



Gannett Fleming

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January 30, 2019

File #34265.003

John Sager
Wisconsin Department of Natural Resources
1701 North 4th Street
Superior, WI 54880

Re: Tank 68 Release Site Remediation Progress Report for 2018
Superior Refining Company LLC Refinery, Superior, WI
WDNR BRRTS# 02-16-526812 and Facility ID: 816009590

Dear John:

On behalf of Superior Refining Company LLC (SRC), Gannett Fleming, Inc. (GF) is submitting this remediation progress report for the Murphy Oil (Murphy) Tank Basin 68 site (WDNR BRRTS# 02-16-526812) at the SRC refinery in Superior. The report summarizes remedial and monitoring activities conducted at the site in 2018. In addition, it includes background information on the refinery and Tank 68 basin for reference.

Periodic reporting of remediation site progress to the Wisconsin Department of Natural Resources (WDNR) is required pursuant to ss. NR 700.11(1) and 724.13(3), Wisconsin Administrative Code. A completed certification page for the report is also attached.

Pertinent Site Background and Tank 68 Basin Information

Figure 1 is a location map showing Tank 68, the refinery, its approximate property boundary, and the area around the refinery and was prepared using the most recent USGS topographic map. The Tank 68 basin is in the SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 25, Township 49 North, Range 14 West, Superior Township of Douglas County.

The land surrounding the Tank 68 basin is also owned by SRC and is part of the refinery. The closest surface water is Newton Creek, located approximately 2,000 feet east of the basin, as shown on Figure 1. The basin is located on relatively level land in the north-central area of the refinery. The basin's ground surface is unpaved. The basin is underlain by native clay, the depth to groundwater is approximately 3 feet below ground surface (bgs), and the regional direction of shallow groundwater flow below the refinery is to the east.

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The hydraulic conductivity of the native clay underlying the refinery is on the order of 10^{-7} centimeters per second. Assuming a horizontal hydraulic gradient of 0.003 and effective porosity of 0.06, the estimated horizontal groundwater flow velocity is approximately 0.01 foot per year (ft/yr). This does not include contaminant retardation.

In October 2011, Calumet Superior LLC (Calumet) acquired the refinery from Murphy. Effective November 8, 2017, Husky Superior Refining Holding Corp (Husky Superior) purchased Calumet and changed its legal name to Superior Refining Company LLC.

Tank 68 Basin Site Background

The Tank 68 basin monitoring network currently includes MW-5/T66, MW-1/T68, MW-2/T68, and MW-4/T68 through MW-6/T68 and monitoring points MP-1/T68 through MP-3/T68, as shown on Figure 2. In 2001, MW-5/T66 was transferred from the Tanks 65/66 release site to the Tank 68 basin site due to the occurrence of free product in MW-5/T66; and test pits TP-2, TP-3, and TP-4 were abandoned. The free product in MW-5/T66 was first observed in January 2000 during a site investigation associated with the Tank 65/66 basins east of Tank 68 and has not been associated with any known release. In 2008, upgradient monitoring well MW-3/T68 was sealed and abandoned. In 2010-2012, test pit sump TP-1/T68 was lost.

Since February 2000, wells in the network have been routinely monitored for the presence of free product, and if present, it is removed and treated in the refinery's No. 1 API oil/water separator/wastewater treatment plant (WWTP). In addition, based on American Petroleum Institute guidelines, wells in the network have been purged dry following routine gauging events to promote the accumulation of product. This occurs because product preferentially accumulates in a well when the potentiometric surface is low (i.e., as the potentiometric surface drops, product that remains above the water level drains into the well). As the potentiometric surface rises, the product becomes submerged and trapped in the soil pores and subsequently will not accumulate in the well. The purged water is also treated in the refinery's No. 1 API oil/water separator/WWTP.

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Remedial and Monitoring Activities in 2018

Since the last remediation progress report was submitted to the WDNR on April 5, 2018, work in the Tank 68 basin has included the monitoring and recovery of product from the on-site wells and collection of groundwater samples from select locations.

During the reporting period, measurable product was encountered on seven occasions in MW-5/T68, as shown in Table 1, which includes fluid level monitoring data for January through December 2018. The thickest layer of free product observed in MW-5/T68 was measured as 0.11 foot on November 9, 2018. Otherwise, no measurable thickness of product was observed in MP-1/T68 through MP-3/T68 or any of the other five on-site monitoring wells throughout the entire reporting period.

Through December 2018, approximately 102 gallons of product have been recovered from this tank basin, with almost all (i.e., over 97%) of it coming from MW-2/T68, MW-5/T66, and MW-6/T68. During 2018, approximately 0.06 gallon was recovered from MW-5/T68. This is about 12% of the total volume recovered from MW-5/T68 to date. GF's April 2014 report includes a 15-page table summarizing the historical volume of product removed from each well for reference.

SRC will continue to check for free product, but for all practical purposes, we believe free product has been recovered to the extent practical from the Tank 68 basin.

Groundwater samples were collected at the site during the reporting period in June and October 2018. Each well was purged dry twice and allowed to recover for at least 7 days, prior to the collection of the samples. Monitoring wells MW-1/T68, MW-2/T68, MW-4/T68, MW-5/T66, and MW-6/T68 were routinely sampled. Gannett Fleming used a new one-time-use polyethylene bailer with new nylon rope to collect each groundwater sample. The groundwater samples were sent to Pace Analytical of Green Bay (Wisconsin laboratory certification #405132750) and analyzed for volatile organic compounds (VOCs).

Table 2 presents the analytical results of the groundwater samples in micrograms per liter ($\mu\text{g}/\ell$). As shown in Table 2:

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- All compounds in the samples collected from upgradient well MW-1/T68 were below applicable NR 140 enforcement standards (ESs) for all VOCs.
- Samples collected from the other four Tank 68 monitoring wells in June 2018 contained one or more VOCs at or above applicable NR 140 ESs. Samples collected from these four wells in October 2018 contained one or more VOCs at or above applicable NR 140 ESs, except for MW-4/T68, which had all VOCs below their method detection limit (MDL). Because of the recovery of product over the years, overall VOC concentrations in the wells have been stable or decreasing. For example, Figure 3 presents trend analysis plots for benzene concentrations in the groundwater at MW-2/T68 and MW-4/T68. If benzene was not detected in a sample collected from a well, then the reported MDL was plotted for that date. Note that the plotted data for each well only includes the time since free product was most recently removed. In addition, the best-fit exponential trend lines were generated using Excel. As shown on Figure 3, dissolved-phase benzene concentrations have been stable in MW-2/T68 and followed a general downward trend in MW-4/T68. Based on the relatively low groundwater flow velocity of approximately 0.01 ft/yr and stable to decreasing benzene concentrations, results indicate the overall plume remains stable or receding.

Samples were not collected from MW-5/T68 due to the presence of free product in the well on the day of sampling. Attachment A provides copies of the laboratory reports and chain of custody records for the groundwater samples collected in June and October 2018.

Historically, a groundwater contour map for the Tank 68 release site has not been prepared because groundwater levels in the wells either are influenced by local surface/melt water in the spring or typically do not have sufficient time to reach static levels after they are bailed later in the year. Consequently, a groundwater contour map representing static conditions for the Tank 68 site cannot be created.

Future Work

Year-round access to wells at the refinery is not practical due to relatively shallow groundwater, cold weather, and snow. During time periods when it's warm enough to allow access (i.e., from April/May through October/November), SRG's work plan for 2019 follows:

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- Continue to manually bail product from the six existing monitoring wells (MW-5/T66, MW-1/T68, MW-2/T68, and MW-4/T68 through MW-6/T68) and three monitoring points (MP-1/T68 through MP-3/T68) when free product is present.
- If product is observed, the wells and points will be checked monthly. If product is not observed, the wells and points will be checked quarterly. The purged product/water will continue to be treated in the refinery's No. 1 API oil/water separator/WWTP.
- Collect groundwater samples from those monitoring wells without product biannually, and have the samples analyzed for VOCs by a Wisconsin-certified laboratory using EPA Method 8260. Each monitoring well will be purged dry twice and allowed to recover for at least six days, prior to the collection of the samples.
- Report the results of the 2019 groundwater samples, as well as the results of the recovery of product, in our next remediation progress report to the WDNR by the end of January 2020.

Feel free to contact Matt Turner at Husky Superior, Cliff Wright at GF, and/or me if you have any questions or need additional information.

Sincerely,

GANNETT FLEMING, INC.



Marcus Mussey
Geologist


MCM/jec
Enc.

ecc: Matt Turner (Husky Superior)

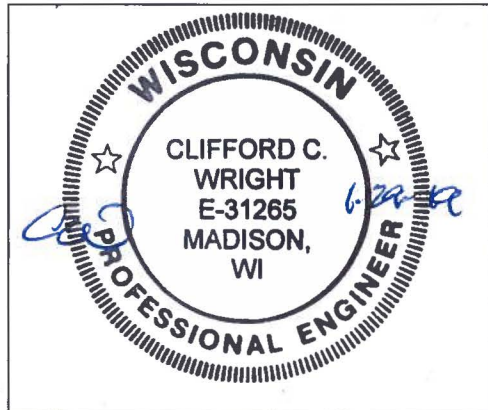
CERTIFICATION

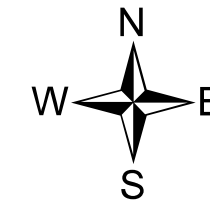
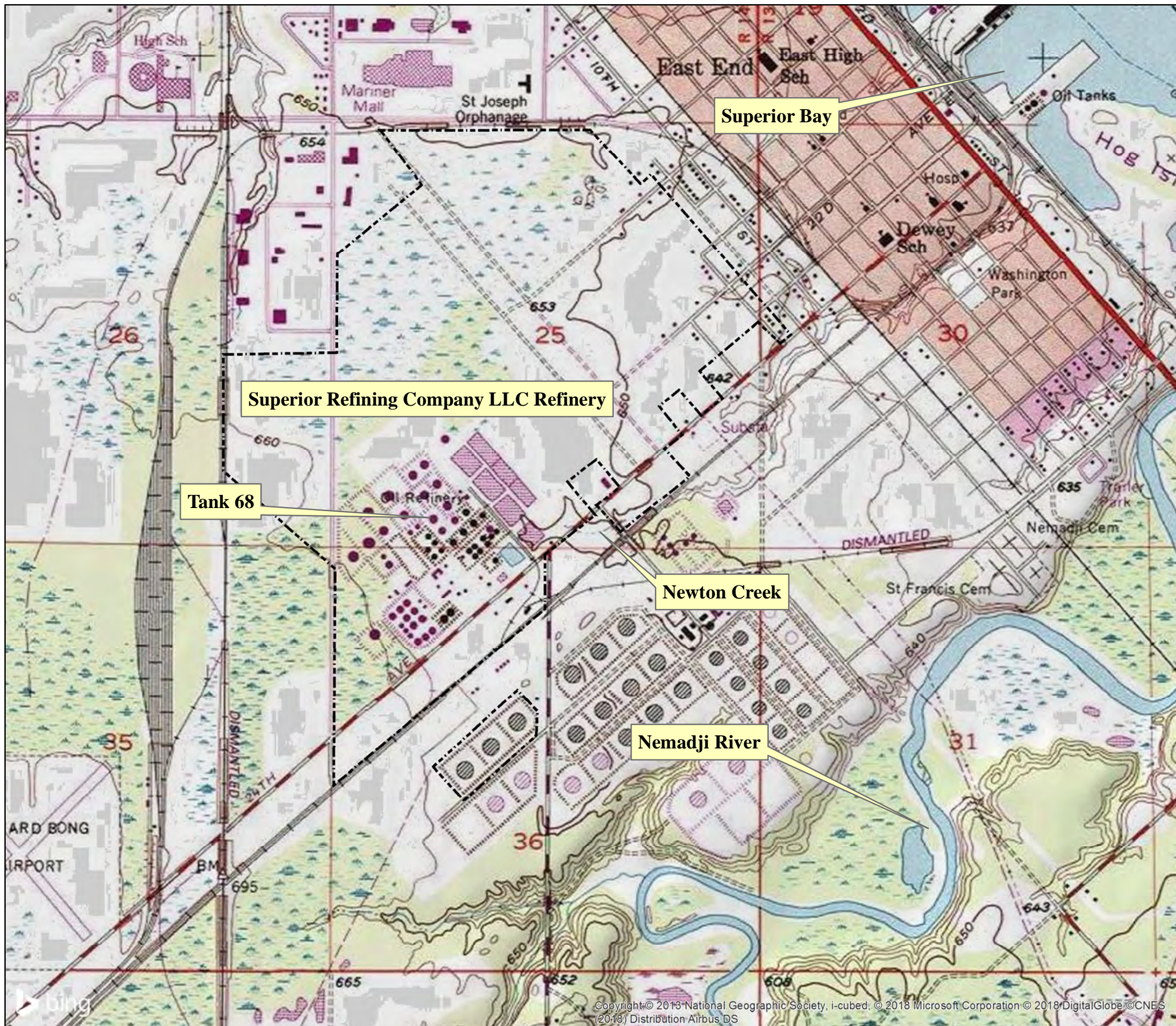
Only persons qualified to submit reports under ch. NR 712 Wis. Adm. Code are to sign this form for sites with any ongoing active remediation, monitoring, or an investigation. Other persons may sign this form for sites with no response activities during the six-month reporting period.

I hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Print Name Clifford C. Wright	Title Project Engineer
Signature 	Date 1-29-19

Professional Seal, if applicable:



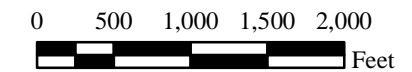



Legend

----- Approximate Property Boundary

Notes:

1. Contour interval = 10ft.
2. Site datum = mean sea level (MSL).
3. Topographic map obtained from ArcGIS USA Topo Map Service. Service includes seamless, scanned image of USGS topographic maps.



Site Location Map			
SUPERIOR REFINING COMPANY LLC REFINERY SUPERIOR, WISCONSIN			
		Gannett Fleming, Inc. 8025 Excelsior Drive Madison WI 53717-1900 (608) 836-1500 www.gannettfleming.com	
Project No.	34265.003	Date	2/19/18 Figure 1

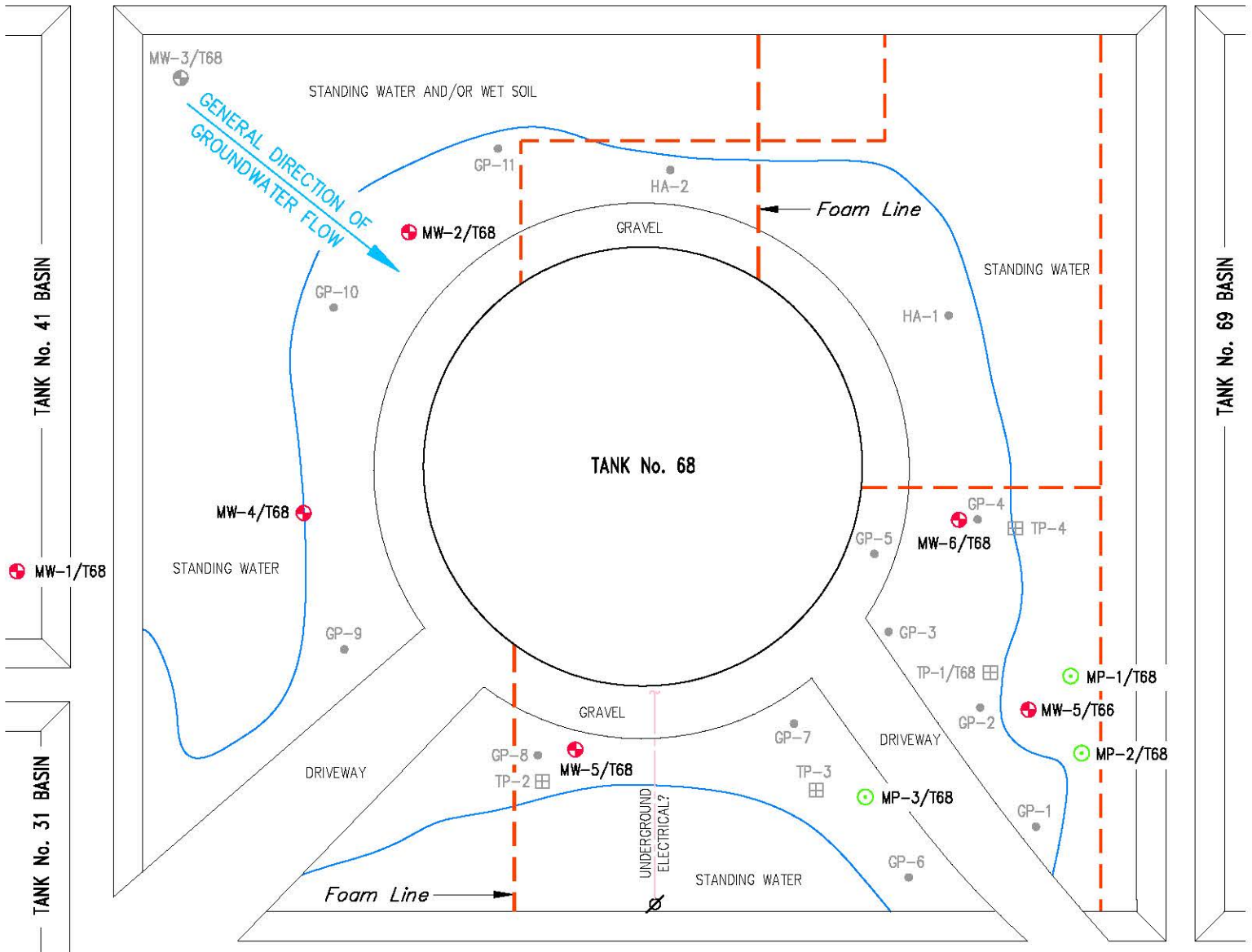


TANK Nos.
29/30 BASIN

TANK No.
70 BASIN

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FIGURE 2



NOTES

1. Site Layout And Sample Locations Are Based On Field Measurements And Are Approximate; Site Not Surveyed.
2. Each Monitoring Point Is 7 Feet Deep And Consists Of 4"Ø PVC With 3 Feet Of Slotted PVC Screen.
3. Shaded Well, Test Pit, And Geoprobe And Hand Auger Boring Locations Have Been Abandoned.

TANK No. 38 BASIN

TANK No. 66 BASIN



Approximate Scale In Feet

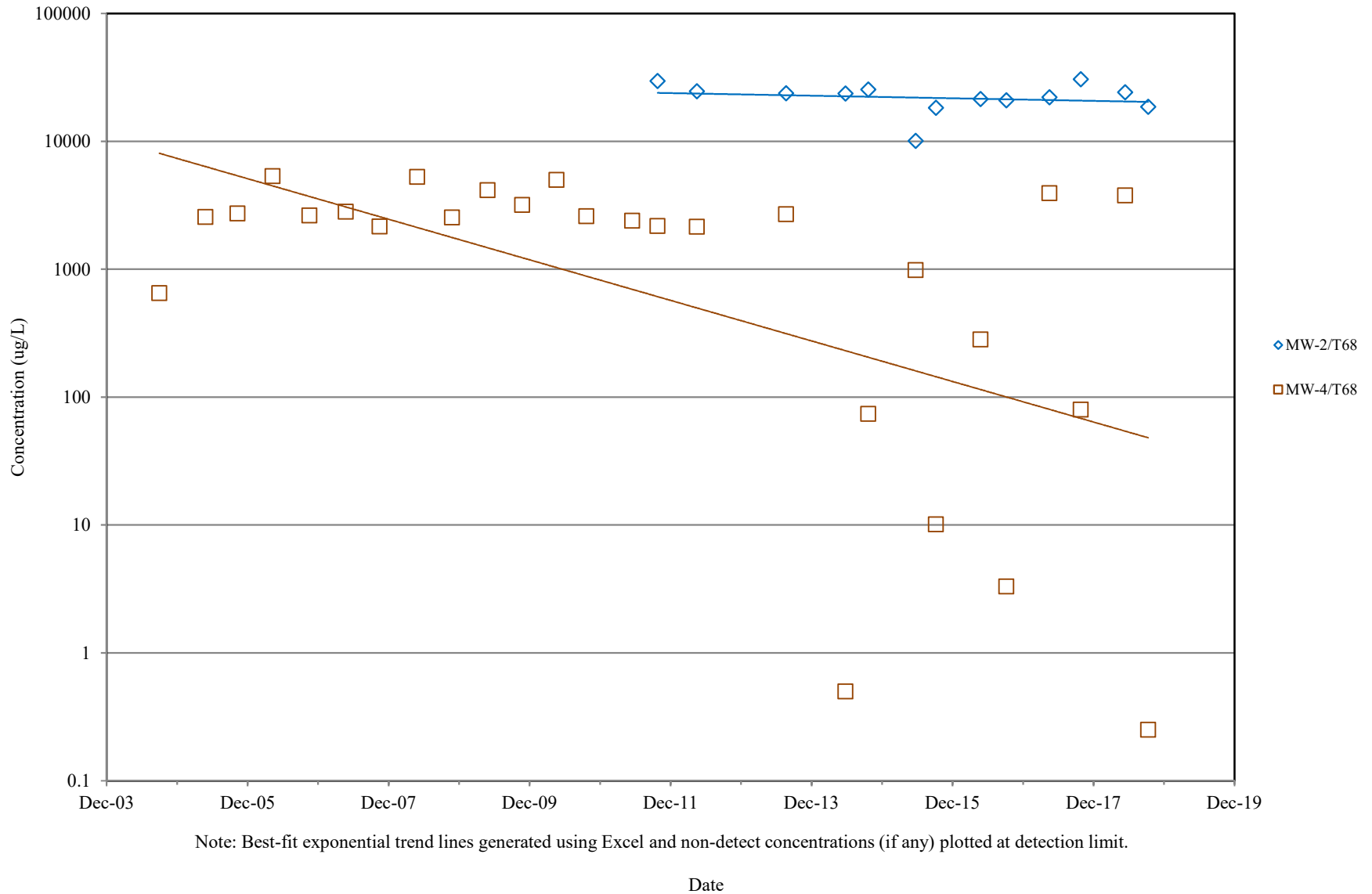
LEGEND

- Geoprobe (GP)/Hand Auger (HA) Boring Locations (April/May 2002)
- Monitoring Point (July 2001)
- ▣ Test Pit (June 2000)
- ⊕ Monitoring Well
- - - Aboveground Piping
- ∅ Utility Pole

**TANK NO. 68
SITE PLAN**

SUPERIOR REFINING COMPANY LLC
SUPERIOR, WISCONSIN

FIGURE 3



BENZENE GROUNDWATER CONCENTRATIONS TANK 68 BASIN

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SUPERIOR, WISCONSIN

SUPERIOR REFINING COMPANY LLC
SUPERIOR, WISCONSIN

TABLE 1

2018 FLUID LEVEL MONITORING DATA FOR TANK 68 RELEASE SITE

Date	MP-1/T68		MP-2/T68		MP-3/T68		MW-1/T68		MW-2/T68		MW-4/T68		MW-5/T66		MW-5/T68		MW-6/T68		Comments/ Footnotes
	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW	
	Depth to Fluid from Top of Casing (feet)																		
05/23/18	--	5.88	--	6.53	--	5.10	--	4.98	--	4.84	--	4.06	--	4.71	--	4.57	--	4.49	(1)
06/07/18	--	5.43	--	5.98	--	4.45	--	4.07	--	4.56	--	3.80	--	7.25	--	3.86	--	5.79	(1)
06/12/18	--	5.51	--	6.16	--	4.51	--	4.28	--	6.92	--	6.45	--	4.23	8.89	8.93	--	7.80	(2)
07/16/18	--	6.56	--	7.11	--	4.92	--	5.19	--	4.30	--	4.54	--	5.27	8.57	8.60	--	4.78	(3)
08/21/18	--	8.94	--	8.85	--	7.13	--	6.66	--	6.45	--	6.34	--	5.63	7.88	7.94	--	5.09	(3)
09/11/18	--	5.63	--	6.22	--	5.16	--	4.85	--	4.93	--	4.16	--	4.25	8.92	8.98	--	4.05	(4)
09/24/18	--	5.47	--	6.07	--	4.66	--	4.48	--	6.52	--	6.15	--	3.96	--	10.03	--	6.93	(1)
10/09/18	--	5.01	--	5.51	--	4.52	--	3.41	--	5.57	--	5.07	--	3.29	10.32	10.38	--	7.82	(5)
10/31/18	--	5.41	--	5.97	--	4.68	--	4.39	--	4.25	--	3.98	--	3.68	8.90	8.95	--	5.31	(3)
11/09/18	--	5.32	--	6.03	--	4.71	--	4.41	--	4.38	--	3.99	--	3.85	10.52	10.63	--	3.91	(3)

NOTES:

DTP = Depth to product.

DTW = Depth to water.

nm = Not measured.

-- = Not applicable/no free product.

FOOTNOTES:

(1) Bailed the monitoring wells (MWs) dry in preparation for sampling.

(2) Bailed MW-5/T68 dry to address measured free product and sampled the remaining MWs (see Table 2 for summary of analytical results).

(3) Bailed MW-5/T68 dry to address measured free product.

(4) Bailed MW-5/T68 dry to address measured free product and bailed the MWs without free product dry in preparation for sampling.

(5) Gauged free product in MW-5/T68 and sampled the remaining MWs (see Table 2 for summary of analytical results).

SUPERIOR REFINING COMPANY LLC
SUPERIOR, WISCONSIN

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	0.5	140	160	400	96	12	10	NS	NS	NS	NS	3	0.5	NS	NS	NS	NS	NS	40	0.5	1.5
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
MW-1/T68																						
03/06/02	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
05/17/02	820	<0.43	5.3	7.1	<1.45	13.8	<0.49	<1.4	<0.42	19	4.2	2.7	<0.69	<0.54	<0.30	<0.30	4.6	5.5	5.1	<0.2	<1	na
09/12/02	<50	<0.45	<0.82	<0.68	<2.47	<1.86	<0.43	<0.89	na	na	na	na	na	na	na	na	na	na	na	na	na	na
03/12/03	<50	<0.45	<0.82	<0.68	<2.47	<1.86	<0.43	<0.89	na	na	na	na	na	na	na	na	na	na	na	na	na	na
09/30/04	<50	<0.14	<0.40	<0.36	<1.10	<0.79	<0.36	<0.47	na	na	na	na	na	na	na	na	na	na	na	na	na	na
05/26/05	<50.0	<0.31	<0.5	<0.3	<0.92	<0.71	<0.3	<0.8	<0.41	<0.36	<0.4	<0.4	<0.29	<0.4	na	<0.30	<0.31	<0.5	<0.3	<0.2	<0.3	na
11/09/05	<50.0	<0.31	<0.5	<0.3	<0.92	<0.71	<0.3	<0.8	<0.41	<0.36	<0.4	<0.4	<0.29	<0.4	na	<0.30	<0.31	<0.5	<0.3	<0.2	<0.3	na
05/10/06	<50.0	<0.31	<0.50	<0.30	<0.92	<0.71	<0.30	<0.80	<0.41	<0.36	<0.40	<0.40	<0.29	<0.40	na	<0.30	<0.31	<0.50	<0.30	<0.2	<0.3	na
11/16/06	<50.0	<0.15	<0.10	<0.40	<0.50	<0.30	<0.10	<1.00	<0.10	<0.20	<0.15	<0.15	<0.20	<0.10	0.56 J	<0.30	<0.10	<0.20	<0.10	<0.2	<0.3	na
05/23/07	<50.0	<0.20	<0.10	<0.40	<0.60	<0.40	<0.20	<1.00	<0.20	<0.20	<0.20	<0.20	<0.30	<0.20	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.3	na
11/15/07	<50.0	<0.20	<0.10	<0.40	<0.60	<0.40	<0.20	<1.00	<0.20	<0.20	<0.20	<0.20	<0.30	<0.20	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.3	na
05/27/08	68	<0.20	<0.10	<0.40	<0.60	<0.40	<0.20	<1.00	<0.20	<0.20	<0.20	<0.20	<0.30	<0.20	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.3	na
11/24/08	<50.0	0.42 J	1.55	3.23	10.16	6.97	<0.50	<1.00	<0.20	<0.40	<0.30	<0.30	<0.40	<0.30	<0.50	<0.30	0.16 J	<0.20	<0.10	<0.2	<0.3	na
05/27/09	<50.0	<0.20	<0.20	<0.40	<0.60	<0.40	<0.50	<1.00	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	<0.80	<0.30	<0.10	<0.40	<0.10	<0.5	<0.3	na
11/23/09	52.6	<2.00	78.0	9.88 J	514	90	<5.00	<10.0	<3.00	<4.00	<3.00	<3.00	<4.00	<3.00	<8.00	na	2.48 J	<4.00	<1.00	<5.00	<0.3	na
05/19/10	<50.0	<0.20	<0.20	<0.40	<0.60	<0.40	<0.50	<1.00	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	<0.80	<0.30	<0.10	<0.40	<0.10	<0.5	<0.3	na
10/21/10	<50.0	<0.20	<0.20	<0.40	<0.60	<0.40	<0.50	<1.00	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	<0.80	<0.30	<0.10	<0.40	<0.10	<0.50	0.90 J	na
06/16/11	na	<0.20	<0.20	<0.40	<0.60	<0.40	<0.50	<1.00	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	<0.80	<0.30	<0.20	<0.40	<0.20	<0.50	<0.30	na
10/25/11	na	<0.20	<0.20	<0.40	<0.60	<0.70	<0.50	<1.00	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	<0.80	<0.30	<0.20	<0.20	<0.20	<0.50	<0.30	na
05/16/12	na	<0.41	<0.54	<0.67	<2.63	<1.80	<0.61	<0.89	<0.82	<0.93	<0.89	<0.97	<0.24	<0.36	<0.75	na	<0.59	<0.67	<0.81	<0.90	<0.45	na
08/21/13	na	<0.50	<0.50	<0.44	<1.32	<3.07	<0.49	<2.5	<0.48	<0.40	<0.60	<0.42	<0.39	<0.48	<0.51	na	<0.34	<0.40	<0.50	<0.44	<0.47	na
06/24/14	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/21/14	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
06/23/15	na	<0.50	0.57 J	2.3	2.92 J	1.36 JU	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/06/15	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
05/24/16	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/05/16	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
05/16/17	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/25/17	na	<0.50	<0.50	2.3	2.38 J	1.08 JU	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
06/12/18	na	<0.50	<0.50	<0.50	<1.50	<1.00	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/09/18	na	<0.25	<0.22	0.22 J	0.90 JU	2.37 JU	<1.2	<1.2	<0.24	<0.71	<0.85	<0.30	<2.2	<0.28	<0.54	na	<0.39	<0.80	<0.81	<0.24	<0.33	na

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	0.5	140	160	400	96	12	10	NS	NS	NS	NS	3	0.5	NS	NS	NS	NS	NS	40	0.5	1.5
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
MW-2/T68																						
05/17/02	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
09/12/02	120,000	32,000	3,000	38,000	17,400	3,170	<170	280 J	<150	<130	<120	<190	<54	2,800	<160	<300	<130	<120	320 J	<200	<300	na
03/12/03	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
09/30/04	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/26/05	121,000	25,200	1,810	29,300	20,850	5,570	<300	1,810	<410	<360	<400	<400	<290	<600	na	<300	<310	<500	<300	<200	<300	na
11/09/05	85,300	25,800	1,530	27,000	15,700	2,476	<300	<800	<410	<360	<400	<400	<290	2,520	na	<300	<310	<500	<300	<200	<300	na
05/10/06	88,800	29,700	1,300	25,600	14,830	3,529	<150	<400	<205	<180	<200	<200	<145	2,680	na	<300	<155	<250	<150	<200	<300	na
11/16/06	95,800	29,100	1,570	26,300	16,440	3,212	<100	<1,000	<100	<200	<150	<150	<200	2,370	544 J	<300	<100	<200	<100	<200	<300	na
05/23/07	124,000	30,000	2,440	34,700	18,820	5,500	<200	<1,000	<200	<200	<200	<200	<300	<200	<300	<300	103	<200	<100	<200	<300	na
11/15/07	98,100	22,500	2,090	24,800	19,190	5,040	<200	6,390	<200	<200	<200	<200	<300	2,020	<300	<300	<100	<200	<100	<200	<300	na
05/27/08	103,000	24,900	1,880	29,000	17,380	4,150	<500	<1,000	<200	<400	<300	<300	<400	1,710	<500	<300	<100	<200	<100	<200	<300	na
11/24/08	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/27/09	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
11/23/09	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/19/10	124,000	39,800	2,790	44,100	18,080	4,660	<500	<1,000	<300	<400	<300	<300	<400	<300	<500	<300	<100	<200	<100	<500	<300	na
10/21/10	245,000	32,300	4,380	41,200	37,800	12,330	<500	1,180 J	<300	<400	<300	<300	<400	1,510	<800	<300	266 J	<400	<200	<500	<300	na
06/16/11	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/25/11	na	29,600	2,760	34,800	18,150	3,670	<100	451 J	<60.0	<80.0	<60.0	<60.0	<80.0	<60.0	<160	na	111 J	<80.0	<40.0	<100	<60.0	na
05/16/12	na	24,600	1,950	29,200	16,780	2,906	<76.2	324 J	<102	<116	<111	<121	<30.0	1,700	<93.8	na	<73.8	<83.8	149	<112	<56.2	na
08/21/13	na	23,800	2,290	28,300	20,740	5,310	<98.7	604 J	<96.7	121 J	<121	<84.9	<77.5	930	<101	na	92.3 J	<79.4	277	<94.4	<88.6	na
06/24/14	na	23,700	892	21,300	16,270	2,757	<43.6	<625	<57.5	<125	<547	<45.1	<125	1,220	<110	na	<35.8	<125	<125	<125	<125	na
10/21/14	na	25,400	975	24,700	15,820	2,149	<34.8	<500	<46.0	<100	<437	<36.1	<100	1,180	<88.2	na	<28.7	<100	<100	<100	<100	na
06/23/15	na	10,100	203	11,500	17,270	3,140	<34.8	<500	<46.0	<100	<437	<36.1	<100	355	<88.2	na	<28.7	<100	<100	<100	<100	na
10/06/15	na	18,300	995	18,500	15,000	2,627	<34.8	<500	<46.0	<100	<437	<36.1	<100	894	<88.2	na	<28.7	<100	<100	<100	<100	na
05/24/16	na	21,400	1,370	22,200	16,160	2,663	<34.8	<500	<46.0	<100	<437	<36.1	<100	1,260	<88.2	na	48.3 J	<100	104 J	<100	<100	na
10/05/16	na	20,900	1,350	20,300	15,370	2,673	<34.8	<500	<46.0	<100	<437	<36.1	<100	1,150	<88.2	na	45.3 J	<100	105 J	<100	<100	na
05/16/17	na	22,100	933	19,200	15,400	3,192	<34.8	<500	<46.0	<100	<437	<36.1	<100	1,420	<88.2	na	<28.7	<100	<100	<100	<100	na
10/25/17	na	30,600	1,170	24,500	19,550	3,122	<43.6	<625	<57.5	<125	<547	<45.1	<125	1,610	<110	na	<35.8	<125	<125	<125	<125	na
06/12/18	na	24,200	1,550	25,500	19,050	2,703	<34.8	<500	<46.0	<100	<437	<36.1	<100	1,240	<88.2	na	32.8 J	<100	<100	<100	<100	na
10/09/18	na	18,600	1,120	16,100	15,370	3,389	<249	292 J	<48.2	<142	<170	<60.8	<438	1,520	<108	na	<78.6	<160	<162	<49.0	<65.3	na

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	0.5	140	160	400	96	12	10	NS	NS	NS	NS	3	0.5	NS	NS	NS	NS	NS	40	0.5	1.5
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
MW-3/T68																						
03/12/03	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
09/30/04	<50	<0.41	<0.54	<0.67	<2.63	<1.8	<0.61	<0.74	<0.82	<0.93	<0.89	<0.97	<0.24	<0.36	<0.75	<0.30	<0.59	<0.67	<0.81	<0.2	<0.45	na
05/26/05	96.8	15.6	0.636 J	0.44 J	1.25 J	4.78 J	<0.3	1.38 J	<0.8	1.61	<0.4	<0.4	<0.29	<0.4	na	<0.30	<0.31	<0.5	<0.3	<0.2	<0.45	na
11/09/05	<50.0	<0.31	<0.5	<0.3	<0.92	<0.71	<0.3	<0.8	<0.41	<0.36	<0.4	<0.4	<1.00	<0.4	na	<0.30	<0.31	<0.5	<0.3	<0.2	<0.45	na
05/10/06	<50.0	9.77	<0.50	<0.30	1.93 J	3.09 J	<0.30	<0.80	<0.41	<0.36	<0.40	<0.40	<0.29	<0.40	na	<0.30	<0.60	<0.50	<0.30	<0.2	<0.71	na
11/16/06	<50.0	<0.15	<0.10	<0.40	<0.50	<0.30	<0.10	<1.00	<0.10	<0.20	<0.15	<0.15	<0.20	<0.10	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.10	na
05/23/07	<50.0	<0.20	0.10 J	<0.40	<0.60	<0.40	<0.20	<1.00	<0.20	<0.20	<0.20	<0.20	<0.30	<0.20	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.30	na
11/15/07	<50.0	<0.20	<0.10	<0.40	<0.60	<0.40	<0.20	<1.00	<0.20	<0.20	<0.20	<0.20	<0.30	<0.20	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.30	na
05/27/08	<50.0	<0.20	<0.10	<0.40	<0.60	<0.40	<0.20	<1.00	<0.20	<0.20	<0.20	<0.20	<0.30	<0.20	<0.30	<0.30	<0.10	<0.20	<0.10	<0.2	<0.30	na
11/24/08	Filled and sealed																					
MW-4/T68																						
03/12/03	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
09/30/04	5,500	650	260	49	1,090	560	<3.0	38	<4.1	<4.6	<4.4	<4.8	<1.2	<1.8	<3.8	<30.0	17	15	24	<20.0	<30.0	na
05/26/05	12,800	2,560	402	44.3	2,857	1,522	<30.0	132	<41.0	<36.0	<40.0	<40.0	<29.0	<40.0	na	<30.0	37.3	<50.0	<30.0	<20.0	<30.0	na
11/09/05	12,100	2,730	650	59.9	3,555	1,439	<15.0	114	<20.5	<18.0	<20.0	<20.0	<14.5	<20.0	na	<30.0	47	<25.0	51.8	<20.0	<30.0	na
05/10/06	15,700	5,350	462	125	4,280	1,622	<30.0	154 J	<41.0	166	<40.0	<40.0	<29.0	<40.0	na	<30.0	<31.0	<50.0	<30.0	<20.0	<30.0	na
11/16/06	15,300	2,630	567	74.9	4,360	2,580	<5.00	212	<5.00	<10.0	<7.50	<7.50	13.6 J	<5.00	<15.0	<30.0	26	11.4 J	<5.00	<20.0	<30.0	na
05/23/07	12,200	2,810	247	52.8	2,314	626	<10.0	118 J	<10.0	<10.0	<10.0	<10.0	<15.0	56.2	<15.0	<30.0	7.83	17.7	<5.00	<20.0	<30.0	na
11/15/07	11,700	2,160	241	<40.0	2,410	1,760	<20.0	164 J	<20.0	<20.0	<20.0	<20.0	<30.0	<20.0	<30.0	<30.0	11.8	<20.0	<10.0	<20.0	<30.0	na
05/27/08	14,600	5,270	554 J	<400	3,156	1,071	<500	<1,000	<200	<400	<300	<300	<400	<300	<500	<300	<100	<200	<100	<200	<300	na
11/24/08	12,100	2,540	399	43.7 J	2,153	1,425	<50.0	157 J	<20.0	<40.0	<30.0	<30.0	<40.0	62.8 J	<50.0	42.5 J	26.5 J	<20.0	<10.0	20 J	<30.0	na
05/27/09	11,100	4,150	335	52.8 J	2,153	1,023	<50.0	104 J	<30.0	<40.0	<30.0	<30.0	<40.0	115	<40.0	<30.0	<10.0	<40.0	<10.0	<50.0	<30.0	na
11/23/09	9,880	3,180	236	136	2,090	784	<50.0	404	<30.0	<40.0	<30.0	<30.0	<40.0	84.3 J	<80.0	na	<10.0	<40.0	<10.0	<50.0	<30.0	na
05/19/10	9,710	4,990	243	<40.0	1,669	839	<50.0	<100	<30.0	<40.0	<30.0	<30.0	<40.0	118	<40.0	<30.0	<10.0	<40.0	<10.0	<50.0	<30.0	na
10/21/10	12,400	2,590	368	<40.0	2,045	1,790	<50.0	153 J	<30.0	<40.0	<30.0	<30.0	<40.0	57.6 J	<80.0	<30.0	<20.0	<40.0	<20.0	<50.0	<30.0	na
06/16/11	na	2,390	172	<40.0	1,096.4 J	535	<50.0	<100	<30.0	<40.0	<30.0	<30.0	<40.0	<30.0	<80.0	na	<20.0	<40.0	<20.0	<50.0	<30.0	na
10/25/11	na	2,180	247	45.2 J	1,234.3 J	857	<50.0	<100	<30.0	<40.0	<30.0	<30.0	<40.0	51.3	<80.0	na	<20.0	<40.0	<20.0	<50.0	<30.0	na
05/16/12	na	2,150	297	13.0	1,054.5	793	<6.1	72.4	<8.2	<9.3	<8.9	<9.7	<2.4	<3.6	<7.5	na	8.0 J	7.0 J	14.4	<9.0	<4.5	na
08/21/13	na	2,690	548	11.4 J	1,157.6 J	799.6 J	<9.9	94.1 J	<9.7	8.5 J	<12.1	<8.5	<7.8	<9.5	<10.1	na	16.2 J	8.4 J	36.3	<8.9	<9.4	na
06/24/14	na	0.50 U	<0.50	<0.50	<1.50	<1.0	<0.23	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/21/14	na	73.8	19.8	<0.50	111.97 J	85.4	<0.17	3.3 J	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
06/23/15	na	982	178	15.8	450.6 J	475.5	<1.7	<25.0	<2.3	<5.0	<21.9	<1.8	<5.0	<1.7	<4.4	na	4.6 J	<5.0	7.5 J	<5.0	<5.0	na

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	0.5	140	160	400	96	12	10	NS	NS	NS	NS	3	0.5	NS	NS	NS	NS	NS	40	0.5	1.5
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
10/06/15	na	10.1	1.5	<0.50	2.7	2.6	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
05/24/16	na	282	30.6	2.2 J	88.0 J	148.6	<0.44	<6.2	<0.58	<1.2	<5.5	<0.45	<1.2	<0.42	<1.1	na	0.69 J	<1.2	<1.2	<1.2	<1.2	na
10/05/16	na	3.3	0.83 J	0.99 J	4.1	3.2	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.17	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
05/16/17	na	3,930	602	<20.0	1,600	674.5	<7.0	<100	<9.2	<20.0	<87.4	<7.2	<20.0	<6.7	<17.6	na	10.4 J	<20.0	<20.0	<20.0	<30.0	na
10/25/17	na	79.6	9.7	3.6	30.6	40.6	<0.44	<6.2	<0.58	<1.2	8.3 J	<0.45	<1.2	<0.42	<1.1	na	0.43 J	<1.2	2.1 J	<1.2	<1.2	na
06/12/18	na	3,770	531	<25.0	1,305 U	597.7 J	<8.7	<125	<11.5	<25.0	<109	<9.0	<25.0	<8.4	<22.1	na	<7.2	<25.0	<25.0	<25.0	<25.0	na
10/09/18	na	0.25 U	<0.22	<0.17	0.73 U	1.71 U	<1.2	<1.2	<0.24	<0.71	<0.85	<0.30	<2.2	<0.28	<0.54	na	<0.39	<0.80	<0.81	<0.24	<0.33	na
MW-5/T66																						
11/25/98	100	<0.30	1.9	6.7	32	10.4	<0.20	<1.1	<0.20	2	<0.20	<0.30	<0.90	<0.20	na	<0.30	<0.20	<0.20	0.3	<0.20	<0.60	na
12/17/98	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	<1
04/06/99	997	44	8.06	33.1	195	109	<0.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.41
06/01/99	3,810	55.4	65.7	170	909	554	<3.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.75
09/09/99	31,300	1,920	1,970	5,190	9,590	2,554	<15	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.23
12/10/99	74,600	7,480	3,070	19,800	15,270	2,786	<60	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.38
03/06/02	44,000	3,300	3,100	13,000	18,000	4,800	<25	820	na	na	na	na	na	na	na	na	na	na	na	na	na	na
07/11/02	na	2,100	1,700	8,700	13,400	2,900	<49	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
09/12/02	44,000	2,200	2,800	10,000	14,500	2,960	<22	310	na	na	na	na	na	na	na	na	na	na	na	na	na	na
03/12/03	48,000	3,400	3,100	9,900	15,600	3,220	<22	340	na	na	na	na	na	na	na	na	na	na	na	na	na	na
09/30/04	77,000	13,000	3,600	23,000	17,200	3,350	<72	520	na	na	na	na	na	na	na	na	na	na	na	na	na	na
05/26/05	72,800	20,700	1,250	23,400	9,990	1,974	<300	<800	<410	<360	<400	<400	<290	<400	na	<300	<310	<500	<300	<200	<300	na
11/09/05	53,100	8,980	2,580	19,700	17,840	2,731	<60.0	270	<82.0	<72.0	<80.0	<80.0	<58.0	<80.0	na	<30.0	68.3	<100	190	<200	<300	na
05/10/06	72,700	8,620	3,660	19,400	18,340	4,340	<150	667 J	<205	549	<200	<200	<145	<200	na	<300	<155	<250	602	<200	<300	na
11/16/06	17,300	672	425	1,740	4,040	1,852	<5.00	89.6 J	102	199	<7.50	<7.50	<10.0	15.4 J	<15.0	<30.0	17.7 J	11.5 J	<5.00	<20.0	<30.0	na
05/23/07	29,800	2,620	1,160	5,200	6,840 J	2,360	<10.0	174	<10.0	<10.0	<10.0	<10.0	19.7 J	52.0	<15.0	<30.0	32.3	<10.0	<5.00	<20.0	<30.0	na
11/15/07	27,000	2,440	1,270	4,790	8,180	2,540	<20.0	221 J	<20.0	<20.0	<20.0	<20.0	<30.0	<20.0	<30.0	<30.0	34.2	<20.0	<10.0	<20.0	<30.0	na
05/27/08	39,500	4,210	2,180	8,750	12,350	2,360	<500	<1,000	<200	<400	<300	<300	<400	<300	<500	<300	<100	<200	<100	<200	<300	na
11/24/08	19,300	2,010	1,270	4,340	8,540	1,841	<50.0	223 J	<20.0	230	<30.0	<30.0	<40.0	<30.0	<50.0	<30.0	33.9 J	<20.0	<10.0	<20.0	<30.0	na
05/29/09	27,500	2,710	1,570	3,590	10,550	3,160	<500	<1,000	<300	<400	<300	<300	<400	<300	<800	<300	<100	<400	<100	<500	<300	na
11/23/09	20,100	1,870	926	1,050	6,910	2,760	<50.0	391	<30.0	<40.0	<30.0	<30.0	<40.0	43.6 J	<80.0	na	31.6	<40.0	<10.0	<50.0	<300	na
05/19/10	25,400	2,980	1,480	4,190	9,050	3,000	<500	<1,000	<300	<400	<300	<300	<400	<300	<800	<300	<100	<400	<100	<500	<300	na
10/21/10	21,800	1,630	913	2,090	6,670	1,431	<50.0	211 J	<30.0	<40.0	<30.0	<30.0	<40.0	34.9 J	<80.0	<30.0	21.3 J	<40.0	<20.0	<500	<30.0	na
06/16/11	na	2,940	1,520	2,470	9,480	2,161 J	<250	<500	<150	<200	<150	<150	<200	<150	<400	na	<100	<200	<100	<250	<150	na
10/25/11	na	3,020	820	1,110	7,280	1,745 J	<250	<500	<150	<200	<150	<150	<200	<150	<400	na	<100	<200	<100	<250	<150	na

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	0.5	140	160	400	96	12	10	NS	NS	NS	NS	3	0.5	NS	NS	NS	NS	NS	40	0.5	1.5
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
05/16/12	na	3,220	2,550	2,690	13,910	2,828	<15.2	317	<20.5	<23.2	<22.2	<24.2	<6.0	<9.0	<18.8	na	54.1	<16.8	210	<22.5	<11.2	na
08/21/13	na	3,860	2,540	1,760	15,230	3,450	<19.7	404	<19.3	56.9	<24.2	<17.0	<15.5	<19.1	<20.3	na	66.4	16.8 J	244	<17.7	<18.9	na
06/24/14	na	6.0	0.80 J	2.5	64.5	19.4	<0.17	<2.5	<0.23	<0.50	<2.2	<0.18	<0.50	<0.16	<0.44	na	<0.14	<0.50	<0.50	<0.50	<0.50	na
10/21/14	na	2,050	1,230	423	9,030	1,486	<3.5	172	<4.6	<10.0	<43.7	<3.6	<10.0	<3.4	<8.8	na	11.5 J	<10.0	43.5	<10.0	<10.0	na
06/23/15	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/06/15	na	11,800	2,080	20,900	16,670	4,585	<34.8	510 J	<46.0	<100	<437	<36.1	<100	<33.6	<88.2	na	74.7 J	<100	316	<100	<100	na
05/24/16	na	10,600	3,330	17,000	19,360	4,719	<34.8	<500	<46.0	<100	<437	<36.1	<100	<33.6	<88.2	na	118 J	<100	419	<100	<100	na
10/05/16	na	9,090	2,700	15,900	16,800	3,241	<34.8	<500	<46.0	<100	<437	<36.1	<100	<33.6	<88.2	na	65.2 J	<100	222	<100	<100	na
05/16/17	na	10,600	2,950	16,300	18,730	2,902	<34.8	<500	<46.0	<100	<437	<36.1	<100	<33.6	<88.2	na	74.4 J	<100	209	<100	<100	na
10/25/17	na	8,790	2,300	15,400	17,250	2,364	<21.8	<312	<28.8	<62.5	<273	<22.5	<62.5	<21.0	<55.1	na	66.4 J	<62.5	167	<62.5	<62.5	na
06/12/18	na	5,630	2,240	8,760	16,810	3,243	<8.7	276	<11.5	<25.0	<109	<9.0	<25.0	<8.4	<22.1	na	40.9 J	<25.0	147	<25.0	<25.0	na
10/09/18	na	4,180	2,030	10,800	17,330	4,662	<62.3	549	<12.1	<35.4	<42.4	<15.2	<109	<14.0	<27.0	na	71.6 J	<40.0	263	<12.2	<16.3	na
MW-5/T68																						
03/12/03	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
09/30/04	57,000	14,000	460	15,000	9,100	1,810	<61	330	<82	<93	<89	<97	<24	<36	<75	<300	<59	<67	<81	<200	<300	na
05/26/05	66,600	10,500	2,240	17,000	17,060	4,084	<150	431	<205	513	<200	<200	<145	<300	na	<300	<155	<250	305	<200	<300	na
11/09/05	40,100	9,710	450	10,100	9,990	1,682	<150	<400	<205	<180	<200	<200	<145	<200	na	<300	<155	<250	<150	<200	<300	na
05/10/06	45,600	13,300	422	12,300	9,700	1,881	<60.0	241 J	<82.0	<72.0	<80.0	<80.0	<58.0	<80.0	na	<300	<62.0	<100	<60.0	<200	<300	na
11/16/06	37,300	5,410	922	6,820	10,380	3,260	<10.0	265 J	75	<20.0	<15.0	19.9 J	<20.0	109	65.6 J	<300	30.1 J	<20.0	<10.0	<200	<300	na
05/23/07	103,000	21,200	2,730	33,800	16,520	4,590	<200	<1,000	<200	<200	<200	<200	<300	<200	<300	<300	<100	<200	<100	<200	<300	na
11/15/07	121,000	7,580	1,240	13,500	7,180	2,007	<200	<1,000	<200	<200	<200	<200	<300	<200	<300	<300	<100	<200	<100	<200	<300	na
05/27/08	120,000	22,600	3,310	45,700	20,390	3,327	<500	<1,000	<200	<400	<300	<300	<400	<300	<500	<300	<100	<200	<100	<200	<300	na
11/24/08	109,000	6,950	1,590	14,200	7,780	1,377	<500	<1,000	<200	<400	<300	<300	<400	<300	<500	<300	<100	<200	<100	<200	<300	na
05/27/09	110,000	19,000	4,030	45,700	21,860	6,040	<500	<1,000	<300	<400	<300	<300	<400	585 J	<800	<300	134 J	<400	<100	<500	<300	na
11/23/09	106,000	13,200	3,630	30,600	20,610	6,280	<50.0	783	<30.0	<40.0	<30.0	<30.0	<40.0	315	<80.0	na	111	<40.0	<10.0	<50.0	<300	na
05/19/10	103,000	18,400	3,640	42,200	21,540	6,560	<500	<1,000	<300	<400	<300	<300	<400	<300	<800	<300	134 J	<400	<100	<500	<300	na
10/21/10	98,000	14,900	3,730	36,800	24,540	6,240	<500	1,070 J	<300	<400	<300	<300	<400	339 J	<400	<300	<200	<400	<200	<500	<300	na
06/16/11	na	12,200	2,760	33,100	16,950	3,324 J	<500	<1,000	<300	<400	<300	<300	<400	<300	<800	na	<200	<400	<200	<500	<300	na
10/25/11	na	12,600	2,250	27,800	18,100	4,288 J	<500	<1,000	<300	<400	<300	<300	<400	322 J	<800	na	<200	<400	<200	<500	<300	na
05/16/12	na	12,700	2,610	28,200	17,680	3,480	<76.2	476 J	<102	<116	<111	<121	<30.0	<45.0	<93.8	na	<73.8	<83.8	214	<112	<56.2	na
08/21/13	na	16,000	2,390	27,800	16,160	4,261	<98.7	584 J	<96.7	<79.9	<121	<84.9	<77.5	<95.3	<101	na	71.0	<79.4	273	<88.6	<94.4	na
06/24/14	na	14,600	2,700	26,900	17,940	1,208	<43.6	<625	<57.5	<125	<547	<45.1	<125	<41.9	<110	na	57.5 J	<125	193 J	<125	<125	na
10/21/14	na	23,300	4,140	48,700	33,400	5,250	<34.8	617 J	<46.0	<100	<437	<36.1	<100	<33.5	<88.2	na	<28.7	<100	260	<100	<100	na

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	0.5	140	160	400	96	12	10	NS	NS	NS	NS	3	0.5	NS	NS	NS	NS	NS	40	0.5	1.5
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
06/23/15	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/06/15	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/24/16	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/05/16	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/16/17	na	25,600	3,200	42,700	23,200	3,821	<109	<1560	<144	623 J	<1370	<113	<312	<105	<276	na	<89.6	<312	<312	<312	<312	na
10/25/17	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
06/12/18	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/09/18	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-6/T68																						
03/12/03	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
09/30/04	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/26/05	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
11/09/05	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
11/19/06	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/23/07	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
11/15/07	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/27/08	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
11/24/08	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/27/09	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
11/23/09	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
05/19/10	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/21/10	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
06/16/11	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
10/25/11	na	24,000	2,160	25,200	16,320	3,830	<100	243 J	<60.0	<80.0	<60.0	<60.0	<80.0	<60.0	<80.0	na	61.3 J	<80.0	<40.0	<100	<60.0	na
05/16/12	na	27,900	2,270	31,200	19,370	3,059	<122	436 J	<164	<186	<178	<194	<48.0	293	<150	na	<118	<134	<162	<180	<90.0	na
08/21/13	na	26,100	3,940	32,700	33,400	11,180	<98.7	852 J	<96.7	439	<121	<84.9	<77.5	<95.3	<101	na	193 J	124 J	741	<88.6	<94.4	na
06/24/14	na	26,000	1,780	25,700	19,390	3,017	<43.6	<625	<57.5	<125	<547	<45.1	<125	336	<110	na	<35.8	<125	127 J	<125	<125	na
10/21/14	na	47,200	2,160	47,700	43,200	6,080	<34.8	543 J	<46.0	<100	<437	<36.1	<100	<33.5	<88.2	na	<28.7	<100	121 J	<100	<100	na
06/23/15	na	5,710	26.3 J	3,900	20,110	4,263	<8.7	383	<11.5	<25.0	<109	<9.0	<25.0	<8.4	<22.1	na	<7.2	<25.0	<25.0	<25.0	<25.0	na
10/06/15	na	6,000	43.0 J	3,010	18,150	4,307	<8.7	342	<11.5	<25.0	<109	<9.0	<25.0	43.5 J	<22.1	na	<7.2	<25.0	<25.0	<25.0	<25.0	na
05/24/16	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP
10/05/16	na	5,070	45.5 J	1,560	14,320	4,065	<8.7	334	<11.5	<25.0	<109	<9.0	<25.0	37.5 J	<22.1	na	<7.2	<25.0	<25.0	<25.0	<25.0	na
05/16/17	na	21,000	1,170	19,600	20,980	3,928	<17.4	273 J	<23.0	<50.0	<219	<18.0	<50.0	240	<44.1	na	30.8 J	<50.0	81.8 J	<50.0	<50.0	na

TABLE 2

GROUNDWATER ANALYTICAL RESULTS FOR DETECTED COMPOUNDS - TANK 68 RELEASE SITE⁽¹⁾

Well ID	Substance																					
	GRO	Benzene	Ethylbenzene	Toluene	Xylenes	TMBs	MTBE	Naphthalene	Bromobenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloromethane	1,2-Dichloroethane	1,1-Dichloropropene	Isopropyl Ether	Isopropylbenzene (Cumene)	p-Isopropyltoluene	n-Propylbenzene	1,1,1-Trichloroethane	Tetrachloroethene	Dissolved Lead
NR 140 PAL	NS	<i>0.5</i>	<i>140</i>	<i>160</i>	<i>400</i>	<i>96</i>	<i>12</i>	<i>10</i>	NS	NS	NS	NS	<i>3</i>	<i>0.5</i>	NS	NS	NS	NS	NS	<i>40</i>	<i>0.5</i>	<i>1.5</i>
NR 140 ES	NS	5	700	800	2,000	480	60	100	NS	NS	NS	NS	30	5	NS	NS	NS	NS	NS	200	5	15
10/25/17	na	17,500	<i>576</i>	12,500	16,570	3,569	<21.8	<312	<28.8	<62.5	<273	<22.5	<62.5	225	<55.1	na	<17.9	<62.5	<62.5	<62.5	<62.5	na
06/12/18	na	23,300	2,100	25,200	22,650	3,555	<8.7	290	<11.5	<25.0	<109	<9.0	<25.0	209	<22.1	na	37.1 J	<25.0	111	<25.0	<25.0	na
10/09/18	na	20,600	1,700	19,300	19,490	3,735	<311	421 J	<60.3	<177	<212	<76.0	<547	<70.0	<135	na	<98.2	<200	<203	<61.2	<81.6	na

NOTES:

Results are in micrograms per liter (µg/ℓ). Detected concentrations at or above an applicable NR 140 PAL are in red font and italicized; those at or above an NR 140 ES are in red font and bold.

DP = Discontinuous product globules, well not sampled.

FP = Free product, well not sampled.

GRO = Gasoline range organics.

J = Estimated concentration, concentration below the laboratory's level of quantitation.

MTBE = Methyl tert butyl ether.

na = Not analyzed.

NI = Not installed.

NR 140 ES = Wisconsin Administrative Code NR 140 Enforcement Standard.

NR 140 PAL = Wisconsin Administrative Code NR 140 Preventive Action Limit.

NS = No standard.

TMBs = Trimethylbenzenes.

U = Compound not detected at or above the limit of detection.

FOOTNOTE:

(1) In addition, 244 µg/ℓ of 1,3-dichloropropane was detected in the sample collected from MW-5/T66 on 10/25/17. However, 1,3-dichloropropane has no NR 140 PAL or NR 140 ES. Consequently, Table 2 was not revised to include all 1,3-dichloropropane data.

ATTACHMENT A

**LABORATORY REPORTS AND CHAIN OF CUSTODY RECORDS FOR GROUNDWATER
SAMPLES COLLECTED IN JUNE AND OCTOEBER 2018**

June 15, 2018

Project #34265.003
Superior Refining Company
Reviewed by CCW
6/19/18

Clifford Wright
Gannett Fleming
8025 Excelsior Drive
Madison, WI 53717

RE: Project: 34265.003 SRC
Pace Project No.: 40170716

Dear Clifford Wright:

Enclosed are the analytical results for sample(s) received by the laboratory on June 13, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 34265.003 SRC

Pace Project No.: 40170716

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 34265.003 SRC

Pace Project No.: 40170716

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40170716001	MW-1/T40	Water	06/12/18 08:05	06/13/18 09:20
40170716002	MW-2/T40	Water	06/12/18 07:35	06/13/18 09:20
40170716003	MW-4/T40	Water	06/12/18 08:00	06/13/18 09:20
40170716004	MW-5/T40	Water	06/12/18 07:40	06/13/18 09:20
40170716005	MW-6/T40	Water	06/12/18 07:50	06/13/18 09:20
40170716006	MW-7/T40	Water	06/12/18 07:55	06/13/18 09:20
40170716007	TS-1/T40	Water	06/12/18 07:52	06/13/18 09:20
40170716008	MW-1/T68	Water	06/12/18 08:10	06/13/18 09:20
40170716009	MW-2/T68	Water	06/12/18 08:20	06/13/18 09:20
40170716010	MW-4/T68	Water	06/12/18 08:15	06/13/18 09:20
40170716011	MW-5/T66	Water	06/12/18 08:30	06/13/18 09:20
40170716012	MW-6/T68	Water	06/12/18 08:25	06/13/18 09:20
40170716013	MW-2R/T70	Water	06/12/18 08:40	06/13/18 09:20
40170716014	MW-3/T70	Water	06/12/18 08:52	06/13/18 09:20
40170716015	MW-4/T70	Water	06/12/18 08:55	06/13/18 09:20
40170716016	MW-5/T70	Water	06/12/18 08:45	06/13/18 09:20
40170716017	MW-6/T70	Water	06/12/18 08:50	06/13/18 09:20
40170716018	MW-11	Water	06/12/18 09:20	06/13/18 09:20
40170716019	PZ-11	Water	06/12/18 09:22	06/13/18 09:20
40170716020	MW-12	Water	06/12/18 09:35	06/13/18 09:20
40170716021	MW-13	Water	06/12/18 09:45	06/13/18 09:20
40170716022	PZ-13	Water	06/12/18 09:47	06/13/18 09:20
40170716023	MW-14	Water	06/12/18 09:55	06/13/18 09:20
40170716024	TRIP BLANK	Water	06/12/18 00:00	06/13/18 09:20

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SAMPLE ANALYTE COUNT

Project: 34265.003 SRC

Pace Project No.: 40170716

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40170716001	MW-1/T40	EPA 8260	HNW	11	PASI-G
40170716002	MW-2/T40	EPA 8260	HNW	11	PASI-G
40170716003	MW-4/T40	EPA 8260	HNW	11	PASI-G
40170716004	MW-5/T40	EPA 8260	HNW	11	PASI-G
40170716005	MW-6/T40	EPA 8260	LAP	11	PASI-G
40170716006	MW-7/T40	EPA 8260	LAP	11	PASI-G
40170716007	TS-1/T40	EPA 8260	LAP	11	PASI-G
40170716008	MW-1/T68	EPA 8260	HNW	63	PASI-G
40170716009	MW-2/T68	EPA 8260	HNW	63	PASI-G
40170716010	MW-4/T68	EPA 8260	HNW	63	PASI-G
40170716011	MW-5/T66	EPA 8260	HNW	63	PASI-G
40170716012	MW-6/T68	EPA 8260	HNW	63	PASI-G
40170716013	MW-2R/T70	EPA 8260	LAP	12	PASI-G
40170716014	MW-3/T70	EPA 8260	LAP	12	PASI-G
40170716015	MW-4/T70	EPA 8260	LAP	12	PASI-G
40170716016	MW-5/T70	EPA 8260	LAP	12	PASI-G
40170716017	MW-6/T70	EPA 8260	LAP	12	PASI-G
40170716018	MW-11	EPA 8021	ALD	10	PASI-G
40170716019	PZ-11	EPA 8021	ALD	10	PASI-G
40170716020	MW-12	EPA 8021	ALD	10	PASI-G
40170716021	MW-13	EPA 8021	ALD	10	PASI-G
40170716022	PZ-13	EPA 8021	ALD	10	PASI-G
40170716023	MW-14	EPA 8021	ALD	10	PASI-G
40170716024	TRIP BLANK	EPA 8260	HNW	63	PASI-G

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SUMMARY OF DETECTION

Project: 34265.003 SRC

Pace Project No.: 40170716

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
40170716007	TS-1/T40					
EPA 8260	Benzene	20.9	ug/L	1.0	06/14/18 12:09	
EPA 8260	Ethylbenzene	2.2	ug/L	1.0	06/14/18 12:09	
EPA 8260	m&p-Xylene	1.5J	ug/L	2.0	06/14/18 12:09	
40170716009	MW-2/T68					
EPA 8260	1,2,4-Trimethylbenzene	2160	ug/L	200	06/14/18 10:45	
EPA 8260	1,2-Dichloroethane	1240	ug/L	200	06/14/18 10:45	
EPA 8260	1,3,5-Trimethylbenzene	543	ug/L	200	06/14/18 10:45	
EPA 8260	Benzene	24200	ug/L	200	06/14/18 10:45	
EPA 8260	Ethylbenzene	1550	ug/L	200	06/14/18 10:45	
EPA 8260	Isopropylbenzene (Cumene)	32.8J	ug/L	200	06/14/18 10:45	
EPA 8260	Toluene	25500	ug/L	200	06/14/18 10:45	
EPA 8260	m&p-Xylene	13200	ug/L	400	06/14/18 10:45	
EPA 8260	o-Xylene	5850	ug/L	200	06/14/18 10:45	
40170716010	MW-4/T68					
EPA 8260	1,2,4-Trimethylbenzene	548	ug/L	50.0	06/14/18 13:56	
EPA 8260	1,3,5-Trimethylbenzene	49.7J	ug/L	50.0	06/14/18 13:56	
EPA 8260	Benzene	3770	ug/L	50.0	06/14/18 13:56	
EPA 8260	Ethylbenzene	531	ug/L	50.0	06/14/18 13:56	
EPA 8260	m&p-Xylene	1280	ug/L	100	06/14/18 13:56	
40170716011	MW-5/T66					
EPA 8260	1,2,4-Trimethylbenzene	2600	ug/L	50.0	06/14/18 14:18	
EPA 8260	1,3,5-Trimethylbenzene	643	ug/L	50.0	06/14/18 14:18	
EPA 8260	Benzene	5630	ug/L	50.0	06/14/18 14:18	
EPA 8260	Ethylbenzene	2240	ug/L	50.0	06/14/18 14:18	
EPA 8260	Isopropylbenzene (Cumene)	40.9J	ug/L	50.0	06/14/18 14:18	
EPA 8260	Naphthalene	276	ug/L	250	06/14/18 14:18	
EPA 8260	Toluene	8760	ug/L	50.0	06/14/18 14:18	
EPA 8260	m&p-Xylene	12100	ug/L	100	06/14/18 14:18	
EPA 8260	n-Propylbenzene	147	ug/L	50.0	06/14/18 14:18	
EPA 8260	o-Xylene	4710	ug/L	50.0	06/14/18 14:18	
40170716012	MW-6/T68					
EPA 8260	1,2,4-Trimethylbenzene	2840	ug/L	50.0	06/14/18 14:41	
EPA 8260	1,2-Dichloroethane	209	ug/L	50.0	06/14/18 14:41	
EPA 8260	1,3,5-Trimethylbenzene	715	ug/L	50.0	06/14/18 14:41	
EPA 8260	Benzene	23300	ug/L	250	06/14/18 18:16	
EPA 8260	Ethylbenzene	2100	ug/L	50.0	06/14/18 14:41	
EPA 8260	Isopropylbenzene (Cumene)	37.1J	ug/L	50.0	06/14/18 14:41	
EPA 8260	Naphthalene	290	ug/L	250	06/14/18 14:41	
EPA 8260	Toluene	25200	ug/L	250	06/14/18 18:16	
EPA 8260	m&p-Xylene	15700	ug/L	100	06/14/18 14:41	
EPA 8260	n-Propylbenzene	111	ug/L	50.0	06/14/18 14:41	
EPA 8260	o-Xylene	6950	ug/L	50.0	06/14/18 14:41	
40170716013	MW-2R/T70					
EPA 8260	1,2,4-Trimethylbenzene	3400	ug/L	250	06/15/18 01:33	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 34265.003 SRC
Pace Project No.: 40170716

Method: EPA 8021
Description: 8021 GCV Short List
Client: Gannett Fleming Inc.
Date: June 15, 2018

General Information:

6 samples were analyzed for EPA 8021. 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.

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:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 34265.003 SRC
Pace Project No.: 40170716

Method: EPA 8260
Description: 8260 MSV
Client: Gannett Fleming Inc.
Date: June 15, 2018

General Information:

6 samples were analyzed for EPA 8260. 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.

QC Batch: 291810

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40170694021

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

- MS (Lab ID: 1706474)
 - Trichloroethene
- MSD (Lab ID: 1706475)
 - Trichloroethene

Additional Comments:

Analyte Comments:

QC Batch: 291810

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

- MS (Lab ID: 1706474)
 - Trichloroethene

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PROJECT NARRATIVE

Project: 34265.003 SRC

Pace Project No.: 40170716

Method: EPA 8260

Description: 8260 MSV

Client: Gannett Fleming Inc.

Date: June 15, 2018

Analyte Comments:

QC Batch: 291810

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

- MSD (Lab ID: 1706475)
- Trichloroethene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 34265.003 SRC

Pace Project No.: 40170716

Method: EPA 8260

Description: 8260 MSV UST

Client: Gannett Fleming Inc.

Date: June 15, 2018

General Information:

12 samples were analyzed for EPA 8260. 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.

QC Batch: 291809

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40170716005

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

- MS (Lab ID: 1707185)
 - Benzene
 - Ethylbenzene
 - m&p-Xylene
- MSD (Lab ID: 1707186)
 - Benzene
 - Ethylbenzene
 - m&p-Xylene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 34265.003 SRC

Pace Project No.: 40170716

Method: EPA 8260

Description: 8260 MSV UST

Client: Gannett Fleming Inc.

Date: June 15, 2018

Analyte Comments:

QC Batch: 291809

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

- MS (Lab ID: 1707185)
 - Benzene
 - Ethylbenzene
 - m&p-Xylene
- MSD (Lab ID: 1707186)
 - Benzene
 - Ethylbenzene
 - m&p-Xylene

QC Batch: 291893

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MW-5/T70 (Lab ID: 40170716016)
 - Dibromofluoromethane (S)

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-1/T68 **Lab ID: 40170716008** Collected: 06/12/18 08:10 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		06/14/18 11:08	630-20-6	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	71-55-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		06/14/18 11:08	79-34-5	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		06/14/18 11:08	79-00-5	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		06/14/18 11:08	75-34-3	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		06/14/18 11:08	75-35-4	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		06/14/18 11:08	563-58-6	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		06/14/18 11:08	87-61-6	
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	96-18-4	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		06/14/18 11:08	120-82-1	
1,2,4-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	95-63-6	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		06/14/18 11:08	96-12-8	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		06/14/18 11:08	106-93-4	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	95-50-1	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		06/14/18 11:08	107-06-2	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		06/14/18 11:08	78-87-5	
1,3,5-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	108-67-8	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	541-73-1	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	142-28-9	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	106-46-7	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		06/14/18 11:08	594-20-7	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		06/14/18 11:08	106-43-4	
Benzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		06/14/18 11:08	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		06/14/18 11:08	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		06/14/18 11:08	74-83-9	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		06/14/18 11:08	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		06/14/18 11:08	67-66-3	
Chloromethane	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	74-87-3	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	124-48-1	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		06/14/18 11:08	74-95-3	
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		06/14/18 11:08	75-71-8	
Ethylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		06/14/18 11:08	87-68-3	
Isopropylbenzene (Cumene)	<0.14	ug/L	1.0	0.14	1		06/14/18 11:08	98-82-8	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		06/14/18 11:08	1634-04-4	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		06/14/18 11:08	75-09-2	
Naphthalene	<2.5	ug/L	5.0	2.5	1		06/14/18 11:08	91-20-3	
Styrene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	100-42-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-1/T68 **Lab ID: 40170716008** Collected: 06/12/18 08:10 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<0.33	ug/L	1.0	0.33	1		06/14/18 11:08	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		06/14/18 11:08	75-69-4	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		06/14/18 11:08	75-01-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		06/14/18 11:08	156-59-2	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	10061-01-5	
m&p-Xylene	<1.0	ug/L	2.0	1.0	1		06/14/18 11:08	179601-23-1	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	104-51-8	
n-Propylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	103-65-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	95-47-6	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		06/14/18 11:08	99-87-6	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		06/14/18 11:08	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		06/14/18 11:08	98-06-6	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		06/14/18 11:08	156-60-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		06/14/18 11:08	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		06/14/18 11:08	460-00-4	
Dibromofluoromethane (S)	105	%	70-130		1		06/14/18 11:08	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		06/14/18 11:08	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-2/T68 **Lab ID: 40170716009** Collected: 06/12/18 08:20 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<36.1	ug/L	200	36.1	200		06/14/18 10:45	630-20-6	
1,1,1-Trichloroethane	<100	ug/L	200	100	200		06/14/18 10:45	71-55-6	
1,1,2,2-Tetrachloroethane	<49.9	ug/L	200	49.9	200		06/14/18 10:45	79-34-5	
1,1,2-Trichloroethane	<39.5	ug/L	200	39.5	200		06/14/18 10:45	79-00-5	
1,1-Dichloroethane	<48.3	ug/L	200	48.3	200		06/14/18 10:45	75-34-3	
1,1-Dichloroethene	<82.0	ug/L	200	82.0	200		06/14/18 10:45	75-35-4	
1,1-Dichloropropene	<88.2	ug/L	200	88.2	200		06/14/18 10:45	563-58-6	
1,2,3-Trichlorobenzene	<427	ug/L	1000	427	200		06/14/18 10:45	87-61-6	
1,2,3-Trichloropropane	<100	ug/L	200	100	200		06/14/18 10:45	96-18-4	
1,2,4-Trichlorobenzene	<442	ug/L	1000	442	200		06/14/18 10:45	120-82-1	
1,2,4-Trimethylbenzene	2160	ug/L	200	100	200		06/14/18 10:45	95-63-6	
1,2-Dibromo-3-chloropropane	<433	ug/L	1000	433	200		06/14/18 10:45	96-12-8	
1,2-Dibromoethane (EDB)	<35.6	ug/L	200	35.6	200		06/14/18 10:45	106-93-4	
1,2-Dichlorobenzene	<100	ug/L	200	100	200		06/14/18 10:45	95-50-1	
1,2-Dichloroethane	1240	ug/L	200	33.6	200		06/14/18 10:45	107-06-2	
1,2-Dichloropropane	<46.6	ug/L	200	46.6	200		06/14/18 10:45	78-87-5	
1,3,5-Trimethylbenzene	543	ug/L	200	100	200		06/14/18 10:45	108-67-8	
1,3-Dichlorobenzene	<100	ug/L	200	100	200		06/14/18 10:45	541-73-1	
1,3-Dichloropropane	<100	ug/L	200	100	200		06/14/18 10:45	142-28-9	
1,4-Dichlorobenzene	<100	ug/L	200	100	200		06/14/18 10:45	106-46-7	
2,2-Dichloropropane	<96.8	ug/L	200	96.8	200		06/14/18 10:45	594-20-7	
2-Chlorotoluene	<100	ug/L	200	100	200		06/14/18 10:45	95-49-8	
4-Chlorotoluene	<42.7	ug/L	200	42.7	200		06/14/18 10:45	106-43-4	
Benzene	24200	ug/L	200	100	200		06/14/18 10:45	71-43-2	
Bromobenzene	<46.0	ug/L	200	46.0	200		06/14/18 10:45	108-86-1	
Bromochloromethane	<68.1	ug/L	200	68.1	200		06/14/18 10:45	74-97-5	
Bromodichloromethane	<100	ug/L	200	100	200		06/14/18 10:45	75-27-4	
Bromoform	<100	ug/L	200	100	200		06/14/18 10:45	75-25-2	
Bromomethane	<487	ug/L	1000	487	200		06/14/18 10:45	74-83-9	
Carbon tetrachloride	<100	ug/L	200	100	200		06/14/18 10:45	56-23-5	
Chlorobenzene	<100	ug/L	200	100	200		06/14/18 10:45	108-90-7	
Chloroethane	<74.9	ug/L	200	74.9	200		06/14/18 10:45	75-00-3	
Chloroform	<500	ug/L	1000	500	200		06/14/18 10:45	67-66-3	
Chloromethane	<100	ug/L	200	100	200		06/14/18 10:45	74-87-3	
Dibromochloromethane	<100	ug/L	200	100	200		06/14/18 10:45	124-48-1	
Dibromomethane	<85.3	ug/L	200	85.3	200		06/14/18 10:45	74-95-3	
Dichlorodifluoromethane	<44.8	ug/L	200	44.8	200		06/14/18 10:45	75-71-8	
Ethylbenzene	1550	ug/L	200	100	200		06/14/18 10:45	100-41-4	
Hexachloro-1,3-butadiene	<421	ug/L	1000	421	200		06/14/18 10:45	87-68-3	
Isopropylbenzene (Cumene)	32.8J	ug/L	200	28.7	200		06/14/18 10:45	98-82-8	
Methyl-tert-butyl ether	<34.8	ug/L	200	34.8	200		06/14/18 10:45	1634-04-4	
Methylene Chloride	<46.5	ug/L	200	46.5	200		06/14/18 10:45	75-09-2	
Naphthalene	<500	ug/L	1000	500	200		06/14/18 10:45	91-20-3	
Styrene	<100	ug/L	200	100	200		06/14/18 10:45	100-42-5	
Tetrachloroethene	<100	ug/L	200	100	200		06/14/18 10:45	127-18-4	
Toluene	25500	ug/L	200	100	200		06/14/18 10:45	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-2/T68 **Lab ID: 40170716009** Collected: 06/12/18 08:20 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<66.1	ug/L	200	66.1	200		06/14/18 10:45	79-01-6	
Trichlorofluoromethane	<37.0	ug/L	200	37.0	200		06/14/18 10:45	75-69-4	
Vinyl chloride	<35.1	ug/L	200	35.1	200		06/14/18 10:45	75-01-4	
cis-1,2-Dichloroethene	<51.2	ug/L	200	51.2	200		06/14/18 10:45	156-59-2	
cis-1,3-Dichloropropene	<100	ug/L	200	100	200		06/14/18 10:45	10061-01-5	
m&p-Xylene	13200	ug/L	400	200	200		06/14/18 10:45	179601-23-1	
n-Butylbenzene	<100	ug/L	200	100	200		06/14/18 10:45	104-51-8	
n-Propylbenzene	<100	ug/L	200	100	200		06/14/18 10:45	103-65-1	
o-Xylene	5850	ug/L	200	100	200		06/14/18 10:45	95-47-6	
p-Isopropyltoluene	<100	ug/L	200	100	200		06/14/18 10:45	99-87-6	
sec-Butylbenzene	<437	ug/L	1000	437	200		06/14/18 10:45	135-98-8	
tert-Butylbenzene	<36.1	ug/L	200	36.1	200		06/14/18 10:45	98-06-6	
trans-1,2-Dichloroethene	<51.3	ug/L	200	51.3	200		06/14/18 10:45	156-60-5	
trans-1,3-Dichloropropene	<45.9	ug/L	200	45.9	200		06/14/18 10:45	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		200		06/14/18 10:45	460-00-4	
Dibromofluoromethane (S)	106	%	70-130		200		06/14/18 10:45	1868-53-7	
Toluene-d8 (S)	102	%	70-130		200		06/14/18 10:45	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-4/T68 **Lab ID: 40170716010** Collected: 06/12/18 08:15 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<9.0	ug/L	50.0	9.0	50		06/14/18 13:56	630-20-6	
1,1,1-Trichloroethane	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	71-55-6	
1,1,2,2-Tetrachloroethane	<12.5	ug/L	50.0	12.5	50		06/14/18 13:56	79-34-5	
1,1,2-Trichloroethane	<9.9	ug/L	50.0	9.9	50		06/14/18 13:56	79-00-5	
1,1-Dichloroethane	<12.1	ug/L	50.0	12.1	50		06/14/18 13:56	75-34-3	
1,1-Dichloroethene	<20.5	ug/L	50.0	20.5	50		06/14/18 13:56	75-35-4	
1,1-Dichloropropene	<22.1	ug/L	50.0	22.1	50		06/14/18 13:56	563-58-6	
1,2,3-Trichlorobenzene	<107	ug/L	250	107	50		06/14/18 13:56	87-61-6	
1,2,3-Trichloropropane	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	96-18-4	
1,2,4-Trichlorobenzene	<110	ug/L	250	110	50		06/14/18 13:56	120-82-1	
1,2,4-Trimethylbenzene	548	ug/L	50.0	25.0	50		06/14/18 13:56	95-63-6	
1,2-Dibromo-3-chloropropane	<108	ug/L	250	108	50		06/14/18 13:56	96-12-8	
1,2-Dibromoethane (EDB)	<8.9	ug/L	50.0	8.9	50		06/14/18 13:56	106-93-4	
1,2-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	95-50-1	
1,2-Dichloroethane	<8.4	ug/L	50.0	8.4	50		06/14/18 13:56	107-06-2	
1,2-Dichloropropane	<11.7	ug/L	50.0	11.7	50		06/14/18 13:56	78-87-5	
1,3,5-Trimethylbenzene	49.7J	ug/L	50.0	25.0	50		06/14/18 13:56	108-67-8	
1,3-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	541-73-1	
1,3-Dichloropropane	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	142-28-9	
1,4-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	106-46-7	
2,2-Dichloropropane	<24.2	ug/L	50.0	24.2	50		06/14/18 13:56	594-20-7	
2-Chlorotoluene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	95-49-8	
4-Chlorotoluene	<10.7	ug/L	50.0	10.7	50		06/14/18 13:56	106-43-4	
Benzene	3770	ug/L	50.0	25.0	50		06/14/18 13:56	71-43-2	
Bromobenzene	<11.5	ug/L	50.0	11.5	50		06/14/18 13:56	108-86-1	
Bromochloromethane	<17.0	ug/L	50.0	17.0	50		06/14/18 13:56	74-97-5	
Bromodichloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	75-27-4	
Bromoform	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	75-25-2	
Bromomethane	<122	ug/L	250	122	50		06/14/18 13:56	74-83-9	
Carbon tetrachloride	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	56-23-5	
Chlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	108-90-7	
Chloroethane	<18.7	ug/L	50.0	18.7	50		06/14/18 13:56	75-00-3	
Chloroform	<125	ug/L	250	125	50		06/14/18 13:56	67-66-3	
Chloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	74-87-3	
Dibromochloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	124-48-1	
Dibromomethane	<21.3	ug/L	50.0	21.3	50		06/14/18 13:56	74-95-3	
Dichlorodifluoromethane	<11.2	ug/L	50.0	11.2	50		06/14/18 13:56	75-71-8	
Ethylbenzene	531	ug/L	50.0	25.0	50		06/14/18 13:56	100-41-4	
Hexachloro-1,3-butadiene	<105	ug/L	250	105	50		06/14/18 13:56	87-68-3	
Isopropylbenzene (Cumene)	<7.2	ug/L	50.0	7.2	50		06/14/18 13:56	98-82-8	
Methyl-tert-butyl ether	<8.7	ug/L	50.0	8.7	50		06/14/18 13:56	1634-04-4	
Methylene Chloride	<11.6	ug/L	50.0	11.6	50		06/14/18 13:56	75-09-2	
Naphthalene	<125	ug/L	250	125	50		06/14/18 13:56	91-20-3	
Styrene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	100-42-5	
Tetrachloroethene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	127-18-4	
Toluene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-4/T68 **Lab ID: 40170716010** Collected: 06/12/18 08:15 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<16.5	ug/L	50.0	16.5	50		06/14/18 13:56	79-01-6	
Trichlorofluoromethane	<9.2	ug/L	50.0	9.2	50		06/14/18 13:56	75-69-4	
Vinyl chloride	<8.8	ug/L	50.0	8.8	50		06/14/18 13:56	75-01-4	
cis-1,2-Dichloroethene	<12.8	ug/L	50.0	12.8	50		06/14/18 13:56	156-59-2	
cis-1,3-Dichloropropene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	10061-01-5	
m&p-Xylene	1280	ug/L	100	50.0	50		06/14/18 13:56	179601-23-1	
n-Butylbenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	104-51-8	
n-Propylbenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	103-65-1	
o-Xylene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	95-47-6	
p-Isopropyltoluene	<25.0	ug/L	50.0	25.0	50		06/14/18 13:56	99-87-6	
sec-Butylbenzene	<109	ug/L	250	109	50		06/14/18 13:56	135-98-8	
tert-Butylbenzene	<9.0	ug/L	50.0	9.0	50		06/14/18 13:56	98-06-6	
trans-1,2-Dichloroethene	<12.8	ug/L	50.0	12.8	50		06/14/18 13:56	156-60-5	
trans-1,3-Dichloropropene	<11.5	ug/L	50.0	11.5	50		06/14/18 13:56	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		50		06/14/18 13:56	460-00-4	
Dibromofluoromethane (S)	105	%	70-130		50		06/14/18 13:56	1868-53-7	
Toluene-d8 (S)	104	%	70-130		50		06/14/18 13:56	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-5/T66 **Lab ID: 40170716011** Collected: 06/12/18 08:30 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<9.0	ug/L	50.0	9.0	50		06/14/18 14:18	630-20-6	
1,1,1-Trichloroethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	71-55-6	
1,1,2,2-Tetrachloroethane	<12.5	ug/L	50.0	12.5	50		06/14/18 14:18	79-34-5	
1,1,2-Trichloroethane	<9.9	ug/L	50.0	9.9	50		06/14/18 14:18	79-00-5	
1,1-Dichloroethane	<12.1	ug/L	50.0	12.1	50		06/14/18 14:18	75-34-3	
1,1-Dichloroethene	<20.5	ug/L	50.0	20.5	50		06/14/18 14:18	75-35-4	
1,1-Dichloropropene	<22.1	ug/L	50.0	22.1	50		06/14/18 14:18	563-58-6	
1,2,3-Trichlorobenzene	<107	ug/L	250	107	50		06/14/18 14:18	87-61-6	
1,2,3-Trichloropropane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	96-18-4	
1,2,4-Trichlorobenzene	<110	ug/L	250	110	50		06/14/18 14:18	120-82-1	
1,2,4-Trimethylbenzene	2600	ug/L	50.0	25.0	50		06/14/18 14:18	95-63-6	
1,2-Dibromo-3-chloropropane	<108	ug/L	250	108	50		06/14/18 14:18	96-12-8	
1,2-Dibromoethane (EDB)	<8.9	ug/L	50.0	8.9	50		06/14/18 14:18	106-93-4	
1,2-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	95-50-1	
1,2-Dichloroethane	<8.4	ug/L	50.0	8.4	50		06/14/18 14:18	107-06-2	
1,2-Dichloropropane	<11.7	ug/L	50.0	11.7	50		06/14/18 14:18	78-87-5	
1,3,5-Trimethylbenzene	643	ug/L	50.0	25.0	50		06/14/18 14:18	108-67-8	
1,3-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	541-73-1	
1,3-Dichloropropane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	142-28-9	
1,4-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	106-46-7	
2,2-Dichloropropane	<24.2	ug/L	50.0	24.2	50		06/14/18 14:18	594-20-7	
2-Chlorotoluene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	95-49-8	
4-Chlorotoluene	<10.7	ug/L	50.0	10.7	50		06/14/18 14:18	106-43-4	
Benzene	5630	ug/L	50.0	25.0	50		06/14/18 14:18	71-43-2	
Bromobenzene	<11.5	ug/L	50.0	11.5	50		06/14/18 14:18	108-86-1	
Bromochloromethane	<17.0	ug/L	50.0	17.0	50		06/14/18 14:18	74-97-5	
Bromodichloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	75-27-4	
Bromoform	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	75-25-2	
Bromomethane	<122	ug/L	250	122	50		06/14/18 14:18	74-83-9	
Carbon tetrachloride	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	56-23-5	
Chlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	108-90-7	
Chloroethane	<18.7	ug/L	50.0	18.7	50		06/14/18 14:18	75-00-3	
Chloroform	<125	ug/L	250	125	50		06/14/18 14:18	67-66-3	
Chloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	74-87-3	
Dibromochloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	124-48-1	
Dibromomethane	<21.3	ug/L	50.0	21.3	50		06/14/18 14:18	74-95-3	
Dichlorodifluoromethane	<11.2	ug/L	50.0	11.2	50		06/14/18 14:18	75-71-8	
Ethylbenzene	2240	ug/L	50.0	25.0	50		06/14/18 14:18	100-41-4	
Hexachloro-1,3-butadiene	<105	ug/L	250	105	50		06/14/18 14:18	87-68-3	
Isopropylbenzene (Cumene)	40.9J	ug/L	50.0	7.2	50		06/14/18 14:18	98-82-8	
Methyl-tert-butyl ether	<8.7	ug/L	50.0	8.7	50		06/14/18 14:18	1634-04-4	
Methylene Chloride	<11.6	ug/L	50.0	11.6	50		06/14/18 14:18	75-09-2	
Naphthalene	276	ug/L	250	125	50		06/14/18 14:18	91-20-3	
Styrene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	100-42-5	
Tetrachloroethene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	127-18-4	
Toluene	8760	ug/L	50.0	25.0	50		06/14/18 14:18	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-5/T66 **Lab ID: 40170716011** Collected: 06/12/18 08:30 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<16.5	ug/L	50.0	16.5	50		06/14/18 14:18	79-01-6	
Trichlorofluoromethane	<9.2	ug/L	50.0	9.2	50		06/14/18 14:18	75-69-4	
Vinyl chloride	<8.8	ug/L	50.0	8.8	50		06/14/18 14:18	75-01-4	
cis-1,2-Dichloroethene	<12.8	ug/L	50.0	12.8	50		06/14/18 14:18	156-59-2	
cis-1,3-Dichloropropene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	10061-01-5	
m&p-Xylene	12100	ug/L	100	50.0	50		06/14/18 14:18	179601-23-1	
n-Butylbenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	104-51-8	
n-Propylbenzene	147	ug/L	50.0	25.0	50		06/14/18 14:18	103-65-1	
o-Xylene	4710	ug/L	50.0	25.0	50		06/14/18 14:18	95-47-6	
p-Isopropyltoluene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:18	99-87-6	
sec-Butylbenzene	<109	ug/L	250	109	50		06/14/18 14:18	135-98-8	
tert-Butylbenzene	<9.0	ug/L	50.0	9.0	50		06/14/18 14:18	98-06-6	
trans-1,2-Dichloroethene	<12.8	ug/L	50.0	12.8	50		06/14/18 14:18	156-60-5	
trans-1,3-Dichloropropene	<11.5	ug/L	50.0	11.5	50		06/14/18 14:18	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-130		50		06/14/18 14:18	460-00-4	
Dibromofluoromethane (S)	102	%	70-130		50		06/14/18 14:18	1868-53-7	
Toluene-d8 (S)	104	%	70-130		50		06/14/18 14:18	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-6/T68 **Lab ID: 40170716012** Collected: 06/12/18 08:25 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<9.0	ug/L	50.0	9.0	50		06/14/18 14:41	630-20-6	
1,1,1-Trichloroethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	71-55-6	
1,1,2,2-Tetrachloroethane	<12.5	ug/L	50.0	12.5	50		06/14/18 14:41	79-34-5	
1,1,2-Trichloroethane	<9.9	ug/L	50.0	9.9	50		06/14/18 14:41	79-00-5	
1,1-Dichloroethane	<12.1	ug/L	50.0	12.1	50		06/14/18 14:41	75-34-3	
1,1-Dichloroethene	<20.5	ug/L	50.0	20.5	50		06/14/18 14:41	75-35-4	
1,1-Dichloropropene	<22.1	ug/L	50.0	22.1	50		06/14/18 14:41	563-58-6	
1,2,3-Trichlorobenzene	<107	ug/L	250	107	50		06/14/18 14:41	87-61-6	
1,2,3-Trichloropropane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	96-18-4	
1,2,4-Trichlorobenzene	<110	ug/L	250	110	50		06/14/18 14:41	120-82-1	
1,2,4-Trimethylbenzene	2840	ug/L	50.0	25.0	50		06/14/18 14:41	95-63-6	
1,2-Dibromo-3-chloropropane	<108	ug/L	250	108	50		06/14/18 14:41	96-12-8	
1,2-Dibromoethane (EDB)	<8.9	ug/L	50.0	8.9	50		06/14/18 14:41	106-93-4	
1,2-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	95-50-1	
1,2-Dichloroethane	209	ug/L	50.0	8.4	50		06/14/18 14:41	107-06-2	
1,2-Dichloropropane	<11.7	ug/L	50.0	11.7	50		06/14/18 14:41	78-87-5	
1,3,5-Trimethylbenzene	715	ug/L	50.0	25.0	50		06/14/18 14:41	108-67-8	
1,3-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	541-73-1	
1,3-Dichloropropane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	142-28-9	
1,4-Dichlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	106-46-7	
2,2-Dichloropropane	<24.2	ug/L	50.0	24.2	50		06/14/18 14:41	594-20-7	
2-Chlorotoluene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	95-49-8	
4-Chlorotoluene	<10.7	ug/L	50.0	10.7	50		06/14/18 14:41	106-43-4	
Benzene	23300	ug/L	250	125	250		06/14/18 18:16	71-43-2	
Bromobenzene	<11.5	ug/L	50.0	11.5	50		06/14/18 14:41	108-86-1	
Bromochloromethane	<17.0	ug/L	50.0	17.0	50		06/14/18 14:41	74-97-5	
Bromodichloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	75-27-4	
Bromoform	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	75-25-2	
Bromomethane	<122	ug/L	250	122	50		06/14/18 14:41	74-83-9	
Carbon tetrachloride	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	56-23-5	
Chlorobenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	108-90-7	
Chloroethane	<18.7	ug/L	50.0	18.7	50		06/14/18 14:41	75-00-3	
Chloroform	<125	ug/L	250	125	50		06/14/18 14:41	67-66-3	
Chloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	74-87-3	
Dibromochloromethane	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	124-48-1	
Dibromomethane	<21.3	ug/L	50.0	21.3	50		06/14/18 14:41	74-95-3	
Dichlorodifluoromethane	<11.2	ug/L	50.0	11.2	50		06/14/18 14:41	75-71-8	
Ethylbenzene	2100	ug/L	50.0	25.0	50		06/14/18 14:41	100-41-4	
Hexachloro-1,3-butadiene	<105	ug/L	250	105	50		06/14/18 14:41	87-68-3	
Isopropylbenzene (Cumene)	37.1J	ug/L	50.0	7.2	50		06/14/18 14:41	98-82-8	
Methyl-tert-butyl ether	<8.7	ug/L	50.0	8.7	50		06/14/18 14:41	1634-04-4	
Methylene Chloride	<11.6	ug/L	50.0	11.6	50		06/14/18 14:41	75-09-2	
Naphthalene	290	ug/L	250	125	50		06/14/18 14:41	91-20-3	
Styrene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	100-42-5	
Tetrachloroethene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	127-18-4	
Toluene	25200	ug/L	250	125	250		06/14/18 18:16	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: MW-6/T68 **Lab ID: 40170716012** Collected: 06/12/18 08:25 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Trichloroethene	<16.5	ug/L	50.0	16.5	50		06/14/18 14:41	79-01-6	
Trichlorofluoromethane	<9.2	ug/L	50.0	9.2	50		06/14/18 14:41	75-69-4	
Vinyl chloride	<8.8	ug/L	50.0	8.8	50		06/14/18 14:41	75-01-4	
cis-1,2-Dichloroethene	<12.8	ug/L	50.0	12.8	50		06/14/18 14:41	156-59-2	
cis-1,3-Dichloropropene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	10061-01-5	
m&p-Xylene	15700	ug/L	100	50.0	50		06/14/18 14:41	179601-23-1	
n-Butylbenzene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	104-51-8	
n-Propylbenzene	111	ug/L	50.0	25.0	50		06/14/18 14:41	103-65-1	
o-Xylene	6950	ug/L	50.0	25.0	50		06/14/18 14:41	95-47-6	
p-Isopropyltoluene	<25.0	ug/L	50.0	25.0	50		06/14/18 14:41	99-87-6	
sec-Butylbenzene	<109	ug/L	250	109	50		06/14/18 14:41	135-98-8	
tert-Butylbenzene	<9.0	ug/L	50.0	9.0	50		06/14/18 14:41	98-06-6	
trans-1,2-Dichloroethene	<12.8	ug/L	50.0	12.8	50		06/14/18 14:41	156-60-5	
trans-1,3-Dichloropropene	<11.5	ug/L	50.0	11.5	50		06/14/18 14:41	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-130		50		06/14/18 14:41	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		50		06/14/18 14:41	1868-53-7	
Toluene-d8 (S)	103	%	70-130		50		06/14/18 14:41	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: TRIP BLANK **Lab ID: 40170716024** Collected: 06/12/18 00:00 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		06/14/18 12:49	630-20-6	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	71-55-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		06/14/18 12:49	79-34-5	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		06/14/18 12:49	79-00-5	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		06/14/18 12:49	75-34-3	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		06/14/18 12:49	75-35-4	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		06/14/18 12:49	563-58-6	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		06/14/18 12:49	87-61-6	
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	96-18-4	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		06/14/18 12:49	120-82-1	
1,2,4-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	95-63-6	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		06/14/18 12:49	96-12-8	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		06/14/18 12:49	106-93-4	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	95-50-1	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		06/14/18 12:49	107-06-2	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		06/14/18 12:49	78-87-5	
1,3,5-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	108-67-8	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	541-73-1	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	142-28-9	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	106-46-7	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		06/14/18 12:49	594-20-7	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		06/14/18 12:49	106-43-4	
Benzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		06/14/18 12:49	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		06/14/18 12:49	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		06/14/18 12:49	74-83-9	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		06/14/18 12:49	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		06/14/18 12:49	67-66-3	
Chloromethane	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	74-87-3	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	124-48-1	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		06/14/18 12:49	74-95-3	
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		06/14/18 12:49	75-71-8	
Ethylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		06/14/18 12:49	87-68-3	
Isopropylbenzene (Cumene)	<0.14	ug/L	1.0	0.14	1		06/14/18 12:49	98-82-8	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		06/14/18 12:49	1634-04-4	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		06/14/18 12:49	75-09-2	
Naphthalene	<2.5	ug/L	5.0	2.5	1		06/14/18 12:49	91-20-3	
Styrene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	100-42-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 SRC

Pace Project No.: 40170716

Sample: TRIP BLANK **Lab ID: 40170716024** Collected: 06/12/18 00:00 Received: 06/13/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<0.33	ug/L	1.0	0.33	1		06/14/18 12:49	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		06/14/18 12:49	75-69-4	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		06/14/18 12:49	75-01-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		06/14/18 12:49	156-59-2	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	10061-01-5	
m&p-Xylene	<1.0	ug/L	2.0	1.0	1		06/14/18 12:49	179601-23-1	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	104-51-8	
n-Propylbenzene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	103-65-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	95-47-6	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		06/14/18 12:49	99-87-6	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		06/14/18 12:49	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		06/14/18 12:49	98-06-6	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		06/14/18 12:49	156-60-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		06/14/18 12:49	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		06/14/18 12:49	460-00-4	
Dibromofluoromethane (S)	106	%	70-130		1		06/14/18 12:49	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		06/14/18 12:49	2037-26-5	

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QUALITY CONTROL DATA

Project: 34265.003 SRC
Pace Project No.: 40170716

QC Batch: 291834 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: 8021 GCV BTEX
Associated Lab Samples: 40170716018, 40170716019, 40170716020, 40170716021, 40170716022, 40170716023

METHOD BLANK: 1706491 Matrix: Water
Associated Lab Samples: 40170716018, 40170716019, 40170716020, 40170716021, 40170716022, 40170716023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.34	1.1	06/14/18 09:15	
1,3,5-Trimethylbenzene	ug/L	<0.33	1.1	06/14/18 09:15	
Benzene	ug/L	<0.31	1.0	06/14/18 09:15	
Ethylbenzene	ug/L	<0.33	1.1	06/14/18 09:15	
m&p-Xylene	ug/L	<0.66	2.2	06/14/18 09:15	
Methyl-tert-butyl ether	ug/L	<0.32	1.1	06/14/18 09:15	
Naphthalene	ug/L	<0.51	1.7	06/14/18 09:15	
o-Xylene	ug/L	<0.32	1.0	06/14/18 09:15	
Toluene	ug/L	<0.49	1.6	06/14/18 09:15	
a,a,a-Trifluorotoluene (S)	%	102	85-115	06/14/18 09:15	

LABORATORY CONTROL SAMPLE & LCSD: 1706492 1706493

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	20.8	21.5	104	107	85-115	3	20	
1,3,5-Trimethylbenzene	ug/L	20	20.1	20.8	101	104	85-115	3	20	
Benzene	ug/L	20	19.8	19.9	99	100	85-115	1	20	
Ethylbenzene	ug/L	20	20.4	20.9	102	104	85-115	2	20	
m&p-Xylene	ug/L	40	40.1	41.2	100	103	85-115	3	20	
Methyl-tert-butyl ether	ug/L	20	19.4	20.0	97	100	85-115	3	20	
Naphthalene	ug/L	20	20.9	22.6	105	113	86-121	8	20	
o-Xylene	ug/L	20	20.1	20.7	100	103	85-115	3	20	
Toluene	ug/L	20	20.0	20.2	100	101	85-115	1	20	
a,a,a-Trifluorotoluene (S)	%				103	104	85-115			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1706756 1706757

Parameter	Units	40170716018		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MSD Result	% Rec	% Rec					
1,2,4-Trimethylbenzene	ug/L	<0.34	20	20	23.7	22.8	119	114	51-160	4	20		
1,3,5-Trimethylbenzene	ug/L	<0.33	20	20	23.0	22.1	115	111	56-146	4	20		
Benzene	ug/L	<0.31	20	20	22.3	21.1	112	105	71-137	6	20		
Ethylbenzene	ug/L	<0.33	20	20	23.5	22.5	118	113	71-141	4	20		
m&p-Xylene	ug/L	<0.66	40	40	46.0	44.2	115	111	66-141	4	20		
Methyl-tert-butyl ether	ug/L	<0.32	20	20	21.6	20.0	108	100	82-116	8	20		
Naphthalene	ug/L	<0.51	20	20	24.2	23.4	121	117	67-138	3	20		
o-Xylene	ug/L	<0.32	20	20	23.0	22.0	115	110	75-133	4	20		
Toluene	ug/L	<0.49	20	20	22.9	21.8	114	109	76-134	5	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 34265.003 SRC

Pace Project No.: 40170716

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		1706756		1706757									
Parameter	Units	40170716018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
a,a,a-Trifluorotoluene (S)	%						103	103	85-115				

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QUALITY CONTROL DATA

Project: 34265.003 SRC
Pace Project No.: 40170716

QC Batch: 291810 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40170716008, 40170716009, 40170716010, 40170716011, 40170716012, 40170716024

METHOD BLANK: 1706443 Matrix: Water
Associated Lab Samples: 40170716008, 40170716009, 40170716010, 40170716011, 40170716012, 40170716024

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.18	1.0	06/14/18 07:23	
1,1,1-Trichloroethane	ug/L	<0.50	1.0	06/14/18 07:23	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	1.0	06/14/18 07:23	
1,1,2-Trichloroethane	ug/L	<0.20	1.0	06/14/18 07:23	
1,1-Dichloroethane	ug/L	<0.24	1.0	06/14/18 07:23	
1,1-Dichloroethene	ug/L	<0.41	1.0	06/14/18 07:23	
1,1-Dichloropropene	ug/L	<0.44	1.0	06/14/18 07:23	
1,2,3-Trichlorobenzene	ug/L	<2.1	5.0	06/14/18 07:23	
1,2,3-Trichloropropane	ug/L	<0.50	1.0	06/14/18 07:23	
1,2,4-Trichlorobenzene	ug/L	<2.2	5.0	06/14/18 07:23	
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 07:23	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	5.0	06/14/18 07:23	
1,2-Dibromoethane (EDB)	ug/L	<0.18	1.0	06/14/18 07:23	
1,2-Dichlorobenzene	ug/L	<0.50	1.0	06/14/18 07:23	
1,2-Dichloroethane	ug/L	<0.17	1.0	06/14/18 07:23	
1,2-Dichloropropane	ug/L	<0.23	1.0	06/14/18 07:23	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 07:23	
1,3-Dichlorobenzene	ug/L	<0.50	1.0	06/14/18 07:23	
1,3-Dichloropropane	ug/L	<0.50	1.0	06/14/18 07:23	
1,4-Dichlorobenzene	ug/L	<0.50	1.0	06/14/18 07:23	
2,2-Dichloropropane	ug/L	<0.48	1.0	06/14/18 07:23	
2-Chlorotoluene	ug/L	<0.50	1.0	06/14/18 07:23	
4-Chlorotoluene	ug/L	<0.21	1.0	06/14/18 07:23	
Benzene	ug/L	<0.50	1.0	06/14/18 07:23	
Bromobenzene	ug/L	<0.23	1.0	06/14/18 07:23	
Bromochloromethane	ug/L	<0.34	1.0	06/14/18 07:23	
Bromodichloromethane	ug/L	<0.50	1.0	06/14/18 07:23	
Bromoform	ug/L	<0.50	1.0	06/14/18 07:23	
Bromomethane	ug/L	<2.4	5.0	06/14/18 07:23	
Carbon tetrachloride	ug/L	<0.50	1.0	06/14/18 07:23	
Chlorobenzene	ug/L	<0.50	1.0	06/14/18 07:23	
Chloroethane	ug/L	<0.37	1.0	06/14/18 07:23	
Chloroform	ug/L	<2.5	5.0	06/14/18 07:23	
Chloromethane	ug/L	<0.50	1.0	06/14/18 07:23	
cis-1,2-Dichloroethene	ug/L	<0.26	1.0	06/14/18 07:23	
cis-1,3-Dichloropropene	ug/L	<0.50	1.0	06/14/18 07:23	
Dibromochloromethane	ug/L	<0.50	1.0	06/14/18 07:23	
Dibromomethane	ug/L	<0.43	1.0	06/14/18 07:23	
Dichlorodifluoromethane	ug/L	<0.22	1.0	06/14/18 07:23	
Ethylbenzene	ug/L	<0.50	1.0	06/14/18 07:23	
Hexachloro-1,3-butadiene	ug/L	<2.1	5.0	06/14/18 07:23	

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QUALITY CONTROL DATA

Project: 34265.003 SRC
Pace Project No.: 40170716

METHOD BLANK: 1706443

Matrix: Water

Associated Lab Samples: 40170716008, 40170716009, 40170716010, 40170716011, 40170716012, 40170716024

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	<0.14	1.0	06/14/18 07:23	
m&p-Xylene	ug/L	<1.0	2.0	06/14/18 07:23	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	06/14/18 07:23	
Methylene Chloride	ug/L	<0.23	1.0	06/14/18 07:23	
n-Butylbenzene	ug/L	<0.50	1.0	06/14/18 07:23	
n-Propylbenzene	ug/L	<0.50	1.0	06/14/18 07:23	
Naphthalene	ug/L	<2.5	5.0	06/14/18 07:23	
o-Xylene	ug/L	<0.50	1.0	06/14/18 07:23	
p-Isopropyltoluene	ug/L	<0.50	1.0	06/14/18 07:23	
sec-Butylbenzene	ug/L	<2.2	5.0	06/14/18 07:23	
Styrene	ug/L	<0.50	1.0	06/14/18 07:23	
tert-Butylbenzene	ug/L	<0.18	1.0	06/14/18 07:23	
Tetrachloroethene	ug/L	<0.50	1.0	06/14/18 07:23	
Toluene	ug/L	<0.50	1.0	06/14/18 07:23	
trans-1,2-Dichloroethene	ug/L	<0.26	1.0	06/14/18 07:23	
trans-1,3-Dichloropropene	ug/L	<0.23	1.0	06/14/18 07:23	
Trichloroethene	ug/L	<0.33	1.0	06/14/18 07:23	
Trichlorofluoromethane	ug/L	<0.18	1.0	06/14/18 07:23	
Vinyl chloride	ug/L	<0.18	1.0	06/14/18 07:23	
4-Bromofluorobenzene (S)	%	97	70-130	06/14/18 07:23	
Dibromofluoromethane (S)	%	102	70-130	06/14/18 07:23	
Toluene-d8 (S)	%	103	70-130	06/14/18 07:23	

LABORATORY CONTROL SAMPLE: 1706444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.9	110	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	51.0	102	67-130	
1,1,2-Trichloroethane	ug/L	50	60.3	121	70-130	
1,1-Dichloroethane	ug/L	50	55.4	111	70-134	
1,1-Dichloroethene	ug/L	50	59.1	118	75-132	
1,2,4-Trichlorobenzene	ug/L	50	44.8	90	68-130	
1,2-Dibromo-3-chloropropane	ug/L	50	47.0	94	60-126	
1,2-Dibromoethane (EDB)	ug/L	50	54.0	108	70-130	
1,2-Dichlorobenzene	ug/L	50	47.4	95	70-130	
1,2-Dichloroethane	ug/L	50	49.9	100	73-134	
1,2-Dichloropropane	ug/L	50	58.6	117	79-128	
1,3-Dichlorobenzene	ug/L	50	45.9	92	70-130	
1,4-Dichlorobenzene	ug/L	50	48.5	97	70-130	
Benzene	ug/L	50	52.9	106	69-137	
Bromodichloromethane	ug/L	50	60.2	120	70-130	
Bromoform	ug/L	50	60.2	120	64-133	
Bromomethane	ug/L	50	49.3	99	29-123	
Carbon tetrachloride	ug/L	50	53.9	108	73-142	

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QUALITY CONTROL DATA

Project: 34265.003 SRC

Pace Project No.: 40170716

LABORATORY CONTROL SAMPLE: 1706444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorobenzene	ug/L	50	55.8	112	70-130	
Chloroethane	ug/L	50	53.8	108	59-133	
Chloroform	ug/L	50	58.5	117	80-129	
Chloromethane	ug/L	50	34.3	69	27-125	
cis-1,2-Dichloroethene	ug/L	50	54.8	110	70-134	
cis-1,3-Dichloropropene	ug/L	50	57.4	115	70-130	
Dibromochloromethane	ug/L	50	53.1	106	70-130	
Dichlorodifluoromethane	ug/L	50	46.7	93	12-127	
Ethylbenzene	ug/L	50	59.6	119	86-127	
Isopropylbenzene (Cumene)	ug/L	50	55.4	111	70-130	
m&p-Xylene	ug/L	100	115	115	70-131	
Methyl-tert-butyl ether	ug/L	50	54.5	109	65-136	
Methylene Chloride	ug/L	50	57.9	116	72-133	
o-Xylene	ug/L	50	56.3	113	70-130	
Styrene	ug/L	50	58.7	117	70-130	
Tetrachloroethene	ug/L	50	59.0	118	70-130	
Toluene	ug/L	50	59.1	118	84-124	
trans-1,2-Dichloroethene	ug/L	50	56.8	114	70-133	
trans-1,3-Dichloropropene	ug/L	50	54.0	108	67-130	
Trichloroethene	ug/L	50	59.0	118	70-130	
Trichlorofluoromethane	ug/L	50	61.9	124	69-147	
Vinyl chloride	ug/L	50	52.4	105	48-134	
4-Bromofluorobenzene (S)	%			112	70-130	
Dibromofluoromethane (S)	%			103	70-130	
Toluene-d8 (S)	%			106	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1706474 1706475

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40170694021 Result	Spike Conc.	Spike Conc.	MSD Result								
1,1,1-Trichloroethane	ug/L	<12.5	500	500	567	578	113	116	70-136	2	20		
1,1,2,2-Tetrachloroethane	ug/L	<6.2	500	500	528	528	106	106	67-133	0	20		
1,1,2-Trichloroethane	ug/L	<4.9	500	500	615	612	123	122	70-130	0	20		
1,1-Dichloroethane	ug/L	<6.0	500	500	566	560	113	112	70-139	1	20		
1,1-Dichloroethene	ug/L	<10.3	500	500	604	602	121	120	72-137	0	20		
1,2,4-Trichlorobenzene	ug/L	<55.2	500	500	470	476	93	94	68-130	1	20		
1,2-Dibromo-3-chloropropane	ug/L	<54.1	500	500	489	479	98	96	60-130	2	21		
1,2-Dibromoethane (EDB)	ug/L	<4.4	500	500	555	549	111	110	70-130	1	20		
1,2-Dichlorobenzene	ug/L	<12.5	500	500	481	483	96	97	70-130	1	20		
1,2-Dichloroethane	ug/L	<4.2	500	500	522	521	104	104	71-137	0	20		
1,2-Dichloropropane	ug/L	<5.8	500	500	599	600	120	120	78-130	0	20		
1,3-Dichlorobenzene	ug/L	<12.5	500	500	472	469	94	94	70-130	1	20		
1,4-Dichlorobenzene	ug/L	<12.5	500	500	499	499	99	99	70-130	0	20		
Benzene	ug/L	<12.5	500	500	536	537	107	107	66-143	0	20		

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QUALITY CONTROL DATA

Project: 34265.003 SRC

Pace Project No.: 40170716

Parameter	Units	1706474		1706475		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		40170694021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Bromodichloromethane	ug/L	<12.5	500	500	610	616	122	123	70-130	1	20		
Bromoform	ug/L	<12.5	500	500	611	608	122	122	64-134	1	20		
Bromomethane	ug/L	<60.9	500	500	537	551	107	110	29-136	3	25		
Carbon tetrachloride	ug/L	<12.5	500	500	546	551	109	110	73-142	1	20		
Chlorobenzene	ug/L	<12.5	500	500	567	561	113	112	70-130	1	20		
Chloroethane	ug/L	<9.4	500	500	544	539	109	108	58-138	1	20		
Chloroform	ug/L	<62.5	500	500	592	596	118	119	80-131	1	20		
Chloromethane	ug/L	<12.5	500	500	342	341	68	68	24-125	0	20		
cis-1,2-Dichloroethene	ug/L	195	500	500	761	758	113	113	68-137	0	22		
cis-1,3-Dichloropropene	ug/L	<12.5	500	500	583	594	117	119	70-130	2	20		
Dibromochloromethane	ug/L	<12.5	500	500	540	538	108	108	70-131	0	20		
Dichlorodifluoromethane	ug/L	<5.6	500	500	460	463	92	93	10-127	1	20		
Ethylbenzene	ug/L	<12.5	500	500	600	600	120	120	81-136	0	20		
Isopropylbenzene (Cumene)	ug/L	<3.6	500	500	565	557	113	111	70-132	1	20		
m&p-Xylene	ug/L	<25.0	1000	1000	1160	1150	116	115	70-135	1	20		
Methyl-tert-butyl ether	ug/L	<4.4	500	500	559	557	112	111	58-142	0	23		
Methylene Chloride	ug/L	<5.8	500	500	587	583	117	117	69-137	1	20		
o-Xylene	ug/L	<12.5	500	500	564	560	113	112	70-132	1	20		
Styrene	ug/L	<12.5	500	500	593	587	119	117	70-130	1	20		
Tetrachloroethene	ug/L	<12.5	500	500	606	600	121	120	70-132	1	20		
Toluene	ug/L	<12.5	500	500	602	597	120	119	81-130	1	20		
trans-1,2-Dichloroethene	ug/L	7.2J	500	500	580	581	115	115	70-136	0	20		
trans-1,3-Dichloropropene	ug/L	<5.7	500	500	558	550	112	110	67-130	2	20		
Trichloroethene	ug/L	2380	500	500	3520	3360	227	196	70-131	5	20	E,M1	
Trichlorofluoromethane	ug/L	<4.6	500	500	629	627	126	125	66-150	0	20		
Vinyl chloride	ug/L	<4.4	500	500	533	530	107	106	46-134	1	20		
4-Bromofluorobenzene (S)	%						112	111	70-130				
Dibromofluoromethane (S)	%						103	105	70-130				
Toluene-d8 (S)	%						105	105	70-130				

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QUALITY CONTROL DATA

Project: 34265.003 SRC
Pace Project No.: 40170716

QC Batch: 291808 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40170716001, 40170716002, 40170716003, 40170716004

METHOD BLANK: 1706439 Matrix: Water
Associated Lab Samples: 40170716001, 40170716002, 40170716003, 40170716004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 07:24	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 07:24	
Benzene	ug/L	<0.50	1.0	06/14/18 07:24	
Ethylbenzene	ug/L	<0.50	1.0	06/14/18 07:24	
m&p-Xylene	ug/L	<1.0	2.0	06/14/18 07:24	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	06/14/18 07:24	
o-Xylene	ug/L	<0.50	1.0	06/14/18 07:24	
Toluene	ug/L	<0.50	1.0	06/14/18 07:24	
4-Bromofluorobenzene (S)	%	97	70-130	06/14/18 07:24	
Dibromofluoromethane (S)	%	97	70-130	06/14/18 07:24	
Toluene-d8 (S)	%	103	70-130	06/14/18 07:24	

LABORATORY CONTROL SAMPLE: 1706440

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	46.6	93	69-137	
Ethylbenzene	ug/L	50	51.0	102	86-127	
m&p-Xylene	ug/L	100	102	102	70-131	
Methyl-tert-butyl ether	ug/L	50	45.7	91	65-136	
o-Xylene	ug/L	50	50.6	101	70-130	
Toluene	ug/L	50	49.0	98	84-124	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			98	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1706476 1706477

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40170736006 Result	Spike Conc.	Spike Conc.	MS Result						
Benzene	ug/L	987	500	500	1400	1390	83	81	66-143	1	20
Ethylbenzene	ug/L	923	500	500	1400	1410	96	97	81-136	0	20
m&p-Xylene	ug/L	1150	1000	1000	2180	2190	103	104	70-135	0	20
Methyl-tert-butyl ether	ug/L	<10.0	500	500	488	461	98	92	58-142	6	23
o-Xylene	ug/L	94.8	500	500	633	636	108	108	70-132	1	20
Toluene	ug/L	25.3	500	500	538	543	102	103	81-130	1	20
4-Bromofluorobenzene (S)	%						102	101	70-130		
Dibromofluoromethane (S)	%						103	101	70-130		
Toluene-d8 (S)	%						101	101	70-130		

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QUALITY CONTROL DATA

Project: 34265.003 SRC
Pace Project No.: 40170716

QC Batch: 291809 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40170716005, 40170716006, 40170716007

METHOD BLANK: 1706441 Matrix: Water
Associated Lab Samples: 40170716005, 40170716006, 40170716007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 08:45	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 08:45	
Benzene	ug/L	<0.50	1.0	06/14/18 08:45	
Ethylbenzene	ug/L	<0.50	1.0	06/14/18 08:45	
m&p-Xylene	ug/L	<1.0	2.0	06/14/18 08:45	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	06/14/18 08:45	
o-Xylene	ug/L	<0.50	1.0	06/14/18 08:45	
Toluene	ug/L	<0.50	1.0	06/14/18 08:45	
4-Bromofluorobenzene (S)	%	97	70-130	06/14/18 08:45	
Dibromofluoromethane (S)	%	109	70-130	06/14/18 08:45	
Toluene-d8 (S)	%	103	70-130	06/14/18 08:45	

LABORATORY CONTROL SAMPLE: 1706442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	66.5	133	69-137	
Ethylbenzene	ug/L	50	58.5	117	86-127	
m&p-Xylene	ug/L	100	115	115	70-131	
Methyl-tert-butyl ether	ug/L	50	63.8	128	65-136	
o-Xylene	ug/L	50	57.3	115	70-130	
Toluene	ug/L	50	58.2	116	84-124	
4-Bromofluorobenzene (S)	%			99	70-130	
Dibromofluoromethane (S)	%			109	70-130	
Toluene-d8 (S)	%			103	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1707185 1707186

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		40170716005 Result	Spike Conc.	Spike Conc.	Result							Result
Benzene	ug/L	1180	50	50	1110	1160	-142	-35	66-143	5	20	E,M1
Ethylbenzene	ug/L	662	50	50	742	733	160	143	81-136	1	20	E,M1
m&p-Xylene	ug/L	822	100	100	1020	1010	201	192	70-135	1	20	E,M1
Methyl-tert-butyl ether	ug/L	<0.17	50	50	63.7	60.2	127	120	58-142	6	23	
o-Xylene	ug/L	2.3	50	50	58.6	56.5	113	108	70-132	4	20	
Toluene	ug/L	<0.50	50	50	56.9	54.8	114	110	81-130	4	20	
4-Bromofluorobenzene (S)	%						104	103	70-130			
Dibromofluoromethane (S)	%						108	111	70-130			
Toluene-d8 (S)	%						102	100	70-130			

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: 34265.003 SRC
Pace Project No.: 40170716

QC Batch: 291893 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40170716013, 40170716014, 40170716015, 40170716016, 40170716017

METHOD BLANK: 1706810 Matrix: Water
Associated Lab Samples: 40170716013, 40170716014, 40170716015, 40170716016, 40170716017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 16:52	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	06/14/18 16:52	
Benzene	ug/L	<0.50	1.0	06/14/18 16:52	
Ethylbenzene	ug/L	<0.50	1.0	06/14/18 16:52	
m&p-Xylene	ug/L	<1.0	2.0	06/14/18 16:52	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	06/14/18 16:52	
Naphthalene	ug/L	<2.5	5.0	06/14/18 16:52	
o-Xylene	ug/L	<0.50	1.0	06/14/18 16:52	
Toluene	ug/L	<0.50	1.0	06/14/18 16:52	
4-Bromofluorobenzene (S)	%	88	70-130	06/14/18 16:52	
Dibromofluoromethane (S)	%	110	70-130	06/14/18 16:52	
Toluene-d8 (S)	%	99	70-130	06/14/18 16:52	

LABORATORY CONTROL SAMPLE: 1706811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	45.4	91	69-137	
Ethylbenzene	ug/L	50	55.2	110	86-127	
m&p-Xylene	ug/L	100	115	115	70-131	
Methyl-tert-butyl ether	ug/L	50	54.9	110	65-136	
o-Xylene	ug/L	50	55.2	110	70-130	
Toluene	ug/L	50	51.6	103	84-124	
4-Bromofluorobenzene (S)	%			107	70-130	
Dibromofluoromethane (S)	%			109	70-130	
Toluene-d8 (S)	%			95	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1707203 1707204

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10435016001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Benzene	ug/L	13.1J	1000	1000	936	954	92	94	66-143	2	20	
Ethylbenzene	ug/L	17.7J	1000	1000	1140	1150	112	113	81-136	1	20	
m&p-Xylene	ug/L	101	2000	2000	2440	2430	117	116	70-135	0	20	
Methyl-tert-butyl ether	ug/L	<3.5	1000	1000	1120	1140	112	114	58-142	2	23	
o-Xylene	ug/L	164	1000	1000	1370	1380	120	122	70-132	1	20	
Toluene	ug/L	53.5	1000	1000	1090	1090	104	103	81-130	1	20	
4-Bromofluorobenzene (S)	%						107	109	70-130			
Dibromofluoromethane (S)	%						101	102	70-130			

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QUALITY CONTROL DATA

Project: 34265.003 SRC

Pace Project No.: 40170716

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		1707203			1707204								
Parameter	Units	10435016001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Toluene-d8 (S)	%						95	95	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 34265.003 SRC

Pace Project No.: 40170716

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-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 34265.003 SRC

Pace Project No.: 40170716

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40170716018	MW-11	EPA 8021	291834		
40170716019	PZ-11	EPA 8021	291834		
40170716020	MW-12	EPA 8021	291834		
40170716021	MW-13	EPA 8021	291834		
40170716022	PZ-13	EPA 8021	291834		
40170716023	MW-14	EPA 8021	291834		
40170716008	MW-1/T68	EPA 8260	291810		
40170716009	MW-2/T68	EPA 8260	291810		
40170716010	MW-4/T68	EPA 8260	291810		
40170716011	MW-5/T66	EPA 8260	291810		
40170716012	MW-6/T68	EPA 8260	291810		
40170716024	TRIP BLANK	EPA 8260	291810		
40170716001	MW-1/T40	EPA 8260	291808		
40170716002	MW-2/T40	EPA 8260	291808		
40170716003	MW-4/T40	EPA 8260	291808		
40170716004	MW-5/T40	EPA 8260	291808		
40170716005	MW-6/T40	EPA 8260	291809		
40170716006	MW-7/T40	EPA 8260	291809		
40170716007	TS-1/T40	EPA 8260	291809		
40170716013	MW-2R/T70	EPA 8260	291893		
40170716014	MW-3/T70	EPA 8260	291893		
40170716015	MW-4/T70	EPA 8260	291893		
40170716016	MW-5/T70	EPA 8260	291893		
40170716017	MW-6/T70	EPA 8260	291893		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: Gannett Fleming
 Branch/Location: Madison, WI
 Project Contact: Cliff Wright
 Phone: 608-836-1500
 Project Number: 34265.003
 Project Name: SRC
 Project State: WI
 Sampled By (Print): Marcus Mussey
 Sampled By (Sign): *[Signature]*
 PO #:
 Regulatory Program:



UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

40170716

CHAIN OF CUSTODY

Preservation Codes
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED?
(YES/NO)
 PRESERVATION
(CODE)*

Y/N	N	N	N						
Pick Letter	B	B	B						
Analyses Requested	PVOCs 8260	VOCs 8260	PVOC/Naph. 8260						

Data Package Options (billable)
 EPA Level III
 EPA Level IV

MS/MSD
 On your sample (billable)
 NOT needed on your sample

Matrix Codes
 A = Air W = Water
 B = Biota DW = Drinking Water
 C = Charcoal GW = Ground Water
 O = Oil SW = Surface Water
 S = Soil WW = Waste Water
 SI = Sludge WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX
		DATE	TIME	
001	MW-1/T40	6/12	805	GW
002	MW-2/T40		735	
003	MW-4/T40		800	
004	MW-5/T40		740	
005	MW-6/T40		750	
006	MW-7/T40		755	
007	TS-1/T40		752	
008	MW-1/T68		810	
009	MW-2/T68		820	
010	MW-4/T68		815	
011	MW-5/T66		830	
012	MW-6/T68		825	
013	MW-2R/T70		840	

Quote #:
Mail To Contact: cwright@gfnet.com
Mail To Company: Gannett Fleming
Mail To Address: 8025 Excelsior Dr
 Madison, WI 53717
Invoice To Contact:
Invoice To Company:
Invoice To Address:
Invoice To Phone: 608-836-1500
CLIENT COMMENTS
LAB COMMENTS (Lab Use Only)
Profile #

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge)
 Date Needed:
 Transmit Prelim Rush Results by (complete what you want):
 Email #1:
 Email #2:
 Telephone:
 Fax:
 Samples on HOLD are subject to special pricing and release of liability

Relinquished By: <i>[Signature]</i>	Date/Time: 6/12, 1520	Received By: Fedex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 6/13/18 0920	Received By: <i>[Signature]</i>	Date/Time: 6/13/18 0920
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No. 40170716
 Receipt Temp = *RT* °C
 Sample Receipt pH OK / Adjusted
 Cooler Custody Seal Present / Not Present Intact / Not Intact

(Please Print Clearly)



40170716

CHAIN OF CUSTODY

***Preservation Codes**
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED?
(YES/NO)
 PRESERVATION
(CODE)*

Y/N	N	N																	
Pick Letter	B	B																	
Analyses Requested	PVOC/Naph.	PVOC/Naph.																	
	8760	8021																	
	1208																		

Quote #:		
Mail To Contact:		
Mail To Company:		
Mail To Address:		
Invoice To Contact:		
Invoice To Company:		
Invoice To Address:		
Invoice To Phone:		
CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #

Company Name: _____
 Branch/Location: *see*
 Project Contact: _____
 Phone: _____
 Project Number: *page*
 Project Name: _____
 Project State: *I*
 Sampled By (Print): _____
 Sampled By (Sign): _____
 PO #: _____ Regulatory Program: _____

Data Package Options (billable)
 EPA Level III
 EPA Level IV

MS/MSD
 On your sample (billable)
 NOT needed on your sample

Matrix Codes
 A = Air B = Biota C = Charcoal O = Oil S = Soil SI = Sludge
 W = Water DW = Drinking Water GW = Ground Water SW = Surface Water WW = Waste Water WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX
		DATE	TIME	
014	MW-3/T70	6/12	852	GW
015	MW-4/T70		855	
016	MW-5/T70		845	
017	MW-6/T70		850	
018	MW-11		920	
019	PZ-11		922	
020	MW-12		935	
021	MW-13		945	
022	PZ-13		947	
023	MW-14		955	
024	Trip Blank			

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: <i>[Signature]</i> Date/Time: 6/12/18 1520	Received By: _____ Date/Time: _____	PACE Project No. 40170716
	Transmit Prelim Rush Results by (complete what you want): Fed Ex 6/13/18 0920	Received By: <i>[Signature]</i> Date/Time: 6/13/18 0920	
Email #1:	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Sample Receipt pH OK / Adjusted
Email #2:	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Cooler Custody Seal Present / Not Present Intact / Not Intact
Telephone:	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	
Fax:	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	

Sample Preservation Receipt Form

Client Name: Garnett Fleming

Project # 40170716

All containers needing preservation have been checked and noted below: Yes No N/A

Initial when completed:

Date/Time:

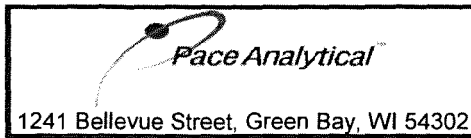
Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass						Plastic						Vials				Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)		
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU								WPFU	SP5T
001																	3														2.5 / 5 / 10
002																	3														2.5 / 5 / 10
003																	3														2.5 / 5 / 10
004																	3														2.5 / 5 / 10
005																	3														2.5 / 5 / 10
006																	3														2.5 / 5 / 10
007																	3														2.5 / 5 / 10
008																	3														2.5 / 5 / 10
009																	3														2.5 / 5 / 10
010																	3														2.5 / 5 / 10
011																	3														2.5 / 5 / 10
012																	3														2.5 / 5 / 10
013																	3														2.5 / 5 / 10
014																	3														2.5 / 5 / 10
015																	3														2.5 / 5 / 10
016																	3														2.5 / 5 / 10
017																	3														2.5 / 5 / 10
018																	3														2.5 / 5 / 10
019																	3														2.5 / 5 / 10
020																	3														2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : Yes No N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	



Document Name:
Sample Condition Upon Receipt (SCUR)
 Document No.:
F-GB-C-031-Rev.07

Document Revised: 25Apr2018
 Issuing Authority:
 Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: _____

Client Name: Garnott Fleming

WO#: 40170716

Courier: CS Logistics Fed Ex Speedee UPS Waltco
 Client Pace Other: _____



Tracking #: 8130 1610 8130

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used SR - N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROP ICorr: _____

Temp Blank Present: yes no

Biological Tissue is Frozen: yes no

Person examining contents:
 Date: 6/13/18
 Initials: SSM

Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. page 2 has missed mail to info invoice info, page # SSM 6/13/18
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. page 1 only SSM 6/13/18
Samples Arrived within Hold Time: - VOA Samples frozen upon receipt	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		8.
Correct Containers Used: -Pace Containers Used: -Pace IR Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>W</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present Pace Trip Blank Lot # (if purchased): <u>400</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution: _____ If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: RNR for DM

Date: 6/13/18

October 15, 2018

Project #34265.003
SRC CW, T40/68/70
Reviewed by CCW
10/16/18

Clifford Wright
Gannett Fleming
8025 Excelsior Drive
Madison, WI 53717

RE: Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

Dear Clifford Wright:

Enclosed are the analytical results for sample(s) received by the laboratory on October 10, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40177409001	MW-1/CW	Water	10/09/18 13:30	10/10/18 09:50
40177409002	MW-2/CW	Water	10/09/18 13:25	10/10/18 09:50
40177409003	MW-3/CW	Water	10/09/18 13:35	10/10/18 09:50
40177409004	MW-4/CW	Water	10/09/18 13:20	10/10/18 09:50
40177409005	MW-1/T40	Water	10/09/18 14:25	10/10/18 09:50
40177409006	MW-2/T40	Water	10/09/18 14:00	10/10/18 09:50
40177409007	MW-4/T40	Water	10/09/18 14:30	10/10/18 09:50
40177409008	MW-5/T40	Water	10/09/18 14:05	10/10/18 09:50
40177409009	MW-6/T40	Water	10/09/18 14:20	10/10/18 09:50
40177409010	MW-7/T40	Water	10/09/18 14:15	10/10/18 09:50
40177409011	TS-1/T40	Water	10/09/18 14:10	10/10/18 09:50
40177409012	MW-1/T68	Water	10/09/18 14:40	10/10/18 09:50
40177409013	MW-2/T68	Water	10/09/18 14:50	10/10/18 09:50
40177409014	MW-4/T68	Water	10/09/18 14:45	10/10/18 09:50
40177409015	MW-5/T66	Water	10/09/18 15:05	10/10/18 09:50
40177409016	MW-6/T68	Water	10/09/18 15:00	10/10/18 09:50
40177409017	MW-2R/T70	Water	10/09/18 15:20	10/10/18 09:50
40177409018	MW-3/T70	Water	10/09/18 15:10	10/10/18 09:50
40177409019	MW-4/T70	Water	10/09/18 15:15	10/10/18 09:50
40177409020	MW-5/T70	Water	10/09/18 15:25	10/10/18 09:50
40177409021	MW-6/T70	Water	10/09/18 15:30	10/10/18 09:50
40177409022	TRIP BLANK	Water	10/09/18 00:00	10/10/18 09:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40177409001	MW-1/CW	EPA 8260	MDS	12	PASI-G
40177409002	MW-2/CW	EPA 8260	MDS	12	PASI-G
40177409003	MW-3/CW	EPA 8260	MDS	12	PASI-G
40177409004	MW-4/CW	EPA 8260	MDS	12	PASI-G
40177409005	MW-1/T40	EPA 8260	MDS	11	PASI-G
40177409006	MW-2/T40	EPA 8260	MDS	11	PASI-G
40177409007	MW-4/T40	EPA 8260	MDS	11	PASI-G
40177409008	MW-5/T40	EPA 8260	MDS	11	PASI-G
40177409009	MW-6/T40	EPA 8260	MDS	11	PASI-G
40177409010	MW-7/T40	EPA 8260	MDS	11	PASI-G
40177409011	TS-1/T40	EPA 8260	LAP	11	PASI-G
40177409012	MW-1/T68	EPA 8260	HNW	63	PASI-G
40177409013	MW-2/T68	EPA 8260	HNW	63	PASI-G
40177409014	MW-4/T68	EPA 8260	MDS	63	PASI-G
40177409015	MW-5/T66	EPA 8260	HNW	63	PASI-G
40177409016	MW-6/T68	EPA 8260	HNW	63	PASI-G
40177409017	MW-2R/T70	EPA 8260	LAP	12	PASI-G
40177409018	MW-3/T70	EPA 8260	LAP	12	PASI-G
40177409019	MW-4/T70	EPA 8260	LAP	12	PASI-G
40177409020	MW-5/T70	EPA 8260	LAP	12	PASI-G
40177409021	MW-6/T70	EPA 8260	LAP	12	PASI-G
40177409022	TRIP BLANK	EPA 8260	HNW	63	PASI-G

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
40177409008	MW-5/T40					
EPA 8260	Ethylbenzene	30.4	ug/L	1.0	10/11/18 12:08	
EPA 8260	m&p-Xylene	115	ug/L	2.0	10/11/18 12:08	
40177409010	MW-7/T40					
EPA 8260	1,2,4-Trimethylbenzene	85.9	ug/L	5.6	10/12/18 10:24	
EPA 8260	1,3,5-Trimethylbenzene	34.3	ug/L	5.8	10/12/18 10:24	
EPA 8260	Benzene	275	ug/L	2.0	10/12/18 10:24	
EPA 8260	Ethylbenzene	33.3	ug/L	2.0	10/12/18 10:24	
EPA 8260	Toluene	1.9J	ug/L	10.0	10/12/18 10:24	
EPA 8260	m&p-Xylene	302	ug/L	4.0	10/12/18 10:24	
EPA 8260	o-Xylene	74.3	ug/L	2.0	10/12/18 10:24	
40177409011	TS-1/T40					
EPA 8260	Benzene	2.1	ug/L	1.0	10/11/18 20:15	
40177409012	MW-1/T68					
EPA 8260	1,2,4-Trimethylbenzene	1.5J	ug/L	2.8	10/11/18 19:57	
EPA 8260	Toluene	0.22J	ug/L	5.0	10/11/18 19:57	
EPA 8260	m&p-Xylene	0.64J	ug/L	2.0	10/11/18 19:57	
40177409013	MW-2/T68					
EPA 8260	1,2,4-Trimethylbenzene	2660	ug/L	560	10/12/18 00:36	
EPA 8260	1,2-Dichloroethane	1520	ug/L	200	10/12/18 00:36	
EPA 8260	1,3,5-Trimethylbenzene	729	ug/L	582	10/12/18 00:36	
EPA 8260	Benzene	18600	ug/L	200	10/12/18 00:36	
EPA 8260	Ethylbenzene	1120	ug/L	200	10/12/18 00:36	
EPA 8260	Naphthalene	292J	ug/L	1000	10/12/18 00:36	
EPA 8260	Toluene	16100	ug/L	1000	10/12/18 00:36	
EPA 8260	m&p-Xylene	10200	ug/L	400	10/12/18 00:36	
EPA 8260	o-Xylene	5170	ug/L	200	10/12/18 00:36	
40177409015	MW-5/T66					
EPA 8260	1,2,4-Trimethylbenzene	3670	ug/L	140	10/12/18 01:19	
EPA 8260	1,3,5-Trimethylbenzene	992	ug/L	146	10/12/18 01:19	
EPA 8260	Benzene	4180	ug/L	50.0	10/12/18 01:19	
EPA 8260	Ethylbenzene	2030	ug/L	50.0	10/12/18 01:19	
EPA 8260	Isopropylbenzene (Cumene)	71.6J	ug/L	250	10/12/18 01:19	
EPA 8260	Naphthalene	549	ug/L	250	10/12/18 01:19	
EPA 8260	Toluene	10800	ug/L	250	10/12/18 01:19	
EPA 8260	m&p-Xylene	12200	ug/L	100	10/12/18 01:19	
EPA 8260	n-Propylbenzene	263	ug/L	250	10/12/18 01:19	
EPA 8260	o-Xylene	5130	ug/L	50.0	10/12/18 01:19	
40177409016	MW-6/T68					
EPA 8260	1,2,4-Trimethylbenzene	2940	ug/L	700	10/12/18 01:40	
EPA 8260	1,3,5-Trimethylbenzene	795	ug/L	728	10/12/18 01:40	
EPA 8260	Benzene	20600	ug/L	250	10/12/18 01:40	
EPA 8260	Ethylbenzene	1700	ug/L	250	10/12/18 01:40	
EPA 8260	Naphthalene	421J	ug/L	1250	10/12/18 01:40	
EPA 8260	Toluene	19300	ug/L	1250	10/12/18 01:40	

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SUMMARY OF DETECTION

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
40177409016	MW-6/T68					
EPA 8260	m&p-Xylene	13500	ug/L	500	10/12/18 01:40	
EPA 8260	o-Xylene	5990	ug/L	250	10/12/18 01:40	
40177409017	MW-2R/T70					
EPA 8260	1,2,4-Trimethylbenzene	3940	ug/L	700	10/11/18 21:00	
EPA 8260	1,3,5-Trimethylbenzene	979	ug/L	728	10/11/18 21:00	
EPA 8260	Benzene	14400	ug/L	250	10/11/18 21:00	
EPA 8260	Ethylbenzene	1850	ug/L	250	10/11/18 21:00	
EPA 8260	Naphthalene	575J	ug/L	1250	10/11/18 21:00	
EPA 8260	Toluene	20900	ug/L	1250	10/11/18 21:00	
EPA 8260	m&p-Xylene	14700	ug/L	500	10/11/18 21:00	
EPA 8260	o-Xylene	6840	ug/L	250	10/11/18 21:00	
40177409018	MW-3/T70					
EPA 8260	1,2,4-Trimethylbenzene	31.6	ug/L	2.8	10/12/18 16:15	
EPA 8260	1,3,5-Trimethylbenzene	5.0	ug/L	2.9	10/12/18 16:15	
EPA 8260	Benzene	32.5	ug/L	1.0	10/12/18 16:15	
EPA 8260	Ethylbenzene	4.1	ug/L	1.0	10/12/18 16:15	
EPA 8260	Naphthalene	5.1	ug/L	5.0	10/12/18 16:15	
EPA 8260	Toluene	0.50J	ug/L	5.0	10/12/18 16:15	
EPA 8260	m&p-Xylene	45.1	ug/L	2.0	10/12/18 16:15	
EPA 8260	o-Xylene	10.7	ug/L	1.0	10/12/18 16:15	
40177409019	MW-4/T70					
EPA 8260	1,2,4-Trimethylbenzene	3430	ug/L	280	10/11/18 21:46	
EPA 8260	1,3,5-Trimethylbenzene	853	ug/L	291	10/11/18 21:46	
EPA 8260	Benzene	17400	ug/L	100	10/11/18 21:46	
EPA 8260	Ethylbenzene	1810	ug/L	100	10/11/18 21:46	
EPA 8260	Naphthalene	609	ug/L	500	10/11/18 21:46	
EPA 8260	Toluene	23200	ug/L	500	10/11/18 21:46	
EPA 8260	m&p-Xylene	16500	ug/L	200	10/11/18 21:46	
EPA 8260	o-Xylene	7730	ug/L	100	10/11/18 21:46	
40177409020	MW-5/T70					
EPA 8260	1,2,4-Trimethylbenzene	1.1J	ug/L	2.8	10/12/18 16:38	
EPA 8260	Benzene	4.3	ug/L	1.0	10/12/18 16:38	
EPA 8260	Ethylbenzene	0.66J	ug/L	1.0	10/12/18 16:38	
EPA 8260	Naphthalene	2.5J	ug/L	5.0	10/12/18 16:38	
EPA 8260	Toluene	0.51J	ug/L	5.0	10/12/18 16:38	
EPA 8260	m&p-Xylene	0.98J	ug/L	2.0	10/12/18 16:38	
EPA 8260	o-Xylene	3.1	ug/L	1.0	10/12/18 16:38	
40177409021	MW-6/T70					
EPA 8260	1,2,4-Trimethylbenzene	22.8	ug/L	2.8	10/11/18 20:38	
EPA 8260	1,3,5-Trimethylbenzene	7.6	ug/L	2.9	10/11/18 20:38	
EPA 8260	Benzene	235	ug/L	1.0	10/11/18 20:38	
EPA 8260	Ethylbenzene	16.2	ug/L	1.0	10/11/18 20:38	
EPA 8260	Naphthalene	2.8J	ug/L	5.0	10/11/18 20:38	
EPA 8260	Toluene	8.2	ug/L	5.0	10/11/18 20:38	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Method: EPA 8260

Description: 8260 MSV

Client: Gannett Fleming Inc.

Date: October 15, 2018

General Information:

6 samples were analyzed for EPA 8260. 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:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

Method: EPA 8260
Description: 8260 MSV UST
Client: Gannett Fleming Inc.
Date: October 15, 2018

General Information:

16 samples were analyzed for EPA 8260. 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.

QC Batch: 303005

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40177402015

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

- MS (Lab ID: 1770718)
 - o-Xylene
- MSD (Lab ID: 1770719)
 - o-Xylene

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

Sample: **MW-1/T68** Lab ID: **40177409012** Collected: 10/09/18 14:40 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
1,1,1,2-Tetrachloroethane	<0.27	ug/L	1.0	0.27	1		10/11/18 19:57	630-20-6	
1,1,1-Trichloroethane	<0.24	ug/L	1.0	0.24	1		10/11/18 19:57	71-55-6	
1,1,2,2-Tetrachloroethane	<0.28	ug/L	1.0	0.28	1		10/11/18 19:57	79-34-5	
1,1,2-Trichloroethane	<0.55	ug/L	5.0	0.55	1		10/11/18 19:57	79-00-5	
1,1-Dichloroethane	<0.27	ug/L	1.0	0.27	1		10/11/18 19:57	75-34-3	
1,1-Dichloroethene	<0.24	ug/L	1.0	0.24	1		10/11/18 19:57	75-35-4	
1,1-Dichloropropene	<0.54	ug/L	1.8	0.54	1		10/11/18 19:57	563-58-6	
1,2,3-Trichlorobenzene	<0.63	ug/L	5.0	0.63	1		10/11/18 19:57	87-61-6	
1,2,3-Trichloropropane	<0.59	ug/L	5.0	0.59	1		10/11/18 19:57	96-18-4	
1,2,4-Trichlorobenzene	<0.95	ug/L	5.0	0.95	1		10/11/18 19:57	120-82-1	
1,2,4-Trimethylbenzene	1.5J	ug/L	2.8	0.84	1		10/11/18 19:57	95-63-6	
1,2-Dibromo-3-chloropropane	<1.8	ug/L	5.9	1.8	1		10/11/18 19:57	96-12-8	
1,2-Dibromoethane (EDB)	<0.83	ug/L	2.8	0.83	1		10/11/18 19:57	106-93-4	
1,2-Dichlorobenzene	<0.71	ug/L	2.4	0.71	1		10/11/18 19:57	95-50-1	
1,2-Dichloroethane	<0.28	ug/L	1.0	0.28	1		10/11/18 19:57	107-06-2	
1,2-Dichloropropane	<0.28	ug/L	1.0	0.28	1		10/11/18 19:57	78-87-5	
1,3,5-Trimethylbenzene	<0.87	ug/L	2.9	0.87	1		10/11/18 19:57	108-67-8	
1,3-Dichlorobenzene	<0.63	ug/L	2.1	0.63	1		10/11/18 19:57	541-73-1	
1,3-Dichloropropane	<0.83	ug/L	2.8	0.83	1		10/11/18 19:57	142-28-9	
1,4-Dichlorobenzene	<0.94	ug/L	3.1	0.94	1		10/11/18 19:57	106-46-7	
2,2-Dichloropropane	<2.3	ug/L	7.6	2.3	1		10/11/18 19:57	594-20-7	
2-Chlorotoluene	<0.93	ug/L	5.0	0.93	1		10/11/18 19:57	95-49-8	
4-Chlorotoluene	<0.76	ug/L	2.5	0.76	1		10/11/18 19:57	106-43-4	
Benzene	<0.25	ug/L	1.0	0.25	1		10/11/18 19:57	71-43-2	
Bromobenzene	<0.24	ug/L	1.0	0.24	1		10/11/18 19:57	108-86-1	
Bromochloromethane	<0.36	ug/L	5.0	0.36	1		10/11/18 19:57	74-97-5	
Bromodichloromethane	<0.36	ug/L	1.2	0.36	1		10/11/18 19:57	75-27-4	
Bromoform	<4.0	ug/L	13.2	4.0	1		10/11/18 19:57	75-25-2	
Bromomethane	<0.97	ug/L	5.0	0.97	1		10/11/18 19:57	74-83-9	
Carbon tetrachloride	<0.17	ug/L	1.0	0.17	1		10/11/18 19:57	56-23-5	
Chlorobenzene	<0.71	ug/L	2.4	0.71	1		10/11/18 19:57	108-90-7	
Chloroethane	<1.3	ug/L	5.0	1.3	1		10/11/18 19:57	75-00-3	
Chloroform	<1.3	ug/L	5.0	1.3	1		10/11/18 19:57	67-66-3	
Chloromethane	<2.2	ug/L	7.3	2.2	1		10/11/18 19:57	74-87-3	
Dibromochloromethane	<2.6	ug/L	8.7	2.6	1		10/11/18 19:57	124-48-1	
Dibromomethane	<0.94	ug/L	3.1	0.94	1		10/11/18 19:57	74-95-3	
Dichlorodifluoromethane	<0.50	ug/L	5.0	0.50	1		10/11/18 19:57	75-71-8	
Ethylbenzene	<0.22	ug/L	1.0	0.22	1		10/11/18 19:57	100-41-4	
Hexachloro-1,3-butadiene	<1.2	ug/L	5.0	1.2	1		10/11/18 19:57	87-68-3	
Isopropylbenzene (Cumene)	<0.39	ug/L	5.0	0.39	1		10/11/18 19:57	98-82-8	
Methyl-tert-butyl ether	<1.2	ug/L	4.2	1.2	1		10/11/18 19:57	1634-04-4	
Methylene Chloride	<0.58	ug/L	5.0	0.58	1		10/11/18 19:57	75-09-2	
Naphthalene	<1.2	ug/L	5.0	1.2	1		10/11/18 19:57	91-20-3	
Styrene	<0.47	ug/L	1.6	0.47	1		10/11/18 19:57	100-42-5	
Tetrachloroethene	<0.33	ug/L	1.1	0.33	1		10/11/18 19:57	127-18-4	
Toluene	0.22J	ug/L	5.0	0.17	1		10/11/18 19:57	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-1/T68 **Lab ID: 40177409012** Collected: 10/09/18 14:40 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Trichloroethene	<0.26	ug/L	1.0	0.26	1		10/11/18 19:57	79-01-6	
Trichlorofluoromethane	<0.21	ug/L	1.0	0.21	1		10/11/18 19:57	75-69-4	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/11/18 19:57	75-01-4	
cis-1,2-Dichloroethene	<0.27	ug/L	1.0	0.27	1		10/11/18 19:57	156-59-2	
cis-1,3-Dichloropropene	<3.6	ug/L	12.1	3.6	1		10/11/18 19:57	10061-01-5	
m&p-Xylene	0.64J	ug/L	2.0	0.47	1		10/11/18 19:57	179601-23-1	
n-Butylbenzene	<0.71	ug/L	2.4	0.71	1		10/11/18 19:57	104-51-8	
n-Propylbenzene	<0.81	ug/L	5.0	0.81	1		10/11/18 19:57	103-65-1	
o-Xylene	<0.26	ug/L	1.0	0.26	1		10/11/18 19:57	95-47-6	
p-Isopropyltoluene	<0.80	ug/L	2.7	0.80	1		10/11/18 19:57	99-87-6	
sec-Butylbenzene	<0.85	ug/L	5.0	0.85	1		10/11/18 19:57	135-98-8	
tert-Butylbenzene	<0.30	ug/L	1.0	0.30	1		10/11/18 19:57	98-06-6	
trans-1,2-Dichloroethene	<1.1	ug/L	3.6	1.1	1		10/11/18 19:57	156-60-5	
trans-1,3-Dichloropropene	<4.4	ug/L	14.6	4.4	1		10/11/18 19:57	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		10/11/18 19:57	460-00-4	
Dibromofluoromethane (S)	104	%	70-130		1		10/11/18 19:57	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		10/11/18 19:57	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-2/T68 **Lab ID: 40177409013** Collected: 10/09/18 14:50 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<53.8	ug/L	200	53.8	200		10/12/18 00:36	630-20-6	
1,1,1-Trichloroethane	<49.0	ug/L	200	49.0	200		10/12/18 00:36	71-55-6	
1,1,2,2-Tetrachloroethane	<55.1	ug/L	200	55.1	200		10/12/18 00:36	79-34-5	
1,1,2-Trichloroethane	<110	ug/L	1000	110	200		10/12/18 00:36	79-00-5	
1,1-Dichloroethane	<54.5	ug/L	200	54.5	200		10/12/18 00:36	75-34-3	
1,1-Dichloroethene	<49.0	ug/L	200	49.0	200		10/12/18 00:36	75-35-4	
1,1-Dichloropropene	<108	ug/L	360	108	200		10/12/18 00:36	563-58-6	
1,2,3-Trichlorobenzene	<125	ug/L	1000	125	200		10/12/18 00:36	87-61-6	
1,2,3-Trichloropropane	<118	ug/L	1000	118	200		10/12/18 00:36	96-18-4	
1,2,4-Trichlorobenzene	<190	ug/L	1000	190	200		10/12/18 00:36	120-82-1	
1,2,4-Trimethylbenzene	2660	ug/L	560	168	200		10/12/18 00:36	95-63-6	
1,2-Dibromo-3-chloropropane	<353	ug/L	1180	353	200		10/12/18 00:36	96-12-8	
1,2-Dibromoethane (EDB)	<166	ug/L	553	166	200		10/12/18 00:36	106-93-4	
1,2-Dichlorobenzene	<141	ug/L	470	141	200		10/12/18 00:36	95-50-1	
1,2-Dichloroethane	1520	ug/L	200	56.0	200		10/12/18 00:36	107-06-2	
1,2-Dichloropropane	<56.6	ug/L	200	56.6	200		10/12/18 00:36	78-87-5	
1,3,5-Trimethylbenzene	729	ug/L	582	175	200		10/12/18 00:36	108-67-8	
1,3-Dichlorobenzene	<126	ug/L	419	126	200		10/12/18 00:36	541-73-1	
1,3-Dichloropropane	<165	ug/L	551	165	200		10/12/18 00:36	142-28-9	
1,4-Dichlorobenzene	<189	ug/L	629	189	200		10/12/18 00:36	106-46-7	
2,2-Dichloropropane	<453	ug/L	1510	453	200		10/12/18 00:36	594-20-7	
2-Chlorotoluene	<185	ug/L	1000	185	200		10/12/18 00:36	95-49-8	
4-Chlorotoluene	<151	ug/L	504	151	200		10/12/18 00:36	106-43-4	
Benzene	18600	ug/L	200	49.3	200		10/12/18 00:36	71-43-2	
Bromobenzene	<48.2	ug/L	200	48.2	200		10/12/18 00:36	108-86-1	
Bromochloromethane	<72.4	ug/L	1000	72.4	200		10/12/18 00:36	74-97-5	
Bromodichloromethane	<72.7	ug/L	242	72.7	200		10/12/18 00:36	75-27-4	
Bromoform	<794	ug/L	2650	794	200		10/12/18 00:36	75-25-2	
Bromomethane	<194	ug/L	1000	194	200		10/12/18 00:36	74-83-9	
Carbon tetrachloride	<33.2	ug/L	200	33.2	200		10/12/18 00:36	56-23-5	
Chlorobenzene	<142	ug/L	474	142	200		10/12/18 00:36	108-90-7	
Chloroethane	<268	ug/L	1000	268	200		10/12/18 00:36	75-00-3	
Chloroform	<255	ug/L	1000	255	200		10/12/18 00:36	67-66-3	
Chloromethane	<438	ug/L	1460	438	200		10/12/18 00:36	74-87-3	
Dibromochloromethane	<520	ug/L	1730	520	200		10/12/18 00:36	124-48-1	
Dibromomethane	<187	ug/L	625	187	200		10/12/18 00:36	74-95-3	
Dichlorodifluoromethane	<99.9	ug/L	1000	99.9	200		10/12/18 00:36	75-71-8	
Ethylbenzene	1120	ug/L	200	43.6	200		10/12/18 00:36	100-41-4	
Hexachloro-1,3-butadiene	<236	ug/L	1000	236	200		10/12/18 00:36	87-68-3	
Isopropylbenzene (Cumene)	<78.6	ug/L	1000	78.6	200		10/12/18 00:36	98-82-8	
Methyl-tert-butyl ether	<249	ug/L	831	249	200		10/12/18 00:36	1634-04-4	
Methylene Chloride	<116	ug/L	1000	116	200		10/12/18 00:36	75-09-2	
Naphthalene	292J	ug/L	1000	235	200		10/12/18 00:36	91-20-3	
Styrene	<93.1	ug/L	310	93.1	200		10/12/18 00:36	100-42-5	
Tetrachloroethene	<65.3	ug/L	218	65.3	200		10/12/18 00:36	127-18-4	
Toluene	16100	ug/L	1000	34.4	200		10/12/18 00:36	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-2/T68 **Lab ID: 40177409013** Collected: 10/09/18 14:50 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<51.0	ug/L	200	51.0	200		10/12/18 00:36	79-01-6	
Trichlorofluoromethane	<43.0	ug/L	200	43.0	200		10/12/18 00:36	75-69-4	
Vinyl chloride	<34.9	ug/L	200	34.9	200		10/12/18 00:36	75-01-4	
cis-1,2-Dichloroethene	<54.2	ug/L	200	54.2	200		10/12/18 00:36	156-59-2	
cis-1,3-Dichloropropene	<726	ug/L	2420	726	200		10/12/18 00:36	10061-01-5	
m&p-Xylene	10200	ug/L	400	93.1	200		10/12/18 00:36	179601-23-1	
n-Butylbenzene	<142	ug/L	472	142	200		10/12/18 00:36	104-51-8	
n-Propylbenzene	<162	ug/L	1000	162	200		10/12/18 00:36	103-65-1	
o-Xylene	5170	ug/L	200	52.4	200		10/12/18 00:36	95-47-6	
p-Isopropyltoluene	<160	ug/L	533	160	200		10/12/18 00:36	99-87-6	
sec-Butylbenzene	<170	ug/L	1000	170	200		10/12/18 00:36	135-98-8	
tert-Butylbenzene	<60.8	ug/L	203	60.8	200		10/12/18 00:36	98-06-6	
trans-1,2-Dichloroethene	<218	ug/L	727	218	200		10/12/18 00:36	156-60-5	
trans-1,3-Dichloropropene	<874	ug/L	2910	874	200		10/12/18 00:36	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		200		10/12/18 00:36	460-00-4	
Dibromofluoromethane (S)	108	%	70-130		200		10/12/18 00:36	1868-53-7	
Toluene-d8 (S)	99	%	70-130		200		10/12/18 00:36	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-4/T68 **Lab ID: 40177409014** Collected: 10/09/18 14:45 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<0.27	ug/L	1.0	0.27	1		10/12/18 13:20	630-20-6	
1,1,1-Trichloroethane	<0.24	ug/L	1.0	0.24	1		10/12/18 13:20	71-55-6	
1,1,2,2-Tetrachloroethane	<0.28	ug/L	1.0	0.28	1		10/12/18 13:20	79-34-5	
1,1,2-Trichloroethane	<0.55	ug/L	5.0	0.55	1		10/12/18 13:20	79-00-5	
1,1-Dichloroethane	<0.27	ug/L	1.0	0.27	1		10/12/18 13:20	75-34-3	
1,1-Dichloroethene	<0.24	ug/L	1.0	0.24	1		10/12/18 13:20	75-35-4	
1,1-Dichloropropene	<0.54	ug/L	1.8	0.54	1		10/12/18 13:20	563-58-6	
1,2,3-Trichlorobenzene	<0.63	ug/L	5.0	0.63	1		10/12/18 13:20	87-61-6	
1,2,3-Trichloropropane	<0.59	ug/L	5.0	0.59	1		10/12/18 13:20	96-18-4	
1,2,4-Trichlorobenzene	<0.95	ug/L	5.0	0.95	1		10/12/18 13:20	120-82-1	
1,2,4-Trimethylbenzene	<0.84	ug/L	2.8	0.84	1		10/12/18 13:20	95-63-6	
1,2-Dibromo-3-chloropropane	<1.8	ug/L	5.9	1.8	1		10/12/18 13:20	96-12-8	
1,2-Dibromoethane (EDB)	<0.83	ug/L	2.8	0.83	1		10/12/18 13:20	106-93-4	
1,2-Dichlorobenzene	<0.71	ug/L	2.4	0.71	1		10/12/18 13:20	95-50-1	
1,2-Dichloroethane	<0.28	ug/L	1.0	0.28	1		10/12/18 13:20	107-06-2	
1,2-Dichloropropane	<0.28	ug/L	1.0	0.28	1		10/12/18 13:20	78-87-5	
1,3,5-Trimethylbenzene	<0.87	ug/L	2.9	0.87	1		10/12/18 13:20	108-67-8	
1,3-Dichlorobenzene	<0.63	ug/L	2.1	0.63	1		10/12/18 13:20	541-73-1	
1,3-Dichloropropane	<0.83	ug/L	2.8	0.83	1		10/12/18 13:20	142-28-9	
1,4-Dichlorobenzene	<0.94	ug/L	3.1	0.94	1		10/12/18 13:20	106-46-7	
2,2-Dichloropropane	<2.3	ug/L	7.6	2.3	1		10/12/18 13:20	594-20-7	
2-Chlorotoluene	<0.93	ug/L	5.0	0.93	1		10/12/18 13:20	95-49-8	
4-Chlorotoluene	<0.76	ug/L	2.5	0.76	1		10/12/18 13:20	106-43-4	
Benzene	<0.25	ug/L	1.0	0.25	1		10/12/18 13:20	71-43-2	
Bromobenzene	<0.24	ug/L	1.0	0.24	1		10/12/18 13:20	108-86-1	
Bromochloromethane	<0.36	ug/L	5.0	0.36	1		10/12/18 13:20	74-97-5	
Bromodichloromethane	<0.36	ug/L	1.2	0.36	1		10/12/18 13:20	75-27-4	
Bromoform	<4.0	ug/L	13.2	4.0	1		10/12/18 13:20	75-25-2	
Bromomethane	<0.97	ug/L	5.0	0.97	1		10/12/18 13:20	74-83-9	
Carbon tetrachloride	<0.17	ug/L	1.0	0.17	1		10/12/18 13:20	56-23-5	
Chlorobenzene	<0.71	ug/L	2.4	0.71	1		10/12/18 13:20	108-90-7	
Chloroethane	<1.3	ug/L	5.0	1.3	1		10/12/18 13:20	75-00-3	
Chloroform	<1.3	ug/L	5.0	1.3	1		10/12/18 13:20	67-66-3	
Chloromethane	<2.2	ug/L	7.3	2.2	1		10/12/18 13:20	74-87-3	
Dibromochloromethane	<2.6	ug/L	8.7	2.6	1		10/12/18 13:20	124-48-1	
Dibromomethane	<0.94	ug/L	3.1	0.94	1		10/12/18 13:20	74-95-3	
Dichlorodifluoromethane	<0.50	ug/L	5.0	0.50	1		10/12/18 13:20	75-71-8	
Ethylbenzene	<0.22	ug/L	1.0	0.22	1		10/12/18 13:20	100-41-4	
Hexachloro-1,3-butadiene	<1.2	ug/L	5.0	1.2	1		10/12/18 13:20	87-68-3	
Isopropylbenzene (Cumene)	<0.39	ug/L	5.0	0.39	1		10/12/18 13:20	98-82-8	
Methyl-tert-butyl ether	<1.2	ug/L	4.2	1.2	1		10/12/18 13:20	1634-04-4	
Methylene Chloride	<0.58	ug/L	5.0	0.58	1		10/12/18 13:20	75-09-2	
Naphthalene	<1.2	ug/L	5.0	1.2	1		10/12/18 13:20	91-20-3	
Styrene	<0.47	ug/L	1.6	0.47	1		10/12/18 13:20	100-42-5	
Tetrachloroethene	<0.33	ug/L	1.1	0.33	1		10/12/18 13:20	127-18-4	
Toluene	<0.17	ug/L	5.0	0.17	1		10/12/18 13:20	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-4/T68 **Lab ID: 40177409014** Collected: 10/09/18 14:45 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Trichloroethene	<0.26	ug/L	1.0	0.26	1		10/12/18 13:20	79-01-6	
Trichlorofluoromethane	<0.21	ug/L	1.0	0.21	1		10/12/18 13:20	75-69-4	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/12/18 13:20	75-01-4	
cis-1,2-Dichloroethene	<0.27	ug/L	1.0	0.27	1		10/12/18 13:20	156-59-2	
cis-1,3-Dichloropropene	<3.6	ug/L	12.1	3.6	1		10/12/18 13:20	10061-01-5	
m&p-Xylene	<0.47	ug/L	2.0	0.47	1		10/12/18 13:20	179601-23-1	
n-Butylbenzene	<0.71	ug/L	2.4	0.71	1		10/12/18 13:20	104-51-8	
n-Propylbenzene	<0.81	ug/L	5.0	0.81	1		10/12/18 13:20	103-65-1	
o-Xylene	<0.26	ug/L	1.0	0.26	1		10/12/18 13:20	95-47-6	
p-Isopropyltoluene	<0.80	ug/L	2.7	0.80	1		10/12/18 13:20	99-87-6	
sec-Butylbenzene	<0.85	ug/L	5.0	0.85	1		10/12/18 13:20	135-98-8	
tert-Butylbenzene	<0.30	ug/L	1.0	0.30	1		10/12/18 13:20	98-06-6	
trans-1,2-Dichloroethene	<1.1	ug/L	3.6	1.1	1		10/12/18 13:20	156-60-5	
trans-1,3-Dichloropropene	<4.4	ug/L	14.6	4.4	1		10/12/18 13:20	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	85	%	70-130		1		10/12/18 13:20	460-00-4	
Dibromofluoromethane (S)	105	%	70-130		1		10/12/18 13:20	1868-53-7	
Toluene-d8 (S)	95	%	70-130		1		10/12/18 13:20	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: **MW-5/T66** Lab ID: **40177409015** Collected: 10/09/18 15:05 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
1,1,1,2-Tetrachloroethane	<13.5	ug/L	50.0	13.5	50		10/12/18 01:19	630-20-6	
1,1,1-Trichloroethane	<12.2	ug/L	50.0	12.2	50		10/12/18 01:19	71-55-6	
1,1,2,2-Tetrachloroethane	<13.8	ug/L	50.0	13.8	50		10/12/18 01:19	79-34-5	
1,1,2-Trichloroethane	<27.6	ug/L	250	27.6	50		10/12/18 01:19	79-00-5	
1,1-Dichloroethane	<13.6	ug/L	50.0	13.6	50		10/12/18 01:19	75-34-3	
1,1-Dichloroethene	<12.2	ug/L	50.0	12.2	50		10/12/18 01:19	75-35-4	
1,1-Dichloropropene	<27.0	ug/L	90.0	27.0	50		10/12/18 01:19	563-58-6	
1,2,3-Trichlorobenzene	<31.3	ug/L	250	31.3	50		10/12/18 01:19	87-61-6	
1,2,3-Trichloropropane	<29.5	ug/L	250	29.5	50		10/12/18 01:19	96-18-4	
1,2,4-Trichlorobenzene	<47.6	ug/L	250	47.6	50		10/12/18 01:19	120-82-1	
1,2,4-Trimethylbenzene	3670	ug/L	140	42.0	50		10/12/18 01:19	95-63-6	
1,2-Dibromo-3-chloropropane	<88.2	ug/L	294	88.2	50		10/12/18 01:19	96-12-8	
1,2-Dibromoethane (EDB)	<41.5	ug/L	138	41.5	50		10/12/18 01:19	106-93-4	
1,2-Dichlorobenzene	<35.3	ug/L	118	35.3	50		10/12/18 01:19	95-50-1	
1,2-Dichloroethane	<14.0	ug/L	50.0	14.0	50		10/12/18 01:19	107-06-2	
1,2-Dichloropropane	<14.1	ug/L	50.0	14.1	50		10/12/18 01:19	78-87-5	
1,3,5-Trimethylbenzene	992	ug/L	146	43.7	50		10/12/18 01:19	108-67-8	
1,3-Dichlorobenzene	<31.4	ug/L	105	31.4	50		10/12/18 01:19	541-73-1	
1,3-Dichloropropane	<41.3	ug/L	138	41.3	50		10/12/18 01:19	142-28-9	
1,4-Dichlorobenzene	<47.2	ug/L	157	47.2	50		10/12/18 01:19	106-46-7	
2,2-Dichloropropane	<113	ug/L	378	113	50		10/12/18 01:19	594-20-7	
2-Chlorotoluene	<46.3	ug/L	250	46.3	50		10/12/18 01:19	95-49-8	
4-Chlorotoluene	<37.8	ug/L	126	37.8	50		10/12/18 01:19	106-43-4	
Benzene	4180	ug/L	50.0	12.3	50		10/12/18 01:19	71-43-2	
Bromobenzene	<12.1	ug/L	50.0	12.1	50		10/12/18 01:19	108-86-1	
Bromochloromethane	<18.1	ug/L	250	18.1	50		10/12/18 01:19	74-97-5	
Bromodichloromethane	<18.2	ug/L	60.6	18.2	50		10/12/18 01:19	75-27-4	
Bromoform	<199	ug/L	662	199	50		10/12/18 01:19	75-25-2	
Bromomethane	<48.6	ug/L	250	48.6	50		10/12/18 01:19	74-83-9	
Carbon tetrachloride	<8.3	ug/L	50.0	8.3	50		10/12/18 01:19	56-23-5	
Chlorobenzene	<35.5	ug/L	118	35.5	50		10/12/18 01:19	108-90-7	
Chloroethane	<67.1	ug/L	250	67.1	50		10/12/18 01:19	75-00-3	
Chloroform	<63.7	ug/L	250	63.7	50		10/12/18 01:19	67-66-3	
Chloromethane	<109	ug/L	365	109	50		10/12/18 01:19	74-87-3	
Dibromochloromethane	<130	ug/L	434	130	50		10/12/18 01:19	124-48-1	
Dibromomethane	<46.8	ug/L	156	46.8	50		10/12/18 01:19	74-95-3	
Dichlorodifluoromethane	<25.0	ug/L	250	25.0	50		10/12/18 01:19	75-71-8	
Ethylbenzene	2030	ug/L	50.0	10.9	50		10/12/18 01:19	100-41-4	
Hexachloro-1,3-butadiene	<59.1	ug/L	250	59.1	50		10/12/18 01:19	87-68-3	
Isopropylbenzene (Cumene)	71.6J	ug/L	250	19.6	50		10/12/18 01:19	98-82-8	
Methyl-tert-butyl ether	<62.3	ug/L	208	62.3	50		10/12/18 01:19	1634-04-4	
Methylene Chloride	<29.0	ug/L	250	29.0	50		10/12/18 01:19	75-09-2	
Naphthalene	549	ug/L	250	58.8	50		10/12/18 01:19	91-20-3	
Styrene	<23.3	ug/L	77.6	23.3	50		10/12/18 01:19	100-42-5	
Tetrachloroethene	<16.3	ug/L	54.4	16.3	50		10/12/18 01:19	127-18-4	
Toluene	10800	ug/L	250	8.6	50		10/12/18 01:19	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-5/T66 **Lab ID: 40177409015** Collected: 10/09/18 15:05 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Trichloroethene	<12.8	ug/L	50.0	12.8	50		10/12/18 01:19	79-01-6	
Trichlorofluoromethane	<10.7	ug/L	50.0	10.7	50		10/12/18 01:19	75-69-4	
Vinyl chloride	<8.7	ug/L	50.0	8.7	50		10/12/18 01:19	75-01-4	
cis-1,2-Dichloroethene	<13.6	ug/L	50.0	13.6	50		10/12/18 01:19	156-59-2	
cis-1,3-Dichloropropene	<181	ug/L	605	181	50		10/12/18 01:19	10061-01-5	
m&p-Xylene	12200	ug/L	100	23.3	50		10/12/18 01:19	179601-23-1	
n-Butylbenzene	<35.4	ug/L	118	35.4	50		10/12/18 01:19	104-51-8	
n-Propylbenzene	263	ug/L	250	40.5	50		10/12/18 01:19	103-65-1	
o-Xylene	5130	ug/L	50.0	13.1	50		10/12/18 01:19	95-47-6	
p-Isopropyltoluene	<40.0	ug/L	133	40.0	50		10/12/18 01:19	99-87-6	
sec-Butylbenzene	<42.4	ug/L	250	42.4	50		10/12/18 01:19	135-98-8	
tert-Butylbenzene	<15.2	ug/L	50.6	15.2	50		10/12/18 01:19	98-06-6	
trans-1,2-Dichloroethene	<54.5	ug/L	182	54.5	50		10/12/18 01:19	156-60-5	
trans-1,3-Dichloropropene	<219	ug/L	728	219	50		10/12/18 01:19	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		50		10/12/18 01:19	460-00-4	
Dibromofluoromethane (S)	107	%	70-130		50		10/12/18 01:19	1868-53-7	
Toluene-d8 (S)	98	%	70-130		50		10/12/18 01:19	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: **MW-6/T68** Lab ID: **40177409016** Collected: 10/09/18 15:00 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<67.3	ug/L	250	67.3	250		10/12/18 01:40	630-20-6	
1,1,1-Trichloroethane	<61.2	ug/L	250	61.2	250		10/12/18 01:40	71-55-6	
1,1,2,2-Tetrachloroethane	<68.8	ug/L	250	68.8	250		10/12/18 01:40	79-34-5	
1,1,2-Trichloroethane	<138	ug/L	1250	138	250		10/12/18 01:40	79-00-5	
1,1-Dichloroethane	<68.1	ug/L	250	68.1	250		10/12/18 01:40	75-34-3	
1,1-Dichloroethene	<61.2	ug/L	250	61.2	250		10/12/18 01:40	75-35-4	
1,1-Dichloropropene	<135	ug/L	450	135	250		10/12/18 01:40	563-58-6	
1,2,3-Trichlorobenzene	<156	ug/L	1250	156	250		10/12/18 01:40	87-61-6	
1,2,3-Trichloropropane	<148	ug/L	1250	148	250		10/12/18 01:40	96-18-4	
1,2,4-Trichlorobenzene	<238	ug/L	1250	238	250		10/12/18 01:40	120-82-1	
1,2,4-Trimethylbenzene	2940	ug/L	700	210	250		10/12/18 01:40	95-63-6	
1,2-Dibromo-3-chloropropane	<441	ug/L	1470	441	250		10/12/18 01:40	96-12-8	
1,2-Dibromoethane (EDB)	<207	ug/L	691	207	250		10/12/18 01:40	106-93-4	
1,2-Dichlorobenzene	<176	ug/L	588	176	250		10/12/18 01:40	95-50-1	
1,2-Dichloroethane	<70.0	ug/L	250	70.0	250		10/12/18 01:40	107-06-2	
1,2-Dichloropropane	<70.7	ug/L	250	70.7	250		10/12/18 01:40	78-87-5	
1,3,5-Trimethylbenzene	795	ug/L	728	218	250		10/12/18 01:40	108-67-8	
1,3-Dichlorobenzene	<157	ug/L	523	157	250		10/12/18 01:40	541-73-1	
1,3-Dichloropropane	<206	ug/L	688	206	250		10/12/18 01:40	142-28-9	
1,4-Dichlorobenzene	<236	ug/L	786	236	250		10/12/18 01:40	106-46-7	
2,2-Dichloropropane	<566	ug/L	1890	566	250		10/12/18 01:40	594-20-7	
2-Chlorotoluene	<232	ug/L	1250	232	250		10/12/18 01:40	95-49-8	
4-Chlorotoluene	<189	ug/L	630	189	250		10/12/18 01:40	106-43-4	
Benzene	20600	ug/L	250	61.6	250		10/12/18 01:40	71-43-2	
Bromobenzene	<60.3	ug/L	250	60.3	250		10/12/18 01:40	108-86-1	
Bromochloromethane	<90.5	ug/L	1250	90.5	250		10/12/18 01:40	74-97-5	
Bromodichloromethane	<90.9	ug/L	303	90.9	250		10/12/18 01:40	75-27-4	
Bromoform	<993	ug/L	3310	993	250		10/12/18 01:40	75-25-2	
Bromomethane	<243	ug/L	1250	243	250		10/12/18 01:40	74-83-9	
Carbon tetrachloride	<41.5	ug/L	250	41.5	250		10/12/18 01:40	56-23-5	
Chlorobenzene	<178	ug/L	592	178	250		10/12/18 01:40	108-90-7	
Chloroethane	<336	ug/L	1250	336	250		10/12/18 01:40	75-00-3	
Chloroform	<318	ug/L	1250	318	250		10/12/18 01:40	67-66-3	
Chloromethane	<547	ug/L	1820	547	250		10/12/18 01:40	74-87-3	
Dibromochloromethane	<650	ug/L	2170	650	250		10/12/18 01:40	124-48-1	
Dibromomethane	<234	ug/L	781	234	250		10/12/18 01:40	74-95-3	
Dichlorodifluoromethane	<125	ug/L	1250	125	250		10/12/18 01:40	75-71-8	
Ethylbenzene	1700	ug/L	250	54.5	250		10/12/18 01:40	100-41-4	
Hexachloro-1,3-butadiene	<296	ug/L	1250	296	250		10/12/18 01:40	87-68-3	
Isopropylbenzene (Cumene)	<98.2	ug/L	1250	98.2	250		10/12/18 01:40	98-82-8	
Methyl-tert-butyl ether	<311	ug/L	1040	311	250		10/12/18 01:40	1634-04-4	
Methylene Chloride	<145	ug/L	1250	145	250		10/12/18 01:40	75-09-2	
Naphthalene	421J	ug/L	1250	294	250		10/12/18 01:40	91-20-3	
Styrene	<116	ug/L	388	116	250		10/12/18 01:40	100-42-5	
Tetrachloroethene	<81.6	ug/L	272	81.6	250		10/12/18 01:40	127-18-4	
Toluene	19300	ug/L	1250	43.0	250		10/12/18 01:40	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: MW-6/T68 **Lab ID: 40177409016** Collected: 10/09/18 15:00 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<63.8	ug/L	250	63.8	250		10/12/18 01:40	79-01-6	
Trichlorofluoromethane	<53.7	ug/L	250	53.7	250		10/12/18 01:40	75-69-4	
Vinyl chloride	<43.7	ug/L	250	43.7	250		10/12/18 01:40	75-01-4	
cis-1,2-Dichloroethene	<67.8	ug/L	250	67.8	250		10/12/18 01:40	156-59-2	
cis-1,3-Dichloropropene	<907	ug/L	3020	907	250		10/12/18 01:40	10061-01-5	
m&p-Xylene	13500	ug/L	500	116	250		10/12/18 01:40	179601-23-1	
n-Butylbenzene	<177	ug/L	590	177	250		10/12/18 01:40	104-51-8	
n-Propylbenzene	<203	ug/L	1250	203	250		10/12/18 01:40	103-65-1	
o-Xylene	5990	ug/L	250	65.5	250		10/12/18 01:40	95-47-6	
p-Isopropyltoluene	<200	ug/L	667	200	250		10/12/18 01:40	99-87-6	
sec-Butylbenzene	<212	ug/L	1250	212	250		10/12/18 01:40	135-98-8	
tert-Butylbenzene	<76.0	ug/L	253	76.0	250		10/12/18 01:40	98-06-6	
trans-1,2-Dichloroethene	<273	ug/L	909	273	250		10/12/18 01:40	156-60-5	
trans-1,3-Dichloropropene	<1090	ug/L	3640	1090	250		10/12/18 01:40	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		250		10/12/18 01:40	460-00-4	
Dibromofluoromethane (S)	105	%	70-130		250		10/12/18 01:40	1868-53-7	
Toluene-d8 (S)	99	%	70-130		250		10/12/18 01:40	2037-26-5	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: TRIP BLANK **Lab ID: 40177409022** Collected: 10/09/18 00:00 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Analytical Method: EPA 8260									
1,1,1,2-Tetrachloroethane	<0.27	ug/L	1.0	0.27	1		10/11/18 19:35	630-20-6	
1,1,1-Trichloroethane	<0.24	ug/L	1.0	0.24	1		10/11/18 19:35	71-55-6	
1,1,2,2-Tetrachloroethane	<0.28	ug/L	1.0	0.28	1		10/11/18 19:35	79-34-5	
1,1,2-Trichloroethane	<0.55	ug/L	5.0	0.55	1		10/11/18 19:35	79-00-5	
1,1-Dichloroethane	<0.27	ug/L	1.0	0.27	1		10/11/18 19:35	75-34-3	
1,1-Dichloroethene	<0.24	ug/L	1.0	0.24	1		10/11/18 19:35	75-35-4	
1,1-Dichloropropene	<0.54	ug/L	1.8	0.54	1		10/11/18 19:35	563-58-6	
1,2,3-Trichlorobenzene	<0.63	ug/L	5.0	0.63	1		10/11/18 19:35	87-61-6	
1,2,3-Trichloropropane	<0.59	ug/L	5.0	0.59	1		10/11/18 19:35	96-18-4	
1,2,4-Trichlorobenzene	<0.95	ug/L	5.0	0.95	1		10/11/18 19:35	120-82-1	
1,2,4-Trimethylbenzene	<0.84	ug/L	2.8	0.84	1		10/11/18 19:35	95-63-6	
1,2-Dibromo-3-chloropropane	<1.8	ug/L	5.9	1.8	1		10/11/18 19:35	96-12-8	
1,2-Dibromoethane (EDB)	<0.83	ug/L	2.8	0.83	1		10/11/18 19:35	106-93-4	
1,2-Dichlorobenzene	<0.71	ug/L	2.4	0.71	1		10/11/18 19:35	95-50-1	
1,2-Dichloroethane	<0.28	ug/L	1.0	0.28	1		10/11/18 19:35	107-06-2	
1,2-Dichloropropane	<0.28	ug/L	1.0	0.28	1		10/11/18 19:35	78-87-5	
1,3,5-Trimethylbenzene	<0.87	ug/L	2.9	0.87	1		10/11/18 19:35	108-67-8	
1,3-Dichlorobenzene	<0.63	ug/L	2.1	0.63	1		10/11/18 19:35	541-73-1	
1,3-Dichloropropane	<0.83	ug/L	2.8	0.83	1		10/11/18 19:35	142-28-9	
1,4-Dichlorobenzene	<0.94	ug/L	3.1	0.94	1		10/11/18 19:35	106-46-7	
2,2-Dichloropropane	<2.3	ug/L	7.6	2.3	1		10/11/18 19:35	594-20-7	
2-Chlorotoluene	<0.93	ug/L	5.0	0.93	1		10/11/18 19:35	95-49-8	
4-Chlorotoluene	<0.76	ug/L	2.5	0.76	1		10/11/18 19:35	106-43-4	
Benzene	<0.25	ug/L	1.0	0.25	1		10/11/18 19:35	71-43-2	
Bromobenzene	<0.24	ug/L	1.0	0.24	1		10/11/18 19:35	108-86-1	
Bromochloromethane	<0.36	ug/L	5.0	0.36	1		10/11/18 19:35	74-97-5	
Bromodichloromethane	<0.36	ug/L	1.2	0.36	1		10/11/18 19:35	75-27-4	
Bromoform	<4.0	ug/L	13.2	4.0	1		10/11/18 19:35	75-25-2	
Bromomethane	<0.97	ug/L	5.0	0.97	1		10/11/18 19:35	74-83-9	
Carbon tetrachloride	<0.17	ug/L	1.0	0.17	1		10/11/18 19:35	56-23-5	
Chlorobenzene	<0.71	ug/L	2.4	0.71	1		10/11/18 19:35	108-90-7	
Chloroethane	<1.3	ug/L	5.0	1.3	1		10/11/18 19:35	75-00-3	
Chloroform	<1.3	ug/L	5.0	1.3	1		10/11/18 19:35	67-66-3	
Chloromethane	<2.2	ug/L	7.3	2.2	1		10/11/18 19:35	74-87-3	
Dibromochloromethane	<2.6	ug/L	8.7	2.6	1		10/11/18 19:35	124-48-1	
Dibromomethane	<0.94	ug/L	3.1	0.94	1		10/11/18 19:35	74-95-3	
Dichlorodifluoromethane	<0.50	ug/L	5.0	0.50	1		10/11/18 19:35	75-71-8	
Ethylbenzene	<0.22	ug/L	1.0	0.22	1		10/11/18 19:35	100-41-4	
Hexachloro-1,3-butadiene	<1.2	ug/L	5.0	1.2	1		10/11/18 19:35	87-68-3	
Isopropylbenzene (Cumene)	<0.39	ug/L	5.0	0.39	1		10/11/18 19:35	98-82-8	
Methyl-tert-butyl ether	<1.2	ug/L	4.2	1.2	1		10/11/18 19:35	1634-04-4	
Methylene Chloride	<0.58	ug/L	5.0	0.58	1		10/11/18 19:35	75-09-2	
Naphthalene	<1.2	ug/L	5.0	1.2	1		10/11/18 19:35	91-20-3	
Styrene	<0.47	ug/L	1.6	0.47	1		10/11/18 19:35	100-42-5	
Tetrachloroethene	<0.33	ug/L	1.1	0.33	1		10/11/18 19:35	127-18-4	
Toluene	<0.17	ug/L	5.0	0.17	1		10/11/18 19:35	108-88-3	

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ANALYTICAL RESULTS

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Sample: TRIP BLANK **Lab ID: 40177409022** Collected: 10/09/18 00:00 Received: 10/10/18 09:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Trichloroethene	<0.26	ug/L	1.0	0.26	1		10/11/18 19:35	79-01-6	
Trichlorofluoromethane	<0.21	ug/L	1.0	0.21	1		10/11/18 19:35	75-69-4	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/11/18 19:35	75-01-4	
cis-1,2-Dichloroethene	<0.27	ug/L	1.0	0.27	1		10/11/18 19:35	156-59-2	
cis-1,3-Dichloropropene	<3.6	ug/L	12.1	3.6	1		10/11/18 19:35	10061-01-5	
m&p-Xylene	<0.47	ug/L	2.0	0.47	1		10/11/18 19:35	179601-23-1	
n-Butylbenzene	<0.71	ug/L	2.4	0.71	1		10/11/18 19:35	104-51-8	
n-Propylbenzene	<0.81	ug/L	5.0	0.81	1		10/11/18 19:35	103-65-1	
o-Xylene	<0.26	ug/L	1.0	0.26	1		10/11/18 19:35	95-47-6	
p-Isopropyltoluene	<0.80	ug/L	2.7	0.80	1		10/11/18 19:35	99-87-6	
sec-Butylbenzene	<0.85	ug/L	5.0	0.85	1		10/11/18 19:35	135-98-8	
tert-Butylbenzene	<0.30	ug/L	1.0	0.30	1		10/11/18 19:35	98-06-6	
trans-1,2-Dichloroethene	<1.1	ug/L	3.6	1.1	1		10/11/18 19:35	156-60-5	
trans-1,3-Dichloropropene	<4.4	ug/L	14.6	4.4	1		10/11/18 19:35	10061-02-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		10/11/18 19:35	460-00-4	
Dibromofluoromethane (S)	108	%	70-130		1		10/11/18 19:35	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		10/11/18 19:35	2037-26-5	

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

QC Batch: 302883 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40177409012, 40177409013, 40177409015, 40177409016, 40177409022

METHOD BLANK: 1769057 Matrix: Water
Associated Lab Samples: 40177409012, 40177409013, 40177409015, 40177409016, 40177409022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.27	1.0	10/11/18 15:39	
1,1,1-Trichloroethane	ug/L	<0.24	1.0	10/11/18 15:39	
1,1,2,2-Tetrachloroethane	ug/L	<0.28	1.0	10/11/18 15:39	
1,1,2-Trichloroethane	ug/L	<0.55	5.0	10/11/18 15:39	
1,1-Dichloroethane	ug/L	<0.27	1.0	10/11/18 15:39	
1,1-Dichloroethene	ug/L	<0.24	1.0	10/11/18 15:39	
1,1-Dichloropropene	ug/L	<0.54	1.8	10/11/18 15:39	
1,2,3-Trichlorobenzene	ug/L	<0.63	5.0	10/11/18 15:39	
1,2,3-Trichloropropane	ug/L	<0.59	5.0	10/11/18 15:39	
1,2,4-Trichlorobenzene	ug/L	<0.95	5.0	10/11/18 15:39	
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	10/11/18 15:39	
1,2-Dibromo-3-chloropropane	ug/L	<1.8	5.9	10/11/18 15:39	
1,2-Dibromoethane (EDB)	ug/L	<0.83	2.8	10/11/18 15:39	
1,2-Dichlorobenzene	ug/L	<0.71	2.4	10/11/18 15:39	
1,2-Dichloroethane	ug/L	<0.28	1.0	10/11/18 15:39	
1,2-Dichloropropane	ug/L	<0.28	1.0	10/11/18 15:39	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	10/11/18 15:39	
1,3-Dichlorobenzene	ug/L	<0.63	2.1	10/11/18 15:39	
1,3-Dichloropropane	ug/L	<0.83	2.8	10/11/18 15:39	
1,4-Dichlorobenzene	ug/L	<0.94	3.1	10/11/18 15:39	
2,2-Dichloropropane	ug/L	<2.3	7.6	10/11/18 15:39	
2-Chlorotoluene	ug/L	<0.93	5.0	10/11/18 15:39	
4-Chlorotoluene	ug/L	<0.76	2.5	10/11/18 15:39	
Benzene	ug/L	<0.25	1.0	10/11/18 15:39	
Bromobenzene	ug/L	<0.24	1.0	10/11/18 15:39	
Bromochloromethane	ug/L	<0.36	5.0	10/11/18 15:39	
Bromodichloromethane	ug/L	<0.36	1.2	10/11/18 15:39	
Bromoform	ug/L	<4.0	13.2	10/11/18 15:39	
Bromomethane	ug/L	<0.97	5.0	10/11/18 15:39	
Carbon tetrachloride	ug/L	<0.17	1.0	10/11/18 15:39	
Chlorobenzene	ug/L	<0.71	2.4	10/11/18 15:39	
Chloroethane	ug/L	<1.3	5.0	10/11/18 15:39	
Chloroform	ug/L	<1.3	5.0	10/11/18 15:39	
Chloromethane	ug/L	<2.2	7.3	10/11/18 15:39	
cis-1,2-Dichloroethene	ug/L	<0.27	1.0	10/11/18 15:39	
cis-1,3-Dichloropropene	ug/L	<3.6	12.1	10/11/18 15:39	
Dibromochloromethane	ug/L	<2.6	8.7	10/11/18 15:39	
Dibromomethane	ug/L	<0.94	3.1	10/11/18 15:39	
Dichlorodifluoromethane	ug/L	<0.50	5.0	10/11/18 15:39	
Ethylbenzene	ug/L	<0.22	1.0	10/11/18 15:39	
Hexachloro-1,3-butadiene	ug/L	<1.2	5.0	10/11/18 15:39	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

METHOD BLANK: 1769057

Matrix: Water

Associated Lab Samples: 40177409012, 40177409013, 40177409015, 40177409016, 40177409022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	<0.39	5.0	10/11/18 15:39	
m&p-Xylene	ug/L	<0.47	2.0	10/11/18 15:39	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	10/11/18 15:39	
Methylene Chloride	ug/L	<0.58	5.0	10/11/18 15:39	
n-Butylbenzene	ug/L	<0.71	2.4	10/11/18 15:39	
n-Propylbenzene	ug/L	<0.81	5.0	10/11/18 15:39	
Naphthalene	ug/L	<1.2	5.0	10/11/18 15:39	
o-Xylene	ug/L	<0.26	1.0	10/11/18 15:39	
p-Isopropyltoluene	ug/L	<0.80	2.7	10/11/18 15:39	
sec-Butylbenzene	ug/L	<0.85	5.0	10/11/18 15:39	
Styrene	ug/L	<0.47	1.6	10/11/18 15:39	
tert-Butylbenzene	ug/L	<0.30	1.0	10/11/18 15:39	
Tetrachloroethene	ug/L	<0.33	1.1	10/11/18 15:39	
Toluene	ug/L	<0.17	5.0	10/11/18 15:39	
trans-1,2-Dichloroethene	ug/L	<1.1	3.6	10/11/18 15:39	
trans-1,3-Dichloropropene	ug/L	<4.4	14.6	10/11/18 15:39	
Trichloroethene	ug/L	<0.26	1.0	10/11/18 15:39	
Trichlorofluoromethane	ug/L	<0.21	1.0	10/11/18 15:39	
Vinyl chloride	ug/L	<0.17	1.0	10/11/18 15:39	
4-Bromofluorobenzene (S)	%	95	70-130	10/11/18 15:39	
Dibromofluoromethane (S)	%	109	70-130	10/11/18 15:39	
Toluene-d8 (S)	%	98	70-130	10/11/18 15:39	

LABORATORY CONTROL SAMPLE: 1769058

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.0	108	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	47.5	95	67-130	
1,1,2-Trichloroethane	ug/L	50	48.2	96	70-130	
1,1-Dichloroethane	ug/L	50	52.1	104	70-134	
1,1-Dichloroethene	ug/L	50	51.2	102	75-132	
1,2,4-Trichlorobenzene	ug/L	50	46.3	93	68-130	
1,2-Dibromo-3-chloropropane	ug/L	50	41.7	83	60-126	
1,2-Dibromoethane (EDB)	ug/L	50	50.1	100	70-130	
1,2-Dichlorobenzene	ug/L	50	50.1	100	70-130	
1,2-Dichloroethane	ug/L	50	49.4	99	73-134	
1,2-Dichloropropane	ug/L	50	44.8	90	79-128	
1,3-Dichlorobenzene	ug/L	50	49.4	99	70-130	
1,4-Dichlorobenzene	ug/L	50	49.0	98	70-130	
Benzene	ug/L	50	53.3	107	69-137	
Bromodichloromethane	ug/L	50	48.6	97	70-130	
Bromoform	ug/L	50	45.4	91	64-133	
Bromomethane	ug/L	50	30.6	61	29-123	
Carbon tetrachloride	ug/L	50	52.8	106	73-142	

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

LABORATORY CONTROL SAMPLE: 1769058

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorobenzene	ug/L	50	50.0	100	70-130	
Chloroethane	ug/L	50	45.5	91	59-133	
Chloroform	ug/L	50	51.6	103	80-129	
Chloromethane	ug/L	50	39.7	79	27-125	
cis-1,2-Dichloroethene	ug/L	50	52.5	105	70-134	
cis-1,3-Dichloropropene	ug/L	50	42.7	85	70-130	
Dibromochloromethane	ug/L	50	54.5	109	70-130	
Dichlorodifluoromethane	ug/L	50	35.5	71	12-127	
Ethylbenzene	ug/L	50	50.5	101	86-127	
Isopropylbenzene (Cumene)	ug/L	50	50.9	102	70-130	
m&p-Xylene	ug/L	100	101	101	70-131	
Methyl-tert-butyl ether	ug/L	50	44.6	89	65-136	
Methylene Chloride	ug/L	50	51.1	102	72-133	
o-Xylene	ug/L	50	49.6	99	70-130	
Styrene	ug/L	50	50.5	101	70-130	
Tetrachloroethene	ug/L	50	45.7	91	70-130	
Toluene	ug/L	50	49.6	99	84-124	
trans-1,2-Dichloroethene	ug/L	50	52.3	105	70-133	
trans-1,3-Dichloropropene	ug/L	50	41.3	83	67-130	
Trichloroethene	ug/L	50	50.4	101	70-130	
Trichlorofluoromethane	ug/L	50	54.0	108	69-147	
Vinyl chloride	ug/L	50	46.4	93	48-134	
4-Bromofluorobenzene (S)	%			97	70-130	
Dibromofluoromethane (S)	%			108	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1769362 1769363

Parameter	Units	40177409012		MSD		MSD		% Rec	% Rec	% Rec	MSD	% Rec	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	MS							
1,1,1-Trichloroethane	ug/L	<0.24	50	50	54.2	54.8	108	110	70-136	1	20			
1,1,2,2-Tetrachloroethane	ug/L	<0.28	50	50	47.9	49.3	96	99	67-133	3	20			
1,1,2-Trichloroethane	ug/L	<0.55	50	50	47.5	49.2	95	98	70-130	3	20			
1,1-Dichloroethane	ug/L	<0.27	50	50	51.5	52.4	103	105	70-139	2	20			
1,1-Dichloroethene	ug/L	<0.24	50	50	51.8	51.1	104	102	72-137	1	20			
1,2,4-Trichlorobenzene	ug/L	<0.95	50	50	48.0	49.0	96	98	68-130	2	20			
1,2-Dibromo-3-chloropropane	ug/L	<1.8	50	50	42.5	47.0	85	94	60-130	10	21			
1,2-Dibromoethane (EDB)	ug/L	<0.83	50	50	49.7	52.3	99	105	70-130	5	20			
1,2-Dichlorobenzene	ug/L	<0.71	50	50	51.5	51.6	103	103	70-130	0	20			
1,2-Dichloroethane	ug/L	<0.28	50	50	49.4	49.6	99	99	71-137	0	20			
1,2-Dichloropropane	ug/L	<0.28	50	50	45.1	45.9	90	92	78-130	2	20			
1,3-Dichlorobenzene	ug/L	<0.63	50	50	50.2	51.4	100	103	70-130	2	20			
1,4-Dichlorobenzene	ug/L	<0.94	50	50	49.5	51.2	99	102	70-130	3	20			
Benzene	ug/L	<0.25	50	50	52.6	53.2	105	106	66-143	1	20			

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Parameter	Units	40177409012		1769362		1769363		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Bromodichloromethane	ug/L	<0.36	50	50	48.8	50.2	98	100	70-130	3	20		
Bromoform	ug/L	<4.0	50	50	45.6	47.1	91	94	64-134	3	20		
Bromomethane	ug/L	<0.97	50	50	30.3	32.2	61	64	29-136	6	25		
Carbon tetrachloride	ug/L	<0.17	50	50	53.0	53.8	106	108	73-142	2	20		
Chlorobenzene	ug/L	<0.71	50	50	50.1	51.5	100	103	70-130	3	20		
Chloroethane	ug/L	<1.3	50	50	43.9	45.5	88	91	58-138	4	20		
Chloroform	ug/L	<1.3	50	50	51.1	51.6	102	103	80-131	1	20		
Chloromethane	ug/L	<2.2	50	50	38.4	39.6	77	79	24-125	3	20		
cis-1,2-Dichloroethene	ug/L	<0.27	50	50	51.3	51.7	103	103	68-137	1	22		
cis-1,3-Dichloropropene	ug/L	<3.6	50	50	43.1	44.7	86	89	70-130	4	20		
Dibromochloromethane	ug/L	<2.6	50	50	54.2	55.9	108	112	70-131	3	20		
Dichlorodifluoromethane	ug/L	<0.50	50	50	34.5	34.5	69	69	10-127	0	20		
Ethylbenzene	ug/L	<0.22	50	50	50.1	51.6	100	103	81-136	3	20		
Isopropylbenzene (Cumene)	ug/L	<0.39	50	50	51.2	52.2	102	104	70-132	2	20		
m&p-Xylene	ug/L	0.64J	100	100	102	105	102	105	70-135	3	20		
Methyl-tert-butyl ether	ug/L	<1.2	50	50	44.0	45.1	88	90	58-142	2	23		
Methylene Chloride	ug/L	<0.58	50	50	49.9	51.3	100	103	69-137	3	20		
o-Xylene	ug/L	<0.26	50	50	50.3	50.5	100	101	70-132	1	20		
Styrene	ug/L	<0.47	50	50	50.6	51.8	101	104	70-130	2	20		
Tetrachloroethene	ug/L	<0.33	50	50	46.0	47.5	92	95	70-132	3	20		
Toluene	ug/L	0.22J	50	50	49.4	50.9	98	101	81-130	3	20		
trans-1,2-Dichloroethene	ug/L	<1.1	50	50	51.1	51.4	102	103	70-136	0	20		
trans-1,3-Dichloropropene	ug/L	<4.4	50	50	41.4	42.8	83	86	67-130	3	20		
Trichloroethene	ug/L	<0.26	50	50	49.9	51.1	100	102	70-131	2	20		
Trichlorofluoromethane	ug/L	<0.21	50	50	53.8	55.0	108	110	66-150	2	20		
Vinyl chloride	ug/L	<0.17	50	50	45.5	45.9	91	92	46-134	1	20		
4-Bromofluorobenzene (S)	%						98	99	70-130				
Dibromofluoromethane (S)	%						105	105	70-130				
Toluene-d8 (S)	%						97	99	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

QC Batch: 303011 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40177409014

METHOD BLANK: 1769831 Matrix: Water
Associated Lab Samples: 40177409014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.27	1.0	10/12/18 09:18	
1,1,1-Trichloroethane	ug/L	<0.24	1.0	10/12/18 09:18	
1,1,2,2-Tetrachloroethane	ug/L	<0.28	1.0	10/12/18 09:18	
1,1,2-Trichloroethane	ug/L	<0.55	5.0	10/12/18 09:18	
1,1-Dichloroethane	ug/L	<0.27	1.0	10/12/18 09:18	
1,1-Dichloroethene	ug/L	<0.24	1.0	10/12/18 09:18	
1,1-Dichloropropene	ug/L	<0.54	1.8	10/12/18 09:18	
1,2,3-Trichlorobenzene	ug/L	<0.63	5.0	10/12/18 09:18	
1,2,3-Trichloropropane	ug/L	<0.59	5.0	10/12/18 09:18	
1,2,4-Trichlorobenzene	ug/L	<0.95	5.0	10/12/18 09:18	
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	10/12/18 09:18	
1,2-Dibromo-3-chloropropane	ug/L	<1.8	5.9	10/12/18 09:18	
1,2-Dibromoethane (EDB)	ug/L	<0.83	2.8	10/12/18 09:18	
1,2-Dichlorobenzene	ug/L	<0.71	2.4	10/12/18 09:18	
1,2-Dichloroethane	ug/L	<0.28	1.0	10/12/18 09:18	
1,2-Dichloropropane	ug/L	<0.28	1.0	10/12/18 09:18	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	10/12/18 09:18	
1,3-Dichlorobenzene	ug/L	<0.63	2.1	10/12/18 09:18	
1,3-Dichloropropane	ug/L	<0.83	2.8	10/12/18 09:18	
1,4-Dichlorobenzene	ug/L	<0.94	3.1	10/12/18 09:18	
2,2-Dichloropropane	ug/L	<2.3	7.6	10/12/18 09:18	
2-Chlorotoluene	ug/L	<0.93	5.0	10/12/18 09:18	
4-Chlorotoluene	ug/L	<0.76	2.5	10/12/18 09:18	
Benzene	ug/L	<0.25	1.0	10/12/18 09:18	
Bromobenzene	ug/L	<0.24	1.0	10/12/18 09:18	
Bromochloromethane	ug/L	<0.36	5.0	10/12/18 09:18	
Bromodichloromethane	ug/L	<0.36	1.2	10/12/18 09:18	
Bromoform	ug/L	<4.0	13.2	10/12/18 09:18	
Bromomethane	ug/L	<0.97	5.0	10/12/18 09:18	
Carbon tetrachloride	ug/L	<0.17	1.0	10/12/18 09:18	
Chlorobenzene	ug/L	<0.71	2.4	10/12/18 09:18	
Chloroethane	ug/L	<1.3	5.0	10/12/18 09:18	
Chloroform	ug/L	<1.3	5.0	10/12/18 09:18	
Chloromethane	ug/L	<2.2	7.3	10/12/18 09:18	
cis-1,2-Dichloroethene	ug/L	<0.27	1.0	10/12/18 09:18	
cis-1,3-Dichloropropene	ug/L	<3.6	12.1	10/12/18 09:18	
Dibromochloromethane	ug/L	<2.6	8.7	10/12/18 09:18	
Dibromomethane	ug/L	<0.94	3.1	10/12/18 09:18	
Dichlorodifluoromethane	ug/L	<0.50	5.0	10/12/18 09:18	
Ethylbenzene	ug/L	<0.22	1.0	10/12/18 09:18	
Hexachloro-1,3-butadiene	ug/L	<1.2	5.0	10/12/18 09:18	

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

METHOD BLANK: 1769831

Matrix: Water

Associated Lab Samples: 40177409014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	<0.39	5.0	10/12/18 09:18	
m&p-Xylene	ug/L	<0.47	2.0	10/12/18 09:18	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	10/12/18 09:18	
Methylene Chloride	ug/L	<0.58	5.0	10/12/18 09:18	
n-Butylbenzene	ug/L	<0.71	2.4	10/12/18 09:18	
n-Propylbenzene	ug/L	<0.81	5.0	10/12/18 09:18	
Naphthalene	ug/L	<1.2	5.0	10/12/18 09:18	
o-Xylene	ug/L	<0.26	1.0	10/12/18 09:18	
p-Isopropyltoluene	ug/L	<0.80	2.7	10/12/18 09:18	
sec-Butylbenzene	ug/L	<0.85	5.0	10/12/18 09:18	
Styrene	ug/L	<0.47	1.6	10/12/18 09:18	
tert-Butylbenzene	ug/L	<0.30	1.0	10/12/18 09:18	
Tetrachloroethene	ug/L	<0.33	1.1	10/12/18 09:18	
Toluene	ug/L	<0.17	5.0	10/12/18 09:18	
trans-1,2-Dichloroethene	ug/L	<1.1	3.6	10/12/18 09:18	
trans-1,3-Dichloropropene	ug/L	<4.4	14.6	10/12/18 09:18	
Trichloroethene	ug/L	<0.26	1.0	10/12/18 09:18	
Trichlorofluoromethane	ug/L	<0.21	1.0	10/12/18 09:18	
Vinyl chloride	ug/L	<0.17	1.0	10/12/18 09:18	
4-Bromofluorobenzene (S)	%	86	70-130	10/12/18 09:18	
Dibromofluoromethane (S)	%	106	70-130	10/12/18 09:18	
Toluene-d8 (S)	%	94	70-130	10/12/18 09:18	

LABORATORY CONTROL SAMPLE: 1769832

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.4	109	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	49.5	99	67-130	
1,1,2-Trichloroethane	ug/L	50	52.6	105	70-130	
1,1-Dichloroethane	ug/L	50	54.2	108	70-134	
1,1-Dichloroethene	ug/L	50	46.0	92	75-132	
1,2,4-Trichlorobenzene	ug/L	50	47.0	94	68-130	
1,2-Dibromo-3-chloropropane	ug/L	50	51.9	104	60-126	
1,2-Dibromoethane (EDB)	ug/L	50	52.9	106	70-130	
1,2-Dichlorobenzene	ug/L	50	52.3	105	70-130	
1,2-Dichloroethane	ug/L	50	49.4	99	73-134	
1,2-Dichloropropane	ug/L	50	50.1	100	79-128	
1,3-Dichlorobenzene	ug/L	50	51.5	103	70-130	
1,4-Dichlorobenzene	ug/L	50	51.5	103	70-130	
Benzene	ug/L	50	41.7	83	69-137	
Bromodichloromethane	ug/L	50	52.4	105	70-130	
Bromoform	ug/L	50	56.4	113	64-133	
Bromomethane	ug/L	50	18.7	37	29-123	
Carbon tetrachloride	ug/L	50	54.4	109	73-142	

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

LABORATORY CONTROL SAMPLE: 1769832

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorobenzene	ug/L	50	51.7	103	70-130	
Chloroethane	ug/L	50	35.5	71	59-133	
Chloroform	ug/L	50	51.2	102	80-129	
Chloromethane	ug/L	50	14.5	29	27-125	
cis-1,2-Dichloroethene	ug/L	50	48.3	97	70-134	
cis-1,3-Dichloropropene	ug/L	50	46.9	94	70-130	
Dibromochloromethane	ug/L	50	55.8	112	70-130	
Dichlorodifluoromethane	ug/L	50	7.7	15	12-127	
Ethylbenzene	ug/L	50	51.9	104	86-127	
Isopropylbenzene (Cumene)	ug/L	50	57.1	114	70-130	
m&p-Xylene	ug/L	100	112	112	70-131	
Methyl-tert-butyl ether	ug/L	50	49.8	100	65-136	
Methylene Chloride	ug/L	50	46.6	93	72-133	
o-Xylene	ug/L	50	55.4	111	70-130	
Styrene	ug/L	50	56.9	114	70-130	
Tetrachloroethene	ug/L	50	54.4	109	70-130	
Toluene	ug/L	50	51.2	102	84-124	
trans-1,2-Dichloroethene	ug/L	50	50.2	100	70-133	
trans-1,3-Dichloropropene	ug/L	50	47.0	94	67-130	
Trichloroethene	ug/L	50	53.4	107	70-130	
Trichlorofluoromethane	ug/L	50	49.6	99	69-147	
Vinyl chloride	ug/L	50	27.5	55	48-134	
4-Bromofluorobenzene (S)	%			108	70-130	
Dibromofluoromethane (S)	%			101	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1771098 1771099

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40177467001	Spike Conc.	Spike Conc.	Result								
1,1,1-Trichloroethane	ug/L	<0.24	50	50	58.5	58.1	117	116	70-136	1	20		
1,1,2,2-Tetrachloroethane	ug/L	<0.28	50	50	52.7	53.0	105	106	67-133	1	20		
1,1,2-Trichloroethane	ug/L	<0.55	50	50	54.6	54.6	109	109	70-130	0	20		
1,1-Dichloroethane	ug/L	<0.27	50	50	54.7	55.4	109	111	70-139	1	20		
1,1-Dichloroethene	ug/L	<0.24	50	50	46.1	47.3	92	95	72-137	3	20		
1,2,4-Trichlorobenzene	ug/L	<0.95	50	50	49.8	50.2	100	100	68-130	1	20		
1,2-Dibromo-3-chloropropane	ug/L	<1.8	50	50	55.6	57.6	111	115	60-130	3	21		
1,2-Dibromoethane (EDB)	ug/L	<0.83	50	50	54.5	54.9	109	110	70-130	1	20		
1,2-Dichlorobenzene	ug/L	<0.71	50	50	52.3	54.4	105	109	70-130	4	20		
1,2-Dichloroethane	ug/L	<0.28	50	50	56.5	54.4	113	109	71-137	4	20		
1,2-Dichloropropane	ug/L	<0.28	50	50	51.1	53.1	102	106	78-130	4	20		
1,3-Dichlorobenzene	ug/L	<0.63	50	50	53.2	53.5	106	107	70-130	1	20		
1,4-Dichlorobenzene	ug/L	<0.94	50	50	55.3	55.7	111	111	70-130	1	20		
Benzene	ug/L	<0.25	50	50	46.9	44.9	94	90	66-143	4	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Parameter	Units	40177467001		1771098		1771099		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Bromodichloromethane	ug/L	<0.36	50	50	51.9	55.4	104	111	70-130	6	20		
Bromoform	ug/L	<4.0	50	50	61.4	61.2	123	122	64-134	0	20		
Bromomethane	ug/L	<0.97	50	50	22.2	20.9	44	42	29-136	6	25		
Carbon tetrachloride	ug/L	<0.17	50	50	59.1	57.0	118	114	73-142	4	20		
Chlorobenzene	ug/L	<0.71	50	50	53.2	54.0	106	108	70-130	1	20		
Chloroethane	ug/L	<1.3	50	50	34.7	37.0	69	74	58-138	6	20		
Chloroform	ug/L	<1.3	50	50	54.4	53.5	109	107	80-131	2	20		
Chloromethane	ug/L	<2.2	50	50	14.9	14.0	30	28	24-125	6	20		
cis-1,2-Dichloroethene	ug/L	<0.27	50	50	49.6	50.5	99	101	68-137	2	22		
cis-1,3-Dichloropropene	ug/L	<3.6	50	50	46.8	49.7	94	99	70-130	6	20		
Dibromochloromethane	ug/L	<2.6	50	50	58.1	58.3	116	117	70-131	0	20		
Dichlorodifluoromethane	ug/L	<0.50	50	50	7.6	6.5	15	13	10-127	15	20		
Ethylbenzene	ug/L	<0.22	50	50	55.6	55.4	111	111	81-136	0	20		
Isopropylbenzene (Cumene)	ug/L	<0.39	50	50	58.9	58.8	118	118	70-132	0	20		
m&p-Xylene	ug/L	<0.47	100	100	117	117	117	117	70-135	0	20		
Methyl-tert-butyl ether	ug/L	<1.2	50	50	51.5	53.2	103	106	58-142	3	23		
Methylene Chloride	ug/L	<0.58	50	50	47.6	48.8	95	98	69-137	2	20		
o-Xylene	ug/L	<0.26	50	50	57.8	57.7	116	115	70-132	0	20		
Styrene	ug/L	<0.47	50	50	59.4	59.6	119	119	70-130	0	20		
Tetrachloroethene	ug/L	<0.33	50	50	55.6	55.7	111	111	70-132	0	20		
Toluene	ug/L	<0.17	50	50	52.0	52.3	104	105	81-130	1	20		
trans-1,2-Dichloroethene	ug/L	<1.1	50	50	49.7	50.6	99	101	70-136	2	20		
trans-1,3-Dichloropropene	ug/L	<4.4	50	50	51.2	50.8	102	102	67-130	1	20		
Trichloroethene	ug/L	<0.26	50	50	54.7	55.8	109	112	70-131	2	20		
Trichlorofluoromethane	ug/L	<0.21	50	50	48.5	49.3	97	99	66-150	2	20		
Vinyl chloride	ug/L	<0.17	50	50	27.0	25.8	54	52	46-134	4	20		
4-Bromofluorobenzene (S)	%						104	104	70-130				
Dibromofluoromethane (S)	%						103	104	70-130				
Toluene-d8 (S)	%						96	96	70-130				

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

QC Batch: 302885 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40177409001, 40177409002, 40177409003, 40177409004, 40177409005, 40177409006, 40177409007, 40177409008, 40177409009, 40177409010

METHOD BLANK: 1769063 Matrix: Water
Associated Lab Samples: 40177409001, 40177409002, 40177409003, 40177409004, 40177409005, 40177409006, 40177409007, 40177409008, 40177409009, 40177409010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	10/11/18 09:02	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	10/11/18 09:02	
Benzene	ug/L	<0.25	1.0	10/11/18 09:02	
Ethylbenzene	ug/L	<0.22	1.0	10/11/18 09:02	
m&p-Xylene	ug/L	<0.47	2.0	10/11/18 09:02	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	10/11/18 09:02	
Naphthalene	ug/L	<1.2	5.0	10/11/18 09:02	
o-Xylene	ug/L	<0.26	1.0	10/11/18 09:02	
Toluene	ug/L	<0.17	5.0	10/11/18 09:02	
4-Bromofluorobenzene (S)	%	84	70-130	10/11/18 09:02	
Dibromofluoromethane (S)	%	107	70-130	10/11/18 09:02	
Toluene-d8 (S)	%	92	70-130	10/11/18 09:02	

LABORATORY CONTROL SAMPLE: 1769064

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	43.1	86	69-137	
Ethylbenzene	ug/L	50	53.4	107	86-127	
m&p-Xylene	ug/L	100	111	111	70-131	
Methyl-tert-butyl ether	ug/L	50	50.5	101	65-136	
o-Xylene	ug/L	50	54.0	108	70-130	
Toluene	ug/L	50	50.7	101	84-124	
4-Bromofluorobenzene (S)	%			104	70-130	
Dibromofluoromethane (S)	%			100	70-130	
Toluene-d8 (S)	%			96	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1769073 1769074

Parameter	Units	40177409002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result						
Benzene	ug/L	<0.25	50	50	44.2	46.6	88	93	66-143	5	20	
Ethylbenzene	ug/L	<0.22	50	50	55.2	56.6	110	113	81-136	3	20	
m&p-Xylene	ug/L	<0.47	100	100	115	119	115	119	70-135	3	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	51.7	51.3	103	103	58-142	1	23	
o-Xylene	ug/L	<0.26	50	50	56.6	58.3	113	117	70-132	3	20	
Toluene	ug/L	<0.17	50	50	52.4	52.7	105	105	81-130	1	20	
4-Bromofluorobenzene (S)	%						106	105	70-130			

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1769073		1769074		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		40177409002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Dibromofluoromethane (S)	%					103	104	70-130			
Toluene-d8 (S)	%					96	95	70-130			

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

QC Batch: 302931 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40177409011, 40177409017, 40177409019, 40177409021

METHOD BLANK: 1769300 Matrix: Water
Associated Lab Samples: 40177409011, 40177409017, 40177409019, 40177409021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	10/11/18 16:17	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	10/11/18 16:17	
Benzene	ug/L	<0.25	1.0	10/11/18 16:17	
Ethylbenzene	ug/L	<0.22	1.0	10/11/18 16:17	
m&p-Xylene	ug/L	<0.47	2.0	10/11/18 16:17	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	10/11/18 16:17	
Naphthalene	ug/L	<1.2	5.0	10/11/18 16:17	
o-Xylene	ug/L	<0.26	1.0	10/11/18 16:17	
Toluene	ug/L	<0.17	5.0	10/11/18 16:17	
4-Bromofluorobenzene (S)	%	92	70-130	10/11/18 16:17	
Dibromofluoromethane (S)	%	88	70-130	10/11/18 16:17	
Toluene-d8 (S)	%	100	70-130	10/11/18 16:17	

LABORATORY CONTROL SAMPLE: 1769301

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	51.5	103	69-137	
Ethylbenzene	ug/L	50	55.9	112	86-127	
m&p-Xylene	ug/L	100	109	109	70-131	
Methyl-tert-butyl ether	ug/L	50	52.0	104	65-136	
o-Xylene	ug/L	50	56.3	113	70-130	
Toluene	ug/L	50	52.8	106	84-124	
4-Bromofluorobenzene (S)	%			97	70-130	
Dibromofluoromethane (S)	%			95	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1769694 1769695

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		40177402022 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Benzene	ug/L	<0.25	50	50	51.1	51.1	102	102	66-143	0	20	
Ethylbenzene	ug/L	<0.22	50	50	54.1	53.4	108	107	81-136	1	20	
m&p-Xylene	ug/L	<0.47	100	100	107	107	107	107	70-135	1	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	44.2	46.1	88	92	58-142	4	23	
o-Xylene	ug/L	<0.26	50	50	55.0	54.1	110	108	70-132	2	20	
Toluene	ug/L	<0.17	50	50	51.7	51.3	103	103	81-130	1	20	
4-Bromofluorobenzene (S)	%						94	101	70-130			
Dibromofluoromethane (S)	%						95	90	70-130			

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		1769694		1769695									
Parameter	Units	40177402022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Toluene-d8 (S)	%						99	96	70-130				

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

QC Batch: 303005 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40177409018, 40177409020

METHOD BLANK: 1769811 Matrix: Water
Associated Lab Samples: 40177409018, 40177409020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	10/12/18 12:05	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	10/12/18 12:05	
Benzene	ug/L	<0.25	1.0	10/12/18 12:05	
Ethylbenzene	ug/L	<0.22	1.0	10/12/18 12:05	
m&p-Xylene	ug/L	<0.47	2.0	10/12/18 12:05	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	10/12/18 12:05	
Naphthalene	ug/L	<1.2	5.0	10/12/18 12:05	
o-Xylene	ug/L	<0.26	1.0	10/12/18 12:05	
Toluene	ug/L	<0.17	5.0	10/12/18 12:05	
4-Bromofluorobenzene (S)	%	92	70-130	10/12/18 12:05	
Dibromofluoromethane (S)	%	90	70-130	10/12/18 12:05	
Toluene-d8 (S)	%	101	70-130	10/12/18 12:05	

LABORATORY CONTROL SAMPLE: 1769812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	47.7	95	69-137	
Ethylbenzene	ug/L	50	52.9	106	86-127	
m&p-Xylene	ug/L	100	108	108	70-131	
Methyl-tert-butyl ether	ug/L	50	44.5	89	65-136	
o-Xylene	ug/L	50	53.8	108	70-130	
Toluene	ug/L	50	50.6	101	84-124	
4-Bromofluorobenzene (S)	%			94	70-130	
Dibromofluoromethane (S)	%			88	70-130	
Toluene-d8 (S)	%			93	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1770718 1770719

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		40177402015 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Benzene	ug/L	<0.25	50	50	49.2	49.7	98	99	66-143	1	20	
Ethylbenzene	ug/L	10.6	50	50	69.2	70.9	117	120	81-136	2	20	
m&p-Xylene	ug/L	24.7	100	100	143	144	118	119	70-135	1	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	46.5	46.9	93	94	58-142	1	23	
o-Xylene	ug/L	34.0	50	50	104	106	140	144	70-132	2	20 M1	
Toluene	ug/L	<0.17	50	50	52.2	52.7	104	105	81-130	1	20	
4-Bromofluorobenzene (S)	%						98	98	70-130			
Dibromofluoromethane (S)	%						93	94	70-130			

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QUALITY CONTROL DATA

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1770718												1770719	
Parameter	Units	40177402015 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Toluene-d8 (S)	%						100	98	70-130				

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QUALIFIERS

Project: 34265.003 Superior Refining Co
Pace Project No.: 40177409

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-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 34265.003 Superior Refining Co

Pace Project No.: 40177409

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40177409012	MW-1/T68	EPA 8260	302883		
40177409013	MW-2/T68	EPA 8260	302883		
40177409014	MW-4/T68	EPA 8260	303011		
40177409015	MW-5/T66	EPA 8260	302883		
40177409016	MW-6/T68	EPA 8260	302883		
40177409022	TRIP BLANK	EPA 8260	302883		
40177409001	MW-1/CW	EPA 8260	302885		
40177409002	MW-2/CW	EPA 8260	302885		
40177409003	MW-3/CW	EPA 8260	302885		
40177409004	MW-4/CW	EPA 8260	302885		
40177409005	MW-1/T40	EPA 8260	302885		
40177409006	MW-2/T40	EPA 8260	302885		
40177409007	MW-4/T40	EPA 8260	302885		
40177409008	MW-5/T40	EPA 8260	302885		
40177409009	MW-6/T40	EPA 8260	302885		
40177409010	MW-7/T40	EPA 8260	302885		
40177409011	TS-1/T40	EPA 8260	302931		
40177409017	MW-2R/T70	EPA 8260	302931		
40177409018	MW-3/T70	EPA 8260	303005		
40177409019	MW-4/T70	EPA 8260	302931		
40177409020	MW-5/T70	EPA 8260	303005		
40177409021	MW-6/T70	EPA 8260	302931		

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Sample Preservation Receipt Form

Client Name: Gannett Fleming Project # 40177409

All containers needing preservation have been checked and noted below: Yes No N/A

Initial when completed:

Date/Time:

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass							Plastic							Vials					Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act. pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)		
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC								GN	
001																	3																	2.5 / 5 / 10
002																	3																	2.5 / 5 / 10
003																	3																	2.5 / 5 / 10
004																	3																	2.5 / 5 / 10
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018																	3																	2.5 / 5 / 10
019																	3																	2.5 / 5 / 10
020																	3																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : Yes No N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Sample Condition Upon Receipt Form (SCUR)

Project #: _____

Client Name: Garnett Fleming

WO# : 40177409

Courier: CS Logistics Fed Ex Speedee UPS Walto
 Client Pace Other: _____



Tracking #: 8133 9386 2421

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used SR - 30 Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 3 / Corr: 3

Temp Blank Present: yes no Biological Tissue is Frozen: yes no

Person examining contents:
Date: 10/10/18
Initials: PS

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time: _____
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): <u>407</u>		

Client Notification/ Resolution: _____ If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: CH FZ DM Date: 10/10/18