



15 July 2022

Via Electronic Mail

Ms. Erin McDonnell
Oregon Department of Environmental Quality
Northwest Region
700 NE Multnomah St, Suite 600
Portland, OR 97232

Reference: 0633086

Subject: Quarter 2, 2022 Progress Report
(April through June 2022)
MMGL / Premier Edible Oils Site (ESCI #2013)

Dear Ms. McDonnell:

ERM-West, Inc. (ERM) is submitting this Quarterly Progress Report (QPR) on behalf of MMGL LLC (MMGL) to summarize Quarter 2, 2022 activities at the Premier Edible Oils (PEO) site located at 10400 North Burgard Way in Portland, Oregon.

Section II, H of the Voluntary Cleanup Agreement for the Upland Remedial Investigation/Feasibility Study and Source Control Measures between MMGL (formerly Schnitzer Investment Corporation) and the Oregon Department of Environmental Quality (DEQ), dated 6 March 2001, requires submittal QPRs summarizing site activities. The following progress report summarizes activities for Quarter 2, 2022 (April through June).

The attached Figure 1 shows the location of the groundwater monitoring wells.

Actions Taken Quarter 2, 2022 (April through June)

- On 19 April, ERM conducted the Groundwater Source Control Measures (GW SCM) monthly water level monitoring. During this water level monitoring event, location MW-41 was inaccessible due to ponding surface water over the location. During this event, LNAPL was observed in MW-38. Observations are presented in Attachment A, Table Q2-1.
- On 15 April, ERM submitted the Q1 GWSC Quarterly Progress Report.
- Between 28 and 29 April, ERM mobilized to the site to abandon MW-28 and install replacement well MW-28a. Drilling logs and field notes are presented in Attachment B and will be included in the Q1-Q2 2022 GW SCM Semi-Annual Monitoring Report, due on 31 July 2022.
- On 2 May, ERM conducted the GW SCM monthly water level monitoring. During this event, LNAPL was observed in MW-38 and MW-43. Observations are presented in Attachment A, Table Q2-2.
- On 2 May, ERM mobilized to the site to develop newly installed well MW-28a.
- Between 3 May and 11 May, ERM conducted the GW SCM quarterly groundwater monitoring. The air sparge system was shut down while conducting these activities. During this event, LNAPL was observed in MW-38, and MW-43. Observations are presented in Attachment A, Table Q1-7.

- On 14 June, ERM conducted the GW SCM monthly water level monitoring. There were no observations of LNAPL during this event. Observations are presented in Attachment A, Table Q2-3.

Data Received in Quarter 2, 2022 (April through June)

- Field data collected in Quarter 2, 2022 are included in Attachment A and will be included in the Q1-Q2 2022 GW SCM Semi-Annual Monitoring Report, due on 31 July 2022.
- Analytical data received in Q2 2022 includes the sampling events from both Q1 2022 and Q2 2022. The analytical reports and QAQC memos for both quarters are included in Attachment C.

Issues Observed during Quarter 2, 2022 (April through June)***Shallow Zone***

No issues were observed with the shallow zone air sparge system in Q2.

Deep Zone

Following the November 2021 groundwater sampling event, the deep zone sparge system remained off until 17 February 2022 when ERM determined that the sensor on the flow meter was faulty due to mineral buildup from condensation occurring in the outflow piping. The sensor was cleaned on 17 February and the deep zone sparge system was restarted.

Actions Scheduled for Quarter 2, 2022 (July through September)

- The Quarterly Progress Report for Quarter 2, 2022 will be prepared and submitted.
- The Quarterly Monitoring Report for Quarter 1 and Quarter 2, 2022 will be prepared and submitted.
- Monthly level transducer data downloading events and a quarterly groundwater sampling and water level monitoring event will be conducted.

If you have questions or comments pertaining to this progress report, please contact us at (503) 488-5282.

Yours sincerely,



Haley Rothwell
Project Manager



Brendan Robinson, PE
Partner in Charge

Attachments:

Attachment A – Data Tables

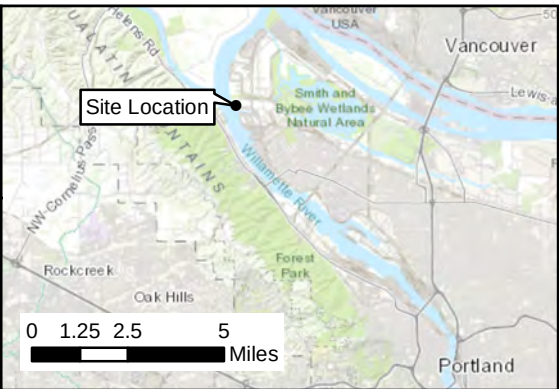
Attachment B – MW-28/MW-28a Abandonment and Installation Well Log

Attachment C – Analytical Reports

CC w/ attachments: Tom Graf, GrafCon

Figures

FILE: M:\Projects\0283866 MMGL Portland PEO Site GW SCM BR\Maps\Q2 2021 Report\Fig 2 PEO MW Locations.mxd REVISED: 02/02/2022 SCALE: 1:900 when printed at 11x17
DRAWN BY: Carissa True



- Legend**
- Shallow Monitoring Well
 - Deep Monitoring Well
 - Abandoned Shallow Monitoring Well
 - Transducer Installed
 - Top of Bank
 - Ordinary High Water (20.1 ft)
 - Barrier Wall Alignment
 - Property Boundary
 - Parcels

Notes:
* Abandoned.
Aerial Imagery: City of Portland, Summer 2016.

Figure 1
Monitoring Well Locations
PEO Site
Portland, Oregon

*Attachment A – Q1 and Q2 2022 GW SCM
Groundwater Tables*

Table Q1-1
Monitoring Well Summary
Premier Edible Oils
Portland, Oregon

Well Identification	Status	Well Depth (ft)	Screen Zone	Screen Interval (ft bgs)		Measuring Point (Top of Casing) ft-NAVD88	Sitewide Monitoring Point	Water Level Monitoring Point ¹	Transducer Installed	Quarterly Monitoring ²
				Top	Bottom					
MW-02	Active	26	Shallow	11	26	31.18	X	X		X
MW-03	Active	26	Shallow	11	26	31.67	X	X		X
MW-04	Active	26	Shallow	11	26	31.37				
MW-05	Active	26	Shallow	11	26	31.27				
MW-06	Active	27	Shallow	12	27	31.23	X	X		X
MW-08	Active	27	Shallow	12	27	30.93	X	X	X	X
MW-11	Active	27	Shallow	12	27	31.06	X	X	X	X
MW-18	Active	27	Shallow	12	27	30.87	X	X	X	X
MW-19	Active	27	Shallow	12	27	31.7	X	X		X
MW-21	Active	27	Shallow	12	27	31.36	X	X	X	X
MW-24A	Active	27	Shallow	12	27	32.35	X	X		X
MW-25	Active	-	Shallow	-	-	31.78	X	X		X
MW-26	Active	39	Deep	34	39	31.89	X	X		X
MW-27	Active	40	Deep	35	40	31.46	X	X	X	X
MW-28*	Active	28	Shallow	13	28	31.26	X	X	X	X
MW-29	Active	30	Shallow	13	28	31.9	X	X		X
MW-30	Active	28	Shallow	13	28	31.05	X	X	X	X
MW-31	Active	28	Shallow	13	28	30.77	X	X		X
MW-32	Active	40	Deep	35	40	31.08	X	X	X	X
MW-33	Active	40	Deep	35	40	30.88	X	X	X	X
MW-34	Active	28	Shallow	13	28	30.72	X	X	X	X
MW-35	Active	40	Deep	35	40	30.83	X	X	X	X
MW-36	Active	30	Shallow	15	30	30.16	X	X	X	X
MW-37	Active	40	Deep	35	40	31.27	X	X		X
MW-38	Active	27	Shallow	13	27	31.54	X	X		X
MW-39	Active	30	Shallow	15	30	31.08	X	X		X
MW-40	Active	40	Deep	35	40	31.71	X	X	X	X
MW-41	Active	27	Shallow	13	27	31.32	X	X	X	X
MW-42	Active	40	Deep	35	40	31.94	X	X	X	X
MW-43	Active	30	Shallow	15	30	31.39	X	X		X
MW-44	Active	25	Shallow	10	25	30.98	X	X		X
MW-45	Active	30	Shallow	15	30	31.70	X	X		X

Notes:

* = Damaged on 2 March 2022

– = not applicable

¹ = Manual water level measurement collected monthly

² = Groundwater analytical samples

NAVD88 = North America Vertical Datum 1988

Table Q1-2
Groundwater Elevations - January 2022
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	1/28/2022	18.41	-	ND	-	12.77
MW-03	Shallow	31.67	1/28/2022	17.00	-	ND	-	14.67
MW-06	Shallow	31.23	1/28/2022	17.49	-	ND	-	13.74
MW-08	Shallow	30.93	1/28/2022	18.88	-	ND	-	12.05
MW-11	Shallow	31.06	1/28/2022	17.53	-	ND	-	13.53
MW-18	Shallow	30.87	1/28/2022	19.24	-	ND	-	11.63
MW-19	Shallow	31.70	1/28/2022	18.56	-	ND	-	13.14
MW-21	Shallow	31.36	1/28/2022	12.93	-	ND	-	18.43
MW-24A	Shallow	32.35	1/28/2022	17.36	-	ND	-	14.99
MW-25	Shallow	31.78	1/28/2022	17.90	-	ND	-	13.88
MW-26	Deep	31.89	1/28/2022	21.57	-	ND	-	10.32
MW-27	Deep	31.46	1/28/2022	21.17	-	ND	-	10.29
MW-28	Shallow	31.26	1/28/2022	19.18	-	ND	-	12.08
MW-29	Shallow	31.90	1/28/2022	18.19	-	ND	-	13.71
MW-30	Shallow	31.05	1/28/2022	18.34	-	ND	-	12.71
MW-31	Shallow	30.77	1/28/2022	18.73	-	ND	-	12.04
MW-32	Deep	31.08	1/28/2022	20.47	-	ND	-	10.61
MW-33	Deep	30.88	1/28/2022	19.44	-	ND	-	11.44
MW-34	Shallow	30.72	1/28/2022	16.90	-	ND	-	13.82
MW-35	Deep	30.83	1/28/2022	19.83	-	ND	-	11.00
MW-36	Shallow	30.16	1/28/2022	19.72	-	ND	-	10.44
MW-37	Deep	31.27	1/28/2022	20.43	-	ND	-	10.84
MW-38	Shallow	31.54	1/28/2022	17.32	-	ND	-	14.22
MW-39	Shallow	31.08	1/28/2022	20.77	-	ND	-	10.31
MW-40	Deep	31.71	1/28/2022	20.68	-	ND	-	11.03
MW-41	Shallow	31.32	1/28/2022	15.59	-	ND	-	15.73
MW-42	Deep	31.94	1/28/2022	21.73	-	ND	-	10.21
MW-43	Shallow	31.39	1/28/2022	20.63	20.56	0.07	0.01	10.82
MW-44	Shallow	30.98	1/28/2022	18.41	-	ND	-	12.57
MW-45	Shallow	31.70	1/28/2022	21.72	-	ND	-	9.98

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q1-3
Groundwater Elevations - February 2022
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	2/28/2022	20.16	-	ND	-	11.02
MW-03	Shallow	31.67	2/28/2022	19.50	-	ND	-	12.17
MW-06	Shallow	31.23	2/28/2022	20.17	-	ND	-	11.06
MW-08	Shallow	30.93	2/28/2022	Unable to locate				
MW-11	Shallow	31.06	2/28/2022	20.30	-	ND	-	10.76
MW-18	Shallow	30.87	2/28/2022	Inaccessible				
MW-19	Shallow	31.70	2/28/2022	21.12	-	ND	-	10.58
MW-21	Shallow	31.36	2/28/2022	13.66	-	ND	-	17.70
MW-24A	Shallow	32.35	2/28/2022	18.28	-	ND	-	14.07
MW-25	Shallow	31.78	2/28/2022	Inaccessible				
MW-26	Deep	31.89	2/28/2022	22.36	-	ND	-	9.53
MW-27	Deep	31.46	2/28/2022	21.93	-	ND	-	9.53
MW-28	Shallow	31.26	2/28/2022	Inaccessible				
MW-29	Shallow	31.90	2/28/2022	20.83	20.63	0.20	0.03	11.23
MW-30	Shallow	31.05	2/28/2022	20.74	-	ND	-	10.31
MW-31	Shallow	30.77	2/28/2022	20.65	-	ND	-	10.12
MW-32	Deep	31.08	2/28/2022	21.44	-	ND	-	9.64
MW-33	Deep	30.88	2/28/2022	21.25	-	ND	-	9.63
MW-34	Shallow	30.72	2/28/2022	18.99	-	ND	-	11.73
MW-35	Deep	30.83	2/28/2022	19.56	-	ND	-	11.27
MW-36	Shallow	30.16	2/28/2022	Inaccessible				
MW-37	Deep	31.27	2/28/2022	19.26	-	ND	-	12.01
MW-38	Shallow	31.54	2/28/2022	19.26	19.2	0.06	0.01	12.33
MW-39	Shallow	31.08	2/28/2022	21.65	-	ND	-	9.43
MW-40	Deep	31.71	2/28/2022	21.91	-	ND	-	9.80
MW-41	Shallow	31.32	2/28/2022	Inaccessible				
MW-42	Deep	31.94	2/28/2022	22.41	-	ND	-	9.53
MW-43	Shallow	31.39	2/28/2022	22.00	21.60	0.40	0.07	9.71
MW-44	Shallow	30.98	2/28/2022	20.61	-	ND	-	10.37
MW-45	Shallow	31.70	2/28/2022	22.31	-	ND	-	9.39

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q1-4
Groundwater Elevations - March 2022
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	3/16/2022	19.25	-	ND	-	11.93
MW-03	Shallow	31.67	3/16/2022	18.52	-	ND	-	13.15
MW-06	Shallow	31.23	3/16/2022	18.85	-	ND	-	12.38
MW-08	Shallow	30.93	3/16/2022	19.63	-	ND	-	11.30
MW-11	Shallow	31.06	3/16/2022	18.46	-	ND	-	12.60
MW-18	Shallow	30.87	3/16/2022	19.78	-	ND	-	11.09
MW-19	Shallow	31.70	3/16/2022	19.92	-	ND	-	11.78
MW-21	Shallow	31.36	3/16/2022	13.35	-	ND	-	18.01
MW-24A	Shallow	32.35	3/16/2022	18.03	-	ND	-	14.32
MW-25	Shallow	31.78	3/16/2022	18.44	-	ND	-	13.34
MW-26	Deep	31.89	3/16/2022	22.38	-	ND	-	9.51
MW-27	Deep	31.46	3/16/2022	21.55	-	ND	-	9.91
MW-28	Damaged 3/2/2022							
MW-29	Shallow	31.90	3/16/2022	18.95	-	ND	-	12.95
MW-30	Shallow	31.05	3/16/2022	19.55	-	ND	-	11.50
MW-31	Shallow	30.77	3/16/2022	19.61	-	ND	-	11.16
MW-32	Deep	31.08	3/16/2022	20.53	-	ND	-	10.55
MW-33	Deep	30.88	3/16/2022	20.65	-	ND	-	10.23
MW-34	Shallow	30.72	3/16/2022	18.07	-	ND	-	12.65
MW-35	Deep	30.83	3/16/2022	21.18	-	ND	-	9.65
MW-36	Shallow	30.16	3/16/2022	19.72	-	ND	-	10.44
MW-37	Deep	31.27	3/16/2022	21.70	-	ND	-	9.57
MW-38	Shallow	31.54	3/16/2022	18.50	-	ND	-	13.04
MW-39	Shallow	31.08	3/16/2022	20.90	-	ND	-	10.18
MW-40	Deep	31.71	3/16/2022	21.68	-	ND	-	10.03
MW-41	Shallow	31.32	3/16/2022	16.38	-	ND	-	14.94
MW-42	Deep	31.94	3/16/2022	22.03	-	ND	-	9.91
MW-43	Shallow	31.39	3/16/2022	20.75	20.60	0.15	0.02	10.76
MW-44	Shallow	30.98	3/16/2022	19.47	-	ND	-	11.51
MW-45	Shallow	31.70	3/16/2022	23.00	-	ND	-	8.70

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q1-5
Transducer Calibration Offsets
Premier Edible Oils
Portland, Oregon

Calibration Event	Measurement	MW-08	MW-11	MW-18	MW-21	MW-27	MW-28 ¹	MW-30	MW-32	MW-33	MW-34	MW-35	MW-36	MW-40	MW-41	MW-42	MW-45
Transducer Position	TOC Elev Adj. (ft above NAVD88)	30.93	31.06	30.87	31.36	31.46	31.26	31.05	31.08	30.88	30.72	30.83	30.16	31.71	31.32	31.94	31.70
	Datalogger depth (ft BTOC)	26.91	26.25 ¹	27.00	18.05	39.87	28.12	28.00	38.14	39.31	27.90	39.83	29.92	39.84	27.35	39.04	27.00
10/12/2021	DTW measured (ft BTOC)	23.47	22.66	23.40	16.07	24.66	23.76	23.46	23.80	24.14	23.24	23.66	23.14	24.66	16.87	24.92	23.84
	DTW calculated (ft BTOC)	23.47	23.26	23.39	16.02	24.89	23.77	23.76	24.19	23.90	23.38	24.06	23.19	24.95	19.01	25.03	23.92
	Calibration Offset	0.00	0.60	-0.01	-0.05	0.23	0.01	0.30	0.39	-0.24	0.14	0.40	0.05	0.29	2.14	0.11	0.08
11/1/2021	DTW measured (ft BTOC)	23.11	22.94	23.10	16.11	24.54	23.72	23.28	23.64	23.73	23.44	23.99	23.04	24.90	16.75	25.26	25.26
	DTW calculated (ft BTOC)	23.07	23.63	23.08	16.00	24.52	23.71	23.45	23.90	23.78	23.55	24.25	23.02	24.99	18.89	25.28	24.40
	Calibration Offset	-0.04	0.69	-0.02	-0.11	-0.02	-0.01	0.17	0.26	0.05	0.11	0.26	-0.02	0.09	2.14	0.02	-0.86
01/03/2022 ³	DTW measured (ft BTOC)	18.19	17.49	18.30	13.08	19.50	18.81	18.03	19.11	20.43	18.20	19.05	18.01	19.71	13.84	20.04	20.51
	DTW calculated (ft BTOC)	18.15	18.14	18.35	13.10	19.51	18.76	18.40	19.36	19.15	18.27	19.51	18.16	20.14	16.09	20.20	20.19
	Calibration Offset	-0.04	0.65	0.05	0.02	0.01	-0.05	0.37	0.25	-1.28	0.07	0.46	0.15	0.43	2.25	0.16	-0.32
01/28/2022 ³	DTW measured (ft BTOC)	18.88	16.78	19.24	12.93	21.17	19.18	18.34	20.47	19.44	16.90	19.83	19.72	20.68	13.59	21.73	21.72
	DTW calculated (ft BTOC)	18.88	17.50	19.38	12.96	21.19	19.11	18.69	20.84	20.61	17.10	20.18	19.86	21.18	15.79	21.93	21.19
	Calibration Offset	0.00	0.72	0.14	0.03	0.02	-0.07	0.35	0.37	1.17	0.20	0.35	0.14	0.50	2.20	0.20	-0.53
02/28/2022 ³	DTW measured (ft BTOC)	NM	21.05	NM	13.66	21.93	NM	20.74	21.44	21.25	18.99	19.56	NM	21.91	NM	22.41	22.31
	DTW calculated (ft BTOC)	18.53	20.21	19.07	13.65	21.91	--	21.01	21.67	21.36	19.19	19.53	18.94	21.94	15.77	22.70	22.16
	Calibration Offset	NC	-0.84	NC	-0.01	-0.02	NC	0.27	0.23	0.11	0.20	-0.03	NC	0.03	NC	0.29	-0.15
03/16/2022 ³	DTW measured (ft BTOC)	19.63	19.21	19.70	13.35	21.55	NM	19.55	20.53	20.53	18.07	21.18	19.72	21.68	14.38	22.03	23.00
	DTW calculated (ft BTOC)	19.60	18.51	19.98	13.43	21.72	--	19.94	20.91	20.69	18.45	21.67	19.96	21.71	16.65	22.27	19.23
	Calibration Offset	-0.03	-0.70	0.28	0.08	0.17	NC	0.39	0.38	0.16	0.38	0.49	0.24	0.03	2.27	0.24	-3.77

Notes:

NAVD88 = North America Vertical Datum 1988

DTW = Depth to Water

BTOC = Below Top of Casing

1 = Datalogger depth adjusted up by 0.75 ft on 4/8/2020

2 = Pressure transducer stopped working on 3/9/2020. Replace on 4/8/2020.

3 = Pressure transducers were not calibrated in December due to access and weather issues. Calibration completed in January 2022.

4 = Monitoring well damaged on 3/21/2022

NM = Water level not collected due to ponding surface water over top of monitoring well.

NC = Pressure transducer not calibrated due to no water level being collected

-- = Not applicable

Table Q1-6
Horizontal and Vertical Gradients - Barrier Wall
Premier Edible Oils
Portland, Oregon

Well Identification	Measuring Point (Top of Casing) ft-NAVD88	Screen Interval (ft bgs)		Groundwater Elevation ft-NAVD88			Gradient ^{1,2} ft/ft		
		Top	Bottom	1/28/2022	2/28/2022	3/16/2022	1/28/2022	2/28/2022	3/16/2022
Shallow Horizontal Gradient									
MW-30	31.05	13.00	28.00	12.71	10.31	11.50	0.0199	0.0056	0.0101
MW-31	30.77	13.00	28.00	12.04	10.12	11.16			
MW-30	31.05	13.00	28.00	12.71	10.31	11.50	0.0248	0.2365	0.0094
MW-18	30.87	12.00	27.00	11.63	0.00	11.09			
MW-34	30.72	13.00	28.00	13.82	11.73	12.65	0.1212	0.4207	0.0793
MW-36	30.16	15.00	30.00	10.44	0.00	10.44			
MW-38	31.54	13.00	27.00	14.22	12.33	13.04	0.1633	0.1211	0.1195
MW-39	31.08	15.00	30.00	10.31	9.43	10.18			
MW-29	31.90	13.00	28.00	13.71	11.23	12.95	0.0556	0.0292	0.0420
MW-43	31.39	15.00	30.00	10.82	9.71	10.76			
MW-41	31.32	13.00	27.00	15.73	0.00	14.94	0.0262	-0.4984	0.0220
MW-24A	32.35	12.00	27.00	14.99	14.07	14.32			
Average Shallow Horizontal Gradient							0.0685	0.0524	0.0470
Deep Horizontal Gradient									
MW-32	31.08	35.00	40.00	10.61	9.64	10.55	-0.0095	0.0001	0.0037
MW-33	30.88	35.00	40.00	11.44	9.63	10.23			
MW-35	30.83	35.00	40.00	11.00	11.27	9.65	0.0177	0.0435	-0.0065
MW-27	31.46	35.00	40.00	10.29	9.53	9.91			
MW-37	31.27	35.00	40.00	10.84	12.01	9.57	0.0086	0.0386	-0.0053
MW-27	31.46	35.00	40.00	10.29	9.53	9.91			
MW-37	31.27	35.00	40.00	10.84	12.01	9.57	0.0075	0.0359	0.0009
MW-26	31.89	34.00	39.00	10.32	9.53	9.51			
MW-40	31.71	35.00	40.00	11.03	9.80	10.03	0.0256	0.0084	0.0037
MW-42	31.94	35.00	40.00	10.21	9.53	9.91			
Average Deep Horizontal Gradient							0.0100	0.0253	-0.0007
Vertical Gradients ³									
MW-32	31.08	35.00	40.00	10.61	9.64	10.55	-0.3000	-0.0957	-0.1357
MW-30	31.05	13.00	28.00	12.71	10.31	11.50			
MW-35	30.83	35.00	40.00	11.00	11.27	9.65	-0.4029	-0.0657	-0.4286
MW-34	30.72	13.00	28.00	13.82	11.73	12.65			
MW-37	31.27	35.00	40.00	10.84	12.01	9.57	-0.4225	-0.0398	-0.4338
MW-38	31.54	13.00	27.00	14.22	12.33	13.04			
MW-40	31.71	35.00	40.00	11.03	9.80	10.03	-0.5875	1.2250	-0.6138
MW-41	31.32	13.00	27.00	15.73	0.00	14.94			
Average Vertical Gradient							-0.4282	0.2560	-0.4029

Notes:

NAVD88 = North America Vertical Datum 1988

¹ = Positive horizontal gradients indicate flow toward the river; negative horizontal gradients indicate flow away from the river.

² = Positive vertical gradients indicate upward flow; negative vertical gradients indicate downward flow.

³ = Vertical Gradients measured using bottom of upper casing screen to top of lower casing screen elevations.

Table Q1-7
LNAPL Observations during Groundwater Sampling Event
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	3/9/2022	13:16	19.11	-	ND	-	12.07
MW-03	Shallow	31.67	3/2/2022	11:45	19.20	-	ND	-	12.47
MW-06	Shallow	31.23	3/2/2022	13:03	19.80	-	ND	-	11.43
MW-08	Shallow	30.93	3/3/2022	11:31	19.03	-	ND	-	11.90
MW-11	Shallow	31.06	3/9/2022	14:27	18.65	-	ND	-	12.41
MW-18	Shallow	30.87	3/4/2022	10:45	17.85	-	ND	-	13.02
MW-19	Shallow	31.70	3/2/2022	14:56	20.43	-	ND	-	11.27
MW-21	Shallow	31.36	3/4/2022	13:28	13.45	-	ND	-	17.91
MW-24A	Shallow	32.35	3/1/2022	14:44	18.14	-	ND	-	14.21
MW-25	Shallow	31.78	3/3/2022	09:09	19.34	-	ND	-	12.44
MW-26	Deep	31.89	3/8/2022	08:32	21.04	-	ND	-	10.85
MW-27	Deep	31.46	3/8/2022	14:43	21.06	-	ND	-	10.40
MW-28	Damaged 3/2/2022								
MW-29	Shallow	31.90	3/3/2022	10:45	18.61	18.43	0.18	0.03	13.43
MW-30	Shallow	31.05	3/4/2022	08:36	19.10	-	ND	-	11.95
MW-31	Shallow	30.77	3/3/2022	15:12	18.44	-	ND	-	12.33
MW-32	Deep	31.08	3/1/2022	09:49	19.84	-	ND	-	11.24
MW-33	Deep	30.88	3/1/2022	12:01	19.49	-	ND	-	11.39
MW-34	Shallow	30.72	3/9/2022	11:29	17.97	-	ND	-	12.75
MW-35	Deep	30.83	3/9/2022	10:03	19.91	-	ND	-	10.92
MW-36	Shallow	30.16	3/8/2022	12:31	18.03	-	ND	-	12.13
MW-37	Deep	31.27	3/9/2022	08:36	20.66	-	ND	-	10.61
MW-38	Shallow	31.54	3/3/2022	10:51	18.42	18.36	0.06	0.01	13.17
MW-39	Shallow	31.08	3/8/2022	10:42	19.94	-	ND	-	11.14
MW-40	Deep	31.71	3/7/2022	08:43	20.18	-	ND	-	11.53
MW-41	Shallow	31.32	3/7/2022	14:36	16.36	-	ND	-	14.96
MW-42	Deep	31.94	3/2/2022	09:17	19.00	-	ND	-	12.94
MW-43	Shallow	31.39	3/7/2022	16:06	19.55	19.53	0.02	0.00	11.86
MW-44	Shallow	30.98	3/3/2022	13:50	19.06	-	ND	-	11.92
MW-45	Shallow	31.70	3/7/2022	11:56	20.15	-	ND	-	11.55

Notes:

– = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (LNAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q1-8
LNAPL Recovery Volumes
Premier Edible Oils
Portland, Oregon

Quarter	Date	MW-02 gal	MW-11 gal	MW-29 gal	MW-34 gal	MW-38 gal	MW-39 gal	MW-43 gal	Total gal
Q1 2022	3/10/2022	-	-	-	-	-	-	-	0.00
Q2 2022	-	-	-	-	-	-	-	-	0.00
Q3 2022	-	-	-	-	-	-	-	-	0.00
Q4 2022	-	-	-	-	-	-	-	-	0.00
Total Recovered		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes:
 – = not applicable
 * = approximate value

Table Q1-9
Groundwater Field Parameters - March 2022
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance $\mu\text{S}/\text{cm}$	Temperature $^{\circ}\text{C}$	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-02	3/9/2022	6.21	726	27.46	-66.8	0.25	--
MW-03	3/2/2022	6.42	111	15.17	153.4	3.64	4.87
MW-06	3/2/2022	6.2	156	15.47	54	0.5	--
MW-08	3/3/2022	6.84	541	19.18	171.6	0.32	--
MW-11	3/9/2022	6.39	714	24.32	31.3	0.37	--
MW-18	3/4/2022	6.33	279	18.2	55.7	0.42	--
MW-19	3/2/2022	6.28	206	15.99	128.9	0.67	19.5
MW-21	3/4/2022	6.67	84	15.78	112.1	4.09	--
MW-24A	3/1/2022	6.5	143	16.29	15.9	1.64	--
MW-25	3/3/2022	6.01	132	15.86	217.8	1.01	5.83
MW-26	3/8/2022	6.34	132	18.98	98.3	1.01	51.6
MW-27	3/8/2022	6.68	231	25.26	-24.9	0.31	10.3
MW-28	Damaged on 3/2/2022						
MW-29	3/3/2022	LNAPL					
MW-30	3/4/2022	5.94	497	18.45	139.7	1.27	73.3
MW-31	3/3/2022	6.38	317	18.96	139.1	0.52	--
MW-32	3/1/2022	9.89	218	17.66	3.4	1.18	22.7
MW-33	3/1/2022	8.91	250	19.64	-2	0.59	10.6
MW-34	3/9/2022	5.79	550	26.31	8.7	0.4	--
MW-35	3/9/2022	6.4	289	26.61	84.1	0.41	--
MW-36	3/8/2022	6.15	204	22.76	92	1.07	--
MW-37	3/9/2022	6.8	208	21.84	163.5	0.95	--
MW-38	3/3/2022	LNAPL					
MW-39	3/8/2022	6.37	502	19.97	-57.7	0.31	--
MW-40	3/7/2022	6.44	222	15.67	-35.6	0.43	--
MW-41	3/7/2022	6.22	107	16.23	151.7	0.59	--
MW-42	3/2/2022	8.92	229	15.58	126	0.56	11
MW-43	3/7/2022	LNAPL					
MW-44	3/3/2022	6.42	223	16.95	113	1	12.9
MW-45	3/7/2022	5.21	212	17.92	195	5.37	--

Notes:

-- = not analyzed

$^{\circ}\text{C}$ = degrees Celsius

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Units

ORP = oxidation reduction potential, measured in millivolts (mV)

pH standard units

$\mu\text{S}/\text{cm}$ = microsiemens per centimeter

Empty cells = Not measured.

Table Q1-10
Groundwater Analytical Data - Petroleum Related Compounds
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Method		EPA 8620B					NWTPH-Dx, SGT		NWTPH-Gx	NWEPH	NWVPH
Analyte		Benzene	Ethylbenzene	m,p-Xylenes	o-Xylene	Toluene	Motor Oil Range Organics (C24-C36) ²	TPH Diesel Range Organics ³	TPH-GRO (Gasoline Range Organics) ⁴	C10-C12-Aliphatics	C10-C12-Aliphatics
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		1.4	210	13	13	1,500	NS	1000	1000	2.6	2.6
Groundwater Cleanup Levels ¹		0.44	7.3	13	13	9.8	NS	NS	NS	2.6	2.6
Well	Sample Date										
MW-02	3/9/2022	0.14 j	< 0.11	< 0.20	0.72 j	0.11 j	1,200 J	49,800	222 J+	165	38.8
MW-03	3/2/2022	< 0.10	< 0.11	< 0.20	0.19 j	< 0.10	< 180	< 120	< 22.2	< 20.5	< 12.2
MW-06	3/2/2022	< 0.10	< 0.11	< 0.20	0.24 j	< 1.0 U	< 190	1,000	2,590 J+	31.9 j	405
MW-08	3/3/2022	< 0.10	< 0.11	< 0.20	0.22 j	< 0.10	< 190	250 j	< 22.2	< 20.5	< 12.2
MW-08 Dup	3/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 410 U	590 J-	< 22.2	< 20.5	< 12.2
MW-11	3/9/2022	2.6	< 0.11	0.76 j	1.3	1.6	1,300 J	70,100	486 J+	319	39.0
MW-18	3/4/2022	0.17 j	< 0.11	< 0.20	0.30 j	< 0.10	< 430 U	560 J-	< 22.2	< 20.4	< 12.2
MW-19	3/2/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	170 j	< 22.2	< 20.6	< 12.2
MW-21	3/4/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	< 22.2	< 20.5	< 12.2
MW-24A	3/1/2022	< 0.10	< 0.11	< 0.20	0.23 j	< 0.10	< 190	< 130	< 22.2	< 20.3	< 12.2
MW-25	3/3/2022	< 0.10	< 0.11	< 0.20	0.27 j	< 0.10	< 180	< 120	< 22.2	< 20.5	< 12.2
MW-26	3/8/2022	< 0.10	< 0.11	< 0.20	0.55 j	< 0.10	380 j	120 j	< 22.2	< 20.4	< 12.2
MW-27	3/8/2022	< 0.10	< 0.11	< 0.20	0.66 j	< 0.10	220 j	700	62.7 J+	< 20.3	< 12.2
MW-30	3/4/2022	0.13 j	< 0.11	< 0.20	0.48 j	< 0.10	< 180	1,100	30.3 J+	< 20.6	< 12.2
MW-31	3/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	120 j	< 22.2	< 20.6	< 12.2
MW-32	3/1/2022	0.34 j	< 0.11	0.23 j	0.41 j	0.14 j	< 190	170 j	23.8 J+	< 20.7 UJ	12.7 j
MW-33	3/1/2022	< 0.10	< 0.11	< 0.20	0.30 j	< 0.10	< 200	< 130	< 22.2	< 20.7	< 12.2 UJ
MW-34	3/9/2022	< 0.10	< 0.11	0.20 j	1.1	0.13 j	740 J	18,000	161 J+	41.9 J-	< 12.2
MW-35	3/9/2022	< 0.10	< 0.11	< 0.20	1.1	< 0.10	< 440 U	1,800	23.2 J+	< 20.6	< 12.2
MW-36	3/8/2022	0.24 J	< 0.11 UJ	0.27 J	0.61 J	0.16 J	510 J	2,600 J	65.1 J+	< 20.5 UJ	18.4 j
MW-37	3/9/2022	< 0.10	< 0.11	< 0.20	0.70 j	< 0.10	< 420 U	150 j	< 22.2	< 20.5	< 12.2
MW-39	3/8/2022	17.4	5.1	19.8	9.3	13.8	930	10,100	3,440 J+	< 20.6	378
MW-40	3/7/2022	< 0.10	< 0.11	< 0.20	0.35 j	< 0.10	< 190	140 j	< 22.2	< 20.3	< 12.2
MW-41	3/7/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.2	< 20.4	< 12.2
MW-41 Dup	3/7/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	230 j	160 j	< 22.2	< 20.5	< 12.2
MW-42	3/2/2022	< 0.10	< 0.11	< 0.20	0.42 j	< 0.10	< 190	< 120	< 22.2	< 20.6	< 12.2
MW-44	3/3/2022	0.17 j	< 0.11	< 0.20	< 0.18	< 0.10	< 430 U	140 j	< 22.2	< 20.4	< 12.2
MW-45	3/7/2022	< 0.10	< 0.11	< 0.20	0.41 j	< 0.10	< 190	< 130	< 22.2	< 20.6	< 12.2

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the Portland Harbor Superfund Site Record of Decision
2. Solubility of Motor Oil Range Organics ranges from 3.7 ug/L - 260 ug/L at 20C (EPA 2015). Results within or greater than this range are above saturation and indicate the likely presence of residual LNAPL in the well or adjacent groundwater.
3. Solubility of Diesel Range Organics ranges from 220 ug/L - 27,800 ug/L at 20C (EPA 2015). Results within or greater than this range are above saturation and indicate the likely presence of residual LNAPL in the well or adjacent groundwater.
4. Solubility of Gasoline Range Organics ranges from 9,500 ug/L - 1,790,000 ug/L at 20C (EPA 2015). Results within or greater than this range are above saturation and indicate the likely presence of residual LNAPL in the well or adjacent groundwater.

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

NWTPH-Dx, SGT analyses performed by PACE.

NWTPH-Gx analyses performed by PACE.

NWVPH analyses performed by Fremont.

NWEPH analyses performed by Fremont.

Table Q1-11

Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 6020A		EPA 8270 by SIM				
Analyte		Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
Unit		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		2.1	1,925	NS	NS	99	NS	4,000
Groundwater Cleanup Levels ¹		0.018	430	NS	NS	23	NS	0.73
Well	Sample Date							
MW-02	3/9/2022	29.8	3,020	0.38 J-	0.18 J-	0.23 J-	3.8 J-	< 0.011 UJ
MW-03	3/2/2022	0.24 j	1.9	< 0.0077	< 0.0095	< 0.0079	< 0.0070	< 0.0062
MW-06	3/2/2022	3.2	539	32.0	28.3	0.92	0.19	0.096
MW-08	3/3/2022	2.3	231	0.026 J	0.013 J	0.015 J	< 0.0063	< 0.0056
MW-08 Dup	3/3/2022	2.2	222	0.018 J	< 0.0087	< 0.0073	< 0.0064	< 0.0056
MW-11	3/9/2022	46.3	2,640	0.45 J-	0.21 J-	0.38 J-	2.3 J-	< 0.011 UJ
MW-18	3/4/2022	1.7	561	0.015 J	< 0.0083	0.077 J	< 0.0061	< 0.0054
MW-19	3/2/2022	0.11 j	18.5	0.13	0.17	< 0.0070	< 0.0061	< 0.0054
MW-21	3/4/2022	0.19 j	13.9	< 0.0069	< 0.0084	< 0.0070	< 0.0062	< 0.0055
MW-24A	3/1/2022	0.96	312	< 0.0067	< 0.0082	< 0.0068	< 0.0060	< 0.0053
MW-25	3/3/2022	0.16 j	0.47 j	0.011 J	0.012 J	< 0.0070	< 0.0061	< 0.0054
MW-26	3/8/2022	2.4	346	< 0.0068	< 0.0084	< 0.0070	< 0.0061	< 0.0054
MW-27	3/8/2022	39.1	1,070	0.057	< 0.040 U	0.38	0.015 j	0.078
MW-30	3/4/2022	1.2	806	0.033 J	0.065 J	0.15 J	0.020 J	0.042
MW-31	3/3/2022	0.20 j	24.3	0.0087 J	< 0.0087	0.021 J	< 0.0064	< 0.0056
MW-32	3/1/2022	8.9	2.5	< 0.0067	< 0.0083	< 0.0069	< 0.0061	< 0.0054
MW-33	3/1/2022	9.5	580	< 0.0069	< 0.0084	0.028 j	< 0.0062	< 0.0055
MW-34	3/9/2022	10.2	2,470	0.68 J-	0.36 J-	5.1 J-	11.0 J-	< 0.011 UJ
MW-35	3/9/2022	10.3	1,320	< 0.0070	< 0.0086	0.61	< 0.0063	< 0.0056
MW-36	3/8/2022	7.3	856	0.14	< 0.041 U	0.28	0.025 j	< 0.0055
MW-37	3/9/2022	1.8	276	< 0.0069	< 0.0084	< 0.0070	< 0.0062	< 0.0055
MW-39	3/8/2022	41.0	2,490	4.3	0.12	2.0	0.84	< 0.0054
MW-40	3/7/2022	4.0	1,220	< 0.0065	< 0.0080	< 0.0067	< 0.0059	< 0.0052
MW-41	3/7/2022	0.10 j	31.4	< 0.0069	< 0.0084	< 0.0070	< 0.0062	< 0.0055
MW-41 Dup	3/7/2022	0.11 j	32.2	< 0.0068	< 0.0084	< 0.0070	< 0.0061	< 0.0054
MW-42	3/2/2022	4.7	439	< 0.0075	< 0.0092	< 0.0077	< 0.0068	< 0.0060
MW-44	3/3/2022	1.1	173	0.0077 J	< 0.0084	< 0.0070	< 0.0061	< 0.0054
MW-45	3/7/2022	0.095 j	425	< 0.0066	< 0.0081	< 0.0068	< 0.0060	< 0.0053

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the Portland Harbor Superfund Site Record of Decision

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q1-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 827				
Analyte		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
Unit		µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		0.0018	0.0018	0.0018	0.0018	0.0018
Groundwater Cleanup Levels ¹		0.0012	0.00012	0.0012	NS	0.0013
Well	Sample Date					
MW-02	3/9/2022	< 0.019 UJ	0.065 J-	0.052 J-	0.11 J-	< 0.017 UJ
MW-03	3/2/2022	0.020 j	< 0.010	< 0.011	< 0.0093	< 0.0095
MW-06	3/2/2022	< 0.0096	< 0.0094	< 0.010	< 0.0086	< 0.0088
MW-08	3/3/2022	< 0.0094	< 0.0092	< 0.0099	< 0.0085	< 0.0086
MW-08 Dup	3/3/2022	< 0.0095	< 0.0093	< 0.010	< 0.0085	< 0.0087
MW-11	3/9/2022	< 0.018 UJ	0.037 J-	< 0.019 UJ	< 0.016 UJ	< 0.017 UJ
MW-18	3/4/2022	< 0.0090	< 0.0088	< 0.0095	< 0.0081	< 0.0083
MW-19	3/2/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-21	3/4/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-24A	3/1/2022	< 0.0090	< 0.0088	< 0.0094	< 0.0080	< 0.0082
MW-25	3/3/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-26	3/8/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-27	3/8/2022	< 0.0090	< 0.0088	< 0.0095	< 0.0081	< 0.0083
MW-30	3/4/2022	< 0.0093	< 0.0091	< 0.0098	< 0.0084	< 0.0085
MW-31	3/3/2022	< 0.0095	< 0.0093	< 0.010	< 0.0085	< 0.0087
MW-32	3/1/2022	< 0.0090	< 0.0088	< 0.0095	< 0.0081	< 0.0083
MW-33	3/1/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-34	3/9/2022	< 0.019 UJ	0.027 J-	0.028 J-	< 0.017 UJ	< 0.017 UJ
MW-35	3/9/2022	< 0.0094	< 0.0092	< 0.0099	< 0.0085	< 0.0086
MW-36	3/8/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-37	3/9/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-39	3/8/2022	< 0.0090	< 0.0088	< 0.0095	< 0.0081	< 0.0083
MW-40	3/7/2022	< 0.0088	< 0.0086	< 0.0092	< 0.0079	< 0.0080
MW-41	3/7/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-41 Dup	3/7/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-42	3/2/2022	< 0.010	< 0.0098	< 0.011	< 0.0090	< 0.0092
MW-44	3/3/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-45	3/7/2022	< 0.0089	< 0.0087	< 0.0093	< 0.0080	< 0.0081

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the P

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable De

Shaded values indicate concentrations above the GW SCM Pei

Qualifiers - Organics

j = The result is an estimated concentration, detected between i

J+ = The concentration of the sample is considered to be biased

J- = The concentration of the sample is considered to be biased

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making

EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q1-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method by SIM						
Analyte		Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene
Unit		µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		0.0018	0.0018	14	530	0.0018
Groundwater Cleanup Levels ¹		0.0013	0.00012	NS	NS	0.0012
Well	Sample Date					
MW-02	3/9/2022	< 0.019 UJ	< 0.016 UJ	< 0.029 UJ	0.31 J-	0.089 J-
MW-03	3/2/2022	0.028 j	< 0.0091	< 0.016	< 0.0069	< 0.013
MW-06	3/2/2022	< 0.010	< 0.0085	0.049	1.6	< 0.012
MW-08	3/3/2022	< 0.0098	< 0.0083	< 0.015	< 0.0063	< 0.012
MW-08 Dup	3/3/2022	< 0.0099	< 0.0084	< 0.015	< 0.0064	< 0.012
MW-11	3/9/2022	< 0.019 UJ	< 0.016 UJ	< 0.028 UJ	0.37 J-	0.036 J-
MW-18	3/4/2022	< 0.0094	< 0.0080	< 0.014	< 0.0060	< 0.011
MW-19	3/2/2022	< 0.0095	< 0.0080	< 0.014	0.016 j	< 0.011
MW-21	3/4/2022	< 0.0096	< 0.0081	< 0.014	< 0.0062	< 0.011
MW-24A	3/1/2022	< 0.0093	< 0.0079	< 0.014	< 0.0060	< 0.011
MW-25	3/3/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-26	3/8/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-27	3/8/2022	< 0.0094	< 0.0080	0.048	0.33	< 0.011
MW-30	3/4/2022	< 0.0097	< 0.0082	< 0.015	0.041 J	< 0.012
MW-31	3/3/2022	< 0.0099	< 0.0084	< 0.015	< 0.0064	< 0.012
MW-32	3/1/2022	< 0.0094	< 0.0080	< 0.014	< 0.0060	< 0.011
MW-33	3/1/2022	< 0.0096	< 0.0081	< 0.014	< 0.0062	< 0.011
MW-34	3/9/2022	< 0.020 UJ	< 0.017 UJ	< 0.029 UJ	0.34 J-	0.034 J-
MW-35	3/9/2022	< 0.0098	< 0.0083	0.048	< 0.0063	< 0.012
MW-36	3/8/2022	< 0.0096	< 0.0081	< 0.041 U	0.24	< 0.011
MW-37	3/9/2022	< 0.0096	< 0.0081	< 0.014	< 0.0062	< 0.011
MW-39	3/8/2022	< 0.0094	< 0.0080	< 0.014	1.5	< 0.011
MW-40	3/7/2022	< 0.0091	< 0.0077	< 0.014	< 0.0059	< 0.011
MW-41	3/7/2022	< 0.0096	< 0.0081	< 0.014	< 0.0062	< 0.011
MW-41 Dup	3/7/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-42	3/2/2022	< 0.010	< 0.0088	< 0.016	< 0.0067	< 0.012
MW-44	3/3/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-45	3/7/2022	< 0.0092	< 0.0078	< 0.014	< 0.0059	< 0.011

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the P

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable De

Shaded values indicate concentrations above the GW SCM Pei

Qualifiers - Organics

j = The result is an estimated concentration, detected between i

J+ = The concentration of the sample is considered to be biased

J- = The concentration of the sample is considered to be biased

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making

EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q1-11

Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 8270 by SIM			Calculated
Analyte		Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (ND=0)
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		12	NS	400	0.0018
Groundwater Cleanup Levels ¹		NS	NS	NS	0.00012
Well	Sample Date				
MW-02	3/9/2022	0.26 J-	< 0.025 UJ	0.22 J-	0.079
MW-03	3/2/2022	< 0.010	< 0.014	< 0.011	0.0020
MW-06	3/2/2022	4.2	0.28	0.052	< 0.012 U
MW-08	3/3/2022	0.060 J	< 0.013	< 0.010	< 0.012 U
MW-08 Dup	3/3/2022	0.041 J	< 0.013	< 0.010	< 0.012 U
MW-11	3/9/2022	0.48 J-	< 0.024 UJ	< 0.020 UJ	0.041
MW-18	3/4/2022	< 0.0088	< 0.012	0.013 j	< 0.011 U
MW-19	3/2/2022	0.024 j	< 0.012	< 0.010	< 0.011 U
MW-21	3/4/2022	< 0.0090	< 0.012	< 0.010	< 0.011 U
MW-24A	3/1/2022	< 0.0087	< 0.012	< 0.0098	< 0.011 U
MW-25	3/3/2022	< 0.0089	< 0.012	< 0.010	< 0.011 U
MW-26	3/8/2022	< 0.0089	< 0.012	< 0.010	< 0.011 U
MW-27	3/8/2022	0.073	< 0.040 U	< 0.040 U	< 0.011 U
MW-30	3/4/2022	0.052 J	0.052 J	< 0.010	< 0.012 U
MW-31	3/3/2022	< 0.0093	< 0.013	< 0.010	< 0.012 U
MW-32	3/1/2022	0.030 j	< 0.012	< 0.0099	< 0.011 U
MW-33	3/1/2022	< 0.0090	< 0.012	< 0.010	< 0.011 U
MW-34	3/9/2022	0.19 J-	< 0.025 UJ	0.070 J-	0.033
MW-35	3/9/2022	0.061	< 0.013	0.056	< 0.012 U
MW-36	3/8/2022	0.24	0.066 J+	< 0.041 U	< 0.011 U
MW-37	3/9/2022	< 0.0090	< 0.012	< 0.010	< 0.011 U
MW-39	3/8/2022	2.3	0.15	< 0.040 U	< 0.011 U
MW-40	3/7/2022	< 0.0085	< 0.012	< 0.0096	< 0.011 U
MW-41	3/7/2022	< 0.0090	< 0.012	< 0.010	< 0.011 U
MW-41 Dup	3/7/2022	< 0.0089	< 0.012	< 0.010	< 0.011 U
MW-42	3/2/2022	< 0.0098	< 0.014	< 0.011	< 0.012 U
MW-44	3/3/2022	< 0.0089	< 0.012	< 0.010	< 0.011 U
MW-45	3/7/2022	< 0.0086	< 0.012	< 0.0097	< 0.011 U

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the P

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable De

Shaded values indicate concentrations above the GW SCM Pei

Qualifiers - Organics

j = The result is an estimated concentration, detected between 1

J+ = The concentration of the sample is considered to be biased

J- = The concentration of the sample is considered to be biased

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making

EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q1-12
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 353.2	EPA 300.0	SM2320B	SM2340B
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO ₃	Hardness as CaCO ₃
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-02	3/9/2022	--	19,200	269,000	231,000
MW-03	3/2/2022	--	4,600	60,200	47,100
MW-06	3/2/2022	--	1,700	61,200	26,600
MW-08	3/3/2022	--	99,300 J	145,000	43,200
MW-08 Dup	3/3/2022	--	59,300 J	146,000	46,300
MW-11	3/9/2022	--	< 430	341,000	305,000
MW-18	3/4/2022	--	36,100	107,000	109,000
MW-19	3/2/2022	--	9,000	133,000	80,900
MW-21	3/4/2022	--	2,900	42,300	37,800
MW-24A	3/1/2022	--	--	--	49,400
MW-25	3/3/2022	--	4,400	68,700	51,200
MW-26	3/8/2022	--	28,400	37,000	46,600
MW-27	3/8/2022	--	43,100	38,900	62,300
MW-30	3/4/2022	--	178,000	99,600	264,000
MW-31	3/3/2022	--	42,100	137,000	145,000
MW-32	3/1/2022	--	23,900	109,000	96,800
MW-33	3/1/2022	--	59,900	60,800	88,800
MW-34	3/9/2022	--	113,000	83,200	163,000
MW-35	3/9/2022	--	19,300	95,400	76,400
MW-36	3/8/2022	--	25,800	80,300	64,400
MW-37	3/9/2022	--	42,100	55,600	78,200
MW-39	3/8/2022	--	670 j	197,000	154,000
MW-40	3/7/2022	--	66,200	48,600	87,400
MW-41	3/7/2022	--	3,500	61,600	50,200
MW-41 Dup	3/7/2022	--	3,500	61,000	47,800
MW-42	3/2/2022	--	52,500	90,000	105,000
MW-44	3/3/2022	--	9,100	131,000	100,000
MW-45	3/7/2022	--	89,600	< 5,000 U	74,800

Notes:

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard for GW SCM Performance Evaluation

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

EPA 300.0 analyses performed by PACE.

EPA 353.2 analyses performed by PACE.

SM2320B analyses performed by PACE.

SM2340B analyses performed by PACE.

Table Q2-1
Monitoring Well Summary
Premier Edible Oils
Portland, Oregon

Well Identification	Status	Well Depth (ft)	Screen Zone	Screen Interval (ft bgs)		Measuring Point (Top of Casing) ft-NAVD88	Sitewide Monitoring Point	Water Level Monitoring Point ¹	Transducer Installed	Quarterly Monitoring ²
				Top	Bottom					
MW-02	Active	26	Shallow	11	26	31.18	X	X		X
MW-03	Active	26	Shallow	11	26	31.67	X	X		X
MW-04	Active	26	Shallow	11	26	31.37				
MW-05	Active	26	Shallow	11	26	31.27				
MW-06	Active	27	Shallow	12	27	31.23	X	X		X
MW-08	Active	27	Shallow	12	27	30.93	X	X	X	X
MW-11	Active	27	Shallow	12	27	31.06	X	X	X	X
MW-18	Active	27	Shallow	12	27	30.87	X	X	X	X
MW-19	Active	27	Shallow	12	27	31.7	X	X		X
MW-21	Active	27	Shallow	12	27	31.36	X	X	X	X
MW-24A	Active	27	Shallow	12	27	32.35	X	X		X
MW-25	Active	-	Shallow	-	-	31.78	X	X		X
MW-26	Active	39	Deep	34	39	31.89	X	X		X
MW-27	Active	40	Deep	35	40	31.46	X	X	X	X
MW-28*	Abandoned	28	Shallow	13	28	31.26	X	X	X	X
MW-28A**	Active	29	Shallow	14	29	--	X	X		X
MW-29	Active	30	Shallow	13	28	31.9	X	X		X
MW-30	Active	28	Shallow	13	28	31.05	X	X	X	X
MW-31	Active	28	Shallow	13	28	30.77	X	X		X
MW-32	Active	40	Deep	35	40	31.08	X	X	X	X
MW-33	Active	40	Deep	35	40	30.88	X	X	X	X
MW-34	Active	28	Shallow	13	28	30.72	X	X	X	X
MW-35	Active	40	Deep	35	40	30.83	X	X	X	X
MW-36	Active	30	Shallow	15	30	30.16	X	X	X	X
MW-37	Active	40	Deep	35	40	31.27	X	X		X
MW-38	Active	27	Shallow	13	27	31.54	X	X		X
MW-39	Active	30	Shallow	15	30	31.08	X	X		X
MW-40	Active	40	Deep	35	40	31.71	X	X	X	X
MW-41	Active	27	Shallow	13	27	31.32	X	X	X	X
MW-42	Active	40	Deep	35	40	31.94	X	X	X	X
MW-43	Active	30	Shallow	15	30	31.39	X	X		X
MW-44	Active	25	Shallow	10	25	30.98	X	X		X
MW-45	Active	30	Shallow	15	30	31.70	X	X		X

Notes:

* = Damaged on 3/2/2022, Abandoned on 4/29/2022

** = MW-28A installed on 4/28/303, developed on 5/2/2022. Top of Casing has not been surveyed yet.

-- = not applicable

¹ = Manual water level measurment collected monthly

² = Groundwater analytical samples

NAVD88 = North America Vertical Datum 1988

Table Q2-2
Groundwater Elevations - April 2022
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	4/19/2022	20.15	-	ND	-	11.03
MW-03	Shallow	31.67	4/19/2022	19.47	-	ND	-	12.20
MW-06	Shallow	31.23	4/19/2022	19.90	-	ND	-	11.33
MW-08	Shallow	30.93	4/19/2022	21.07	-	ND	-	9.86
MW-11	Shallow	31.06	4/19/2022	19.52	-	ND	-	11.54
MW-18	Shallow	30.87	4/19/2022	20.37	-	ND	-	10.50
MW-19	Shallow	31.70	4/19/2022	20.85	-	ND	-	10.85
MW-21	Shallow	31.36	4/19/2022	13.65	-	ND	-	17.71
MW-24A	Shallow	32.35	4/19/2022	18.06	-	ND	-	14.29
MW-25	Shallow	31.78	4/19/2022	20.01	-	ND	-	11.77
MW-26	Deep	31.89	4/19/2022	21.88	-	ND	-	10.01
MW-27	Deep	31.46	4/19/2022	21.52	-	ND	-	9.94
MW-28	Damaged 3/2/2022, Abandoned on 4/29/2022							
MW-29	Shallow	31.90	4/19/2022	20.75	-	ND	-	11.15
MW-30	Shallow	31.05	4/19/2022	20.69	-	ND	-	10.36
MW-31	Shallow	30.77	4/19/2022	20.28	-	ND	-	10.49
MW-32	Deep	31.08	4/19/2022	20.62	-	ND	-	10.46
MW-33	Deep	30.88	4/19/2022	20.86	-	ND	-	10.02
MW-34	Shallow	30.72	4/19/2022	18.24	-	ND	-	12.48
MW-35	Deep	30.83	4/19/2022	21.52	-	ND	-	9.31
MW-36	Shallow	30.16	4/19/2022	19.53	-	ND	-	10.63
MW-37	Deep	31.27	4/19/2022	21.95	-	ND	-	9.32
MW-38	Shallow	31.54	4/19/2022	18.96	18.90	0.06	0.01	12.63
MW-39	Shallow	31.08	4/19/2022	20.82	-	ND	-	10.26
MW-40	Deep	31.71	4/19/2022	21.52	-	ND	-	10.19
MW-41	Shallow	31.32	4/19/2022	Inaccessible				
MW-42	Deep	31.94	4/19/2022	21.59	-	ND	-	10.35
MW-43	Shallow	31.39	4/19/2022	21.02	-	ND	-	10.37
MW-44	Shallow	30.98	4/19/2022	20.27	-	ND	-	10.71
MW-45	Shallow	31.70	4/19/2022	21.80	-	ND	-	9.90

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q2-3
Groundwater Elevations - May 2022
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	5/2/2022	20.18	-	ND	-	11.00
MW-03	Shallow	31.67	5/2/2022	19.52	-	ND	-	12.15
MW-06	Shallow	31.23	5/2/2022	19.96	-	ND	-	11.27
MW-08	Shallow	30.93	5/2/2022	20.22	-	ND	-	10.71
MW-11	Shallow	31.06	5/2/2022	19.69	-	ND	-	11.37
MW-18	Shallow	30.87	5/2/2022	20.16	-	ND	-	10.71
MW-19	Shallow	31.70	5/2/2022	20.87	-	ND	-	10.83
MW-21	Shallow	31.36	5/2/2022	13.58	-	ND	-	17.78
MW-24A	Shallow	32.35	5/2/2022	18.06	-	ND	-	14.29
MW-25	Shallow	31.78	5/2/2022	20.37	-	ND	-	11.41
MW-26	Deep	31.89	5/2/2022	20.90	-	ND	-	10.99
MW-27	Deep	31.46	5/2/2022	20.52	-	ND	-	10.94
MW-28	Shallow	Damaged 3/2/2022, Abandoned on 4/29/2022						
MW-28A	Shallow	Installed 4/28/22, Developed 5/2/2022						
MW-29	Shallow	31.90	5/2/2022	20.05	-	ND	-	11.85
MW-30	Shallow	31.05	5/2/2022	20.36	-	ND	-	10.69
MW-31	Shallow	30.77	5/2/2022	20.19	-	ND	-	10.58
MW-32	Deep	31.08	5/2/2022	20.16	-	ND	-	10.92
MW-33	Deep	30.88	5/2/2022	19.84	-	ND	-	11.04
MW-34	Shallow	30.72	5/2/2022	18.67	-	ND	-	12.05
MW-35	Deep	30.83	5/2/2022	20.33	-	ND	-	10.50
MW-36	Shallow	30.16	5/2/2022	19.08	-	ND	-	11.08
MW-37	Deep	31.27	5/2/2022	20.73	-	ND	-	10.54
MW-38	Shallow	31.54	5/2/2022	19.25	19.20	0.05	0.01	12.33
MW-39	Shallow	31.08	5/2/2022	20.35	-	ND	-	10.73
MW-40	Deep	31.71	5/2/2022	21.17	-	ND	-	10.54
MW-41	Shallow	31.32	5/2/2022	16.48	-	ND	-	14.84
MW-42	Deep	31.94	5/2/2022	21.40	-	ND	-	10.54
MW-43	Shallow	31.39	5/2/2022	21.01	20.80	0.21	0.03	10.55
MW-44	Shallow	30.98	5/2/2022	20.27	-	ND	-	10.71
MW-45	Shallow	31.70	5/2/2022	21.45	-	ND	-	10.25

Notes:

– = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q2-4
Groundwater Elevations - June 2022
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	6/14/2022	14.18	-	ND	-	17.00
MW-03	Shallow	31.67	6/14/2022	14.58	-	ND	-	17.09
MW-06	Shallow	31.23	6/14/2022	13.75	-	ND	-	17.48
MW-08	Shallow	30.93	6/14/2022	13.24	-	ND	-	17.69
MW-11	Shallow	31.06	6/14/2022	15.19	-	ND	-	15.87
MW-18	Shallow	30.87	6/14/2022	9.86	-	ND	-	21.01
MW-19	Shallow	31.70	6/14/2022	13.41	-	ND	-	18.29
MW-21	Shallow	31.36	6/14/2022	13.25	-	ND	-	18.11
MW-24A	Shallow	32.35	6/14/2022	12.62	-	ND	-	19.73
MW-25	Shallow	31.78	6/14/2022	14.06	-	ND	-	17.72
MW-26	Deep	31.89	6/14/2022	12.20	-	ND	-	19.69
MW-27	Deep	31.46	6/14/2022	11.15	-	ND	-	20.31
MW-28	Damaged 3/2/2022, Abandoned on 4/29/2022							
MW-28A	Shallow	-	6/14/2022	15.09	-	ND	-	-
MW-29	Shallow	31.90	6/14/2022	16.89	-	ND	-	15.01
MW-30	Shallow	31.05	6/14/2022	12.62	-	ND	-	18.43
MW-31	Shallow	30.77	6/14/2022	10.43	-	ND	-	20.34
MW-32	Deep	31.08	6/14/2022	11.13	-	ND	-	19.95
MW-33	Deep	30.88	6/14/2022	10.90	-	ND	-	19.98
MW-34	Shallow	30.72	6/14/2022	14.66	-	ND	-	16.06
MW-35	Deep	30.83	6/14/2022	10.88	-	ND	-	19.95
MW-36	Shallow	30.16	6/14/2022	9.16	-	ND	-	21.00
MW-37	Deep	31.27	6/14/2022	11.29	-	ND	-	19.98
MW-38	Shallow	31.54	6/14/2022	16.09	-	ND	-	15.45
MW-39	Shallow	31.08	6/14/2022	10.12	-	ND	-	20.96
MW-40	Deep	31.71	6/14/2022	11.47	-	ND	-	20.24
MW-41	Shallow	31.32	6/14/2022	13.89	-	ND	-	17.43
MW-42	Deep	31.94	6/14/2022	11.42	-	ND	-	20.52
MW-43	Shallow	31.39	6/14/2022	10.44	-	ND	-	20.95
MW-44	Shallow	30.98	6/14/2022	11.77	-	ND	-	19.21
MW-45	Shallow	31.70	6/14/2022	12.87	-	ND	-	18.83

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q2-5
Transducer Calibration Offsets
Premier Edible Oils
Portland, Oregon

Calibration Event	Measurement	MW-08	MW-11	MW-18	MW-21	MW-27	MW-28 ¹	MW-30	MW-32	MW-33	MW-34	MW-35	MW-36	MW-40	MW-41	MW-42	MW-45
Transducer Position	TOC Elev Adj. (ft above NAVD88)	30.93	31.06	30.87	31.36	31.46	31.26	31.05	31.08	30.88	30.72	30.83	30.16	31.71	31.32	31.94	31.70
01/03/2022 ³	Datalogger depth (ft BTOC)	26.91	#####	12.46	#####	-	ND	19.49	ND	39.31	27.90	39.83	29.92	39.84	27.35	39.04	27.00
	DTW measured (ft BTOC)	18.19	17.49	18.30	13.08	19.50	18.81	18.03	19.11	20.43	18.20	19.05	18.01	19.71	13.84	20.04	20.51
	DTW calculated (ft BTOC)	18.15	18.14	18.35	13.10	19.51	18.76	18.40	19.36	19.15	18.27	19.51	18.16	20.14	16.09	20.20	20.19
	Calibration Offset	-0.04	0.65	0.05	0.02	0.01	-0.05	0.37	0.25	-1.28	0.07	0.46	0.15	0.43	2.25	0.16	-0.32
01/28/2022 ³	DTW measured (ft BTOC)	18.88	16.78	19.24	12.93	21.17	19.18	18.34	20.47	19.44	16.90	19.83	19.72	20.68	13.59	21.73	21.72
	DTW calculated (ft BTOC)	18.88	17.50	19.38	12.96	21.19	19.11	18.69	20.84	20.61	17.10	20.18	19.86	21.18	15.79	21.93	21.19
	Calibration Offset	0.00	0.72	0.14	0.03	0.02	-0.07	0.35	0.37	1.17	0.20	0.35	0.14	0.50	2.20	0.20	-0.53
	DTW measured (ft BTOC)	NM	21.05	NM	13.66	21.93	NM	20.74	21.44	21.25	18.99	19.56	NM	21.91	NM	22.41	22.31
02/28/2022 ³	DTW calculated (ft BTOC)	18.53	20.21	19.07	13.65	21.91	--	21.01	21.67	21.36	19.19	19.53	18.94	21.94	15.77	22.70	22.16
	Calibration Offset	NC	-0.84	NC	-0.01	-0.02	NC	0.27	0.23	0.11	0.20	-0.03	NC	0.03	NC	0.29	-0.15
	DTW measured (ft BTOC)	19.63	19.21	19.70	13.35	21.55	--	19.55	20.53	20.53	18.07	21.18	19.72	21.68	14.38	22.03	23.00
	DTW calculated (ft BTOC)	19.60	18.51	19.98	13.43	21.72	--	19.94	20.91	20.69	18.45	21.67	19.96	21.71	16.65	22.27	19.23
03/16/2022 ³	Calibration Offset	-0.03	-0.70	0.28	0.08	0.17	--	0.39	0.38	0.16	0.38	0.49	0.24	0.03	2.27	0.24	-3.77
	DTW measured (ft BTOC)	21.07	18.77	20.37	13.65	21.52	--	20.69	20.62	20.86	18.24	21.52	19.53	21.52	NM	21.59	21.80
	DTW calculated (ft BTOC)	20.92	19.47	20.32	13.59	21.64	--	20.99	21.02	21.15	18.42	21.86	19.70	21.68	--	21.81	22.13
	Calibration Offset	-0.15	0.70	-0.05	-0.06	0.12	--	0.30	0.40	0.29	0.18	0.34	0.17	0.16	NC	0.22	0.33
05/2/2022	DTW measured (ft BTOC)	20.22	18.94	20.16	13.58	20.52	--	20.36	20.16	19.84	18.67	20.33	19.08	21.17	14.48	21.40	21.45
	DTW calculated (ft BTOC)	20.18	19.62	20.23	13.51	20.66	--	20.73	20.61	19.92	18.93	20.70	19.27	21.20	16.60	21.61	21.13
	Calibration Offset	-0.04	0.68	0.07	-0.07	0.14	--	0.37	0.45	0.08	0.26	0.37	0.19	0.03	2.12	0.21	-0.32
	DTW measured (ft BTOC)	13.24	14.44	9.86	13.25	11.15	--	12.62	11.13	10.90	14.66	10.88	9.16	11.47	11.89	11.42	12.87
06/14/2022	DTW calculated (ft BTOC)	13.18	15.19	9.93	13.27	11.33	--	12.96	11.54	11.13	14.89	11.42	9.33	11.85	13.98	11.89	13.20
	Calibration Offset	-0.06	0.75	0.07	0.02	0.18	--	0.34	0.41	0.23	0.23	0.54	0.17	0.38	2.09	0.47	0.33

Notes:

NAVD88 = North America Vertical Datum 1988

DTW = Depth to Water

BTOC = Below Top of Casing

1 = Datalogger depth adjusted up by 0.75 ft on 4/8/2020

2 = Pressure transducer stopped working on 3/9/2020. Replace on 4/8/2020.

3 = Pressure transducers were not calibrated in December due to access and weather issues. Calibration completed in January 2022.

4 = Monitoring well damaged on 3/21/2022

NM = Water level not collected due to ponding surface water over top of monitoring well.

NC = Pressure transducer not calibrated due to no water level being collected

-- = Not applicable

Table Q2-6
Horizontal and Vertical Gradients - Barrier Wall
Premier Edible Oils
Portland, Oregon

Well Identification	Measuring Point (Top of Casing)	Screen Interval (ft bgs)		Groundwater Elevation ft-NAVD88			Gradient ^{1,2} ft/ft		
		ft-NAVD88	Top	Bottom	4/19/2022	5/2/2022	6/14/2022	4/19/2022	5/2/2022
Shallow Horizontal Gradient									
MW-30	31.05	13.00	28.00	10.36	10.69	18.43	-0.0039	0.0033	-0.0567
MW-31	30.77	13.00	28.00	10.49	10.58	20.34			
MW-30	31.05	13.00	28.00	10.36	10.69	18.43	-0.0032	-0.0005	-0.0592
MW-18	30.87	12.00	27.00	10.50	10.71	21.01			
MW-34	30.72	13.00	28.00	12.48	12.05	16.06	0.0664	0.0348	-0.1772
MW-36	30.16	15.00	30.00	10.63	11.08	21.00			
MW-38	31.54	13.00	27.00	12.63	12.33	15.45	0.0989	0.0668	-0.2302
MW-39	31.08	15.00	30.00	10.26	10.73	20.96			
MW-29	31.90	13.00	28.00	11.15	11.85	15.01	0.0150	0.0250	-0.1140
MW-43	31.39	15.00	30.00	10.37	10.55	20.95			
MW-41	31.32	13.00	27.00	0.00	14.84	17.43	-0.5062	0.0195	-0.0815
MW-24A	32.35	12.00	27.00	14.29	14.29	19.73			
Average Shallow Horizontal Gradient							-0.0555	0.0248	-0.1198
Deep Horizontal Gradient									
MW-32	31.08	35.00	40.00	10.46	10.92	19.95	0.0050	-0.0014	-0.0003
MW-33	30.88	35.00	40.00	10.02	11.04	19.98			
MW-35	30.83	35.00	40.00	9.31	10.50	19.95	-0.0157	-0.0110	-0.0090
MW-27	31.46	35.00	40.00	9.94	10.94	20.31			
MW-37	31.27	35.00	40.00	9.32	10.54	19.98	-0.0096	-0.0062	-0.0051
MW-27	31.46	35.00	40.00	9.94	10.94	20.31			
MW-37	31.27	35.00	40.00	9.32	10.54	19.98	-0.0100	-0.0065	0.0042
MW-26	31.89	34.00	39.00	10.01	10.99	19.69			
MW-40	31.71	35.00	40.00	10.19	10.54	20.24	-0.0050	0.0000	-0.0087
MW-42	31.94	35.00	40.00	10.35	10.54	20.52			
Average Deep Horizontal Gradient							-0.0071	-0.0050	-0.0038
Vertical Gradients ³									
MW-32	31.08	35.00	40.00	10.46	10.92	19.95	0.0143	0.0329	0.2171
MW-30	31.05	13.00	28.00	10.36	10.69	18.43			
MW-35	30.83	35.00	40.00	9.31	10.50	19.95	-0.4529	-0.2214	0.5557
MW-34	30.72	13.00	28.00	12.48	12.05	16.06			
MW-37	31.27	35.00	40.00	9.32	10.54	19.98	-0.4135	-0.2238	0.5663
MW-38	31.54	13.00	27.00	12.63	12.33	15.45			
MW-40	31.71	35.00	40.00	10.19	10.54	20.24	1.2738	-0.5375	0.3513
MW-41	31.32	13.00	27.00	0.00	14.84	17.43			
Average Vertical Gradient							0.1054	-0.2375	0.4226

Notes:

NAVD88 = North America Vertical Datum 1988

¹ = Positive horizontal gradients indicate flow toward the river; negative horizontal gradients indicate flow away from the river.

² = Positive vertical gradients indicate upward flow; negative vertical gradients indicate downward flow.

³ = Vertical Gradients measured using bottom of upper casing screen to top of lower casing screen elevations.

Table Q2-7
LNAPL Observations during Groundwater Sampling Event
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	5/9/2022	18.53	-	ND	-	12.65
MW-03	Shallow	31.67	5/8/2022	19.16	-	ND	-	12.51
MW-06	Shallow	31.23	5/4/2022	19.91	-	ND	-	11.32
MW-08	Shallow	30.93	5/3/2022	20.17	-	ND	-	10.76
MW-11	Shallow	31.06	5/10/2022	17.86	-	ND	-	13.20
MW-18	Shallow	30.87	5/4/2022	20.25	-	ND	-	10.62
MW-19	Shallow	31.70	5/4/2022	20.75	-	ND	-	10.95
MW-21	Shallow	31.36	5/8/2022	13.60	-	ND	-	17.76
MW-24A	Shallow	32.35	5/3/2022	18.06	-	ND	-	14.29
MW-25	Shallow	31.78	5/8/2022	19.21	-	ND	-	12.57
MW-26	Deep	31.89	5/5/2022	21.05	-	ND	-	10.84
MW-27	Deep	31.46	5/9/2022	17.41	-	ND	-	14.05
MW-28A	Shallow	-	5/10/2022	17.07	-	ND	-	-
MW-29	Shallow	31.90	5/8/2022	18.16	-	ND	-	13.74
MW-30	Shallow	31.05	5/4/2022	20.33	-	ND	-	10.72
MW-31	Shallow	30.77	5/4/2022	20.17	-	ND	-	10.60
MW-32	Deep	31.08	5/3/2022	20.63	-	ND	-	10.45
MW-33	Deep	30.88	5/3/2022	20.05	-	ND	-	10.83
MW-34	Shallow	30.72	5/6/2022	18.55	-	ND	-	12.17
MW-35	Deep	30.83	5/6/2022	19.32	-	ND	-	11.51
MW-36	Shallow	30.16	5/9/2022	16.46	-	ND	-	13.70
MW-37	Deep	31.27	5/5/2022	20.98	-	ND	-	10.29
MW-38	Shallow	31.54	5/5/2022	19.11	19.04	0.07	0.01	12.49
MW-39	Shallow	31.08	5/6/2022	20.11	-	ND	-	10.97
MW-40	Deep	31.71	5/8/2022	18.03	-	ND	-	13.68
MW-41	Shallow	31.32	5/10/2022	16.37	-	ND	-	14.95
MW-42	Deep	31.94	5/3/2022	21.68	-	ND	-	10.26
MW-43	Shallow	31.39	5/5/2022	21.01	20.79	0.22	0.04	10.56
MW-44	Shallow	30.98	5/5/2022	20.20	-	ND	-	10.78
MW-45	Shallow	31.70	5/6/2022	20.72	-	ND	-	10.98

Notes:

– = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (LNAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table Q2-8
LNAPL Recovery Volumes
Premier Edible Oils
Portland, Oregon

Quarter	Date	MW-02 gal	MW-11 gal	MW-29 gal	MW-34 gal	MW-38 gal	MW-39 gal	MW-43 gal	Total gal
Q1 2022	3/10/2022	-	-	-	-	-	-	-	0.00
Q2 2022	5/10/2022	-	-	-	-	-	-	-	0.00
Q3 2022	-	-	-	-	-	-	-	-	0.00
Q4 2022	-	-	-	-	-	-	-	-	0.00
Total Recovered		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes:
 – = not applicable
 * = approximate value

Table Q2-9
Groundwater Field Parameters - May 2022
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance $\mu\text{S}/\text{cm}$	Temperature $^{\circ}\text{C}$	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-02	5/9/2022	6.3	836	29.23	-38.4	0.06	--
MW-03	5/8/2022	6.34	99	14.56	86.2	5.92	48
MW-06	5/4/2022	6.17	131	15.45	58.7	0.23	17
MW-08	5/3/2022	5.63	258	19.11	30.4	5.32	--
MW-11	5/10/2022	6.59	1,150	26.98	-23.6	0.15	67
MW-18	5/4/2022	6.35	408	19.45	-19.3	0.3	--
MW-19	5/4/2022	6.33	206	16.09	84.6	2.17	10
MW-21	5/8/2022	6.2	88	13.77	97.5	5.22	--
MW-24A	5/3/2022	6.6	142	16.23	5.5	0.94	13
MW-25	5/8/2022	6.3	123	15.07	98.8	4.94	12
MW-26	5/5/2022	6.26	127	20.59	107.3	1.59	--
MW-27	5/9/2022	6.55	252	22.61	56.4	0.32	--
MW-28A	5/10/2022	6.26	128	16.8	58.2	9.73	99
MW-29	5/8/2022	6.46	580	19.01	24.4	0.28	68
MW-30	5/4/2022	6.17	714	22.81	38.8	0.47	84
MW-31	5/4/2022	6.39	222	19	62.5	0.67	15
MW-32	5/3/2022	10.06	206	18.29	19.2	1.02	10
MW-33	5/3/2022	8.4	289	19.8	-0.8	0.14	7
MW-34	5/6/2022	6.02	407	28.27	-127.4	0.2	305
MW-35	5/6/2022	6.51	178	27.26	43.4	0.32	--
MW-36	5/9/2022	6.33	356	23.91	-14.2	0.16	185
MW-37	5/5/2022	7.01	181	23.49	81.4	1.35	--
MW-38	5/5/2022	LNAPL					
MW-39	5/6/2022	6.4	503	20.68	-1.6	0.62	93
MW-40	5/8/2022	6.7	230	16.27	36.9	0.21	--
MW-41	5/10/2022	6.42	108	16.5	-11	0.62	159
MW-42	5/3/2022	10.49	209	16.47	-43.8	1.12	--
MW-43	5/5/2022	LNAPL					
MW-44	5/5/2022	6.41	200	14.37	78.5	1.62	--
MW-45	5/6/2022	5.21	177	21.51	42.7	5.63	--

Notes:

-- = not analyzed

$^{\circ}\text{C}$ = degrees Celsius

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Units

ORP = oxidation reduction potential, measured in millivolts (mV)

pH standard units

$\mu\text{S}/\text{cm}$ = microsiemens per centimeter

Empty cells = Not measured.

Table Q2-10
Groundwater Analytical Data - Petroleum Related Compounds
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Method		EPA 8620B					NWTPH-Dx, SGT		NWTPH-Gx	NWEPH	NWVPH
Analyte		Benzene	Ethylbenzene	m,p-Xylenes	o-Xylene	Toluene	Motor Oil Range Organics (C24-C36) ²	TPH Diesel Range Organics ³	TPH-GRO (Gasoline Range Organics) ⁴	C10-C12-Aliphatics	C10-C12-Aliphatics
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		1.4	210	13	13	1,500	NS	1000	1000	2.6	2.6
Groundwater Cleanup Levels ¹		0.44	7.3	13	13	9.8	NS	NS	NS	2.6	2.6
Well	Sample Date										
MW-02	5/9/2022	0.35 j	< 0.11	< 0.20	< 0.18	< 0.10	1,100 J	16,900	< 1,580	< 39.7 UJ	52.2
MW-03	5/8/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 31.6	< 20.5	< 12.2 UJ
MW-06	5/4/2022	< 0.10	< 0.11	< 0.20	< 0.18	0.40 j	< 190	940	1,640	59.6	--
MW-08	5/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	180 j	380 j	< 31.6	< 20.7 UJ	< 12.2
MW-08 Dup	5/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	360 j	< 31.6	< 20.6 UJ	< 12.2
MW-11	5/10/2022	2.4	< 0.11	0.68 j	0.33 j	1.4	< 2,000	26,900 J	1,220 J+	< 20.5	138
MW-18	5/4/2022	0.11 j	< 0.11	< 0.20	< 0.18	< 0.10	< 180	510	< 100 U	< 20.5	--
MW-19	5/4/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 130	< 100 U	< 20.2	< 12.2
MW-21	5/8/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 130	< 31.6	< 20.4	< 12.2 UJ
MW-24A	5/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	< 31.6	< 20.6 UJ	< 12.2
MW-25	5/8/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 31.6	< 20.4	< 12.2 UJ
MW-26	5/5/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	730	230 j	< 100 U	< 20.3 UJ	< 12.2
MW-27	5/9/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	660	32.8 j	< 20.6	< 12.2
MW-28A	5/10/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 220	< 140	< 100 U	< 20.6	< 12.2
MW-29	5/8/2022	0.65 j	1.2	4.6	1.0	1.9	< 180	3,400	2,750	62.9	466 J
MW-30	5/4/2022	0.21 j	< 0.11	< 0.20	0.23 j	0.25 j	270 j	9,100 J	< 100 U	< 20.4	< 12.2
MW-31	5/4/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 230	< 500 U	49.5 j	< 20.4	< 25.0 U
MW-32	5/3/2022	0.37 j	< 0.11	< 0.20	< 0.18	< 0.10	< 180	220 j	47.8 j	< 20.6 UJ	< 12.2
MW-33	5/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	< 31.6	< 20.7 UJ	< 12.2
MW-34	5/6/2022	0.12 j	< 0.11	< 0.20	< 0.18	0.40 j	670 J	7,100 J-	200	51.8 J-	84.1 J
MW-35	5/6/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 210	460	< 31.6	< 20.6	< 12.2 UJ
MW-36	5/9/2022	0.55 j	< 0.11	0.29 j	< 0.18	0.20 j	< 190	1,200	182	< 20.6	13.9 j
MW-37	5/5/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	< 31.6	< 20.5	< 12.2 UJ
MW-39	5/6/2022	7.5	1.9	13.9	7.3	7.3	< 190	4,100	2,530	40.1	446 J
MW-40	5/8/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	68.9 j	< 20.2	< 12.2 UJ
MW-41	5/10/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	150 J	< 100 U	< 39.6 U	< 12.2
MW-42	5/3/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	< 31.6	< 20.7 UJ	< 12.2
MW-44	5/5/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 230	< 150	< 100 U	< 20.6	< 12.2
MW-44 Dup	5/5/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 240	< 160	< 100 U	< 20.4	< 12.2
MW-45	5/6/2022	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 180	< 120	< 31.6	< 20.5	< 12.2 UJ

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the Portland Harbor Superfund Site Record of Decision
2. Solubility of Motor Oil Range Organics ranges from 3.7 ug/L - 260 ug/L at 20C (EPA 2015). Results within or greater than this range are above saturation and indicate the likely presence of residual LNAPL in the well or adjacent groundwater.
3. Solubility of Diesel Range Organics ranges from 220 ug/L - 27,800 ug/L at 20C (EPA 2015). Results within or greater than this range are above saturation and indicate the likely presence of residual LNAPL in the well or adjacent groundwater.
4. Solubility of Gasoline Range Organics ranges from 9,500 ug/L - 1,790,000 ug/L at 20C (EPA 2015). Results within or greater than this range are above saturation and indicate the likely presence of residual LNAPL in the well or adjacent groundwater.

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

NWTPH-Dx, SGT analyses performed by PACE.

NWTPH-Gx analyses performed by PACE.

NWVPH analyses performed by Fremont.

NWEPH analyses performed by Fremont.

Table Q2-11

Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 6020A		EPA 8270 by SIM				
Analyte		Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
Unit		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		2.1	1,925	NS	NS	99	NS	4,000
Groundwater Cleanup Levels ¹		0.018	430	NS	NS	23	NS	0.73
Well	Sample Date							
MW-02	5/9/2022	36.5	3,790	< 0.0068 UJ	< 0.0084 UJ	< 0.0070 UJ	< 0.0061 UJ	< 0.0054 UJ
MW-03	5/8/2022	0.31 j	30.6	< 0.0066	< 0.0082	< 0.0068	< 0.0060	< 0.0053
MW-06	5/4/2022	5.2	409	58.4	73.5	0.96	0.33	0.17
MW-08	5/3/2022	0.47 j	1,640	< 0.0067	< 0.0082	0.10	< 0.0060	< 0.0053
MW-08 Dup	5/3/2022	0.50	1,540	< 0.0070	< 0.0086	< 0.0072	< 0.0063	< 0.0056
MW-11	5/10/2022	120	4,090	< 0.0069 UJ	< 0.0085 UJ	< 0.0071 UJ	< 0.0063 UJ	< 0.0055 UJ
MW-18	5/4/2022	3.9	900	< 0.0068	0.018 j	0.093	< 0.0061	< 0.0054
MW-19	5/4/2022	0.26 j	43.1	0.043	0.042	0.011 j	< 0.0060	< 0.0053
MW-21	5/8/2022	0.22 j	31.2	< 0.0068	< 0.0084	< 0.0070	< 0.0061	< 0.0054
MW-24A	5/3/2022	0.83	284	< 0.0067	< 0.0082	< 0.0068	< 0.0060	< 0.0053
MW-25	5/8/2022	0.19 j	0.67	< 0.0066	< 0.0081	< 0.0068	< 0.0060	< 0.0053
MW-26	5/5/2022	2.4	123	0.010 j	0.013 j	0.018 j	< 0.0064	< 0.0056
MW-27	5/9/2022	38.0	1,500	0.050	0.029 j	0.47	0.030 j	0.098
MW-28A	5/10/2022	0.18 j	2.1	< 0.0070	< 0.0086	< 0.0072	< 0.0063	< 0.0056
MW-29	5/8/2022	49.0	3,630	0.94	< 0.0084	1.5	0.23	< 0.0054
MW-30	5/4/2022	7.3	1,630	< 0.0069	< 0.0085	1.6	< 0.0063	< 0.0055
MW-31	5/4/2022	0.24 j	28.7	0.017 j	0.015 j	0.20	< 0.0062	< 0.0055
MW-32	5/3/2022	10.1	3.1	< 0.0069	< 0.0084	0.041 J+	< 0.0062	< 0.0055
MW-33	5/3/2022	10.2	705	< 0.0068	< 0.0084	< 0.040 U	< 0.0061	< 0.0054
MW-34	5/6/2022	12.7	2,040	< 0.0067 UJ	< 0.0083 UJ	< 0.0069 UJ	< 0.0061 UJ	< 0.0054 UJ
MW-35	5/6/2022	8.6	772	< 0.0063 UJ	< 0.0078 UJ	0.083 J-	< 0.0057 UJ	< 0.0051 UJ
MW-36	5/9/2022	17.2	1,480	0.17	0.028 j	0.79	0.16	< 0.0054
MW-37	5/5/2022	1.5	91.9	< 0.0068	< 0.0084	< 0.0070	< 0.0061	< 0.0054
MW-39	5/6/2022	39.7	2,180	4.1	< 0.0080	1.6	< 0.0058	0.24
MW-40	5/8/2022	4.6	1,230	0.0073 j	< 0.0080	0.022 j	0.0070 j	< 0.0052
MW-41	5/10/2022	0.29 j	119	0.0071 j	< 0.0082	0.0093 j	< 0.0060	< 0.0053
MW-42	5/3/2022	4.6	80.9	< 0.0070	< 0.0086	< 0.0071	< 0.0063	< 0.0056
MW-44	5/5/2022	0.90	72.1	0.014 j	0.021 j	0.011 j	< 0.0063	< 0.0056
MW-44 Dup	5/5/2022	0.98	84.8	< 0.0077	< 0.0095	0.014 j	< 0.0070	< 0.0062
MW-45	5/6/2022	0.12 j	210	0.034 j	< 0.0082	< 0.0068	< 0.0060	< 0.0053

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the Portland Harbor Superfund Site Record of Decision

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

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Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

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NJ = Evidence of the compound at an estimated quantity.

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EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q2-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 827				
Analyte		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
Unit		µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		0.0018	0.0018	0.0018	0.0018	0.0018
Groundwater Cleanup Levels ¹		0.0012	0.00012	0.0012	NS	0.0013
Well	Sample Date					
MW-02	5/9/2022	< 0.0091 UJ	< 0.0089 UJ	< 0.0096 UJ	0.014 J-	< 0.0084 UJ
MW-03	5/8/2022	< 0.0089	< 0.0087	< 0.0094	< 0.0080	< 0.0082
MW-06	5/4/2022	< 0.010	< 0.010	< 0.011	< 0.0092	< 0.0094
MW-08	5/3/2022	< 0.0090	< 0.0088	< 0.0094	< 0.0080	< 0.0082
MW-08 Dup	5/3/2022	< 0.0094	< 0.0092	< 0.0099	< 0.0085	< 0.0086
MW-11	5/10/2022	< 0.0093 UJ	< 0.0091 UJ	< 0.0098 UJ	< 0.0084 UJ	< 0.0085 UJ
MW-18	5/4/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-19	5/4/2022	< 0.0089	< 0.0087	< 0.0093	< 0.0080	< 0.0081
MW-21	5/8/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-24A	5/3/2022	< 0.0090	< 0.0088	< 0.0094	< 0.0080	< 0.0082
MW-25	5/8/2022	< 0.0089	< 0.0087	< 0.0093	< 0.0080	< 0.0081
MW-26	5/5/2022	< 0.0095	< 0.0093	< 0.010	< 0.0085	< 0.0087
MW-27	5/9/2022	< 0.0095	< 0.0093	< 0.010	< 0.0085	< 0.0087
MW-28A	5/10/2022	< 0.0094	< 0.0092	< 0.0099	< 0.0085	< 0.0086
MW-29	5/8/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-30	5/4/2022	< 0.0093	< 0.0091	< 0.0098	< 0.0084	< 0.0085
MW-31	5/4/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-32	5/3/2022	< 0.0092	< 0.0090	< 0.0097	< 0.0083	< 0.0084
MW-33	5/3/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-34	5/6/2022	< 0.0090 UJ	< 0.0088 UJ	< 0.0095 UJ	< 0.0081 UJ	< 0.0083 UJ
MW-35	5/6/2022	< 0.0085 UJ	< 0.0083 UJ	< 0.0090 UJ	< 0.0077 UJ	< 0.0078 UJ
MW-36	5/9/2022	< 0.0090	< 0.0088	< 0.0095	< 0.0081	< 0.0083
MW-37	5/5/2022	< 0.0091	< 0.0089	< 0.0096	< 0.0082	< 0.0084
MW-39	5/6/2022	< 0.0087	< 0.0085	< 0.0092	< 0.0078	< 0.0080
MW-40	5/8/2022	< 0.0088	< 0.0086	< 0.0092	< 0.0079	< 0.0080
MW-41	5/10/2022	< 0.0090	< 0.0088	< 0.0094	< 0.0080	< 0.0082
MW-42	5/3/2022	< 0.0094	< 0.0092	< 0.0099	< 0.0084	< 0.0086
MW-44	5/5/2022	< 0.0094	< 0.0092	< 0.0099	< 0.0085	< 0.0086
MW-44 Dup	5/5/2022	< 0.010	< 0.010	< 0.011	< 0.0093	< 0.0095
MW-45	5/6/2022	< 0.0090	< 0.0088	< 0.0094	< 0.0080	< 0.0082

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the P.

< = Compound not detected. Reportable detection limit shown.

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EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q2-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method 0 by SIM						
Analyte	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	
Selected GW SCM Performance Evaluation Criteria	0.0018	0.0018	14	530	0.0018	
Groundwater Cleanup Levels ¹	0.0013	0.00012	NS	NS	0.0012	
Well	Sample Date					
MW-02	5/9/2022	< 0.0095 UJ	< 0.0080 UJ	< 0.014 UJ	< 0.0061 UJ	< 0.011 UJ
MW-03	5/8/2022	< 0.0093	< 0.0078	< 0.014	< 0.0060	< 0.011
MW-06	5/4/2022	< 0.011	< 0.0090	0.040 j	2.2	< 0.013
MW-08	5/3/2022	< 0.0093	< 0.0079	< 0.014	< 0.0060	< 0.011
MW-08 Dup	5/3/2022	< 0.0098	< 0.0083	< 0.015	< 0.0063	< 0.012
MW-11	5/10/2022	< 0.0097 UJ	< 0.0082 UJ	< 0.015 UJ	< 0.0062 UJ	< 0.012 UJ
MW-18	5/4/2022	< 0.0095	< 0.0080	< 0.014	0.027 j	< 0.011
MW-19	5/4/2022	< 0.0092	< 0.0078	< 0.014	0.018 j	< 0.011
MW-21	5/8/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-24A	5/3/2022	< 0.0093	< 0.0079	< 0.014	< 0.0060	< 0.011
MW-25	5/8/2022	< 0.0092	< 0.0078	< 0.014	< 0.0059	< 0.011
MW-26	5/5/2022	< 0.0099	< 0.0084	< 0.015	0.026 j	< 0.012
MW-27	5/9/2022	< 0.0099	< 0.0084	0.034 j	0.36	< 0.012
MW-28A	5/10/2022	< 0.0098	< 0.0083	< 0.015	< 0.0063	< 0.012
MW-29	5/8/2022	< 0.0095	< 0.0080	0.057	1.5	< 0.011
MW-30	5/4/2022	< 0.0097	< 0.0082	< 0.015	< 0.0062	< 0.012
MW-31	5/4/2022	< 0.0096	< 0.0081	< 0.014	0.013 j	< 0.011
MW-32	5/3/2022	< 0.0096	< 0.0081	< 0.014	0.032 j	< 0.011
MW-33	5/3/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-34	5/6/2022	< 0.0094 UJ	< 0.0080 UJ	< 0.014 UJ	< 0.0060 UJ	< 0.011 UJ
MW-35	5/6/2022	< 0.0089 UJ	< 0.0075 UJ	< 0.013 UJ	< 0.0057 UJ	< 0.011 UJ
MW-36	5/9/2022	< 0.0094	< 0.0080	0.029 j	0.77	< 0.011
MW-37	5/5/2022	< 0.0095	< 0.0080	< 0.014	< 0.0061	< 0.011
MW-39	5/6/2022	< 0.0090	< 0.0076	< 0.014	0.88	< 0.011
MW-40	5/8/2022	< 0.0091	< 0.0077	< 0.014	0.021 j	< 0.011
MW-41	5/10/2022	< 0.0093	< 0.0079	0.015 j	0.014 j	< 0.011
MW-42	5/3/2022	< 0.0097	< 0.0082	< 0.015	< 0.0063	< 0.012
MW-44	5/5/2022	< 0.0098	< 0.0083	< 0.015	0.013 j	< 0.012
MW-44 Dup	5/5/2022	< 0.011	< 0.0091	< 0.016	0.017 j	< 0.013
MW-45	5/6/2022	< 0.0093	< 0.0079	< 0.014	< 0.0060	< 0.011

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the P.

< = Compound not detected. Reportable detection limit shown.

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EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q2-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 8270 by SIM			Calculated
Analyte		Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (ND=0)
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		12	NS	400	0.0018
Groundwater Cleanup Levels ¹		NS	NS	NS	0.00012
Well	Sample Date				
MW-02	5/9/2022	< 0.0089 UJ	< 0.012 UJ	< 0.010 UJ	< 0.011 U
MW-03	5/8/2022	< 0.0087	< 0.012	< 0.0097	< 0.011 U
MW-06	5/4/2022	6.0	0.93	0.043 j	< 0.013 U
MW-08	5/3/2022	< 0.0087	< 0.012	< 0.0098	< 0.011 U
MW-08 Dup	5/3/2022	< 0.0092	< 0.013	< 0.010	< 0.012 U
MW-11	5/10/2022	< 0.0091 UJ	< 0.013 UJ	< 0.010 UJ	< 0.012 U
MW-18	5/4/2022	0.034 j	< 0.012	< 0.010	< 0.011 U
MW-19	5/4/2022	0.017 j	< 0.012	< 0.0097	< 0.011 U
MW-21	5/8/2022	< 0.0089	< 0.012	< 0.010	< 0.011 U
MW-24A	5/3/2022	< 0.0087	< 0.012	< 0.0098	< 0.011 U
MW-25	5/8/2022	< 0.0086	< 0.012	< 0.0097	< 0.011 U
MW-26	5/5/2022	0.015 j	< 0.013	< 0.010	< 0.012 U
MW-27	5/9/2022	0.12	0.028 j	0.031 j	< 0.012 U
MW-28A	5/10/2022	< 0.0092	< 0.042 U	< 0.010	< 0.012 U
MW-29	5/8/2022	2.1	0.82	< 0.010	< 0.011 U
MW-30	5/4/2022	0.44	< 0.013	< 0.010	< 0.012 U
MW-31	5/4/2022	0.011 j	< 0.012	< 0.010	< 0.011 U
MW-32	5/3/2022	0.049 J+	< 0.041 U	0.014 j	< 0.011 U
MW-33	5/3/2022	< 0.040 U	< 0.012	< 0.010	< 0.011 U
MW-34	5/6/2022	< 0.0088 UJ	< 0.012 UJ	< 0.0099 UJ	< 0.011 U
MW-35	5/6/2022	< 0.0083 UJ	< 0.012 UJ	0.024 J-	< 0.011 U
MW-36	5/9/2022	0.34	< 0.012	< 0.0099	< 0.011 U
MW-37	5/5/2022	< 0.0089	< 0.012	< 0.010	< 0.011 U
MW-39	5/6/2022	3.5	0.13	< 0.0095	< 0.011 U
MW-40	5/8/2022	0.019 j	0.016 j	< 0.0096	< 0.011 U
MW-41	5/10/2022	< 0.0087	0.042 J+	0.011 j	< 0.011 U
MW-42	5/3/2022	< 0.0091	< 0.013	< 0.010	< 0.012 U
MW-44	5/5/2022	0.014 j	< 0.013	< 0.010	< 0.012 U
MW-44 Dup	5/5/2022	0.012 j	0.019 j	< 0.011	< 0.013 U
MW-45	5/6/2022	0.0093 j	0.028 j	< 0.0098	< 0.011 U

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the P.

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable De

Shaded values indicate concentrations above the GW SCM Per

Qualifiers - Organics

j = The result is an estimated concentration, detected between t

J+ = The concentration of the sample is considered to be biased

J- = The concentration of the sample is considered to be biased

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making

EPA 6020A analyses performed by PACE.

EPA 8270 BY SIM analyses performed by PACE.

Table Q2-12
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 353.2	EPA 300.0	SM2320B	SM2340B
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO ₃	Hardness as CaCO ₃
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-02	09-May-22	--	9,700	285,000	230,000
MW-03	08-May-22	--	6,700	52,500	48,000
MW-06	04-May-22	--	1,100 j	36,900	20,600
MW-08	03-May-22	--	70,000	31,500	52,600
MW-08 Dup	03-May-22	--	68,200	31,300	52,000
MW-11	10-May-22	--	650 j	409,000	362,000
MW-18	04-May-22	--	50,700	136,000	143,000
MW-19	04-May-22	--	9,100	122,000	81,300
MW-21	08-May-22	--	3,800 J+	47,700	38,400
MW-24A	03-May-22	--	3,700	67,800	55,500
MW-25	08-May-22	--	8,500	63,900	54,400
MW-26	05-May-22	--	28,400	30,300	39,700
MW-27	09-May-22	--	25,200	70,700	67,100
MW-28A	10-May-22	--	4,700	59,100	52,300
MW-29	08-May-22	--	1,200 J+	275,000	217,000
MW-30	04-May-22	--	162,000	173,000	307,000
MW-31	04-May-22	--	34,100	88,200	94,300
MW-32	03-May-22	--	26,700	102,000	88,100
MW-33	03-May-22	--	62,000	92,900	121,000
MW-34	06-May-22	--	10,500	141,000	115,000
MW-35	06-May-22	--	14,800	42,900	34,500
MW-36	09-May-22	--	57,500 J-	82,600	99,300
MW-37	05-May-22	--	19,000	41,500	55,500
MW-39	06-May-22	--	< 1,200 U	211,000	122,000
MW-40	08-May-22	--	52,600	54,600	89,100
MW-41	10-May-22	--	2,600	62,000	50,300
MW-42	03-May-22	--	58,400	89,500	123,000
MW-44	05-May-22	--	15,700	111,000	90,700
MW-44 Dup	05-May-22	--	15,900	111,000	89,100
MW-45	06-May-22	--	61,200	2,600 j	59,100

Notes:

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard for GW SCM Performance Evaluation

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

EPA 300.0 analyses performed by PACE.

EPA 353.2 analyses performed by PACE.

SM2320B analyses performed by PACE.

SM2340B analyses performed by PACE.

*Attachment B – MW-28, MW-28A Well
Logs*



ERM-West, Inc.
1001 S.W. 5th Avenue, Suite 1010
Portland, Oregon 97204
Telephone: 503-488-5282

MW-28A
PAGE 1 OF 2

CLIENT	MMGL	PROJECT NAME	PEO Monitoring Well Installation
PROJECT NUMBER	0633086	PROJECT LOCATION	10400 N Burgard Way, Portland, OR
DATE STARTED	4/28/22	COMPLETED	4/28/22
CONTRACTOR	Cascade Drilling	GROUND ELEVATION	
EQUIPMENT	Direct Push	HOLE SIZE	4-Inches
LOGGED BY	A. Sopata	CHECKED BY	J. Casey
NOTES	Well Tag ID: L140187; Start Card: 1056439		
		GROUND WATER LEVELS:	
		▽ AT TIME OF DRILLING	17.92 ft
		AT END OF DRILLING	---
		AFTER DRILLING	---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					No Sample Taken From 0 - 5 Feet BGS During Pre-Clearance with Vacuum Truck / Air Knife	Casing Type: Sch-40 PVC 2-Inch Schedule 40 PVC Locking Cap Flush Mount Monitoring Well Monument Concrete
5					No Recovery	
					(SW) Med. Grained, Well-Sorted, Loose, Subrounded Sand with Trace Silt. Angular Gravel Lense at 7.75-Feet BGS. Thin Lamintion of Grey Silt at 9.5-Feet BGS. Yellowish Brown (10 YR 3/4). Dry.	2-Inch Schedule 40 PVC Blank Bentonite Chips
10				10.0	No Recovery	
				12.1	1-Inch of Borehole Cave-In with Surface Gravel (SW) Med. Grained, Well-Sorted, Loose, Subrounded Sand with Trace Silt. Color Laminations of Gret and Red from 14 to 15-Feet BGS. Yellowish Brown (10 YR 3/4). Dry.	
15				15.0	No Recovery	
				17.8	(SW) Med. Grained, Well-Sorted, Loose, Subrounded Sand with Trace Silt. Yellowish Brown (10 YR 3/4). Dry.	
				17.9	(SW) Med. Grained, Well-Sorted, Loose, Subrounded Sand with Trace Silt. Dark Grey (10 YR 3/1). Dry.	
					(SW) Med. Grained, Well-Sorted, Loose, Subrounded Sand with Trace Silt. Dark Grey (10 YR 3/1). Wet.	
20				20.0		

(Continued Next Page)

START CARD # 1056440

[illegible]

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 138338

5/19/2022

Map of Hole



OREGON SITE MAP

Cascade Project No.

Bid Number

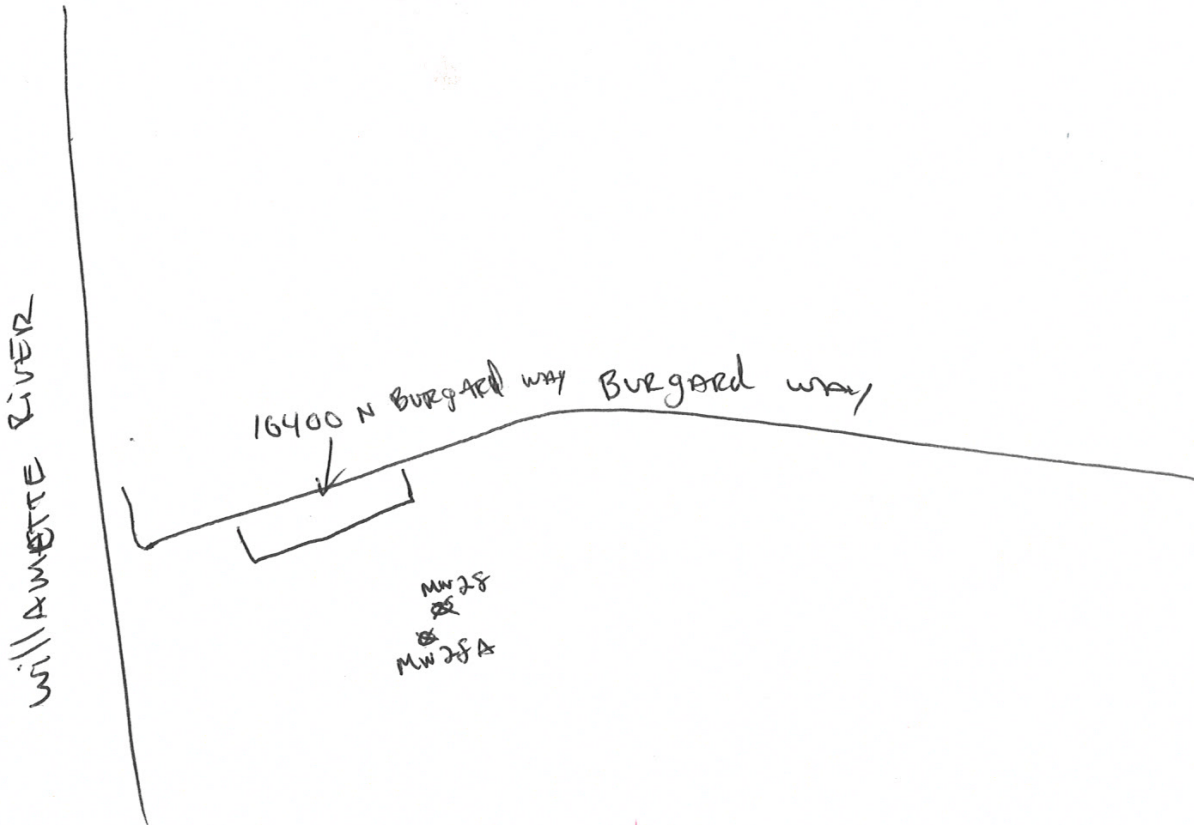
Oregon Water Resources Department (OWRD) requires completion of a Geotechnical Hole Report if any of the following apply:

- Geotechnical hole is greater than 18 feet deep;
- Within 50 feet of a water supply or monitoring well;
- Used to make a determination of water quality;
- Constructed in an area of known or reasonably suspected contamination.

In order to comply with OWRD requirements, please provide a Site Map:

Map shall include an approximate scale, north arrow. Upon completion of well activities, a site map with each well location clearly identified must be filed with each Geotechnical Hole Report (OR 690-240-035).

Thank You for your information and assistance on compliance with Oregon Administrative Rules.



MUST PROVIDE SCALE

Site Address: _____
 Client: _____
 Date: _____



START CARD # 1056439

[illegible]

MONITORING WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

MULT 138337

5/19/2022

Map of Hole



OREGON SITE MAP

Cascade Project No.

Bid Number

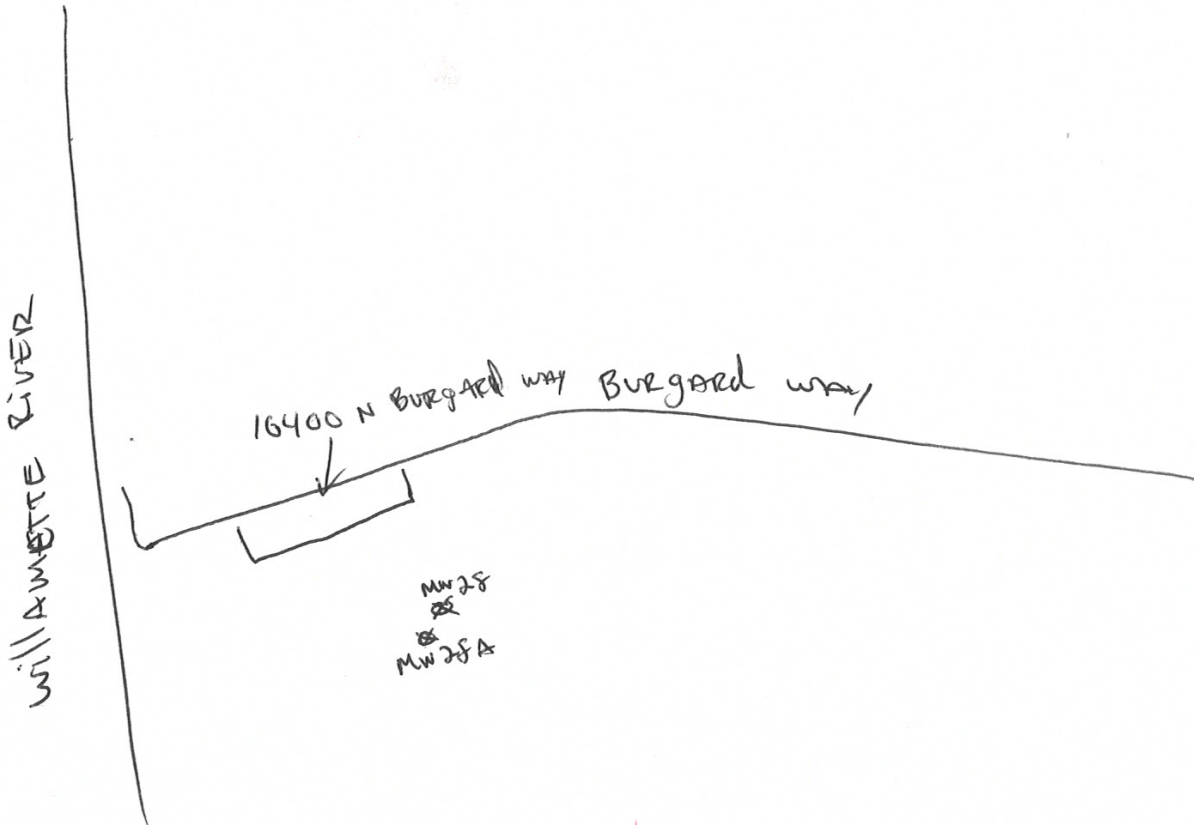
Oregon Water Resources Department (OWRD) requires completion of a Geotechnical Hole Report if any of the following apply:

- Geotechnical hole is greater than 18 feet deep;
- Within 50 feet of a water supply or monitoring well;
- Used to make a determination of water quality;
- Constructed in an area of known or reasonably suspected contamination.

In order to comply with OWRD requirements, please provide a Site Map:

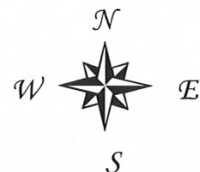
Map shall include an approximate scale, north arrow. Upon completion of well activities, a site map with each well location clearly identified must be filed with each Geotechnical Hole Report (OR 690-240-035).

Thank You for your information and assistance on compliance with Oregon Administrative Rules.



MUST PROVIDE SCALE

Site Address: _____
 Client: _____
 Date: _____



*Attachment C – Q1 and Q2 2022 GW SCM
Laboratory Reports and Quality Assurance
Memos*

**Memorandum**

To	Rita Cooper
From	Rachel James
Date	14 April 2022
Reference	0633086
Subject	Data Review of PEO Groundwater Sampling, First Quarter 2022 Pace Analytical Services, LLC Data Packages 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020. Field duplicates were assessed following *Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures*, September 2020.

SAMPLE RECEIPT COMMENTS

In report 10599254, the laboratory described that all containers for sample TRIP BLANK-20220301 and one unpreserved container for sample PEO-MW-24A-20220301 arrived broken or spilled. The laboratory was unable to perform all requested analyses for sample TRIP BLANK-20220301 and sulfate and alkalinity analyses for sample PEO-MW-24A-20220301.

In report 10599467, the laboratory described that one or more containers for samples TRIP BLANK-20220302, PEO-MW-19-20220302, and PEO-MW-03-20220302 arrived broken. The laboratory was able to complete all requested analyses with the remaining volume. Additionally, the laboratory noted that sample ID PEO-MW-19-20220302 was on the chain-of-custody (COC), but the container labels stated PEO-MW196-20220302. The laboratory identified the sample by the collection time and it was logged in per the COC ID.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. The samples arrived in good condition and properly preserved with several exceptions. The laboratory noted that headspace was present in volatile organic analysis (VOA) vials for several samples. In most cases, sufficient headspace-free VOA vials remained for analysis and qualifications were not necessary. Sample PEO-MW-36-20220308 for Method 8260D and sample PEO-MW-02-20220309 for Method NWTPH-Gx were analyzed from vials containing headspace. The associated results were qualified as estimates (J for detects and UJ for non-detects). The qualified results are presented in Table 1.

BLANK EVALUATION

The method and trip blank results were non-detected for each of the target analytes, with the exceptions noted in Table 2. Non-detected results or results greater than five times the blank concentrations for organics (ten times for inorganics) were considered not affected by the laboratory contamination and were not qualified. If the sample result was reported at a dilution, the reported value was divided by the dilution factor and the adjusted result was used for method blank comparison purposes. Results within five times the blank concentration and less than the reporting limit (RL) were qualified as non-detect (U) at the RL. Results within five times the blank concentration and greater than or equal to the RL were qualified as estimated with a high bias (J+), with the exception of motor oil range silica gel (SG) results for samples PEO-MW-34-20220309, PEO-MW-02-20220309, and PEO-MW-11-20220309 which were qualified as estimates with no bias (J) due to additional low surrogate recoveries.

The trip blank associated with report 10599254 arrived at the laboratory broken. It is not possible to assess whether total petroleum hydrocarbons (TPH) as gas, volatile organic compounds (VOCs), or volatile petroleum hydrocarbons (VPH) detections in associated samples PEO-MW-32-20220301, PEO-MW-33-20220301, or PEO-MW-24A-20220301 were potentially influenced by cross-contamination during shipment, handling, and storage.

BLANK SPIKE EVALUATION

The LCS and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with the exceptions noted in Table 3. No data were qualified for RPD exceedance alone when the associated sample result was non-detected. Detected sample results associated with high LCS/LCSD RPDs were qualified as estimates with no bias (J).

MATRIX SPIKE EVALUATION

The laboratories prepared both project and non-project samples for matrix spike (MS) and matrix spike duplicate (MSD) analysis. Matrix spike samples from non-project parent samples are not representative of the matrix for this project and were therefore not reviewed in this validation effort. For the MS/MSDs prepared from project samples, the recoveries and RPDs were within laboratory limits of acceptance with the exceptions noted in Table 3. No data were qualified if the sample result was greater than four times the spike concentration, if the outlier could be verified by another in-control recovery, or for RPD exceedance alone when the associated sample result was non-detected. Non-detected sample results associated with low MS/MSD recoveries were qualified as estimates (UJ). Detected sample results associated with high MS/MSD RPDs were qualified as estimates with no bias (J).

SURROGATE SPIKE EVALUATION

The surrogate recoveries for project samples were within acceptable limits with the exceptions noted in Table 4. Qualifications to laboratory quality control samples due to surrogate recoveries outside laboratory control limits were not necessary. Sample results associated with low surrogate recoveries were qualified as estimates with a low bias (J-) for detects and (UJ) for non-detects. The motor oil range SG results for samples PEO-MW-Z1-20220303 and PEO-MW-35-20220309 were qualified as

non-detected (U) at the RL due to additional blank contamination and the results for samples PEO-MW-34-20220309, PEO-MW-02-20220309, and PEO-MW-11-20220309 were qualified as estimates with no bias (J) due to additional blank contamination.

CALIBRATION RANGE EXCEEDANCES

Several MS/MSD sample results exceeded the instrument calibration range. Qualifications were not applied to the parent samples based on the MS/MSD results exceeding the calibration range as the parent sample results were within range.

SAMPLES WITH INACCURATE QUANTIFICATION

Several TPH as gas results were qualified by the laboratory for inaccurate quantification issues. The laboratory described that during a routine performance testing failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high. The affected TPH as gas results were qualified as estimates with a high bias (J+) as shown in Table 5.

LABORATORY DUPLICATE EVALUATION

The laboratories prepared both project and non-project samples for laboratory duplicate analysis. Laboratory duplicate samples from non-project parent samples are not representative of the matrix for this project and were therefore not reviewed in this validation effort. For the laboratory duplicates prepared from project samples, the RPDs for detected analytes were within the control limits. The acceptable RPDs indicate acceptable laboratory precision.

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 6. An RPD control limit of 30 was used when both the sample and the field duplicate results were greater than or equal to five times the RL. A control limit of $\pm$ two times the RL was used when at least one of the results was less than five times the reporting limit. Precision criteria was not applied if both results were less than the RL or non-detected. Sulfate in sample pair PEO-MW-08-20220303/PEO-MW-Z1-20220303 did not meet the field duplicate criteria and the results in the primary and field duplicate samples were qualified as estimates (J).

TPH EVALUATION

The laboratory noted that the hydrocarbon patterns present in samples PEO-MW-32-20220301 and PEO-MW-06-20220302 were atypical of a standard fuel pattern. ERM qualified the affected sample results as estimates with a high bias (J+) due to the atypical pattern and an additional laboratory-described quantitation issue. The qualified results are displayed in Table 7.

OVERALL ASSESSMENT

None of the data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be

considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Samples with Exceeded Preservation Requirements
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Preservation Condition	Limits	Affected Analyte	ERM Qualifier
10600160	PEO-MW-36-20220308	8260D	Headspace	No headspace	All in group	Detects J Non-detects UJ
10600362	PEO-MW-02-20220309	NWTPH-Gx	Headspace	No headspace	TPH as Gas	J+ ¹

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Notes:

1 = Qualified as an estimate with a high bias due to additional inaccurate quantification

J = Estimated detected result

J+ = Estimated detection with high bias

NWTPH = Northwest total petroleum hydrocarbons

TPH = Total petroleum hydrocarbons

UJ = Non-detected, estimated report limit

Table 2
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10599467	MB 4266506	None for qualification	Alkalinity, Total as CaCO ₃	2.2	5.0	--	--	mg/L	--
	TRIP BLANK-20220302	PEO-MW-06-20220302	Toluene	0.52	1.0	0.46	1.0	µg/L	1.0 U
10599830 10600362	MB 4264657	PEO-MW-Z1-20220303	Motor Oil Range SG	0.37	0.40	0.27	0.41	mg/L	0.41 U
		PEO-MW-44-20220303				0.30	0.43	mg/L	0.43 U
		PEO-MW-18-20220304				0.27	0.43	mg/L	0.43 U
		PEO-MW-37-20220309				0.25	0.42	mg/L	0.42 U
10599830	MB 4267884	None for qualification	Alkalinity, Total as CaCO ₃	2.4	5.0	--	--	mg/L	--
10599993 10600160	MB 4266339	None for qualification	1-Methylnaphthalene	0.011	0.040	--	--	µg/L	--
		PEO-MW-36-20220308	2-Methylnaphthalene	0.015	0.040	0.020	0.041	µg/L	0.041 U
		PEO-MW-27-20220308				0.018	0.040	µg/L	0.040 U
		PEO-MW-36-20220308	Fluoranthene	0.015	0.040	0.029	0.041	µg/L	0.041 U
		None for qualification	Naphthalene	0.014	0.040	--	--	µg/L	--
		PEO-MW-36-20220308	Phenanthrene	0.024	0.040	0.066	0.041	µg/L	J+
		PEO-MW-27-20220308				0.022	0.040	µg/L	0.040 U
		PEO-MW-39-20220308	Pyrene	0.013	0.040	0.022	0.040	µg/L	0.040 U
		PEO-MW-36-20220308				0.029	0.041	µg/L	0.041 U
		PEO-MW-27-20220308				0.031	0.040	µg/L	0.040 U
10599993	MB 4270454	PEO-MW-45-20220307	Alkalinity, Total as CaCO ₃	1.9	5.0	1.8	5.0	mg/L	5.0 U

Table 2
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10600362	MB 4270446	None for qualification	Diesel Fuel Range SG	0.16	0.40	--	--	mg/L	--
		PEO-MW-35-20220309	Motor Oil Range SG	0.43	0.40	0.34	0.44	mg/L	0.44 U
		PEO-MW-34-20220309				0.74	0.40	mg/L	J ¹
		PEO-MW-02-20220309				1.2	0.48	mg/L	J ¹
		PEO-MW-11-20220309				1.3	0.54	mg/L	J ¹

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Notes:

1 = Qualified as an estimate with no bias due to additional low surrogate recovery

MB = Method blank

mg/L = Milligrams per liter

J+ = Detected results are estimated with a high bias

SG = Silica gel

U = Non-detected

µg/L = Micrograms per liter

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
10599254	LCS 4257385 LCSD 4257386	None for qualification	1-Methylnaphthalene	92/69	43-125	28	20	--	--	--
			Anthracene	96/72	64-125	28	20	--	--	--
10599830	LCS 4261397 LCSD 4261398	PEO-MW-25-20220303	1-Methylnaphthalene	62/92	43-125	38	20	0.011	µg/L	J
		PEO-MW-08-20220303						0.026	µg/L	J
		PEO-MW-Z1-20220303						0.018	µg/L	J
		PEO-MW-44-20220303						0.0077	µg/L	J
		PEO-MW-31-20220303						0.0087	µg/L	J
		PEO-MW-30-20220304						0.033	µg/L	J
		PEO-MW-18-20220304						0.015	µg/L	J
		PEO-MW-25-20220303	2-Methylnaphthalene	53/68	42-125	24	20	0.012	µg/L	J
		PEO-MW-08-20220303						0.013	µg/L	J
		PEO-MW-30-20220304						0.065	µg/L	J
		PEO-MW-08-20220303	Acenaphthene	58/82	56-125	34	20	0.015	µg/L	J
		PEO-MW-31-20220303						0.021	µg/L	J
		PEO-MW-30-20220304						0.15	µg/L	J
		PEO-MW-18-20220304						0.077	µg/L	J
		PEO-MW-30-20220304	Acenaphthylene	58/80	55-125	32	20	0.020	µg/L	J
		None for qualification	Benzo(b)fluoranthene	74/92	70-125	21	20	--	--	--
		None for qualification	Chrysene	83/102	70-125	21	20	--	--	--
		PEO-MW-30-20220304	Fluorene	61/80	59-125	27	20	0.041	µg/L	J
		PEO-MW-08-20220303	Naphthalene	60/82	49-125	31	20	0.060	µg/L	J
		PEO-MW-Z1-20220303						0.041	µg/L	J
		PEO-MW-30-20220304						0.052	µg/L	J
		PEO-MW-30-20220304	Phenanthrene	64/80	65-125	22	20	0.052	µg/L	J

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
10600362	LCS 4270447 LCSD 4270448	PEO-MW-35-20220309	Motor Oil Range SG	114/86	50-150	27	20	0.34	mg/L	0.44 U ¹
		PEO-MW-34-20220309						0.74	mg/L	J
		PEO-MW-02-20220309						1.2	mg/L	J
		PEO-MW-11-20220309						1.3	mg/L	J
MS/MSD										
10599254	PEO-MW-33-20220301 MS/MSD	None for qualification	Manganese, Dissolved	129/95	75-125	5	20	4X	--	--
	PEO-MW-32-20220301 MS	PEO-MW-32-20220301	EPH Aliphatic Hydrocarbon (C10-C12)	62.5	70-130	--	--	ND	µg/L	UJ
10600160	PEO-MW-36-20220308 MS/MSD	None for qualification	TPH as Gas	128/116	65-126	10	30	--	--	--
		None for qualification	Manganese, Dissolved	138/116	75-125	2	20	--	--	--
		PEO-MW-36-20220308	Benzene	109/103	65-140	45	30	0.24	µg/L	J
		None for qualification	Ethylbenzene	105/91	66-126	54	30	ND	µg/L	--
		PEO-MW-36-20220308	m&p-Xylene	106/91	69-134	54	30	0.27	µg/L	J
			o-Xylene	108/97	73-133	49	30	0.61	µg/L	J
			Toluene	107/96	69-131	49	30	0.16	µg/L	J
			Diesel Fuel Range SG	-11/108	50-150	67	30	2.6	mg/L	J
			Motor Oil Range SG	34/73	50-150	48	30	0.51	mg/L	J
			EPH Aliphatic Hydrocarbon (C10-C12)	49.0/58.6	70-130	19	30	ND	µg/L	UJ

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier

Notes:

1 = Qualified non-detect at the reporting limit due to additional blank contamination
4X = The unspiked sample result was greater than four times the spike concentration
EPH = Extractable petroleum hydrocarbons
J = Estimated detected result
J+ = Detected results are estimated with a high bias
LCS/LCSD = Laboratory control sample/laboratory control sample duplicate
mg/L = Milligrams per liter
MS/MSD = Matrix spike/matrix spike duplicate
ND = Not detected
RPD = Relative percent difference
SG = Silica gel
TPH = Total petroleum hydrocarbon
µg/L = Micrograms per liter
U = Non-detected
UJ = Nondetected, estimated report limit

Table 4
Surrogate Recovery Results out of Acceptable Limits
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
10599254	PEO-MW-33-20220301	NWVPH	1,4-Difluorobenzene	164	60-140	VPH Aliphatic Hydrocarbon (C10-C12)	1	UJ
			Bromofluorobenzene	49.7	60-140			
	PEO-MW-24A-20220301	NWVPH	1,4-Difluorobenzene	145	60-140	VPH Aliphatic Hydrocarbon (C10-C12)	1	--
10599830	PEO-MW-Z1-20220303	NWTPH-Dx	o-Terphenyl	31	50-150	Diesel Fuel Range SG	1	J-
			n-Triacontane	38	50-150	Motor Oil Range SG		0.41 U ¹
	PEO-MW-18-20220304	NWTPH-Dx	o-Terphenyl	48	50-150	Diesel Fuel Range SG	1	J-
10600160	PEO-MW-36-20220308 MSD	8270E SIM	p-Terphenyl-d14	53	54-125	None for qualification	--	--
10600362	PEO-MW-35-20220309	NWTPH-Dx	n-Triacontane	39	50-150	Motor Oil Range SG	1	0.44 U ¹
	PEO-MW-34-20220309	NWTPH-Dx	n-Triacontane	38	50-150	Motor Oil Range SG	1	J ²
		8270E SIM	p-Terphenyl-d14	44	54-125	All in group	2	Detects J- Non-detects UJ
		NWEPH	1-Chlorooctadecane	25.3	60-140	EPH Aliphatic Hydrocarbon (C10-C12)	1	J-

Table 4
Surrogate Recovery Results out of Acceptable Limits
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
10600362	PEO-MW-02-20220309	NWTPH-Dx	n-Triacontane	43	50-150	Motor Oil Range SG	1	J ²
		8270E SIM	p-Terphenyl-d14	40	54-125	All in group	2	Detects J- Non-detects UJ
	PEO-MW-11-20220309	NWTPH-Dx	n-Triacontane	43	50-150	Motor Oil Range SG	1	J ²
		8270E SIM	p-Terphenyl-d14	46	54-125	All in group	2	Detects J- Non-detects UJ

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Notes:

1 = Qualified non-detect at the reporting limit due to additional blank contamination

2 = Qualified as an estimate with no bias due to additional blank contamination

J- = Detected results are estimated with a low bias

MSD = Matrix spike duplicate

NWEPH = Northwest extractable petroleum hydrocarbons

NWTPH = Northwest total petroleum hydrocarbons

NWVPH = Northwest volatile petroleum hydrocarbons

SIM = Selected ion monitoring

SG = Silica gel

U = Non-detected

UJ = Non-detected, estimated report limit

Table 5
Samples with Inaccurate Quantification
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Result	Units	Comment	ERM Qualifier
10599254	PEO-MW-32-20220301	NWTPH-Gx	TPH as Gas	23.8	µg/L	During a routine performance testing failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.	J+
10599467	PEO-MW-06-20220302	NWTPH-Gx	TPH as Gas	2590	µg/L	During a routine performance testing failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.	J+
10599830	PEO-MW-30-20220304	NWTPH-Gx	TPH as Gas	30.3	µg/L	During a routine performance testing failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.	J+

Table 5
Samples with Inaccurate Quantification
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Result	Units	Comment	ERM Qualifier
10600160	PEO-MW-39-20220308	NWTPH-Gx	TPH as Gas	3440	µg/L	During a routine performance testing failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.	J+
	PEO-MW-36-20220308			65.1	µg/L		J+
	PEO-MW-27-20220308			62.7	µg/L		J+
10600362	PEO-MW-35-20220309	NWTPH-Gx	TPH as Gas	23.2	µg/L	During a routine performance testing failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.	J+
	PEO-MW-34-20220309			161	µg/L		J+
	PEO-MW-02-20220309			222	µg/L		J+
	PEO-MW-11-20220309			486	µg/L		J+

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Notes:

J+ = Detected results are estimated with a high bias

NWTPH = Northwest total petroleum hydrocarbons

TPH = Total petroleum hydrocarbons

µg/L = Micrograms per liter

Table 6
Field Duplicate Evaluation
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
10599830	PEO-MW-08-20220303/ PEO-MW-Z1-20220303	Diesel Fuel Range SG	0.25	0.59	0.42	0.41	0.34	0.82	mg/L	--	--	--
		Motor Oil Range SG	ND	0.27	0.42	0.41	NA	NA	mg/L	NA	NA	--
		Total Hardness	43200	46300	3300	3300	--	--	µg/L	6.9	30	--
		Arsenic, Dissolved	2.3	2.2	0.50	0.50	0.1	1.00	µg/L	--	--	--
		Manganese, Dissolved	231	222	0.50	0.50	--	--	µg/L	4.0	30	--
		Acenaphthene	0.015	ND	0.042	0.042	NA	NA	µg/L	NA	NA	--
		1-Methylnaphthalene	0.026	0.018	0.042	0.042	NA	NA	µg/L	NA	NA	--
		2-Methylnaphthalene	0.013	ND	0.042	0.042	NA	NA	µg/L	NA	NA	--
		Naphthalene	0.060	0.041	0.042	0.042	0.019	0.084	µg/L	--	--	--
		o-Xylene	0.22	ND	1.0	1.0	NA	NA	µg/L	NA	NA	--
		Alkalinity, Total as CaCO3	145	146	5.0	5.0	--	--	mg/L	0.7	30	--
		Sulfate	99.3	59.3	1.2	1.2	--	--	mg/L	50	30	J

Table 6
Field Duplicate Evaluation
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
10599993	PEO-MW-41-20220307/ PEO-MW-Z2-20220307	Diesel Fuel Range SG	ND	0.16	0.42	0.43	NA	NA	mg/L	NA	NA	--
		Motor Oil Range SG	ND	0.23	0.42	0.43	NA	NA	mg/L	NA	NA	--
		Total Hardness	50200	47800	3300	3300	--	--	µg/L	4.9	30	--
		Arsenic, Dissolved	0.10	0.11	0.50	0.50	NA	NA	µg/L	NA	NA	--
		Manganese, Dissolved	31.4	32.2	0.50	0.50	--	--	µg/L	2.5	30	--
		Alkalinity, Total as CaCO3	61.6	61.0	5.0	5.0	--	--	mg/L	1.0	30	--
		Sulfate	3.5	3.5	1.2	1.2	0.0	2.4	mg/L	--	--	--

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Notes:

J = Estimated detected result

mg/L = Milligrams per liter

NA = Not applicable

RPD = Relative percent difference

SG = Silica gel

µg/L = Micrograms per liter

Table 7
Suspect TPH Results
PEO Groundwater Sampling
First Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Analyte	Reported Concentration	Units	Comment	ERM Qualifier
10599254	PEO-MW-32-20220301	TPH as Gas	23.8	µg/L	Early peaks present outside the GRO window.	J+ ¹
10599467	PEO-MW-06-20220302	TPH as Gas	2590	µg/L	Late peaks present outside the GRO window.	J+ ¹

Lab packages reviewed: 10599254, 10599467, 10599830, 10599993, 10600160, and 10600362

Notes:

1 = Qualified as an estimate with a high bias due to additional inaccurate quantification

J+ = Detected results are estimated with a high bias

TPH = Total petroleum hydrocarbons

µg/L = Micrograms per liter

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April 06, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086
Pace Project No.: 10599254

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 03, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086

Pace Project No.: 10599254

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01*

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086

Pace Project No.: 10599254

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10599254001	TRIP BLANK-20220301	Water	03/01/22 08:00	03/03/22 08:50
10599254002	PEO-MW-32-20220301	Water	03/01/22 10:50	03/03/22 08:50
10599254003	PEO-MW-33-20220301	Water	03/01/22 13:15	03/03/22 08:50
10599254004	PEO-MW-24A-20220301	Water	03/01/22 15:25	03/03/22 08:50

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SAMPLE ANALYTE COUNT

Project: 0633086
Pace Project No.: 10599254

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10599254002	PEO-MW-32-20220301	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
10599254003	PEO-MW-33-20220301	EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10599254004	PEO-MW-24A-20220301	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599254

Sample: PEO-MW-32-20220301 Lab ID: 10599254002 Collected: 03/01/22 10:50 Received: 03/03/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.17J	mg/L	0.42	0.12	1	03/03/22 16:04	03/07/22 10:23	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	03/03/22 16:04	03/07/22 10:23	64742-65-0	
Surrogates									
o-Terphenyl (S)	83	%.	50-150		1	03/03/22 16:04	03/07/22 10:23	84-15-1	
n-Triacontane (S)	76	%.	50-150		1	03/03/22 16:04	03/07/22 10:23		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	23.8J	ug/L	100	22.2	1		03/03/22 18:04		1M,G-
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%.	50-150		1		03/03/22 18:04	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	96800	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 15:45		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	8.9	ug/L	0.50	0.083	1	03/08/22 05:18	03/16/22 00:02	7440-38-2	
Manganese, Dissolved	2.5	ug/L	0.50	0.20	1	03/08/22 05:18	03/16/22 00:02	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0069	1	03/03/22 16:01	03/04/22 15:30	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/03/22 16:01	03/04/22 15:30	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/03/22 16:01	03/04/22 15:30	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	03/03/22 16:01	03/04/22 15:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	03/03/22 16:01	03/04/22 15:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0095	1	03/03/22 16:01	03/04/22 15:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0081	1	03/03/22 16:01	03/04/22 15:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0083	1	03/03/22 16:01	03/04/22 15:30	207-08-9	
Chrysene	ND	ug/L	0.040	0.0094	1	03/03/22 16:01	03/04/22 15:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/03/22 16:01	03/04/22 15:30	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/03/22 16:01	03/04/22 15:30	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	03/03/22 16:01	03/04/22 15:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/03/22 16:01	03/04/22 15:30	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0067	1	03/03/22 16:01	03/04/22 15:30	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0083	1	03/03/22 16:01	03/04/22 15:30	91-57-6	
Naphthalene	0.030J	ug/L	0.040	0.0088	1	03/03/22 16:01	03/04/22 15:30	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/03/22 16:01	03/04/22 15:30	85-01-8	
Pyrene	ND	ug/L	0.040	0.0099	1	03/03/22 16:01	03/04/22 15:30	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	56	%.	52-125		1	03/03/22 16:01	03/04/22 15:30	321-60-8	
p-Terphenyl-d14 (S)	62	%.	54-125		1	03/03/22 16:01	03/04/22 15:30	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599254

Sample: PEO-MW-32-20220301		Lab ID: 10599254002		Collected: 03/01/22 10:50		Received: 03/03/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.34J	ug/L	1.0	0.10	1		03/03/22 16:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/03/22 16:41	100-41-4	
Toluene	0.14J	ug/L	1.0	0.10	1		03/03/22 16:41	108-88-3	
m&p-Xylene	0.23J	ug/L	2.0	0.20	1		03/03/22 16:41	179601-23-1	
o-Xylene	0.41J	ug/L	1.0	0.18	1		03/03/22 16:41	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125		1		03/03/22 16:41	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		03/03/22 16:41	460-00-4	
Toluene-d8 (S)	101	%.	75-125		1		03/03/22 16:41	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	109	mg/L	5.0	1.8	1		03/12/22 12:16		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	23.9	mg/L	1.2	0.43	1		03/05/22 16:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599254

Sample: PEO-MW-33-20220301 Lab ID: 10599254003 Collected: 03/01/22 13:15 Received: 03/03/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.43	0.13	1	03/03/22 16:04	03/07/22 10:45	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.20	1	03/03/22 16:04	03/07/22 10:45	64742-65-0	
Surrogates									
o-Terphenyl (S)	83	%.	50-150		1	03/03/22 16:04	03/07/22 10:45	84-15-1	
n-Triacontane (S)	79	%.	50-150		1	03/03/22 16:04	03/07/22 10:45		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/03/22 18:34		
Surrogates									
a,a,a-Trifluorotoluene (S)	94	%.	50-150		1		03/03/22 18:34	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	88800	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 15:57		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	9.5	ug/L	0.50	0.083	1	03/08/22 05:18	03/16/22 00:09	7440-38-2	
Manganese, Dissolved	580	ug/L	5.0	2.0	10	03/08/22 05:18	03/16/22 00:25	7439-96-5	P6
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.028J	ug/L	0.041	0.0070	1	03/03/22 16:01	03/04/22 15:50	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0062	1	03/03/22 16:01	03/04/22 15:50	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	03/03/22 16:01	03/04/22 15:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	03/03/22 16:01	03/04/22 15:50	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	03/03/22 16:01	03/04/22 15:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	03/03/22 16:01	03/04/22 15:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	03/03/22 16:01	03/04/22 15:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	03/03/22 16:01	03/04/22 15:50	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	03/03/22 16:01	03/04/22 15:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	03/03/22 16:01	03/04/22 15:50	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.014	1	03/03/22 16:01	03/04/22 15:50	206-44-0	
Fluorene	ND	ug/L	0.041	0.0062	1	03/03/22 16:01	03/04/22 15:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	03/03/22 16:01	03/04/22 15:50	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	03/03/22 16:01	03/04/22 15:50	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0084	1	03/03/22 16:01	03/04/22 15:50	91-57-6	
Naphthalene	ND	ug/L	0.041	0.0090	1	03/03/22 16:01	03/04/22 15:50	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.012	1	03/03/22 16:01	03/04/22 15:50	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	03/03/22 16:01	03/04/22 15:50	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	55	%.	52-125		1	03/03/22 16:01	03/04/22 15:50	321-60-8	
p-Terphenyl-d14 (S)	60	%.	54-125		1	03/03/22 16:01	03/04/22 15:50	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599254

Sample: PEO-MW-33-20220301		Lab ID: 10599254003		Collected: 03/01/22 13:15		Received: 03/03/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/03/22 16:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/03/22 16:56	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/03/22 16:56	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/03/22 16:56	179601-23-1	
o-Xylene	0.30J	ug/L	1.0	0.18	1		03/03/22 16:56	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125		1		03/03/22 16:56	2199-69-1	
4-Bromofluorobenzene (S)	103	%.	75-125		1		03/03/22 16:56	460-00-4	
Toluene-d8 (S)	102	%.	75-125		1		03/03/22 16:56	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	60.8	mg/L	5.0	1.8	1		03/12/22 12:18		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	59.9	mg/L	1.2	0.43	1		03/05/22 17:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599254

Sample: PEO-MW-24A-20220301 Lab ID: 10599254004 Collected: 03/01/22 15:25 Received: 03/03/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.43	0.13	1	03/03/22 16:04	03/07/22 10:56	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.19	1	03/03/22 16:04	03/07/22 10:56	64742-65-0	
Surrogates									
o-Terphenyl (S)	80	%.	50-150		1	03/03/22 16:04	03/07/22 10:56	84-15-1	
n-Triacontane (S)	75	%.	50-150		1	03/03/22 16:04	03/07/22 10:56		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/03/22 18:50		
Surrogates									
a,a,a-Trifluorotoluene (S)	91	%.	50-150		1		03/03/22 18:50	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	49400	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 15:58		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.96	ug/L	0.50	0.083	1	03/08/22 05:18	03/16/22 00:42	7440-38-2	
Manganese, Dissolved	312	ug/L	0.50	0.20	1	03/08/22 05:18	03/16/22 00:42	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0068	1	03/03/22 16:01	03/04/22 16:10	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0060	1	03/03/22 16:01	03/04/22 16:10	208-96-8	
Anthracene	ND	ug/L	0.040	0.0053	1	03/03/22 16:01	03/04/22 16:10	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	03/03/22 16:01	03/04/22 16:10	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	03/03/22 16:01	03/04/22 16:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0094	1	03/03/22 16:01	03/04/22 16:10	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0080	1	03/03/22 16:01	03/04/22 16:10	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0082	1	03/03/22 16:01	03/04/22 16:10	207-08-9	
Chrysene	ND	ug/L	0.040	0.0093	1	03/03/22 16:01	03/04/22 16:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	03/03/22 16:01	03/04/22 16:10	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/03/22 16:01	03/04/22 16:10	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	03/03/22 16:01	03/04/22 16:10	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/03/22 16:01	03/04/22 16:10	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0067	1	03/03/22 16:01	03/04/22 16:10	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0082	1	03/03/22 16:01	03/04/22 16:10	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0087	1	03/03/22 16:01	03/04/22 16:10	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/03/22 16:01	03/04/22 16:10	85-01-8	
Pyrene	ND	ug/L	0.040	0.0098	1	03/03/22 16:01	03/04/22 16:10	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	03/03/22 16:01	03/04/22 16:10	321-60-8	
p-Terphenyl-d14 (S)	74	%.	54-125		1	03/03/22 16:01	03/04/22 16:10	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599254

Sample: PEO-MW-24A-20220301		Lab ID: 10599254004		Collected: 03/01/22 15:25		Received: 03/03/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/03/22 17:12	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/03/22 17:12	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/03/22 17:12	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/03/22 17:12	179601-23-1	
o-Xylene	0.23J	ug/L	1.0	0.18	1		03/03/22 17:12	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		03/03/22 17:12	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		03/03/22 17:12	460-00-4	
Toluene-d8 (S)	103	%.	75-125		1		03/03/22 17:12	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599254

QC Batch:	801785	Analysis Method:	NWTPH-Gx
QC Batch Method:	NWTPH-Gx	Analysis Description:	NWTPH-Gx Water
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599254002, 10599254003, 10599254004		

METHOD BLANK: 4257726 Matrix: Water

Associated Lab Samples: 10599254002, 10599254003, 10599254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/03/22 17:49	
a,a,a-Trifluorotoluene (S)	%.	100	50-150		03/03/22 17:49	

LABORATORY CONTROL SAMPLE & LCSD: 4257728

4257729

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1020	1060	102	106	75-125	4	20	1M
a,a,a-Trifluorotoluene (S)	%.				106	98	50-150			

SAMPLE DUPLICATE: 4257758

Parameter	Units	10599254002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	23.8J	24.7J		30	1M,G-
a,a,a-Trifluorotoluene (S)	%.	96	94			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599254

QC Batch:	802106	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599254002, 10599254003, 10599254004		

METHOD BLANK: 4259916 Matrix: Water

Associated Lab Samples: 10599254002, 10599254003, 10599254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	03/15/22 23:56	
Manganese, Dissolved	ug/L	ND	0.50	0.20	03/15/22 23:56	

LABORATORY CONTROL SAMPLE: 4259917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.6	94	80-120	
Manganese, Dissolved	ug/L	100	92.2	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4259918 4259919

Parameter	Units	10599254003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	9.5	100	100	108	108	99	98	75-125	1	20	
Manganese, Dissolved	ug/L	580	100	100	709	675	129	95	75-125	5	20	E,P6

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599254

QC Batch:	801731	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599254002, 10599254003, 10599254004

METHOD BLANK: 4257338 Matrix: Water
Associated Lab Samples: 10599254002, 10599254003, 10599254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/03/22 12:03	
Ethylbenzene	ug/L	ND	1.0	0.11	03/03/22 12:03	
m&p-Xylene	ug/L	ND	2.0	0.20	03/03/22 12:03	
o-Xylene	ug/L	ND	1.0	0.18	03/03/22 12:03	
Toluene	ug/L	ND	1.0	0.10	03/03/22 12:03	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		03/03/22 12:03	
4-Bromofluorobenzene (S)	%	103	75-125		03/03/22 12:03	
Toluene-d8 (S)	%	103	75-125		03/03/22 12:03	

LABORATORY CONTROL SAMPLE & LCSD: 4257339

Parameter	Units	4257340								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.4	19.2	97	96	73-125	1	20	
Ethylbenzene	ug/L	20	18.3	18.0	92	90	75-125	2	20	
m&p-Xylene	ug/L	40	36.5	35.3	91	88	72-125	3	20	
o-Xylene	ug/L	20	19.0	18.2	95	91	73-125	4	20	
Toluene	ug/L	20	19.6	18.8	98	94	74-125	5	20	
1,2-Dichlorobenzene-d4 (S)	%				99	100	75-125			
4-Bromofluorobenzene (S)	%				101	104	75-125			
Toluene-d8 (S)	%				101	103	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599254

QC Batch: 801742 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599254002, 10599254003, 10599254004

METHOD BLANK: 4257384 Matrix: Water
Associated Lab Samples: 10599254002, 10599254003, 10599254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	03/04/22 12:10	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	03/04/22 12:10	
Acenaphthene	ug/L	ND	0.040	0.0069	03/04/22 12:10	
Acenaphthylene	ug/L	ND	0.040	0.0061	03/04/22 12:10	
Anthracene	ug/L	ND	0.040	0.0054	03/04/22 12:10	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	03/04/22 12:10	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	03/04/22 12:10	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	03/04/22 12:10	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	03/04/22 12:10	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	03/04/22 12:10	
Chrysene	ug/L	ND	0.040	0.0094	03/04/22 12:10	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	03/04/22 12:10	
Fluoranthene	ug/L	ND	0.040	0.014	03/04/22 12:10	
Fluorene	ug/L	ND	0.040	0.0060	03/04/22 12:10	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	03/04/22 12:10	
Naphthalene	ug/L	ND	0.040	0.0088	03/04/22 12:10	
Phenanthrene	ug/L	ND	0.040	0.012	03/04/22 12:10	
Pyrene	ug/L	ND	0.040	0.0099	03/04/22 12:10	
2-Fluorobiphenyl (S)	%	69	52-125		03/04/22 12:10	
p-Terphenyl-d14 (S)	%	80	54-125		03/04/22 12:10	

LABORATORY CONTROL SAMPLE & LCSD: 4257385

LABORATORY CONTROL SAMPLE & LCSD: 4257385			4257386							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.92	0.69	92	69	43-125	28	20	R1
2-Methylnaphthalene	ug/L	1	0.86	0.71	86	71	42-125	19	20	
Acenaphthene	ug/L	1	0.86	0.77	86	77	56-125	11	20	
Acenaphthylene	ug/L	1	0.83	0.74	83	74	55-125	11	20	
Anthracene	ug/L	1	0.96	0.72	96	72	64-125	28	20	R1
Benzo(a)anthracene	ug/L	1	0.86	0.77	86	77	65-125	12	20	
Benzo(a)pyrene	ug/L	1	0.88	0.82	88	82	64-125	6	20	
Benzo(b)fluoranthene	ug/L	1	0.89	0.79	89	79	70-125	13	20	
Benzo(g,h,i)perylene	ug/L	1	0.85	0.79	85	79	49-125	7	20	
Benzo(k)fluoranthene	ug/L	1	0.93	0.93	93	93	69-125	0	20	
Chrysene	ug/L	1	0.94	0.88	94	88	70-125	7	20	
Dibenz(a,h)anthracene	ug/L	1	0.89	0.82	89	82	41-125	8	20	
Fluoranthene	ug/L	1	0.90	0.82	90	82	67-125	9	20	
Fluorene	ug/L	1	0.84	0.71	84	71	59-125	18	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.79	0.73	79	73	57-125	9	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599254

LABORATORY CONTROL SAMPLE & LCSD: 4257385			4257386							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Naphthalene	ug/L	1	0.89	0.74	89	74	49-125	18	20	
Phenanthrene	ug/L	1	0.82	0.75	82	75	65-125	9	20	
Pyrene	ug/L	1	0.89	0.84	89	84	67-125	6	20	
2-Fluorobiphenyl (S)	%.				75	65	52-125			
p-Terphenyl-d14 (S)	%.				81	72	54-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599254

QC Batch:	801732	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599254002, 10599254003, 10599254004		

METHOD BLANK: 4257341 Matrix: Water

Associated Lab Samples: 10599254002, 10599254003, 10599254004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/07/22 09:50	
Motor Oil Range SG	mg/L	ND	0.40	0.18	03/07/22 09:50	
n-Triacontane (S)	%.	64	50-150		03/07/22 09:50	
o-Terphenyl (S)	%.	70	50-150		03/07/22 09:50	

LABORATORY CONTROL SAMPLE & LCSD: 4257342

		4257343								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.7	1.5	87	74	50-150	16	20	
Motor Oil Range SG	mg/L	2	1.7	1.6	87	79	50-150	9	20	
n-Triacontane (S)	%.				79	69	50-150			
o-Terphenyl (S)	%.				89	76	50-150			

SAMPLE DUPLICATE: 4257344

Parameter	Units	10599254002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.17J	0.16J		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%.	76	86			
o-Terphenyl (S)	%.	83	92			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599254

QC Batch: 803408

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599254002, 10599254003

METHOD BLANK: 4265613

Matrix: Water

Associated Lab Samples: 10599254002, 10599254003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	03/12/22 12:06	

LABORATORY CONTROL SAMPLE & LCSD: 4265614

4265615

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.3	42.3	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4265616

4265617

Parameter	Units	10599450001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	5.2	40	40	56.5	55.8	128	127	80-120	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4265634

4265635

Parameter	Units	10599691013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	250	40	40	290	292	102	106	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599254

QC Batch: 801858

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599254002, 10599254003

METHOD BLANK: 4258285

Matrix: Water

Associated Lab Samples: 10599254002, 10599254003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/04/22 19:26	

LABORATORY CONTROL SAMPLE: 4258286

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	54.1	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4258287 4258288

Parameter	Units	10599254002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	23.9	50	50	70.8	72.0	94	96	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4258289 4258290

Parameter	Units	10599254003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	59.9	50	50	102	102	84	83	80-120	0	20 E	

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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QUALIFIERS

Project: 0633086

Pace Project No.: 10599254

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 adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 10599254004

[1] For sample MW-24A, the unpreserved volume for alkalinity and sulfate was spilt in the cooler upon arrival, analysis could not be completed.

BATCH QUALIFIERS

Batch: 801731

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 801785

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 801907

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M During a routine PT failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.

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

G- Early peaks present outside the GRO window.

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0633086
Pace Project No.: 10599254

ANALYTE QUALIFIERS

P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086

Pace Project No.: 10599254

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10599254002	PEO-MW-32-20220301	EPA Mod. 3510C	801732	NWTPH-Dx	802208
10599254003	PEO-MW-33-20220301	EPA Mod. 3510C	801732	NWTPH-Dx	802208
10599254004	PEO-MW-24A-20220301	EPA Mod. 3510C	801732	NWTPH-Dx	802208
10599254002	PEO-MW-32-20220301	NWTPH-Gx	801785		
10599254003	PEO-MW-33-20220301	NWTPH-Gx	801785		
10599254004	PEO-MW-24A-20220301	NWTPH-Gx	801785		
10599254002	PEO-MW-32-20220301	EPA 3010A	802103	EPA 6010D	802483
10599254003	PEO-MW-33-20220301	EPA 3010A	802103	EPA 6010D	802483
10599254004	PEO-MW-24A-20220301	EPA 3010A	802103	EPA 6010D	802483
10599254002	PEO-MW-32-20220301	EPA 3020A	802106	EPA 6020A	802512
10599254003	PEO-MW-33-20220301	EPA 3020A	802106	EPA 6020A	802512
10599254004	PEO-MW-24A-20220301	EPA 3020A	802106	EPA 6020A	802512
10599254002	PEO-MW-32-20220301	EPA Mod. 3510C	801742	EPA 8270E by SIM	801907
10599254003	PEO-MW-33-20220301	EPA Mod. 3510C	801742	EPA 8270E by SIM	801907
10599254004	PEO-MW-24A-20220301	EPA Mod. 3510C	801742	EPA 8270E by SIM	801907
10599254002	PEO-MW-32-20220301	EPA 8260D	801731		
10599254003	PEO-MW-33-20220301	EPA 8260D	801731		
10599254004	PEO-MW-24A-20220301	EPA 8260D	801731		
10599254002	PEO-MW-32-20220301	SM 2320B	803408		
10599254003	PEO-MW-33-20220301	SM 2320B	803408		
10599254002	PEO-MW-32-20220301	EPA 300.0	801858		
10599254003	PEO-MW-33-20220301	EPA 300.0	801858		

REPORT OF LABORATORY ANALYSIS

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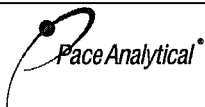
Page: _____ of _____

WO#: 10599254



10599254

Page 22 of 34

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Page 1 of 1
	Pace Analytical Services - Minneapolis	

Sample Condition Upon Receipt	Client Name: <u>ERM</u>	Project #: W0# : 10599254
	Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Speedee ☐ Commercial	PM: JMT Due Date: 03/17/22 CLIENT: ERM-Oregon
Tracking Number: <u>5405 1817 1800/022/1811</u>		See Exceptions ☐ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No	Seals Intact? ☒ Yes ☐ No	Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A
Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:	Temp Blank? ☒ Yes ☐ No	
Thermometer: ☐ T1(0461) ☐ T2(1336) ☒ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808	Type of Ice: ☐ Wet ☒ Blue ☐ None ☐ Dry ☐ Melted	

Did Samples Originate in West Virginia? ☐ Yes ☐ No	Were All Container Temps Taken? ☐ Yes ☐ No ☐ N/A
Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>3.9, 4.1, 5.2</u> °C
Correction Factor: <u>-0.2</u>	Cooler Temp Corrected w/temp blank: <u>3.7, 3.9, 5.0</u> °C
Average Corrected Temp (no temp blank only): _____ °C	
☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container	

USDA Regulated Soil: (☒ N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: by 3/13/22
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
-Pace Containers Used? ☒ Yes ☐ No	9. <u>see exceptions sheet</u>
Containers Intact? ☒ Yes ☒ No	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☐ No ☐ N/A	11. If no, write ID/ Date/Time on Container Below: ☐ See Exception ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? ☒ Yes ☐ No	
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	12. Sample # <u>2-41</u> <u>2-42</u> ☒ NaOH ☒ HNO ₃ ☒ H ₂ SO ₄ ☐ Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide) ☒ Yes ☐ No ☐ N/A	Positive for Res. ☐ Yes ☐ No Chlorine? ☐ Yes ☐ No pH Paper Lot#
Exceptions (VOA) Coliform, TOC/DOC Oil and Grease, <u>PRD</u> /8015 (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	Res. Chlorine ☐ Yes ☐ No 0-6 Roll ☐ Yes ☐ No 0-6 Strip ☐ Yes ☐ No 0-14 Strip
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	13. ☐ See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☒ No ☐ N/A	
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>352235</u>
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____
 Comments/Resolution: notified that TB were recieved broken and the unpreserved contents for sulfate/alkalinity was spilt for MW-24A.

Field Data Required? ☐ Yes ☐ No

Project Manager Review: [Signature]

Date: 3/4/22

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

Labeled by: [Signature] (3) Page 23 of 34

	Document Name: Sample Condition Upon Receipt (SCUR) Exception Form	Document Revised: 04Jun2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0142 Rev.01	Pace Analytical Services - Minneapolis

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? ☐ Yes ☐ No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			Multiple Cooler Project? ☐ Yes ☐ No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp												
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			

Tracking Number/Temperature

No volume -

Issue Type: <i>broken/spilled</i>	Container Type	# of Containers
<i>Sample ID</i>		
<i>pH-MW-24A-20220301</i>	<i>B93U</i>	<i>1</i>
<i>Trip Blank-20220301</i>	<i>v69H</i>	<i>6</i>

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition? ☐ Yes ☐ No	Initials

Comments:

All trip blanks broken



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086

Work Order Number: 2203181

March 18, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 3 sample(s) on 3/4/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086
Work Order: 2203181

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203181-001	PEO-MW-32-20220301	03/01/2022 10:50 AM	03/04/2022 10:16 AM
2203181-002	PEO-MW-33-20220301	03/01/2022 1:15 PM	03/04/2022 10:16 AM
2203181-003	PEO-MW-24A-20220301	03/01/2022 3:25 PM	03/04/2022 10:16 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota**Project:** 0633086

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2203181
Date Reported: 3/18/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203181-001

Collection Date: 3/1/2022 10:50:00 AM

Client Sample ID: PEO-MW-32-20220301

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.7		µg/L	1	3/17/2022 5:51:56 PM
Surr: 1-Chlorooctadecane	84.7	60 - 140		%Rec	1	3/17/2022 5:51:56 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	12.7	12.2	J	µg/L	1	3/11/2022 4:37:44 PM
Surr: 1,4-Difluorobenzene	137	60 - 140		%Rec	1	3/11/2022 4:37:44 PM
Surr: Bromofluorobenzene	94.0	60 - 140		%Rec	1	3/11/2022 4:37:44 PM

Lab ID: 2203181-002

Collection Date: 3/1/2022 1:15:00 PM

Client Sample ID: PEO-MW-33-20220301

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.7		µg/L	1	3/17/2022 7:38:12 PM
Surr: 1-Chlorooctadecane	83.7	60 - 140		%Rec	1	3/17/2022 7:38:12 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 3:24:18 PM
Surr: 1,4-Difluorobenzene	164	60 - 140	S	%Rec	1	3/12/2022 3:24:18 PM
Surr: Bromofluorobenzene	49.7	60 - 140	S	%Rec	1	3/12/2022 3:24:18 PM

NOTES:

S - Outlying surrogate recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.



Analytical Report

Work Order: 2203181
Date Reported: 3/18/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203181-003

Collection Date: 3/1/2022 3:25:00 PM

Client Sample ID: PEO-MW-24A-20220301

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	3/17/2022 8:31:14 PM
Surr: 1-Chlorooctadecane	72.4	60 - 140		%Rec	1	3/17/2022 8:31:14 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/11/2022 6:42:08 PM
Surr: 1,4-Difluorobenzene	145	60 - 140	S	%Rec	1	3/11/2022 6:42:08 PM
Surr: Bromofluorobenzene	104	60 - 140		%Rec	1	3/11/2022 6:42:08 PM

NOTES:

S - Outlying surrogate recovery(ies) observed (high bias). Sample is non-detect; result meets QC requirements.

Work Order: 2203181
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-35660		SampType: MBLK			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: MBLKW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518640				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						
Surr: 1-Chlorooctadecane	332		400.0		82.9	60	140				

Sample ID: LCS-35660		SampType: LCS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518641				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	352	40.0	500.0	0	70.4	70	130				
Surr: 1-Chlorooctadecane	416		400.0		104	60	140				

Sample ID: LCSD-35660		SampType: LCSD			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW02		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518642				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	353	40.0	500.0	0	70.6	70	130	352.0	0.318	20	
Surr: 1-Chlorooctadecane	402		400.0		100	60	140		0		

Sample ID: 2203181-001AMS		SampType: MS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: PEO-MW-32-20220301		Batch ID: 35660						Analysis Date: 3/17/2022			SeqNo: 1518644	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	318	40.7	509.3	0	62.5	70	130				S
Surr: 1-Chlorooctadecane	391		407.5		95.9	60	140				

NOTES:

S - Outlying spike recoveries were associated with this sample.

Work Order: 2203181
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-35678		SampType: LCS			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: LCSW		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518456				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	196	25.0	200.0	0	98.0	70	130				
Surr: 1,4-Difluorobenzene	49.2		50.00		98.4	60	140				
Surr: Bromofluorobenzene	49.0		50.00		98.0	60	140				

Sample ID: MB-35678		SampType: MBLK			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: MBLKW		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518455				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	67.1		50.00		134	60	140				
Surr: Bromofluorobenzene	47.3		50.00		94.6	60	140				

Sample ID: 2203181-001BDUP		SampType: DUP			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: PEO-MW-32-20220301		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518423				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	12.8	25.0		0	0			12.66	0.842	25	J
Surr: 1,4-Difluorobenzene	61.8		50.00		124	60	140		0		
Surr: Bromofluorobenzene	47.0		50.00		93.9	60	140		0		

Sample ID: 2203181-002BMS		SampType: MS			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: PEO-MW-33-20220301		Batch ID: 35678			Analysis Date: 3/12/2022			SeqNo: 1518426				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	156	25.0	200.0	0	77.8	70	130				
Surr: 1,4-Difluorobenzene	48.6		50.00		97.2	60	140				
Surr: Bromofluorobenzene	44.1		50.00		88.2	60	140				

Client Name: **PACEMI**
 Logged by: **Clare Griggs**

Work Order Number: **2203181**
 Date Received: **3/4/2022 10:16:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	1.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

April 06, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086
Pace Project No.: 10599467

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 04, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086

Pace Project No.: 10599467

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01*

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086

Pace Project No.: 10599467

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10599467001	TRIP BLANK-20220302	Water	03/02/22 08:00	03/04/22 08:50
10599467002	PEO-MW-42-20220302	Water	03/02/22 10:05	03/04/22 08:50
10599467003	PEO-MW-03-20220302	Water	03/02/22 12:30	03/04/22 08:50
10599467004	PEO-MW-06-20220302	Water	03/02/22 13:50	03/04/22 08:50
10599467005	PEO-MW-19-20220302	Water	03/02/22 15:40	03/04/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086

Pace Project No.: 10599467

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10599467001	TRIP BLANK-20220302	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	MAM	8	PASI-M
10599467002	PEO-MW-42-20220302	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
10599467003	PEO-MW-03-20220302	EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10599467004	PEO-MW-06-20220302	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
10599467005	PEO-MW-19-20220302	SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599467

Sample: TRIP BLANK-20220302		Lab ID: 10599467001		Collected: 03/02/22 08:00		Received: 03/04/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/04/22 15:40		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	50-150		1		03/04/22 15:40	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/04/22 23:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/04/22 23:37	100-41-4	
Toluene	0.52J	ug/L	1.0	0.10	1		03/04/22 23:37	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/04/22 23:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/04/22 23:37	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/04/22 23:37	2199-69-1	
4-Bromofluorobenzene (S)	111	%.	75-125		1		03/04/22 23:37	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		03/04/22 23:37	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599467

Sample: PEO-MW-42-20220302 Lab ID: 10599467002 Collected: 03/02/22 10:05 Received: 03/04/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.42	0.12	1	03/04/22 16:37	03/09/22 11:46	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	03/04/22 16:37	03/09/22 11:46	64742-65-0	
Surrogates									
o-Terphenyl (S)	80	%.	50-150		1	03/04/22 16:37	03/09/22 11:46	84-15-1	
n-Triacontane (S)	82	%.	50-150		1	03/04/22 16:37	03/09/22 11:46		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/04/22 15:56		
Surrogates									
a,a,a-Trifluorotoluene (S)	106	%.	50-150		1		03/04/22 15:56	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	105000	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 16:00		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	4.7	ug/L	0.50	0.083	1	03/08/22 05:18	03/16/22 00:49	7440-38-2	
Manganese, Dissolved	439	ug/L	0.50	0.20	1	03/08/22 05:18	03/16/22 00:49	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.044	0.0077	1	03/04/22 16:33	03/09/22 13:31	83-32-9	
Acenaphthylene	ND	ug/L	0.044	0.0068	1	03/04/22 16:33	03/09/22 13:31	208-96-8	
Anthracene	ND	ug/L	0.044	0.0060	1	03/04/22 16:33	03/09/22 13:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.044	0.010	1	03/04/22 16:33	03/09/22 13:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.044	0.0098	1	03/04/22 16:33	03/09/22 13:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.044	0.011	1	03/04/22 16:33	03/09/22 13:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.044	0.0090	1	03/04/22 16:33	03/09/22 13:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.044	0.0092	1	03/04/22 16:33	03/09/22 13:31	207-08-9	
Chrysene	ND	ug/L	0.044	0.010	1	03/04/22 16:33	03/09/22 13:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.044	0.0088	1	03/04/22 16:33	03/09/22 13:31	53-70-3	
Fluoranthene	ND	ug/L	0.044	0.016	1	03/04/22 16:33	03/09/22 13:31	206-44-0	
Fluorene	ND	ug/L	0.044	0.0067	1	03/04/22 16:33	03/09/22 13:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.044	0.012	1	03/04/22 16:33	03/09/22 13:31	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.044	0.0075	1	03/04/22 16:33	03/09/22 13:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.044	0.0092	1	03/04/22 16:33	03/09/22 13:31	91-57-6	
Naphthalene	ND	ug/L	0.044	0.0098	1	03/04/22 16:33	03/09/22 13:31	91-20-3	
Phenanthrene	ND	ug/L	0.044	0.014	1	03/04/22 16:33	03/09/22 13:31	85-01-8	
Pyrene	ND	ug/L	0.044	0.011	1	03/04/22 16:33	03/09/22 13:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%.	52-125		1	03/04/22 16:33	03/09/22 13:31	321-60-8	
p-Terphenyl-d14 (S)	73	%.	54-125		1	03/04/22 16:33	03/09/22 13:31	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599467

Sample: PEO-MW-42-20220302		Lab ID: 10599467002		Collected: 03/02/22 10:05		Received: 03/04/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/05/22 01:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/05/22 01:20	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/05/22 01:20	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/05/22 01:20	179601-23-1	
o-Xylene	0.42J	ug/L	1.0	0.18	1		03/05/22 01:20	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125		1		03/05/22 01:20	2199-69-1	
4-Bromofluorobenzene (S)	109	%.	75-125		1		03/05/22 01:20	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		03/05/22 01:20	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	90.0	mg/L	5.0	1.8	1		03/15/22 12:44		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	52.5	mg/L	1.2	0.43	1		03/08/22 20:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599467

Sample: PEO-MW-03-20220302 Lab ID: 10599467003 Collected: 03/02/22 12:30 Received: 03/04/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	03/04/22 16:37	03/09/22 12:08	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	03/04/22 16:37	03/09/22 12:08	64742-65-0	
Surrogates									
o-Terphenyl (S)	73	%.	50-150		1	03/04/22 16:37	03/09/22 12:08	84-15-1	
n-Triacontane (S)	79	%.	50-150		1	03/04/22 16:37	03/09/22 12:08		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/04/22 16:11		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%.	50-150		1		03/04/22 16:11	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	47100	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 16:02		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.24J	ug/L	0.50	0.083	1	03/08/22 05:18	03/16/22 00:56	7440-38-2	
Manganese, Dissolved	1.9	ug/L	0.50	0.20	1	03/08/22 05:18	03/16/22 00:56	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.046	0.0079	1	03/04/22 16:33	03/09/22 13:51	83-32-9	
Acenaphthylene	ND	ug/L	0.046	0.0070	1	03/04/22 16:33	03/09/22 13:51	208-96-8	
Anthracene	ND	ug/L	0.046	0.0062	1	03/04/22 16:33	03/09/22 13:51	120-12-7	
Benzo(a)anthracene	0.020J	ug/L	0.046	0.010	1	03/04/22 16:33	03/09/22 13:51	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.046	0.010	1	03/04/22 16:33	03/09/22 13:51	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.046	0.011	1	03/04/22 16:33	03/09/22 13:51	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.046	0.0093	1	03/04/22 16:33	03/09/22 13:51	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.046	0.0095	1	03/04/22 16:33	03/09/22 13:51	207-08-9	
Chrysene	0.028J	ug/L	0.046	0.011	1	03/04/22 16:33	03/09/22 13:51	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.046	0.0091	1	03/04/22 16:33	03/09/22 13:51	53-70-3	
Fluoranthene	ND	ug/L	0.046	0.016	1	03/04/22 16:33	03/09/22 13:51	206-44-0	
Fluorene	ND	ug/L	0.046	0.0069	1	03/04/22 16:33	03/09/22 13:51	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.046	0.013	1	03/04/22 16:33	03/09/22 13:51	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.046	0.0077	1	03/04/22 16:33	03/09/22 13:51	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.046	0.0095	1	03/04/22 16:33	03/09/22 13:51	91-57-6	
Naphthalene	ND	ug/L	0.046	0.010	1	03/04/22 16:33	03/09/22 13:51	91-20-3	
Phenanthrene	ND	ug/L	0.046	0.014	1	03/04/22 16:33	03/09/22 13:51	85-01-8	
Pyrene	ND	ug/L	0.046	0.011	1	03/04/22 16:33	03/09/22 13:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	64	%.	52-125		1	03/04/22 16:33	03/09/22 13:51	321-60-8	
p-Terphenyl-d14 (S)	72	%.	54-125		1	03/04/22 16:33	03/09/22 13:51	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599467

Sample: PEO-MW-03-20220302		Lab ID: 10599467003		Collected: 03/02/22 12:30		Received: 03/04/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/05/22 01:35	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/05/22 01:35	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/05/22 01:35	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/05/22 01:35	179601-23-1	
o-Xylene	0.19J	ug/L	1.0	0.18	1		03/05/22 01:35	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/05/22 01:35	2199-69-1	
4-Bromofluorobenzene (S)	109	%.	75-125		1		03/05/22 01:35	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/05/22 01:35	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	60.2	mg/L	5.0	1.8	1		03/15/22 12:59		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	4.6	mg/L	1.2	0.43	1		03/08/22 22:39	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599467

Sample: PEO-MW-06-20220302 Lab ID: 10599467004 Collected: 03/02/22 13:50 Received: 03/04/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.0	mg/L	0.43	0.13	1	03/04/22 16:37	03/09/22 12:19	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.19	1	03/04/22 16:37	03/09/22 12:19	64742-65-0	
Surrogates									
o-Terphenyl (S)	73	%.	50-150		1	03/04/22 16:37	03/09/22 12:19	84-15-1	
n-Triacontane (S)	83	%.	50-150		1	03/04/22 16:37	03/09/22 12:19		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	2590	ug/L	500	111	5		03/04/22 16:26		1M,G+
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	50-150		5		03/04/22 16:26	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	26600	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 16:03		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	3.2	ug/L	2.5	0.41	5	03/08/22 05:18	03/16/22 01:03	7440-38-2	
Manganese, Dissolved	539	ug/L	2.5	1.0	5	03/08/22 05:18	03/16/22 01:03	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.92	ug/L	0.043	0.0073	1	03/04/22 16:33	03/09/22 14:11	83-32-9	
Acenaphthylene	0.19	ug/L	0.043	0.0065	1	03/04/22 16:33	03/09/22 14:11	208-96-8	
Anthracene	0.096	ug/L	0.043	0.0057	1	03/04/22 16:33	03/09/22 14:11	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.043	0.0096	1	03/04/22 16:33	03/09/22 14:11	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.043	0.0094	1	03/04/22 16:33	03/09/22 14:11	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.043	0.010	1	03/04/22 16:33	03/09/22 14:11	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.043	0.0086	1	03/04/22 16:33	03/09/22 14:11	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.043	0.0088	1	03/04/22 16:33	03/09/22 14:11	207-08-9	
Chrysene	ND	ug/L	0.043	0.010	1	03/04/22 16:33	03/09/22 14:11	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.043	0.0085	1	03/04/22 16:33	03/09/22 14:11	53-70-3	
Fluoranthene	0.049	ug/L	0.043	0.015	1	03/04/22 16:33	03/09/22 14:11	206-44-0	
Fluorene	1.6	ug/L	0.043	0.0064	1	03/04/22 16:33	03/09/22 14:11	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.043	0.012	1	03/04/22 16:33	03/09/22 14:11	193-39-5	
1-Methylnaphthalene	32.0	ug/L	0.21	0.036	5	03/04/22 16:33	03/10/22 11:58	90-12-0	
2-Methylnaphthalene	28.3	ug/L	0.21	0.044	5	03/04/22 16:33	03/10/22 11:58	91-57-6	
Naphthalene	4.2	ug/L	0.043	0.0094	1	03/04/22 16:33	03/09/22 14:11	91-20-3	
Phenanthrene	0.28	ug/L	0.043	0.013	1	03/04/22 16:33	03/09/22 14:11	85-01-8	
Pyrene	0.052	ug/L	0.043	0.010	1	03/04/22 16:33	03/09/22 14:11	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	74	%.	52-125		1	03/04/22 16:33	03/09/22 14:11	321-60-8	
p-Terphenyl-d14 (S)	72	%.	54-125		1	03/04/22 16:33	03/09/22 14:11	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599467

Sample: PEO-MW-06-20220302		Lab ID: 10599467004		Collected: 03/02/22 13:50		Received: 03/04/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/05/22 01:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/05/22 01:49	100-41-4	
Toluene	0.46J	ug/L	1.0	0.10	1		03/05/22 01:49	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/05/22 01:49	179601-23-1	
o-Xylene	0.24J	ug/L	1.0	0.18	1		03/05/22 01:49	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125		1		03/05/22 01:49	2199-69-1	
4-Bromofluorobenzene (S)	110	%.	75-125		1		03/05/22 01:49	460-00-4	
Toluene-d8 (S)	93	%.	75-125		1		03/05/22 01:49	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	61.2	mg/L	5.0	1.8	1		03/15/22 13:11		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	1.7	mg/L	1.2	0.43	1		03/08/22 23:27	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599467

Sample: PEO-MW-19-20220302 Lab ID: 10599467005 Collected: 03/02/22 15:40 Received: 03/04/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.17J	mg/L	0.40	0.12	1	03/04/22 16:37	03/09/22 12:30	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	03/04/22 16:37	03/09/22 12:30	64742-65-0	
Surrogates									
o-Terphenyl (S)	82	%.	50-150		1	03/04/22 16:37	03/09/22 12:30	84-15-1	
n-Triacontane (S)	84	%.	50-150		1	03/04/22 16:37	03/09/22 12:30		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/04/22 16:56		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	50-150		1		03/04/22 16:56	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	80900	ug/L	3300	76.7	1	03/08/22 05:22	03/10/22 16:05		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.11J	ug/L	0.50	0.083	1	03/08/22 05:18	03/16/22 01:16	7440-38-2	
Manganese, Dissolved	18.5	ug/L	0.50	0.20	1	03/08/22 05:18	03/16/22 01:16	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	03/04/22 16:33	03/09/22 14:31	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/04/22 16:33	03/09/22 14:31	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/04/22 16:33	03/09/22 14:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	03/04/22 16:33	03/09/22 14:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	03/04/22 16:33	03/09/22 14:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	03/04/22 16:33	03/09/22 14:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	03/04/22 16:33	03/09/22 14:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	03/04/22 16:33	03/09/22 14:31	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	03/04/22 16:33	03/09/22 14:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/04/22 16:33	03/09/22 14:31	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/04/22 16:33	03/09/22 14:31	206-44-0	
Fluorene	0.016J	ug/L	0.040	0.0061	1	03/04/22 16:33	03/09/22 14:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/04/22 16:33	03/09/22 14:31	193-39-5	
1-Methylnaphthalene	0.13	ug/L	0.040	0.0068	1	03/04/22 16:33	03/09/22 14:31	90-12-0	
2-Methylnaphthalene	0.17	ug/L	0.040	0.0084	1	03/04/22 16:33	03/09/22 14:31	91-57-6	
Naphthalene	0.024J	ug/L	0.040	0.0089	1	03/04/22 16:33	03/09/22 14:31	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/04/22 16:33	03/09/22 14:31	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	03/04/22 16:33	03/09/22 14:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%.	52-125		1	03/04/22 16:33	03/09/22 14:31	321-60-8	
p-Terphenyl-d14 (S)	71	%.	54-125		1	03/04/22 16:33	03/09/22 14:31	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599467

Sample: PEO-MW-19-20220302		Lab ID: 10599467005		Collected: 03/02/22 15:40		Received: 03/04/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/05/22 02:04	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/05/22 02:04	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/05/22 02:04	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/05/22 02:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/05/22 02:04	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	105	%.	75-125		1		03/05/22 02:04	2199-69-1	
4-Bromofluorobenzene (S)	109	%.	75-125		1		03/05/22 02:04	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		03/05/22 02:04	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	133	mg/L	5.0	1.8	1		03/15/22 13:14		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	9.0	mg/L	1.2	0.43	1		03/08/22 23:43	14808-79-8	

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

QC Batch: 801966

Analysis Method: NWTPH-Gx

QC Batch Method: NWTPH-Gx

Analysis Description: NWTPH-Gx Water

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599467001, 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4258920

Matrix: Water

Associated Lab Samples: 10599467001, 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/04/22 15:25	
a,a,a-Trifluorotoluene (S)	%.	103	50-150		03/04/22 15:25	

LABORATORY CONTROL SAMPLE & LCSD: 4258922

4258923

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1040	1040	104	104	75-125	0	20	1M
a,a,a-Trifluorotoluene (S)	%.				97	99	50-150			

SAMPLE DUPLICATE: 4258940

Parameter	Units	10599467004 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	2590	2590	0	30	1M,G+
a,a,a-Trifluorotoluene (S)	%.	100	98			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

QC Batch:	802106	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4259916 Matrix: Water
Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	03/15/22 23:56	
Manganese, Dissolved	ug/L	ND	0.50	0.20	03/15/22 23:56	

LABORATORY CONTROL SAMPLE: 4259917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.6	94	80-120	
Manganese, Dissolved	ug/L	100	92.2	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4259918 4259919

Parameter	Units	10599254003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	9.5	100	100	108	108	99	98	75-125	1	20	
Manganese, Dissolved	ug/L	580	100	100	709	675	129	95	75-125	5	20	E,P6

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599467

QC Batch: 801944 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV UST-WATER
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599467001, 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4258854 Matrix: Water
Associated Lab Samples: 10599467001, 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/04/22 23:22	
Ethylbenzene	ug/L	ND	1.0	0.11	03/04/22 23:22	
m&p-Xylene	ug/L	ND	2.0	0.20	03/04/22 23:22	
o-Xylene	ug/L	ND	1.0	0.18	03/04/22 23:22	
Toluene	ug/L	ND	1.0	0.10	03/04/22 23:22	
1,2-Dichlorobenzene-d4 (S)	%	105	75-125		03/04/22 23:22	
4-Bromofluorobenzene (S)	%	110	75-125		03/04/22 23:22	
Toluene-d8 (S)	%	99	75-125		03/04/22 23:22	

LABORATORY CONTROL SAMPLE & LCSD: 4258855		4258856								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	18.2	17.1	91	86	73-125	6	20	
Ethylbenzene	ug/L	20	19.8	18.5	99	93	75-125	7	20	
m&p-Xylene	ug/L	40	39.3	36.3	98	91	72-125	8	20	
o-Xylene	ug/L	20	20.2	18.7	101	93	73-125	8	20	
Toluene	ug/L	20	17.8	16.2	89	81	74-125	9	20	
1,2-Dichlorobenzene-d4 (S)	%				104	105	75-125			
4-Bromofluorobenzene (S)	%				107	107	75-125			
Toluene-d8 (S)	%				95	94	75-125			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

QC Batch:	801960	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4258899 Matrix: Water

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	03/09/22 12:31	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	03/09/22 12:31	
Acenaphthene	ug/L	ND	0.040	0.0069	03/09/22 12:31	
Acenaphthylene	ug/L	ND	0.040	0.0061	03/09/22 12:31	
Anthracene	ug/L	ND	0.040	0.0054	03/09/22 12:31	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	03/09/22 12:31	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	03/09/22 12:31	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	03/09/22 12:31	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	03/09/22 12:31	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	03/09/22 12:31	
Chrysene	ug/L	ND	0.040	0.0094	03/09/22 12:31	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	03/09/22 12:31	
Fluoranthene	ug/L	ND	0.040	0.014	03/09/22 12:31	
Fluorene	ug/L	ND	0.040	0.0060	03/09/22 12:31	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	03/09/22 12:31	
Naphthalene	ug/L	ND	0.040	0.0088	03/09/22 12:31	
Phenanthrene	ug/L	ND	0.040	0.012	03/09/22 12:31	
Pyrene	ug/L	ND	0.040	0.0099	03/09/22 12:31	
2-Fluorobiphenyl (S)	%	77	52-125		03/09/22 12:31	
p-Terphenyl-d14 (S)	%	79	54-125		03/09/22 12:31	

LABORATORY CONTROL SAMPLE & LCSD: 4258900

		4258901								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.92	0.86	92	86	43-125	6	20	
2-Methylnaphthalene	ug/L	1	0.90	0.83	90	83	42-125	8	20	
Acenaphthene	ug/L	1	0.90	0.86	90	86	56-125	4	20	
Acenaphthylene	ug/L	1	0.89	0.83	89	83	55-125	7	20	
Anthracene	ug/L	1	1.1	1.0	110	105	64-125	5	20	
Benzo(a)anthracene	ug/L	1	0.85	0.89	85	89	65-125	4	20	
Benzo(a)pyrene	ug/L	1	0.92	0.96	92	96	64-125	4	20	
Benzo(b)fluoranthene	ug/L	1	0.88	0.93	88	93	70-125	5	20	
Benzo(g,h,i)perylene	ug/L	1	0.76	0.82	76	82	49-125	7	20	
Benzo(k)fluoranthene	ug/L	1	1.0	1.1	103	107	69-125	4	20	
Chrysene	ug/L	1	0.99	1.0	99	103	70-125	4	20	
Dibenz(a,h)anthracene	ug/L	1	0.71	0.85	71	85	41-125	17	20	
Fluoranthene	ug/L	1	0.93	0.90	93	90	67-125	4	20	
Fluorene	ug/L	1	0.83	0.80	83	80	59-125	3	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.82	0.88	82	88	57-125	6	20	

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

LABORATORY CONTROL SAMPLE & LCSD: 4258900			4258901								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.91	0.86	91	86	49-125	6	20		
Phenanthrene	ug/L	1	0.86	0.80	86	80	65-125	8	20		
Pyrene	ug/L	1	0.93	0.95	93	95	67-125	2	20		
2-Fluorobiphenyl (S)	%.				77	72	52-125				
p-Terphenyl-d14 (S)	%.				78	82	54-125				

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

QC Batch:	801958	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4258893 Matrix: Water

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/09/22 11:12	
Motor Oil Range SG	mg/L	ND	0.40	0.18	03/09/22 11:12	
n-Triacontane (S)	%.	80	50-150		03/09/22 11:12	
o-Terphenyl (S)	%.	81	50-150		03/09/22 11:12	

LABORATORY CONTROL SAMPLE & LCSD: 4258894

		4258895								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.7	1.8	87	92	50-150	5	20	
Motor Oil Range SG	mg/L	2	1.7	1.8	87	91	50-150	4	20	
n-Triacontane (S)	%.				79	81	50-150			
o-Terphenyl (S)	%.				84	85	50-150			

SAMPLE DUPLICATE: 4258896

Parameter	Units	10599467002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%.	82	76			
o-Terphenyl (S)	%.	80	74			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

QC Batch:	803683	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4266506 Matrix: Water

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	2.2J	5.0	1.8	03/15/22 10:54	

LABORATORY CONTROL SAMPLE & LCSD: 4266507		4266508								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.6	43.4	109	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266509					4266510							
Parameter	Units	10599375001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike Conc.	Spike Conc.								Result
Alkalinity, Total as CaCO3	mg/L	103	40	40	143	144	101	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266511					4266512							
Parameter	Units	10599467003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	60.2	40	40	100	101	101	101	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599467

QC Batch: 802055

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

METHOD BLANK: 4259733

Matrix: Water

Associated Lab Samples: 10599467002, 10599467003, 10599467004, 10599467005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/08/22 06:49	

LABORATORY CONTROL SAMPLE: 4259734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.2	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4259735 4259736

Parameter	Units	10599467002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	52.5	50	50	98.9	99.0	93	93	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4259737 4259738

Parameter	Units	10599467003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	4.6	50	50	56.6	56.6	104	104	80-120	0	20	

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QUALIFIERS

Project: 0633086
Pace Project No.: 10599467

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 adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
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.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 801944
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 801966
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 802730
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M During a routine PT failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
G+ Late peaks present outside the GRO window.
P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086

Pace Project No.: 10599467

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10599467002	PEO-MW-42-20220302	EPA Mod. 3510C	801958	NWTPH-Dx	802821
10599467003	PEO-MW-03-20220302	EPA Mod. 3510C	801958	NWTPH-Dx	802821
10599467004	PEO-MW-06-20220302	EPA Mod. 3510C	801958	NWTPH-Dx	802821
10599467005	PEO-MW-19-20220302	EPA Mod. 3510C	801958	NWTPH-Dx	802821
10599467001	TRIP BLANK-20220302	NWTPH-Gx	801966		
10599467002	PEO-MW-42-20220302	NWTPH-Gx	801966		
10599467003	PEO-MW-03-20220302	NWTPH-Gx	801966		
10599467004	PEO-MW-06-20220302	NWTPH-Gx	801966		
10599467005	PEO-MW-19-20220302	NWTPH-Gx	801966		
10599467002	PEO-MW-42-20220302	EPA 3010A	802103	EPA 6010D	802483
10599467003	PEO-MW-03-20220302	EPA 3010A	802103	EPA 6010D	802483
10599467004	PEO-MW-06-20220302	EPA 3010A	802103	EPA 6010D	802483
10599467005	PEO-MW-19-20220302	EPA 3010A	802103	EPA 6010D	802483
10599467002	PEO-MW-42-20220302	EPA 3020A	802106	EPA 6020A	802512
10599467003	PEO-MW-03-20220302	EPA 3020A	802106	EPA 6020A	802512
10599467004	PEO-MW-06-20220302	EPA 3020A	802106	EPA 6020A	802512
10599467005	PEO-MW-19-20220302	EPA 3020A	802106	EPA 6020A	802512
10599467002	PEO-MW-42-20220302	EPA Mod. 3510C	801960	EPA 8270E by SIM	802730
10599467003	PEO-MW-03-20220302	EPA Mod. 3510C	801960	EPA 8270E by SIM	802730
10599467004	PEO-MW-06-20220302	EPA Mod. 3510C	801960	EPA 8270E by SIM	802730
10599467005	PEO-MW-19-20220302	EPA Mod. 3510C	801960	EPA 8270E by SIM	802730
10599467001	TRIP BLANK-20220302	EPA 8260D	801944		
10599467002	PEO-MW-42-20220302	EPA 8260D	801944		
10599467003	PEO-MW-03-20220302	EPA 8260D	801944		
10599467004	PEO-MW-06-20220302	EPA 8260D	801944		
10599467005	PEO-MW-19-20220302	EPA 8260D	801944		
10599467002	PEO-MW-42-20220302	SM 2320B	803683		
10599467003	PEO-MW-03-20220302	SM 2320B	803683		
10599467004	PEO-MW-06-20220302	SM 2320B	803683		
10599467005	PEO-MW-19-20220302	SM 2320B	803683		
10599467002	PEO-MW-42-20220302	EPA 300.0	802055		
10599467003	PEO-MW-03-20220302	EPA 300.0	802055		
10599467004	PEO-MW-06-20220302	EPA 300.0	802055		
10599467005	PEO-MW-19-20220302	EPA 300.0	802055		

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CHAIN-OF-CUSTODY / Analytical Request Document

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



Section A Required Client Information:

Company: ERM
Address: 1050 SW 6th Ave, Suite 1650
Portland, OR 97204
Email To: rita.cooper@erm.com
Phone: 207-329-6320 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Rita Cooper
Copy To:
Purchase Order No.:
Project Name:
Project Number: 0633086

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Julie Bowser
Pace Profile #:

Page: of

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location

OR

STATE:

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.								
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other												
					DATE	TIME	DATE	TIME																						
1	TRIP BLANK-20220302		GW	G	3/2/22	8:00				6	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	001
2	PEO-MW-42-20220302		GW	G	3/2/22	10:05				18	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	002
3	PEO-MW-03-20220302		GW	G	3/2/22	12:30				18	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	003
4	PEO-MW-06-20220302		GW	G	3/2/22	13:50				18	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	004
5	PEO-MW196-20220302		GW	G	3/2/22	15:40				18	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	005
6																														
7																														
8																														
9																														
10																														
11																														
12																														

WO#: 10599467



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	ERM	03/03/22	9:32	PACE	3/4/22	8:50	3.7	Y	Y	N
							4.3			
							4.0			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ERM

SIGNATURE of SAMPLER: ERM

DATE Signed (MM/DD/YY): 3/3/22

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

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt	Client Name: <u>ERM</u>	Project #: WO# : 10599467
	Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeedDee ☐ Commercial	PM: JMT Due Date: 03/18/22 CLIENT: ERM-Oregon
Tracking Number:		See Exceptions ☒ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No	Seals Intact? ☒ Yes ☐ No	Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A
Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:	Temp Blank? ☒ Yes ☐ No	
Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☒ T4(0254) ☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808	Type of Ice: ☒ Wet ☒ Blue ☐ None ☐ Dry ☐ Melted	

Did Samples Originate in West Virginia? ☐ Yes ☒ No	Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A	
Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>3.7, 4.3, 4.0</u> °C	Average Corrected Temp (no temp blank only): <u>3.9</u> °C
Correction Factor: <u>True</u>	Cooler Temp Corrected w/temp blank: <u>3.7, 4.3, 4.0</u> °C	See Exceptions ☒ ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☒ N/A, water sample/Other: _____ **Date/Initials of Person Examining Contents:** ED 3.4.22

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

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

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
-Pace Containers Used? ☒ Yes ☐ No	
Containers Intact? ☐ Yes ☒ No	9. 3 containers arrived broken - see exceptions
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☐ No ☐ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☒ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	11. If no, write ID/Date/Time on Container Below: sample 4 ID on COC doesn't match bottles - bottles say PEO-MW-19-20220302 times all match
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	12. Sample # <u>002-005</u> sample 005, not 004 JMB 3/4/22
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	☐ NaOH ☒ HNO ₃ ☒ H ₂ SO ₄ ☐ Zinc Acetate <u>1/1</u> <u>1/1</u>
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, <u>DRO/8015</u> (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	Positive for Res. ☐ Yes ☐ No Chlorine? ☐ Yes ☐ No pH Paper Lot# Res. Chlorine <u>212521</u> 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	13. trip blanks expired on 9/21/21 See Exception ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☒ No ☐ N/A	
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>317614 (4)</u>
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

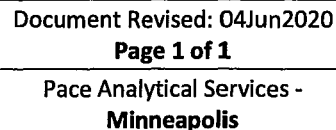
CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Comments/Resolution: verified sample ID and notified about broken containers

Project Manager Review: [Signature] **Date:** 3/4/22

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





Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086

Work Order Number: 2203226

March 21, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 5 sample(s) on 3/8/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086
Work Order: 2203226

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203226-001	TRIP BLANK-20220302	03/02/2022 8:00 AM	03/08/2022 3:45 PM
2203226-002	PEO-MW-42-20220302	03/02/2022 10:05 AM	03/08/2022 3:45 PM
2203226-003	PEO-MW-03-20220302	03/02/2022 12:30 PM	03/08/2022 3:45 PM
2203226-004	PEO-MW-06-20220302	03/02/2022 1:50 PM	03/08/2022 3:45 PM
2203226-005	PEO-MW-19-20220302	03/02/2022 3:40 PM	03/08/2022 3:45 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Work Order: 2203226
Date Reported: 3/21/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203226-001

Client Sample ID: TRIP BLANK-20220302

Collection Date: 3/2/2022 8:00:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/11/2022 1:10:04 PM
Surr: 1,4-Difluorobenzene	134	60 - 140		%Rec	1	3/11/2022 1:10:04 PM
Surr: Bromofluorobenzene	92.9	60 - 140		%Rec	1	3/11/2022 1:10:04 PM

Lab ID: 2203226-002

Client Sample ID: PEO-MW-42-20220302

Collection Date: 3/2/2022 10:05:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/17/2022 9:24:23 PM
Surr: 1-Chlorooctadecane	82.9	60 - 140		%Rec	1	3/17/2022 9:24:23 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/11/2022 7:23:45 PM
Surr: 1,4-Difluorobenzene	139	60 - 140		%Rec	1	3/11/2022 7:23:45 PM
Surr: Bromofluorobenzene	102	60 - 140		%Rec	1	3/11/2022 7:23:45 PM



Analytical Report

Work Order: 2203226
Date Reported: 3/21/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203226-003

Collection Date: 3/2/2022 12:30:00 PM

Client Sample ID: PEO-MW-03-20220302

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/17/2022 10:17:23 PM
Surr: 1-Chlorooctadecane	88.6	60 - 140		%Rec	1	3/17/2022 10:17:23 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/11/2022 8:05:13 PM
Surr: 1,4-Difluorobenzene	140	60 - 140		%Rec	1	3/11/2022 8:05:13 PM
Surr: Bromofluorobenzene	104	60 - 140		%Rec	1	3/11/2022 8:05:13 PM

Lab ID: 2203226-004

Collection Date: 3/2/2022 1:50:00 PM

Client Sample ID: PEO-MW-06-20220302

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	31.9	20.6	J	µg/L	1	3/17/2022 11:10:25 PM
Surr: 1-Chlorooctadecane	87.3	60 - 140		%Rec	1	3/17/2022 11:10:25 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	405	12.2		µg/L	1	3/11/2022 8:46:46 PM
Surr: 1,4-Difluorobenzene	131	60 - 140		%Rec	1	3/11/2022 8:46:46 PM
Surr: Bromofluorobenzene	103	60 - 140		%Rec	1	3/11/2022 8:46:46 PM



Analytical Report

Work Order: 2203226
Date Reported: 3/21/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203226-005

Collection Date: 3/2/2022 3:40:00 PM

Client Sample ID: PEO-MW-19-20220302

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/18/2022 12:03:23 AM
Surr: 1-Chlorooctadecane	88.9	60 - 140		%Rec	1	3/18/2022 12:03:23 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/11/2022 11:32:04 PM
Surr: 1,4-Difluorobenzene	138	60 - 140		%Rec	1	3/11/2022 11:32:04 PM
Surr: Bromofluorobenzene	98.8	60 - 140		%Rec	1	3/11/2022 11:32:04 PM

Work Order: 2203226
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-35660		SampType: MBLK			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: MBLKW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518640				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						
Surr: 1-Chlorooctadecane	332		400.0		82.9	60	140				

Sample ID: LCS-35660		SampType: LCS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518641				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	352	40.0	500.0	0	70.4	70	130				
Surr: 1-Chlorooctadecane	416		400.0		104	60	140				

Sample ID: LCS-35660		SampType: LCS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW02		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518642				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	353	40.0	500.0	0	70.6	70	130	352.0	0.318	20	
Surr: 1-Chlorooctadecane	402		400.0		100	60	140		0		

Sample ID: 2203181-001AMS		SampType: MS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: BATCH		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518644				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	318	40.7	509.3	0	62.5	70	130				S
Surr: 1-Chlorooctadecane	391		407.5		95.9	60	140				

NOTES:

S - Outlying spike recoveries were associated with this sample.

Work Order: 2203226
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-35678		SampType: LCS			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: LCSW		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518456				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	196	25.0	200.0	0	98.0	70	130				
Surr: 1,4-Difluorobenzene	49.2		50.00		98.4	60	140				
Surr: Bromofluorobenzene	49.0		50.00		98.0	60	140				

Sample ID: MB-35678		SampType: MBLK			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: MBLKW		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518455				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	67.1		50.00		134	60	140				
Surr: Bromofluorobenzene	47.3		50.00		94.6	60	140				

Sample ID: 2203181-001BDUP		SampType: DUP			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: BATCH		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518423				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	12.8	25.0		0	0			12.66	0.842	25	J
Surr: 1,4-Difluorobenzene	61.8		50.00		124	60	140		0		
Surr: Bromofluorobenzene	47.0		50.00		93.9	60	140		0		

Sample ID: 2203181-002BMS		SampType: MS			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: BATCH		Batch ID: 35678			Analysis Date: 3/12/2022			SeqNo: 1518426				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	156	25.0	200.0	0	77.8	70	130				
Surr: 1,4-Difluorobenzene	48.6		50.00		97.2	60	140				
Surr: Bromofluorobenzene	44.1		50.00		88.2	60	140				

Client Name: **PACEMI**

Work Order Number: **2203226**

Logged by: **Gabrielle Coeuille**

Date Received: **3/8/2022 3:45:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	2.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10599467

Workorder Name: 0633086

Results Requested By: 3/18/2022

2203226



Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@pacelabs.com

Fremont Analytical
3600 Fremont Ave N
Seattle, WA 98103

P.O. 10599467

State of Sample Origin: OR

Report / Invoice To		Subcontract To		Requested Analysis				
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers	NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)	LAB USE ONLY
1	TRIP BLANK-20220302	3/2/2022 08:00	10599467001	Water	2	X	X	
2	PEO-MW-42-20220302	3/2/2022 10:05	10599467002	Water	5	X	X	
3	PEO-MW-03-20220302	3/2/2022 12:30	10599467003	Water	5	X	X	
4	PEO-MW-06-20220302	3/2/2022 13:50	10599467004	Water	5	X	X	
5	PEO-MW-19-20220302	3/2/2022 15:40	10599467005	Water	5	X	X	
Transfers								
1	Released By: <i>[Signature]</i>	Date/Time: 3/1/22 12:30	Received By: <i>[Signature]</i>	Date/Time: 3/8/22 15:45	Comments: EQUIS EDD J flag to MDL			
2								
3								
Cooler Temperature on Receipt		°C	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N

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April 04, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086
Pace Project No.: 10599830

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 08, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086

Pace Project No.: 10599830

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01*

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086

Pace Project No.: 10599830

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10599830001	TRIP BLANK-20220303	Water	03/03/22 08:00	03/08/22 08:50
10599830002	PEO-MW-25-20220303	Water	03/03/22 10:10	03/08/22 08:50
10599830003	PEO-MW-08-20220303	Water	03/03/22 12:15	03/08/22 08:50
10599830004	PEO-MW-Z1-20220303	Water	03/03/22 12:20	03/08/22 08:50
10599830005	PEO-MW-44-20220303	Water	03/03/22 14:35	03/08/22 08:50
10599830006	PEO-MW-31-20220303	Water	03/03/22 15:55	03/08/22 08:50
10599830007	PEO-MW-30-20220304	Water	03/04/22 09:40	03/08/22 08:50
10599830008	PEO-MW-18-20220304	Water	03/04/22 11:40	03/08/22 08:50
10599830009	PEO-MW-21-20220304	Water	03/04/22 14:15	03/08/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086

Pace Project No.: 10599830

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10599830001	TRIP BLANK-20220303	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	NMB	8	PASI-M
10599830002	PEO-MW-25-20220303	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
10599830003	PEO-MW-08-20220303	EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10599830004	PEO-MW-Z1-20220303	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
10599830005	PEO-MW-44-20220303	SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
10599830006	PEO-MW-31-20220303	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086
Pace Project No.: 10599830

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10599830007	PEO-MW-30-20220304	EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
10599830008	PEO-MW-18-20220304	NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
10599830009	PEO-MW-21-20220304	EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: TRIP BLANK-20220303		Lab ID: 10599830001		Collected: 03/03/22 08:00		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 13:48		
Surrogates									
a,a,a-Trifluorotoluene (S)	94	%.	50-150		1		03/10/22 13:48	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/08/22 17:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 17:16	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 17:16	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 17:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/08/22 17:16	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/08/22 17:16	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/08/22 17:16	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		03/08/22 17:16	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-25-20220303 Lab ID: 10599830002 Collected: 03/03/22 10:10 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	03/08/22 16:28	03/10/22 11:18	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	03/08/22 16:28	03/10/22 11:18	64742-65-0	
Surrogates									
o-Terphenyl (S)	62	%.	50-150		1	03/08/22 16:28	03/10/22 11:18	84-15-1	
n-Triacontane (S)	50	%.	50-150		1	03/08/22 16:28	03/10/22 11:18		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 14:03		
Surrogates									
a,a,a-Trifluorotoluene (S)	94	%.	50-150		1		03/10/22 14:03	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	51200	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 13:40		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.16J	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 14:49	7440-38-2	
Manganese, Dissolved	0.47J	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 14:49	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	03/08/22 16:10	03/14/22 15:19	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/08/22 16:10	03/14/22 15:19	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/08/22 16:10	03/14/22 15:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	03/08/22 16:10	03/14/22 15:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	03/08/22 16:10	03/14/22 15:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	03/08/22 16:10	03/14/22 15:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	03/08/22 16:10	03/14/22 15:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	03/08/22 16:10	03/14/22 15:19	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	03/08/22 16:10	03/14/22 15:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/08/22 16:10	03/14/22 15:19	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/08/22 16:10	03/14/22 15:19	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	03/08/22 16:10	03/14/22 15:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/08/22 16:10	03/14/22 15:19	193-39-5	
1-Methylnaphthalene	0.011J	ug/L	0.040	0.0068	1	03/08/22 16:10	03/14/22 15:19	90-12-0	
2-Methylnaphthalene	0.012J	ug/L	0.040	0.0084	1	03/08/22 16:10	03/14/22 15:19	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	03/08/22 16:10	03/14/22 15:19	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/08/22 16:10	03/14/22 15:19	85-01-8	L2
Pyrene	ND	ug/L	0.040	0.010	1	03/08/22 16:10	03/14/22 15:19	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	55	%.	52-125		1	03/08/22 16:10	03/14/22 15:19	321-60-8	
p-Terphenyl-d14 (S)	66	%.	54-125		1	03/08/22 16:10	03/14/22 15:19	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-25-20220303		Lab ID: 10599830002		Collected: 03/03/22 10:10		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/08/22 18:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 18:37	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 18:37	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 18:37	179601-23-1	
o-Xylene	0.27J	ug/L	1.0	0.18	1		03/08/22 18:37	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125		1		03/08/22 18:37	2199-69-1	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/08/22 18:37	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/08/22 18:37	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	68.7	mg/L	5.0	1.8	1		03/16/22 12:33		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	4.4	mg/L	1.2	0.43	1		03/14/22 16:57	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-08-20220303 Lab ID: 10599830003 Collected: 03/03/22 12:15 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.25J	mg/L	0.42	0.12	1	03/08/22 16:28	03/10/22 16:12	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	03/08/22 16:28	03/10/22 16:12	64742-65-0	
Surrogates									
o-Terphenyl (S)	55	%.	50-150		1	03/08/22 16:28	03/10/22 16:12	84-15-1	
n-Triacontane (S)	50	%.	50-150		1	03/08/22 16:28	03/10/22 16:12		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 14:33		
Surrogates									
a,a,a-Trifluorotoluene (S)	89	%.	50-150		1		03/10/22 14:33	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	43200	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 13:42		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.3	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 15:22	7440-38-2	
Manganese, Dissolved	231	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 15:22	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.015J	ug/L	0.042	0.0072	1	03/08/22 16:10	03/14/22 15:40	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0063	1	03/08/22 16:10	03/14/22 15:40	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	03/08/22 16:10	03/14/22 15:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0094	1	03/08/22 16:10	03/14/22 15:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0092	1	03/08/22 16:10	03/14/22 15:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0099	1	03/08/22 16:10	03/14/22 15:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	03/08/22 16:10	03/14/22 15:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0086	1	03/08/22 16:10	03/14/22 15:40	207-08-9	
Chrysene	ND	ug/L	0.042	0.0098	1	03/08/22 16:10	03/14/22 15:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	03/08/22 16:10	03/14/22 15:40	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	03/08/22 16:10	03/14/22 15:40	206-44-0	
Fluorene	ND	ug/L	0.042	0.0063	1	03/08/22 16:10	03/14/22 15:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	03/08/22 16:10	03/14/22 15:40	193-39-5	
1-Methylnaphthalene	0.026J	ug/L	0.042	0.0070	1	03/08/22 16:10	03/14/22 15:40	90-12-0	
2-Methylnaphthalene	0.013J	ug/L	0.042	0.0086	1	03/08/22 16:10	03/14/22 15:40	91-57-6	
Naphthalene	0.060	ug/L	0.042	0.0092	1	03/08/22 16:10	03/14/22 15:40	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	03/08/22 16:10	03/14/22 15:40	85-01-8	L2
Pyrene	ND	ug/L	0.042	0.010	1	03/08/22 16:10	03/14/22 15:40	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	03/08/22 16:10	03/14/22 15:40	321-60-8	
p-Terphenyl-d14 (S)	72	%.	54-125		1	03/08/22 16:10	03/14/22 15:40	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-08-20220303		Lab ID: 10599830003		Collected: 03/03/22 12:15		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/08/22 18:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 18:52	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 18:52	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 18:52	179601-23-1	
o-Xylene	0.22J	ug/L	1.0	0.18	1		03/08/22 18:52	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	103	%.	75-125		1		03/08/22 18:52	2199-69-1	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/08/22 18:52	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		03/08/22 18:52	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	145	mg/L	5.0	1.8	1		03/16/22 12:37		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	99.3	mg/L	1.2	0.43	1		03/14/22 17:45	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-Z1-20220303 Lab ID: 10599830004 Collected: 03/03/22 12:20 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.59	mg/L	0.41	0.12	1	03/11/22 15:33	03/16/22 17:17	68334-30-5	
Motor Oil Range SG	0.27J	mg/L	0.41	0.19	1	03/11/22 15:33	03/16/22 17:17	64742-65-0	B,P2
Surrogates									
o-Terphenyl (S)	31	%.	50-150		1	03/11/22 15:33	03/16/22 17:17	84-15-1	S0
n-Triacontane (S)	38	%.	50-150		1	03/11/22 15:33	03/16/22 17:17		S0
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 14:49		
Surrogates									
a,a,a-Trifluorotoluene (S)	89	%.	50-150		1		03/10/22 14:49	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	46300	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 13:53		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.2	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 15:29	7440-38-2	
Manganese, Dissolved	222	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 15:29	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.042	0.0073	1	03/08/22 16:10	03/14/22 16:02	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0064	1	03/08/22 16:10	03/14/22 16:02	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	03/08/22 16:10	03/14/22 16:02	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0095	1	03/08/22 16:10	03/14/22 16:02	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0093	1	03/08/22 16:10	03/14/22 16:02	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.010	1	03/08/22 16:10	03/14/22 16:02	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	03/08/22 16:10	03/14/22 16:02	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0087	1	03/08/22 16:10	03/14/22 16:02	207-08-9	
Chrysene	ND	ug/L	0.042	0.0099	1	03/08/22 16:10	03/14/22 16:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0084	1	03/08/22 16:10	03/14/22 16:02	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	03/08/22 16:10	03/14/22 16:02	206-44-0	
Fluorene	ND	ug/L	0.042	0.0064	1	03/08/22 16:10	03/14/22 16:02	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	03/08/22 16:10	03/14/22 16:02	193-39-5	
1-Methylnaphthalene	0.018J	ug/L	0.042	0.0071	1	03/08/22 16:10	03/14/22 16:02	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0087	1	03/08/22 16:10	03/14/22 16:02	91-57-6	
Naphthalene	0.041J	ug/L	0.042	0.0093	1	03/08/22 16:10	03/14/22 16:02	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	03/08/22 16:10	03/14/22 16:02	85-01-8	L2
Pyrene	ND	ug/L	0.042	0.010	1	03/08/22 16:10	03/14/22 16:02	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%.	52-125		1	03/08/22 16:10	03/14/22 16:02	321-60-8	
p-Terphenyl-d14 (S)	64	%.	54-125		1	03/08/22 16:10	03/14/22 16:02	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-Z1-20220303		Lab ID: 10599830004		Collected: 03/03/22 12:20		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/08/22 19:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 19:08	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 19:08	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 19:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/08/22 19:08	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/08/22 19:08	2199-69-1	
4-Bromofluorobenzene (S)	95	%.	75-125		1		03/08/22 19:08	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/08/22 19:08	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	146	mg/L	5.0	1.8	1		03/16/22 12:42		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	59.3	mg/L	1.2	0.43	1		03/14/22 21:06	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-44-20220303 Lab ID: 10599830005 Collected: 03/03/22 14:35 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.14J	mg/L	0.43	0.13	1	03/11/22 15:33	03/16/22 17:28	68334-30-5	
Motor Oil Range SG	0.30J	mg/L	0.43	0.19	1	03/11/22 15:33	03/16/22 17:28	64742-65-0	B
Surrogates									
o-Terphenyl (S)	60	%.	50-150		1	03/11/22 15:33	03/16/22 17:28	84-15-1	
n-Triacontane (S)	58	%.	50-150		1	03/11/22 15:33	03/16/22 17:28		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 15:04		
Surrogates									
a,a,a-Trifluorotoluene (S)	107	%.	50-150		1		03/10/22 15:04	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	100000	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 13:55		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.1	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 15:36	7440-38-2	
Manganese, Dissolved	173	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 15:36	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	03/08/22 16:10	03/14/22 16:23	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/08/22 16:10	03/14/22 16:23	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/08/22 16:10	03/14/22 16:23	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	03/08/22 16:10	03/14/22 16:23	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	03/08/22 16:10	03/14/22 16:23	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	03/08/22 16:10	03/14/22 16:23	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	03/08/22 16:10	03/14/22 16:23	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	03/08/22 16:10	03/14/22 16:23	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	03/08/22 16:10	03/14/22 16:23	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/08/22 16:10	03/14/22 16:23	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/08/22 16:10	03/14/22 16:23	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	03/08/22 16:10	03/14/22 16:23	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/08/22 16:10	03/14/22 16:23	193-39-5	
1-Methylnaphthalene	0.0077J	ug/L	0.040	0.0068	1	03/08/22 16:10	03/14/22 16:23	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	03/08/22 16:10	03/14/22 16:23	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	03/08/22 16:10	03/14/22 16:23	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/08/22 16:10	03/14/22 16:23	85-01-8	L2
Pyrene	ND	ug/L	0.040	0.010	1	03/08/22 16:10	03/14/22 16:23	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	61	%.	52-125		1	03/08/22 16:10	03/14/22 16:23	321-60-8	
p-Terphenyl-d14 (S)	74	%.	54-125		1	03/08/22 16:10	03/14/22 16:23	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-44-20220303		Lab ID: 10599830005		Collected: 03/03/22 14:35		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.17J	ug/L	1.0	0.10	1		03/08/22 19:24	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 19:24	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 19:24	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 19:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/08/22 19:24	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/08/22 19:24	2199-69-1	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/08/22 19:24	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/08/22 19:24	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	131	mg/L	5.0	1.8	1		03/16/22 12:46		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	9.1	mg/L	1.2	0.43	1		03/14/22 21:22	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-31-20220303 Lab ID: 10599830006 Collected: 03/03/22 15:55 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.12J	mg/L	0.39	0.12	1	03/08/22 16:28	03/10/22 12:15	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.39	0.18	1	03/08/22 16:28	03/10/22 12:15	64742-65-0	
Surrogates									
o-Terphenyl (S)	68	%.	50-150		1	03/08/22 16:28	03/10/22 12:15	84-15-1	
n-Triacontane (S)	70	%.	50-150		1	03/08/22 16:28	03/10/22 12:15		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 15:19		
Surrogates									
a,a,a-Trifluorotoluene (S)	108	%.	50-150		1		03/10/22 15:19	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	145000	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 13:57		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.20J	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 15:43	7440-38-2	
Manganese, Dissolved	24.3	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 15:43	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.021J	ug/L	0.042	0.0073	1	03/08/22 16:10	03/14/22 16:45	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0064	1	03/08/22 16:10	03/14/22 16:45	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	03/08/22 16:10	03/14/22 16:45	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0095	1	03/08/22 16:10	03/14/22 16:45	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0093	1	03/08/22 16:10	03/14/22 16:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.010	1	03/08/22 16:10	03/14/22 16:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	03/08/22 16:10	03/14/22 16:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0087	1	03/08/22 16:10	03/14/22 16:45	207-08-9	
Chrysene	ND	ug/L	0.042	0.0099	1	03/08/22 16:10	03/14/22 16:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0084	1	03/08/22 16:10	03/14/22 16:45	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	03/08/22 16:10	03/14/22 16:45	206-44-0	
Fluorene	ND	ug/L	0.042	0.0064	1	03/08/22 16:10	03/14/22 16:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	03/08/22 16:10	03/14/22 16:45	193-39-5	
1-Methylnaphthalene	0.0087J	ug/L	0.042	0.0071	1	03/08/22 16:10	03/14/22 16:45	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0087	1	03/08/22 16:10	03/14/22 16:45	91-57-6	
Naphthalene	ND	ug/L	0.042	0.0093	1	03/08/22 16:10	03/14/22 16:45	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	03/08/22 16:10	03/14/22 16:45	85-01-8	L2
Pyrene	ND	ug/L	0.042	0.010	1	03/08/22 16:10	03/14/22 16:45	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	62	%.	52-125		1	03/08/22 16:10	03/14/22 16:45	321-60-8	
p-Terphenyl-d14 (S)	74	%.	54-125		1	03/08/22 16:10	03/14/22 16:45	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-31-20220303		Lab ID: 10599830006		Collected: 03/03/22 15:55		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/08/22 19:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 19:40	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 19:40	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 19:40	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/08/22 19:40	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/08/22 19:40	2199-69-1	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/08/22 19:40	460-00-4	
Toluene-d8 (S)	97	%.	75-125		1		03/08/22 19:40	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	137	mg/L	5.0	1.8	1		03/17/22 13:40		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	42.1	mg/L	1.2	0.43	1		03/14/22 21:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-30-20220304 Lab ID: 10599830007 Collected: 03/04/22 09:40 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.1	mg/L	0.40	0.12	1	03/08/22 16:28	03/10/22 12:26	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	03/08/22 16:28	03/10/22 12:26	64742-65-0	
Surrogates									
o-Terphenyl (S)	75	%.	50-150		1	03/08/22 16:28	03/10/22 12:26	84-15-1	
n-Triacontane (S)	79	%.	50-150		1	03/08/22 16:28	03/10/22 12:26		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	30.3J	ug/L	100	22.2	1		03/10/22 16:05		1M
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	50-150		1		03/10/22 16:05	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	264000	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 13:58		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.2	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 15:50	7440-38-2	
Manganese, Dissolved	806	ug/L	5.0	2.0	10	03/10/22 06:43	03/17/22 15:53	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.15	ug/L	0.041	0.0071	1	03/08/22 16:10	03/14/22 17:07	83-32-9	
Acenaphthylene	0.020J	ug/L	0.041	0.0063	1	03/08/22 16:10	03/14/22 17:07	208-96-8	
Anthracene	0.042	ug/L	0.041	0.0055	1	03/08/22 16:10	03/14/22 17:07	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0093	1	03/08/22 16:10	03/14/22 17:07	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0091	1	03/08/22 16:10	03/14/22 17:07	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0098	1	03/08/22 16:10	03/14/22 17:07	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0084	1	03/08/22 16:10	03/14/22 17:07	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0085	1	03/08/22 16:10	03/14/22 17:07	207-08-9	
Chrysene	ND	ug/L	0.041	0.0097	1	03/08/22 16:10	03/14/22 17:07	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0082	1	03/08/22 16:10	03/14/22 17:07	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.015	1	03/08/22 16:10	03/14/22 17:07	206-44-0	
Fluorene	0.041J	ug/L	0.041	0.0062	1	03/08/22 16:10	03/14/22 17:07	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.012	1	03/08/22 16:10	03/14/22 17:07	193-39-5	
1-Methylnaphthalene	0.033J	ug/L	0.041	0.0069	1	03/08/22 16:10	03/14/22 17:07	90-12-0	
2-Methylnaphthalene	0.065	ug/L	0.041	0.0085	1	03/08/22 16:10	03/14/22 17:07	91-57-6	
Naphthalene	0.052	ug/L	0.041	0.0091	1	03/08/22 16:10	03/14/22 17:07	91-20-3	
Phenanthrene	0.052	ug/L	0.041	0.013	1	03/08/22 16:10	03/14/22 17:07	85-01-8	L2
Pyrene	ND	ug/L	0.041	0.010	1	03/08/22 16:10	03/14/22 17:07	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	66	%.	52-125		1	03/08/22 16:10	03/14/22 17:07	321-60-8	
p-Terphenyl-d14 (S)	65	%.	54-125		1	03/08/22 16:10	03/14/22 17:07	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-30-20220304		Lab ID: 10599830007		Collected: 03/04/22 09:40		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.13J	ug/L	1.0	0.10	1		03/08/22 19:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 19:56	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 19:56	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 19:56	179601-23-1	
o-Xylene	0.48J	ug/L	1.0	0.18	1		03/08/22 19:56	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		03/08/22 19:56	2199-69-1	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/08/22 19:56	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		03/08/22 19:56	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	99.6	mg/L	5.0	1.8	1		03/17/22 13:46		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	178	mg/L	6.0	2.1	5		03/15/22 09:07	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-18-20220304 Lab ID: 10599830008 Collected: 03/04/22 11:40 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.56	mg/L	0.43	0.13	1	03/11/22 15:33	03/16/22 17:39	68334-30-5	
Motor Oil Range SG	0.27J	mg/L	0.43	0.19	1	03/11/22 15:33	03/16/22 17:39	64742-65-0	B,P2
Surrogates									
o-Terphenyl (S)	48	%.	50-150		1	03/11/22 15:33	03/16/22 17:39	84-15-1	S0
n-Triacontane (S)	64	%.	50-150		1	03/11/22 15:33	03/16/22 17:39		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 16:20		
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%.	50-150		1		03/10/22 16:20	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	109000	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 14:00		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.7	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 16:03	7440-38-2	
Manganese, Dissolved	561	ug/L	5.0	2.0	10	03/10/22 06:43	03/17/22 16:07	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.077	ug/L	0.040	0.0069	1	03/08/22 16:10	03/14/22 17:28	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/08/22 16:10	03/14/22 17:28	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/08/22 16:10	03/14/22 17:28	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	03/08/22 16:10	03/14/22 17:28	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	03/08/22 16:10	03/14/22 17:28	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0095	1	03/08/22 16:10	03/14/22 17:28	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0081	1	03/08/22 16:10	03/14/22 17:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0083	1	03/08/22 16:10	03/14/22 17:28	207-08-9	
Chrysene	ND	ug/L	0.040	0.0094	1	03/08/22 16:10	03/14/22 17:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/08/22 16:10	03/14/22 17:28	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/08/22 16:10	03/14/22 17:28	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	03/08/22 16:10	03/14/22 17:28	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/08/22 16:10	03/14/22 17:28	193-39-5	
1-Methylnaphthalene	0.015J	ug/L	0.040	0.0067	1	03/08/22 16:10	03/14/22 17:28	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0083	1	03/08/22 16:10	03/14/22 17:28	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0088	1	03/08/22 16:10	03/14/22 17:28	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/08/22 16:10	03/14/22 17:28	85-01-8	L2
Pyrene	0.013J	ug/L	0.040	0.0099	1	03/08/22 16:10	03/14/22 17:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	65	%.	52-125		1	03/08/22 16:10	03/14/22 17:28	321-60-8	
p-Terphenyl-d14 (S)	68	%.	54-125		1	03/08/22 16:10	03/14/22 17:28	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-18-20220304		Lab ID: 10599830008		Collected: 03/04/22 11:40		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.17J	ug/L	1.0	0.10	1		03/08/22 20:44	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 20:44	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 20:44	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 20:44	179601-23-1	
o-Xylene	0.30J	ug/L	1.0	0.18	1		03/08/22 20:44	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/08/22 20:44	2199-69-1	
4-Bromofluorobenzene (S)	98	%.	75-125		1		03/08/22 20:44	460-00-4	
Toluene-d8 (S)	97	%.	75-125		1		03/08/22 20:44	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	107	mg/L	5.0	1.8	1		03/17/22 13:51		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	36.1	mg/L	1.2	0.43	1		03/14/22 22:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599830

Sample: PEO-MW-21-20220304 Lab ID: 10599830009 Collected: 03/04/22 14:15 Received: 03/08/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	03/08/22 16:28	03/10/22 12:49	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	03/08/22 16:28	03/10/22 12:49	64742-65-0	
Surrogates									
o-Terphenyl (S)	63	%.	50-150		1	03/08/22 16:28	03/10/22 12:49	84-15-1	
n-Triacontane (S)	54	%.	50-150		1	03/08/22 16:28	03/10/22 12:49		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 16:35		
Surrogates									
a,a,a-Trifluorotoluene (S)	112	%.	50-150		1		03/10/22 16:35	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	37800	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 14:02		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.19J	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 16:10	7440-38-2	
Manganese, Dissolved	13.9	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 16:10	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.041	0.0070	1	03/08/22 16:10	03/14/22 17:50	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0062	1	03/08/22 16:10	03/14/22 17:50	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	03/08/22 16:10	03/14/22 17:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	03/08/22 16:10	03/14/22 17:50	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	03/08/22 16:10	03/14/22 17:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	03/08/22 16:10	03/14/22 17:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	03/08/22 16:10	03/14/22 17:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	03/08/22 16:10	03/14/22 17:50	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	03/08/22 16:10	03/14/22 17:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	03/08/22 16:10	03/14/22 17:50	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.014	1	03/08/22 16:10	03/14/22 17:50	206-44-0	
Fluorene	ND	ug/L	0.041	0.0062	1	03/08/22 16:10	03/14/22 17:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	03/08/22 16:10	03/14/22 17:50	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	03/08/22 16:10	03/14/22 17:50	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0084	1	03/08/22 16:10	03/14/22 17:50	91-57-6	
Naphthalene	ND	ug/L	0.041	0.0090	1	03/08/22 16:10	03/14/22 17:50	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.012	1	03/08/22 16:10	03/14/22 17:50	85-01-8	L2
Pyrene	ND	ug/L	0.041	0.010	1	03/08/22 16:10	03/14/22 17:50	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%.	52-125		1	03/08/22 16:10	03/14/22 17:50	321-60-8	
p-Terphenyl-d14 (S)	76	%.	54-125		1	03/08/22 16:10	03/14/22 17:50	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599830

Sample: PEO-MW-21-20220304		Lab ID: 10599830009		Collected: 03/04/22 14:15		Received: 03/08/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/08/22 20:12	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/08/22 20:12	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/08/22 20:12	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/08/22 20:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/08/22 20:12	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/08/22 20:12	2199-69-1	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/08/22 20:12	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/08/22 20:12	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	42.3	mg/L	5.0	1.8	1		03/17/22 14:18		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	2.9	mg/L	1.2	0.43	1		03/14/22 22:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

QC Batch:	803030	Analysis Method:	NWTPH-Gx
QC Batch Method:	NWTPH-Gx	Analysis Description:	NWTPH-Gx Water
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599830001, 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009		

METHOD BLANK: 4263895 Matrix: Water
Associated Lab Samples: 10599830001, 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/10/22 13:32	
a,a,a-Trifluorotoluene (S)	%.	105	50-150		03/10/22 13:32	

METHOD BLANK: 4263896 Matrix: Water
Associated Lab Samples: 10599830001, 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/10/22 17:21	
a,a,a-Trifluorotoluene (S)	%.	89	50-150		03/10/22 17:21	

LABORATORY CONTROL SAMPLE & LCSD: 4263897			4263898							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1170	1040	117	104	75-125	12	20	1M
a,a,a-Trifluorotoluene (S)	%.				113	104	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4263899				4263900								
Parameter	Units	10600160004	MS	MSD	MS	MSD	MS	MSD	% Rec	RPD	Max	Qual
		Result	Spike Conc.	Spike Conc.								
TPH as Gas	ug/L	65.1J	1000	1000	1350	1220	128	116	65-126	10	30	1M,M1
a,a,a-Trifluorotoluene (S)	%.						108	105	50-150			

SAMPLE DUPLICATE: 4263933		10599830002				Max RPD		Qualifiers
Parameter	Units	Result	Dup Result	RPD				
TPH as Gas	ug/L	ND	ND			30		
a,a,a-Trifluorotoluene (S)	%.	94	89					

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599830

SAMPLE DUPLICATE: 4263934

Parameter	Units	10600160003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	3440	3540	3	30	1M
a,a,a-Trifluorotoluene (S)	%.	92	94			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

QC Batch:	802769	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

METHOD BLANK: 4262818 Matrix: Water
Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	03/17/22 14:42	
Manganese, Dissolved	ug/L	ND	0.50	0.20	03/17/22 14:42	

LABORATORY CONTROL SAMPLE: 4262819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	92.1	92	80-120	
Manganese, Dissolved	ug/L	100	97.1	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4262820 4262821

Parameter	Units	10599830002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	0.16J	100	100	92.5	96.6	92	96	75-125	4	20	
Manganese, Dissolved	ug/L	0.47J	100	100	95.6	101	95	101	75-125	6	20	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

QC Batch:	802539	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599830001, 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009		

METHOD BLANK: 4261509 Matrix: Water
Associated Lab Samples: 10599830001, 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/08/22 15:56	
Ethylbenzene	ug/L	ND	1.0	0.11	03/08/22 15:56	
m&p-Xylene	ug/L	ND	2.0	0.20	03/08/22 15:56	
o-Xylene	ug/L	ND	1.0	0.18	03/08/22 15:56	
Toluene	ug/L	ND	1.0	0.10	03/08/22 15:56	
1,2-Dichlorobenzene-d4 (S)	%	101	75-125		03/08/22 15:56	
4-Bromofluorobenzene (S)	%	99	75-125		03/08/22 15:56	
Toluene-d8 (S)	%	97	75-125		03/08/22 15:56	

LABORATORY CONTROL SAMPLE & LCSD: 4261510			4261511							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	20.0	19.9	100	99	73-125	0	20	
Ethylbenzene	ug/L	20	18.5	17.9	92	89	75-125	3	20	
m&p-Xylene	ug/L	40	37.8	37.2	94	93	72-125	2	20	
o-Xylene	ug/L	20	19.0	18.9	95	94	73-125	1	20	
Toluene	ug/L	20	19.0	18.9	95	95	74-125	1	20	
1,2-Dichlorobenzene-d4 (S)	%				102	102	75-125			
4-Bromofluorobenzene (S)	%				97	97	75-125			
Toluene-d8 (S)	%				100	101	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

QC Batch:	802521	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009		

METHOD BLANK: 4261396 Matrix: Water
Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	03/14/22 11:42	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	03/14/22 11:42	
Acenaphthene	ug/L	ND	0.040	0.0069	03/14/22 11:42	
Acenaphthylene	ug/L	ND	0.040	0.0061	03/14/22 11:42	
Anthracene	ug/L	ND	0.040	0.0054	03/14/22 11:42	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	03/14/22 11:42	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	03/14/22 11:42	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	03/14/22 11:42	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	03/14/22 11:42	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	03/14/22 11:42	
Chrysene	ug/L	ND	0.040	0.0094	03/14/22 11:42	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	03/14/22 11:42	
Fluoranthene	ug/L	ND	0.040	0.014	03/14/22 11:42	
Fluorene	ug/L	ND	0.040	0.0060	03/14/22 11:42	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	03/14/22 11:42	
Naphthalene	ug/L	ND	0.040	0.0088	03/14/22 11:42	
Phenanthrene	ug/L	ND	0.040	0.012	03/14/22 11:42	
Pyrene	ug/L	ND	0.040	0.0099	03/14/22 11:42	
2-Fluorobiphenyl (S)	%	57	52-125		03/14/22 11:42	
p-Terphenyl-d14 (S)	%	69	54-125		03/14/22 11:42	

LABORATORY CONTROL SAMPLE & LCSD: 4261397

LABORATORY CONTROL SAMPLE & LCSD: 4261397			4261398							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.62	0.92	62	92	43-125	38	20	R1
2-Methylnaphthalene	ug/L	1	0.53	0.68	53	68	42-125	24	20	R1
Acenaphthene	ug/L	1	0.58	0.82	58	82	56-125	34	20	R1
Acenaphthylene	ug/L	1	0.58	0.80	58	80	55-125	32	20	R1
Anthracene	ug/L	1	0.83	0.97	83	97	64-125	15	20	
Benzo(a)anthracene	ug/L	1	0.71	0.87	71	87	65-125	20	20	
Benzo(a)pyrene	ug/L	1	0.81	0.95	81	95	64-125	16	20	
Benzo(b)fluoranthene	ug/L	1	0.74	0.92	74	92	70-125	21	20	R1
Benzo(g,h,i)perylene	ug/L	1	0.73	0.86	73	86	49-125	16	20	
Benzo(k)fluoranthene	ug/L	1	0.82	0.95	82	95	69-125	14	20	
Chrysene	ug/L	1	0.83	1.0	83	102	70-125	21	20	R1
Dibenz(a,h)anthracene	ug/L	1	0.72	0.85	72	85	41-125	17	20	
Fluoranthene	ug/L	1	0.77	0.88	77	88	67-125	14	20	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

LABORATORY CONTROL SAMPLE & LCSD: 4261397			4261398							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Fluorene	ug/L	1	0.61	0.80	61	80	59-125	27	20	R1
Indeno(1,2,3-cd)pyrene	ug/L	1	0.79	0.91	79	91	57-125	14	20	
Naphthalene	ug/L	1	0.60	0.82	60	82	49-125	31	20	R1
Phenanthrene	ug/L	1	0.64	0.80	64	80	65-125	22	20	L2,R1
Pyrene	ug/L	1	0.74	0.87	74	87	67-125	16	20	
2-Fluorobiphenyl (S)	%				53	72	52-125			
p-Terphenyl-d14 (S)	%				69	79	54-125			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599830

QC Batch: 802520

Analysis Method: NWTPH-Dx

QC Batch Method: EPA Mod. 3510C

Analysis Description: NWTPH-Dx GCS LV SG

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599830002, 10599830003, 10599830006, 10599830007, 10599830009

METHOD BLANK: 4261392

Matrix: Water

Associated Lab Samples: 10599830002, 10599830003, 10599830006, 10599830007, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/10/22 10:44	
Motor Oil Range SG	mg/L	ND	0.40	0.18	03/10/22 10:44	
n-Triacontane (S)	%	72	50-150		03/10/22 10:44	
o-Terphenyl (S)	%	81	50-150		03/10/22 10:44	

LABORATORY CONTROL SAMPLE & LCSD: 4261393

4261394

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.5	1.6	75	81	50-150	8	20	
Motor Oil Range SG	mg/L	2	1.6	1.7	80	85	50-150	7	20	
n-Triacontane (S)	%				67	74	50-150			
o-Terphenyl (S)	%				82	83	50-150			

SAMPLE DUPLICATE: 4261395

Parameter	Units	10599830002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	50	51			
o-Terphenyl (S)	%	62	60			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599830

QC Batch:	803215	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10599830004, 10599830005, 10599830008		

METHOD BLANK: 4264657 Matrix: Water

Associated Lab Samples: 10599830004, 10599830005, 10599830008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/16/22 16:44	
Motor Oil Range SG	mg/L	0.37J	0.40	0.18	03/16/22 16:44	
n-Triacontane (S)	%	87	50-150		03/16/22 16:44	
o-Terphenyl (S)	%	85	50-150		03/16/22 16:44	

LABORATORY CONTROL SAMPLE & LCSD: 4264658

		4264659								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.9	1.9	93	94	50-150	1	20	
Motor Oil Range SG	mg/L	2	2.1	2.1	105	103	50-150	2	20	
n-Triacontane (S)	%				86	90	50-150			
o-Terphenyl (S)	%				84	86	50-150			

SAMPLE DUPLICATE: 4265089

Parameter	Units	10600362002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.15J	0.14J		30	
Motor Oil Range SG	mg/L	0.25J	0.29J		30	
n-Triacontane (S)	%	83	70			
o-Terphenyl (S)	%	83	61			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599830

QC Batch: 803963

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005

METHOD BLANK: 4267884

Matrix: Water

Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	2.4J	5.0	1.8	03/16/22 11:28	

LABORATORY CONTROL SAMPLE & LCSD: 4267885

4267886

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.5	43.1	109	108	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4267887

4267888

Parameter	Units	92591517021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	279	40	40	320	321	102	104	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

QC Batch: 804189 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599830006, 10599830007, 10599830008, 10599830009

METHOD BLANK: 4268936 Matrix: Water
Associated Lab Samples: 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	03/17/22 11:55	

LABORATORY CONTROL SAMPLE & LCSD: 4268937		4268938								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.3	42.5	106	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4268939					4268940							
Parameter	Units	10599782004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	101	40	40	142	142	102	103	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4268941		4268942										
Parameter	Units	10599830008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	107	40	40	147	148	102	103	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599830

QC Batch:	803530	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

METHOD BLANK:	4265995	Matrix:	Water

Associated Lab Samples: 10599830002, 10599830003, 10599830004, 10599830005, 10599830006, 10599830007, 10599830008, 10599830009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/14/22 15:48	

LABORATORY CONTROL SAMPLE: 4265996						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4265997 4265998												
Parameter	Units	10599830002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	4.4	50	50	55.7	57.3	102	106	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4265999 4266000												
Parameter	Units	10599830003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	99.3	50	50	140	141	81	83	80-120	1	20 E	

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QUALIFIERS

Project: 0633086
Pace Project No.: 10599830

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 adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
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.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 802539

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 803544

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M During a routine PT failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.
B Analyte was detected in the associated method blank.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.
R1 RPD value was outside control limits.
S0 Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086
Pace Project No.: 10599830

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10599830002	PEO-MW-25-20220303	EPA Mod. 3510C	802520	NWTPH-Dx	803036
10599830003	PEO-MW-08-20220303	EPA Mod. 3510C	802520	NWTPH-Dx	803036
10599830004	PEO-MW-Z1-20220303	EPA Mod. 3510C	803215	NWTPH-Dx	804051
10599830005	PEO-MW-44-20220303	EPA Mod. 3510C	803215	NWTPH-Dx	804051
10599830006	PEO-MW-31-20220303	EPA Mod. 3510C	802520	NWTPH-Dx	803036
10599830007	PEO-MW-30-20220304	EPA Mod. 3510C	802520	NWTPH-Dx	803036
10599830008	PEO-MW-18-20220304	EPA Mod. 3510C	803215	NWTPH-Dx	804051
10599830009	PEO-MW-21-20220304	EPA Mod. 3510C	802520	NWTPH-Dx	803036
10599830001	TRIP BLANK-20220303	NWTPH-Gx	803030		
10599830002	PEO-MW-25-20220303	NWTPH-Gx	803030		
10599830003	PEO-MW-08-20220303	NWTPH-Gx	803030		
10599830004	PEO-MW-Z1-20220303	NWTPH-Gx	803030		
10599830005	PEO-MW-44-20220303	NWTPH-Gx	803030		
10599830006	PEO-MW-31-20220303	NWTPH-Gx	803030		
10599830007	PEO-MW-30-20220304	NWTPH-Gx	803030		
10599830008	PEO-MW-18-20220304	NWTPH-Gx	803030		
10599830009	PEO-MW-21-20220304	NWTPH-Gx	803030		
10599830002	PEO-MW-25-20220303	EPA 3010A	802739	EPA 6010D	803063
10599830003	PEO-MW-08-20220303	EPA 3010A	802739	EPA 6010D	803063
10599830004	PEO-MW-Z1-20220303	EPA 3010A	802739	EPA 6010D	803063
10599830005	PEO-MW-44-20220303	EPA 3010A	802739	EPA 6010D	803063
10599830006	PEO-MW-31-20220303	EPA 3010A	802739	EPA 6010D	803063
10599830007	PEO-MW-30-20220304	EPA 3010A	802739	EPA 6010D	803063
10599830008	PEO-MW-18-20220304	EPA 3010A	802739	EPA 6010D	803063
10599830009	PEO-MW-21-20220304	EPA 3010A	802739	EPA 6010D	803063
10599830002	PEO-MW-25-20220303	EPA 3020A	802769	EPA 6020A	803329
10599830003	PEO-MW-08-20220303	EPA 3020A	802769	EPA 6020A	803329
10599830004	PEO-MW-Z1-20220303	EPA 3020A	802769	EPA 6020A	803329
10599830005	PEO-MW-44-20220303	EPA 3020A	802769	EPA 6020A	803329
10599830006	PEO-MW-31-20220303	EPA 3020A	802769	EPA 6020A	803329
10599830007	PEO-MW-30-20220304	EPA 3020A	802769	EPA 6020A	803329
10599830008	PEO-MW-18-20220304	EPA 3020A	802769	EPA 6020A	803329
10599830009	PEO-MW-21-20220304	EPA 3020A	802769	EPA 6020A	803329
10599830002	PEO-MW-25-20220303	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830003	PEO-MW-08-20220303	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830004	PEO-MW-Z1-20220303	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830005	PEO-MW-44-20220303	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830006	PEO-MW-31-20220303	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830007	PEO-MW-30-20220304	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830008	PEO-MW-18-20220304	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830009	PEO-MW-21-20220304	EPA Mod. 3510C	802521	EPA 8270E by SIM	803544
10599830001	TRIP BLANK-20220303	EPA 8260D	802539		
10599830002	PEO-MW-25-20220303	EPA 8260D	802539		
10599830003	PEO-MW-08-20220303	EPA 8260D	802539		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086

Pace Project No.: 10599830

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10599830004	PEO-MW-Z1-20220303	EPA 8260D	802539		
10599830005	PEO-MW-44-20220303	EPA 8260D	802539		
10599830006	PEO-MW-31-20220303	EPA 8260D	802539		
10599830007	PEO-MW-30-20220304	EPA 8260D	802539		
10599830008	PEO-MW-18-20220304	EPA 8260D	802539		
10599830009	PEO-MW-21-20220304	EPA 8260D	802539		
10599830002	PEO-MW-25-20220303	SM 2320B	803963		
10599830003	PEO-MW-08-20220303	SM 2320B	803963		
10599830004	PEO-MW-Z1-20220303	SM 2320B	803963		
10599830005	PEO-MW-44-20220303	SM 2320B	803963		
10599830006	PEO-MW-31-20220303	SM 2320B	804189		
10599830007	PEO-MW-30-20220304	SM 2320B	804189		
10599830008	PEO-MW-18-20220304	SM 2320B	804189		
10599830009	PEO-MW-21-20220304	SM 2320B	804189		
10599830002	PEO-MW-25-20220303	EPA 300.0	803530		
10599830003	PEO-MW-08-20220303	EPA 300.0	803530		
10599830004	PEO-MW-Z1-20220303	EPA 300.0	803530		
10599830005	PEO-MW-44-20220303	EPA 300.0	803530		
10599830006	PEO-MW-31-20220303	EPA 300.0	803530		
10599830007	PEO-MW-30-20220304	EPA 300.0	803530		
10599830008	PEO-MW-18-20220304	EPA 300.0	803530		
10599830009	PEO-MW-21-20220304	EPA 300.0	803530		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Requested Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ERM	Report To:	Rita Cooper	Attention:	
Address:	1050 SW 6th Ave, Suite 1650	Copy To:		Company Name:	
	Portland, OR 97204			Address:	
Email To:	rita.cooper@erm.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	207-329-6320	Project Name:		Pace Project Manager:	Julie Bowser
	Fax:			Pace Profile #:	
Requested Due Date/TAT:		Standard		Project Number: 0633086	

[illegible]

W0# : 10599830



10599830

W0# : 10599830

W0# : 10599830

W0# : 10599830

W0# : 10599830

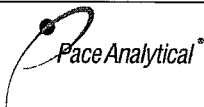
W0# : 10599830

W0# : 10599830

W/O# : 10599830



10599830

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Page 1 of 1 Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeedDee ☐ Commercial Tracking Number: _____ Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ Thermometer: ☒ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted	Client Name: <u>ERM</u> Project #: _____ See Exceptions ☒ ENV-FRM-MIN4-0142	WO#: 10599830 PM: JMT Due Date: 03/22/22 CLIENT: ERM-Oregon

Seals Intact? ☒ Yes ☐ No Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A Temp Blank? ☒ Yes ☐ No	Did Samples Originate in West Virginia? ☐ Yes ☒ No Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: <u>0.3/1.4/1.9/1.4/1.9/0.3</u> Correction Factor: <u>-0.1</u> Cooler Temp Corrected w/temp blank: <u>0.8/1.3/1.8/0.5/0.3/1.5/0.8</u> °C	Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☒ N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: AC 03.08.22
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, IL, IN, IA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No
 If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No -Pace Containers Used? ☒ Yes ☐ No	8. <u>1 TRIP BLANK BLANK</u>
Containers Intact? ☒ Yes ☐ No	9.
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☐ No ☐ N/A Is sufficient information available to reconcile the samples to the COC? ☒ Yes ☐ No Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No 11. If no, write ID/ Date/Time on Container Below: ☐ See Exception ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide) ☒ Yes ☐ No ☐ N/A Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	12. Sample # <u>001-008</u> ☐ NaOH ☒ HNO ₃ ☒ H ₂ SO ₄ ☐ Zinc Acetate Positive for Res. ☐ Yes ☐ No Chlorine? ☐ Yes ☐ No pH Paper Lot# <u>212521</u> Res. Chlorine <u>0-6 Roll</u> 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☐ No ☒ N/A	13. ☐ See Exception ENV-FRM-MIN4-0140
Trip Blank Present? ☒ Yes ☐ No ☐ N/A Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>353983</u> <u>5</u>

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____

Project Manager Review: [Signature] Date: 03/08/2022

	Document Name: Sample Condition Upon Receipt (SCUR) Exception Form	Document Revised: 04Jun2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0142 Rev.01	Pace Analytical Services - Minneapolis

SCUR Exceptions:
Workorder #: 10599830

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? ☐ Yes ☐ No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			Multiple Cooler Project? ☐ Yes ☐ No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp												
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			

Tracking Number/Temperature		
54051817	1720	0.8
	1724	1.3
	1730	1.8
	1763	0.9
	1785	0.9
	1741	1.5
	1757	0.8

Issue Type:	Container Type	# of Containers
Sample ID		

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition? ☐ Yes ☐ No	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

Comments:

	Document Name: Headspace Exception	Document Revised: 26Mar2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0140 Rev.00	Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
PEO-MW-08	0	1	8	9	NO
PEO-MW-21	0	2	7	9	NO
PEO-MW-31	1	2	6	9	NO
PEO-MW-30	2	2	5	9	NO
PRO-MW-18	1	0	8	9	NO

CHAIN-OF-CUSTODY / Analytical Request Document

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

Revised COC received 3/8/22 JMA

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ERM	Report To:	Rita Cooper	Attention:	
Address:	1050 SW 6th Ave, Suite 1650	Copy To:		Company Name:	
	Portland, OR 97204			Address:	
Email To:	rita.cooper@erm.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	207-329-6320	Fax:		Pace Project Manager:	Julie Bowser
Requested Due Date/TAT:	Standard	Project Number:	0633086	Pace Profile #:	
				Site Location	OR
				STATE:	
				REGULATORY AGENCY	
				☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER	
				☐ UST ☐ RCRA ☐ OTHER	

Page: of

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DW DRINKING WATER WT WASTE WATER WW WASTE WATER P PRODUCT SL SOLID OIL WI WIPE AIR OTHER TISSUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)										Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB	SAMPLE TEMP AT COLLECTION													
1	TRIP BLANK-20220303		GW	G	3/3/22	8:00		6	-	-	-	-	-	-	-	-	-	-	-	Residual Chlorine (Y/N)
2	PEO-MW-25-20220303		GW	G	3/3/22	10:10		18	X	X	X	-	-	-	-	-	-	-	-	
3	PEO-MW-08-20220303		GW	G	3/3/22	12:15		18	X	X	X	-	-	-	-	-	-	-	-	
4	PEO-MW-Z1-20220303		GW	G	3/3/22	12:20		18	X	X	X	-	-	-	-	-	-	-	-	
5	PEO-MW-44-20220303		GW	G	3/3/22	14:35		18	X	X	X	-	-	-	-	-	-	-	-	
6	PEO-MW-31-20220303		GW	G	3/3/22	15:55		18	X	X	X	-	-	-	-	-	-	-	-	
7	PEO-MW-30-20220304		GW	G	3/4/22	9:40		18	X	X	X	-	-	-	-	-	-	-	-	
8	PEO-MW-18-20220304		GW	G	3/4/22	11:40		18	X	X	X	-	-	-	-	-	-	-	-	
9	PEO-MW-21-20220304		GW	G	3/4/22	14:15		18	X	X	X	-	-	-	-	-	-	-	-	
10																				
11																				
12																				

ADDITIONAL COMMENTS				RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
				Ariana Johnson / ERM									

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Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086

Work Order Number: 2203239

March 23, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 9 sample(s) on 3/9/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086
Work Order: 2203239

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203239-001	TRIP BLANK-20220303	03/03/2022 8:00 AM	03/09/2022 10:39 AM
2203239-002	PEO-MW-25-20220303	03/03/2022 10:10 AM	03/09/2022 10:39 AM
2203239-003	PEO-MW-08-20220303	03/03/2022 12:15 PM	03/09/2022 10:39 AM
2203239-004	PEO-MW-Z1-20220303	03/03/2022 12:20 PM	03/09/2022 10:39 AM
2203239-005	PEO-MW-44-20220303	03/03/2022 2:35 PM	03/09/2022 10:39 AM
2203239-006	PEO-MW-31-20220303	03/03/2022 3:55 PM	03/09/2022 10:39 AM
2203239-007	PEO-MW-30-20220304	03/04/2022 9:40 AM	03/09/2022 10:39 AM
2203239-008	PEO-MW-18-20220304	03/04/2022 11:40 AM	03/09/2022 10:39 AM
2203239-009	PEO-MW-21-20220304	03/04/2022 2:15 PM	03/09/2022 10:39 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Pace Analytical Minnesota
Project: 0633086

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2203239
Date Reported: 3/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203239-001

Client Sample ID: TRIP BLANK-20220303

Collection Date: 3/3/2022 8:00:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/11/2022 1:51:32 PM
Surr: 1,4-Difluorobenzene	132	60 - 140		%Rec	1	3/11/2022 1:51:32 PM
Surr: Bromofluorobenzene	91.6	60 - 140		%Rec	1	3/11/2022 1:51:32 PM

Lab ID: 2203239-002

Client Sample ID: PEO-MW-25-20220303

Collection Date: 3/3/2022 10:10:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/18/2022 12:56:40 AM
Surr: 1-Chlorooctadecane	84.5	60 - 140		%Rec	1	3/18/2022 12:56:40 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 12:13:15 AM
Surr: 1,4-Difluorobenzene	140	60 - 140		%Rec	1	3/12/2022 12:13:15 AM
Surr: Bromofluorobenzene	100	60 - 140		%Rec	1	3/12/2022 12:13:15 AM



Work Order: 2203239
Date Reported: 3/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203239-003

Client Sample ID: PEO-MW-08-20220303

Collection Date: 3/3/2022 12:15:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/22/2022 6:38:10 PM
Surr: 1-Chlorooctadecane	71.1	60 - 140		%Rec	1	3/22/2022 6:38:10 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 12:54:39 AM
Surr: 1,4-Difluorobenzene	138	60 - 140		%Rec	1	3/12/2022 12:54:39 AM
Surr: Bromofluorobenzene	101	60 - 140		%Rec	1	3/12/2022 12:54:39 AM

Lab ID: 2203239-004

Client Sample ID: PEO-MW-Z1-20220303

Collection Date: 3/3/2022 12:20:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/22/2022 7:31:51 PM
Surr: 1-Chlorooctadecane	69.7	60 - 140		%Rec	1	3/22/2022 7:31:51 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 1:35:58 AM
Surr: 1,4-Difluorobenzene	138	60 - 140		%Rec	1	3/12/2022 1:35:58 AM
Surr: Bromofluorobenzene	100	60 - 140		%Rec	1	3/12/2022 1:35:58 AM



Work Order: 2203239
Date Reported: 3/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203239-005

Client Sample ID: PEO-MW-44-20220303

Collection Date: 3/3/2022 2:35:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	3/22/2022 8:25:15 PM
Surr: 1-Chlorooctadecane	80.9	60 - 140		%Rec	1	3/22/2022 8:25:15 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 2:17:19 AM
Surr: 1,4-Difluorobenzene	139	60 - 140		%Rec	1	3/12/2022 2:17:19 AM
Surr: Bromofluorobenzene	100	60 - 140		%Rec	1	3/12/2022 2:17:19 AM

Lab ID: 2203239-006

Client Sample ID: PEO-MW-31-20220303

Collection Date: 3/3/2022 3:55:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/22/2022 9:18:41 PM
Surr: 1-Chlorooctadecane	78.8	60 - 140		%Rec	1	3/22/2022 9:18:41 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 2:58:47 AM
Surr: 1,4-Difluorobenzene	137	60 - 140		%Rec	1	3/12/2022 2:58:47 AM
Surr: Bromofluorobenzene	97.2	60 - 140		%Rec	1	3/12/2022 2:58:47 AM



Work Order: 2203239
Date Reported: 3/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203239-007

Client Sample ID: PEO-MW-30-20220304

Collection Date: 3/4/2022 9:40:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Extractable Petroleum Hydrocarbons by NWEPH</u>				Batch ID: 35660		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/22/2022 10:11:54 PM
Surr: 1-Chlorooctadecane	73.3	60 - 140		%Rec	1	3/22/2022 10:11:54 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 3:40:12 AM
Surr: 1,4-Difluorobenzene	138	60 - 140		%Rec	1	3/12/2022 3:40:12 AM
Surr: Bromofluorobenzene	98.2	60 - 140		%Rec	1	3/12/2022 3:40:12 AM

Lab ID: 2203239-008

Client Sample ID: PEO-MW-18-20220304

Collection Date: 3/4/2022 11:40:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Extractable Petroleum Hydrocarbons by NWEPH</u>				Batch ID: 35660		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	3/22/2022 11:05:14 PM
Surr: 1-Chlorooctadecane	82.4	60 - 140		%Rec	1	3/22/2022 11:05:14 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 4:21:26 AM
Surr: 1,4-Difluorobenzene	137	60 - 140		%Rec	1	3/12/2022 4:21:26 AM
Surr: Bromofluorobenzene	92.5	60 - 140		%Rec	1	3/12/2022 4:21:26 AM



Analytical Report

Work Order: 2203239
Date Reported: 3/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203239-009

Collection Date: 3/4/2022 2:15:00 PM

Client Sample ID: PEO-MW-21-20220304

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/22/2022 11:58:21 PM
Surr: 1-Chlorooctadecane	88.9	60 - 140		%Rec	1	3/22/2022 11:58:21 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35678

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/12/2022 5:02:37 AM
Surr: 1,4-Difluorobenzene	139	60 - 140		%Rec	1	3/12/2022 5:02:37 AM
Surr: Bromofluorobenzene	90.7	60 - 140		%Rec	1	3/12/2022 5:02:37 AM

Work Order: 2203239
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-35660		SampType: MBLK			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: MBLKW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518640				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						
Surr: 1-Chlorooctadecane	332		400.0		82.9	60	140				

Sample ID: LCS-35660		SampType: LCS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518641				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	352	40.0	500.0	0	70.4	70	130				
Surr: 1-Chlorooctadecane	416		400.0		104	60	140				

Sample ID: LCSD-35660		SampType: LCSD			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW02		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518642				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	353	40.0	500.0	0	70.6	70	130	352.0	0.318	20	
Surr: 1-Chlorooctadecane	402		400.0		100	60	140		0		

Sample ID: 2203181-001AMS		SampType: MS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: BATCH		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518644				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	318	40.7	509.3	0	62.5	70	130				S
Surr: 1-Chlorooctadecane	391		407.5		95.9	60	140				

NOTES:

S - Outlying spike recoveries were associated with this sample.

Work Order: 2203239
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-35678		SampType: LCS			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: LCSW		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518456				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	196	25.0	200.0	0	98.0	70	130				
Surr: 1,4-Difluorobenzene	49.2		50.00		98.4	60	140				
Surr: Bromofluorobenzene	49.0		50.00		98.0	60	140				

Sample ID: MB-35678		SampType: MBLK			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: MBLKW		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518455				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	67.1		50.00		134	60	140				
Surr: Bromofluorobenzene	47.3		50.00		94.6	60	140				

Sample ID: 2203181-001BDUP		SampType: DUP			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: BATCH		Batch ID: 35678			Analysis Date: 3/11/2022			SeqNo: 1518423				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	12.8	25.0		0	0			12.66	0.842	25	J
Surr: 1,4-Difluorobenzene	61.8		50.00		124	60	140		0		
Surr: Bromofluorobenzene	47.0		50.00		93.9	60	140		0		

Sample ID: 2203181-002BMS		SampType: MS			Units: µg/L		Prep Date: 3/10/2022			RunNo: 74088		
Client ID: BATCH		Batch ID: 35678			Analysis Date: 3/12/2022			SeqNo: 1518426				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	156	25.0	200.0	0	77.8	70	130				
Surr: 1,4-Difluorobenzene	48.6		50.00		97.2	60	140				
Surr: Bromofluorobenzene	44.1		50.00		88.2	60	140				

Client Name: **PACEMI**
 Logged by: **Clare Griggs**

Work Order Number: **2203239**
 Date Received: **3/9/2022 10:39:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	2.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10599830

Workorder Name: 0633086

Results Requested By: 3/22/2022

2203239

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@paceclabs.com

Fremont Analytical
3600 Fremont Ave N
Seattle, WA 98103

P.O. 10599830

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)											LAB USE ONLY
					FC	AG1H													
1	TRIP BLANK-20220303	3/3/2022 08:00	10599830001	Water	2		X												
2	PEO-MMW-25-20220303	3/3/2022 10:10	10599830002	Water	3	2	X	X											
3	PEO-MMW-08-20220303	3/3/2022 12:15	10599830003	Water	3	2	X	X											
4	PEO-MMW-21-20220303	3/3/2022 12:20	10599830004	Water	3	2	X	X											
5	PEO-MMW-44-20220303	3/3/2022 14:35	10599830005	Water	3	2	X	X											
6	PEO-MMW-31-20220303	3/3/2022 15:55	10599830006	Water	3	2	X	X											
7	PEO-MMW-30-20220304	3/4/2022 09:40	10599830007	Water	3	2	X	X											
8	PEO-MMW-18-20220304	3/4/2022 11:40	10599830008	Water	3	2	X	X											
9	PEO-MMW-21-20220304	3/4/2022 14:15	10599830009	Water	3	2	X	X											
10																			
11																			
12																			
13																			
Comments																			
Transfers		Released By	Date/Time	Received By	Date/Time														
1		Julie Bowser / PACE	3/18/22 13:45	Augusta Rogers	3/19/22 10:39	EQUIS EDD J flag to MDL													
2																			
3																			
Cooler Temperature on Receipt		°C	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact Y or N												

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April 04, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086
Pace Project No.: 10599993

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 0633086

Pace Project No.: 10599993

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01*

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086

Pace Project No.: 10599993

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10599993001	TRIP BLANK-20220307	Water	03/07/22 08:00	03/09/22 08:50
10599993002	PEO-MW-40-20220307	Water	03/07/22 09:45	03/09/22 08:50
10599993003	PEO-MW-45-20220307	Water	03/07/22 12:40	03/09/22 08:50
10599993004	PEO-MW-41-20220307	Water	03/07/22 15:15	03/09/22 08:50
10599993005	PEO-MW-Z2-20220307	Water	03/07/22 15:20	03/09/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086

Pace Project No.: 10599993

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10599993001	TRIP BLANK-20220307	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	NMB	8	PASI-M
10599993002	PEO-MW-40-20220307	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
10599993003	PEO-MW-45-20220307	EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10599993004	PEO-MW-41-20220307	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
10599993005	PEO-MW-Z2-20220307	SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599993

Sample: TRIP BLANK-20220307		Lab ID: 10599993001		Collected: 03/07/22 08:00		Received: 03/09/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 16:50		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%.	50-150		1		03/10/22 16:50	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/10/22 01:50	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/10/22 01:50	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/10/22 01:50	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/10/22 01:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/10/22 01:50	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/10/22 01:50	2199-69-1	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/10/22 01:50	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/10/22 01:50	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599993

Sample: PEO-MW-40-20220307 Lab ID: 10599993002 Collected: 03/07/22 09:45 Received: 03/09/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.14J	mg/L	0.42	0.12	1	03/10/22 13:58	03/15/22 14:48	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	03/10/22 13:58	03/15/22 14:48	64742-65-0	
Surrogates									
o-Terphenyl (S)	68	%.	50-150		1	03/10/22 13:58	03/15/22 14:48	84-15-1	
n-Triacontane (S)	65	%.	50-150		1	03/10/22 13:58	03/15/22 14:48		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 17:36		
Surrogates									
a,a,a-Trifluorotoluene (S)	106	%.	50-150		1		03/10/22 17:36	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	87400	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 14:07		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	4.0	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 16:17	7440-38-2	
Manganese, Dissolved	1220	ug/L	5.0	2.0	10	03/10/22 06:43	03/17/22 16:20	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0067	1	03/14/22 16:15	03/16/22 14:29	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0059	1	03/14/22 16:15	03/16/22 14:29	208-96-8	
Anthracene	ND	ug/L	0.039	0.0052	1	03/14/22 16:15	03/16/22 14:29	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0088	1	03/14/22 16:15	03/16/22 14:29	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	03/14/22 16:15	03/16/22 14:29	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0092	1	03/14/22 16:15	03/16/22 14:29	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0079	1	03/14/22 16:15	03/16/22 14:29	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0080	1	03/14/22 16:15	03/16/22 14:29	207-08-9	
Chrysene	ND	ug/L	0.039	0.0091	1	03/14/22 16:15	03/16/22 14:29	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	03/14/22 16:15	03/16/22 14:29	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.014	1	03/14/22 16:15	03/16/22 14:29	206-44-0	
Fluorene	ND	ug/L	0.039	0.0059	1	03/14/22 16:15	03/16/22 14:29	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.011	1	03/14/22 16:15	03/16/22 14:29	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0065	1	03/14/22 16:15	03/16/22 14:29	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0080	1	03/14/22 16:15	03/16/22 14:29	91-57-6	
Naphthalene	ND	ug/L	0.039	0.0085	1	03/14/22 16:15	03/16/22 14:29	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.012	1	03/14/22 16:15	03/16/22 14:29	85-01-8	
Pyrene	ND	ug/L	0.039	0.0096	1	03/14/22 16:15	03/16/22 14:29	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	03/14/22 16:15	03/16/22 14:29	321-60-8	
p-Terphenyl-d14 (S)	70	%.	54-125		1	03/14/22 16:15	03/16/22 14:29	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599993

Sample: PEO-MW-40-20220307		Lab ID: 10599993002		Collected: 03/07/22 09:45		Received: 03/09/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/10/22 02:53	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/10/22 02:53	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/10/22 02:53	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/10/22 02:53	179601-23-1	
o-Xylene	0.35J	ug/L	1.0	0.18	1		03/10/22 02:53	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/10/22 02:53	2199-69-1	
4-Bromofluorobenzene (S)	94	%.	75-125		1		03/10/22 02:53	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/10/22 02:53	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	48.6	mg/L	5.0	1.8	1		03/18/22 13:43		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	66.2	mg/L	1.2	0.43	1		03/15/22 06:11	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599993

Sample: PEO-MW-45-20220307 Lab ID: 10599993003 Collected: 03/07/22 12:40 Received: 03/09/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.43	0.13	1	03/10/22 13:58	03/15/22 14:15	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.19	1	03/10/22 13:58	03/15/22 14:15	64742-65-0	
Surrogates									
o-Terphenyl (S)	74	%.	50-150		1	03/10/22 13:58	03/15/22 14:15	84-15-1	
n-Triacontane (S)	69	%.	50-150		1	03/10/22 13:58	03/15/22 14:15		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 17:51		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	50-150		1		03/10/22 17:51	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	74800	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 14:08		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.095J	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 16:24	7440-38-2	
Manganese, Dissolved	425	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 16:24	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0068	1	03/14/22 16:15	03/16/22 14:51	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0060	1	03/14/22 16:15	03/16/22 14:51	208-96-8	
Anthracene	ND	ug/L	0.039	0.0053	1	03/14/22 16:15	03/16/22 14:51	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0089	1	03/14/22 16:15	03/16/22 14:51	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0087	1	03/14/22 16:15	03/16/22 14:51	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0093	1	03/14/22 16:15	03/16/22 14:51	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0080	1	03/14/22 16:15	03/16/22 14:51	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0081	1	03/14/22 16:15	03/16/22 14:51	207-08-9	
Chrysene	ND	ug/L	0.039	0.0092	1	03/14/22 16:15	03/16/22 14:51	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	03/14/22 16:15	03/16/22 14:51	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.014	1	03/14/22 16:15	03/16/22 14:51	206-44-0	
Fluorene	ND	ug/L	0.039	0.0059	1	03/14/22 16:15	03/16/22 14:51	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.011	1	03/14/22 16:15	03/16/22 14:51	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0066	1	03/14/22 16:15	03/16/22 14:51	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0081	1	03/14/22 16:15	03/16/22 14:51	91-57-6	
Naphthalene	ND	ug/L	0.039	0.0086	1	03/14/22 16:15	03/16/22 14:51	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.012	1	03/14/22 16:15	03/16/22 14:51	85-01-8	
Pyrene	ND	ug/L	0.039	0.0097	1	03/14/22 16:15	03/16/22 14:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%.	52-125		1	03/14/22 16:15	03/16/22 14:51	321-60-8	
p-Terphenyl-d14 (S)	64	%.	54-125		1	03/14/22 16:15	03/16/22 14:51	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599993

Sample: PEO-MW-45-20220307		Lab ID: 10599993003		Collected: 03/07/22 12:40		Received: 03/09/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/10/22 03:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/10/22 03:09	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/10/22 03:09	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/10/22 03:09	179601-23-1	
o-Xylene	0.41J	ug/L	1.0	0.18	1		03/10/22 03:09	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		03/10/22 03:09	2199-69-1	
4-Bromofluorobenzene (S)	96	%.	75-125		1		03/10/22 03:09	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/10/22 03:09	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	1.8J	mg/L	5.0	1.8	1		03/18/22 16:27		B
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	89.6	mg/L	1.2	0.43	1		03/15/22 06:59	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599993

Sample: PEO-MW-41-20220307 Lab ID: 10599993004 Collected: 03/07/22 15:15 Received: 03/09/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.42	0.12	1	03/10/22 13:58	03/15/22 14:26	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	03/10/22 13:58	03/15/22 14:26	64742-65-0	
Surrogates									
o-Terphenyl (S)	77	%.	50-150		1	03/10/22 13:58	03/15/22 14:26	84-15-1	
n-Triacontane (S)	76	%.	50-150		1	03/10/22 13:58	03/15/22 14:26		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 18:37		
Surrogates									
a,a,a-Trifluorotoluene (S)	104	%.	50-150		1		03/10/22 18:37	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	50200	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 14:10		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.10J	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 16:31	7440-38-2	
Manganese, Dissolved	31.4	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 16:31	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.041	0.0070	1	03/14/22 16:15	03/16/22 15:13	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0062	1	03/14/22 16:15	03/16/22 15:13	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	03/14/22 16:15	03/16/22 15:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	03/14/22 16:15	03/16/22 15:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	03/14/22 16:15	03/16/22 15:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	03/14/22 16:15	03/16/22 15:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	03/14/22 16:15	03/16/22 15:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	03/14/22 16:15	03/16/22 15:13	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	03/14/22 16:15	03/16/22 15:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	03/14/22 16:15	03/16/22 15:13	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.014	1	03/14/22 16:15	03/16/22 15:13	206-44-0	
Fluorene	ND	ug/L	0.041	0.0062	1	03/14/22 16:15	03/16/22 15:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	03/14/22 16:15	03/16/22 15:13	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	03/14/22 16:15	03/16/22 15:13	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0084	1	03/14/22 16:15	03/16/22 15:13	91-57-6	
Naphthalene	ND	ug/L	0.041	0.0090	1	03/14/22 16:15	03/16/22 15:13	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.012	1	03/14/22 16:15	03/16/22 15:13	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	03/14/22 16:15	03/16/22 15:13	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%.	52-125		1	03/14/22 16:15	03/16/22 15:13	321-60-8	
p-Terphenyl-d14 (S)	68	%.	54-125		1	03/14/22 16:15	03/16/22 15:13	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599993

Sample: PEO-MW-41-20220307		Lab ID: 10599993004		Collected: 03/07/22 15:15		Received: 03/09/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/10/22 03:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/10/22 03:25	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/10/22 03:25	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/10/22 03:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/10/22 03:25	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	103	%.	75-125		1		03/10/22 03:25	2199-69-1	
4-Bromofluorobenzene (S)	94	%.	75-125		1		03/10/22 03:25	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/10/22 03:25	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	61.6	mg/L	5.0	1.8	1		03/18/22 13:50		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	3.5	mg/L	1.2	0.43	1		03/15/22 08:20	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10599993

Sample: PEO-MW-Z2-20220307 Lab ID: 10599993005 Collected: 03/07/22 15:20 Received: 03/09/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.16J	mg/L	0.43	0.13	1	03/10/22 13:58	03/16/22 15:16	68334-30-5	
Motor Oil Range SG	0.23J	mg/L	0.43	0.20	1	03/10/22 13:58	03/16/22 15:16	64742-65-0	
Surrogates									
o-Terphenyl (S)	50	%.	50-150		1	03/10/22 13:58	03/16/22 15:16	84-15-1	
n-Triacontane (S)	50	%.	50-150		1	03/10/22 13:58	03/16/22 15:16		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 18:52		
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%.	50-150		1		03/10/22 18:52	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	47800	ug/L	3300	76.7	1	03/10/22 06:55	03/16/22 14:12		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.11J	ug/L	0.50	0.083	1	03/10/22 06:43	03/17/22 16:44	7440-38-2	
Manganese, Dissolved	32.2	ug/L	0.50	0.20	1	03/10/22 06:43	03/17/22 16:44	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	03/14/22 16:15	03/16/22 17:45	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/14/22 16:15	03/16/22 17:45	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/14/22 16:15	03/16/22 17:45	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	03/14/22 16:15	03/16/22 17:45	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	03/14/22 16:15	03/16/22 17:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	03/14/22 16:15	03/16/22 17:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	03/14/22 16:15	03/16/22 17:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	03/14/22 16:15	03/16/22 17:45	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	03/14/22 16:15	03/16/22 17:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/14/22 16:15	03/16/22 17:45	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/14/22 16:15	03/16/22 17:45	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	03/14/22 16:15	03/16/22 17:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/14/22 16:15	03/16/22 17:45	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	03/14/22 16:15	03/16/22 17:45	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	03/14/22 16:15	03/16/22 17:45	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	03/14/22 16:15	03/16/22 17:45	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/14/22 16:15	03/16/22 17:45	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	03/14/22 16:15	03/16/22 17:45	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%.	52-125		1	03/14/22 16:15	03/16/22 17:45	321-60-8	
p-Terphenyl-d14 (S)	67	%.	54-125		1	03/14/22 16:15	03/16/22 17:45	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10599993

Sample: PEO-MW-Z2-20220307		Lab ID: 10599993005		Collected: 03/07/22 15:20		Received: 03/09/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/10/22 03:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/10/22 03:40	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/10/22 03:40	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/10/22 03:40	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/10/22 03:40	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		03/10/22 03:40	2199-69-1	
4-Bromofluorobenzene (S)	95	%.	75-125		1		03/10/22 03:40	460-00-4	
Toluene-d8 (S)	97	%.	75-125		1		03/10/22 03:40	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	61.0	mg/L	5.0	1.8	1		03/18/22 13:55		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	3.5	mg/L	1.2	0.43	1		03/15/22 10:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599993

QC Batch: 803030 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599993001, 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4263895 Matrix: Water
Associated Lab Samples: 10599993001, 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/10/22 13:32	
a,a,a-Trifluorotoluene (S)	%.	105	50-150		03/10/22 13:32	

METHOD BLANK: 4263896 Matrix: Water
Associated Lab Samples: 10599993001, 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/10/22 17:21	
a,a,a-Trifluorotoluene (S)	%.	89	50-150		03/10/22 17:21	

LABORATORY CONTROL SAMPLE & LCSD: 4263897

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1170	1040	117	104	75-125	12	20	1M
a,a,a-Trifluorotoluene (S)	%.				113	104	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4263899 4263900

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	65.1J	1000	1000	1350	1220	128	116	65-126	10	30	1M, M1
a,a,a-Trifluorotoluene (S)	%.						108	105	50-150			

SAMPLE DUPLICATE: 4263933

Parameter	Units	10599830002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	94	89			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599993

SAMPLE DUPLICATE: 4263934

Parameter	Units	10600160003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	3440	3540	3	30	1M
a,a,a-Trifluorotoluene (S)	%.	92	94			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599993

QC Batch: 802769 Analysis Method: EPA 6020A
QC Batch Method: EPA 3020A Analysis Description: 6020A Water Dissolved UPD4
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4262818 Matrix: Water
Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	03/17/22 14:42	
Manganese, Dissolved	ug/L	ND	0.50	0.20	03/17/22 14:42	

LABORATORY CONTROL SAMPLE: 4262819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	92.1	92	80-120	
Manganese, Dissolved	ug/L	100	97.1	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4262820 4262821

Parameter	Units	10599830002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	0.16J	100	100	92.5	96.6	92	96	75-125	4	20	
Manganese, Dissolved	ug/L	0.47J	100	100	95.6	101	95	101	75-125	6	20	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599993

QC Batch: 802840 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV UST-WATER
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599993001, 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4263097 Matrix: Water
Associated Lab Samples: 10599993001, 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/10/22 01:18	
Ethylbenzene	ug/L	ND	1.0	0.11	03/10/22 01:18	
m&p-Xylene	ug/L	ND	2.0	0.20	03/10/22 01:18	
o-Xylene	ug/L	ND	1.0	0.18	03/10/22 01:18	
Toluene	ug/L	ND	1.0	0.10	03/10/22 01:18	
1,2-Dichlorobenzene-d4 (S)	%	100	75-125		03/10/22 01:18	
4-Bromofluorobenzene (S)	%	96	75-125		03/10/22 01:18	
Toluene-d8 (S)	%	96	75-125		03/10/22 01:18	

LABORATORY CONTROL SAMPLE & LCSD: 4263098

LABORATORY CONTROL SAMPLE & LCSD: 4263098			4263099							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	18.9	19.0	94	95	73-125	1	20	
Ethylbenzene	ug/L	20	17.7	17.6	89	88	75-125	1	20	
m&p-Xylene	ug/L	40	37.0	36.9	92	92	72-125	0	20	
o-Xylene	ug/L	20	18.4	18.6	92	93	73-125	1	20	
Toluene	ug/L	20	18.0	18.2	90	91	74-125	1	20	
1,2-Dichlorobenzene-d4 (S)	%.				98	99	75-125			
4-Bromofluorobenzene (S)	%.				97	97	75-125			
Toluene-d8 (S)	%.				98	100	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599993

QC Batch: 803628 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4266339 Matrix: Water
Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	0.011J	0.040	0.0067	03/16/22 13:46	
2-Methylnaphthalene	ug/L	0.015J	0.040	0.0083	03/16/22 13:46	
Acenaphthene	ug/L	ND	0.040	0.0069	03/16/22 13:46	
Acenaphthylene	ug/L	ND	0.040	0.0061	03/16/22 13:46	
Anthracene	ug/L	ND	0.040	0.0054	03/16/22 13:46	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	03/16/22 13:46	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	03/16/22 13:46	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	03/16/22 13:46	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	03/16/22 13:46	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	03/16/22 13:46	
Chrysene	ug/L	ND	0.040	0.0094	03/16/22 13:46	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	03/16/22 13:46	
Fluoranthene	ug/L	0.015J	0.040	0.014	03/16/22 13:46	
Fluorene	ug/L	ND	0.040	0.0060	03/16/22 13:46	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	03/16/22 13:46	
Naphthalene	ug/L	0.014J	0.040	0.0088	03/16/22 13:46	
Phenanthrene	ug/L	0.024J	0.040	0.012	03/16/22 13:46	
Pyrene	ug/L	0.013J	0.040	0.0099	03/16/22 13:46	
2-Fluorobiphenyl (S)	%	67	52-125		03/16/22 13:46	
p-Terphenyl-d14 (S)	%	70	54-125		03/16/22 13:46	

LABORATORY CONTROL SAMPLE: 4266340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.99	99	43-125	
2-Methylnaphthalene	ug/L	1	0.78	78	42-125	
Acenaphthene	ug/L	1	0.91	91	56-125	
Acenaphthylene	ug/L	1	0.90	90	55-125	
Anthracene	ug/L	1	1.1	106	64-125	
Benzo(a)anthracene	ug/L	1	0.89	89	65-125	
Benzo(a)pyrene	ug/L	1	0.95	95	64-125	
Benzo(b)fluoranthene	ug/L	1	0.93	93	70-125	
Benzo(g,h,i)perylene	ug/L	1	0.85	85	49-125	
Benzo(k)fluoranthene	ug/L	1	0.95	95	69-125	
Chrysene	ug/L	1	0.93	93	70-125	
Dibenz(a,h)anthracene	ug/L	1	0.88	88	41-125	
Fluoranthene	ug/L	1	0.90	90	67-125	
Fluorene	ug/L	1	0.92	92	59-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.94	94	57-125	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599993

LABORATORY CONTROL SAMPLE: 4266340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.93	93	49-125	
Phenanthrene	ug/L	1	0.77	77	65-125	
Pyrene	ug/L	1	0.85	85	67-125	
2-Fluorobiphenyl (S)	%			79	52-125	
p-Terphenyl-d14 (S)	%			73	54-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266341 4266342

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	0.14	1.1	1	0.70	0.82	53	67	30-150	15	30	
2-Methylnaphthalene	ug/L	0.020J	1.1	1	0.82	0.77	76	74	35-125	6	30	
Acenaphthene	ug/L	0.28	1.1	1	1.2	1.1	91	79	45-125	14	30	
Acenaphthylene	ug/L	0.025J	1.1	1	0.99	0.95	92	92	47-125	4	30	
Anthracene	ug/L	ND	1.1	1	0.86	0.81	81	80	44-125	6	30	
Benzo(a)anthracene	ug/L	ND	1.1	1	0.78	0.69	74	68	43-125	13	30	
Benzo(a)pyrene	ug/L	ND	1.1	1	0.71	0.64	67	63	36-125	10	30	
Benzo(b)fluoranthene	ug/L	ND	1.1	1	0.68	0.59	65	59	38-125	14	30	
Benzo(g,h,i)perylene	ug/L	ND	1.1	1	0.65	0.59	62	58	30-125	10	30	
Benzo(k)fluoranthene	ug/L	ND	1.1	1	0.71	0.63	67	62	32-131	12	30	
Chrysene	ug/L	ND	1.1	1	0.82	0.73	77	72	40-125	11	30	
Dibenz(a,h)anthracene	ug/L	ND	1.1	1	0.69	0.62	65	61	30-125	10	30	
Fluoranthene	ug/L	0.029J	1.1	1	1.0	0.96	96	92	56-125	8	30	
Fluorene	ug/L	0.24	1.1	1	1.3	1.1	99	87	46-125	14	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	1.1	1	0.65	0.58	62	57	30-125	12	30	
Naphthalene	ug/L	0.24	1.1	1	0.95	0.77	68	52	42-125	21	30	
Phenanthrene	ug/L	0.066	1.1	1	1.0	0.96	89	88	49-125	5	30	
Pyrene	ug/L	0.029J	1.1	1	0.80	0.73	73	69	50-125	10	30	
2-Fluorobiphenyl (S)	%						78	73	52-125			
p-Terphenyl-d14 (S)	%						59	53	54-125			S5

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599993

QC Batch:	802974	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4263602 Matrix: Water

Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/15/22 12:59	
Motor Oil Range SG	mg/L	ND	0.40	0.18	03/15/22 12:59	
n-Triacontane (S)	%	68	50-150		03/15/22 12:59	
o-Terphenyl (S)	%	67	50-150		03/15/22 12:59	

LABORATORY CONTROL SAMPLE & LCSD: 4263603

		4263604								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.4	1.5	69	74	50-150	7	20	
Motor Oil Range SG	mg/L	2	1.4	1.5	71	77	50-150	8	20	
n-Triacontane (S)	%				71	74	50-150			
o-Terphenyl (S)	%				71	74	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4263912

		4263913										
Parameter	Units	10600160004	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result										
Diesel Fuel Range SG	mg/L	2.6	2	2	2.3	4.7	-11	108	50-150	67	30	M1,R1
Motor Oil Range SG	mg/L	0.51	2	2	1.2	1.9	34	73	50-150	48	30	M1,R1
n-Triacontane (S)	%						59	90	50-150			
o-Terphenyl (S)	%						58	75	50-150			

SAMPLE DUPLICATE: 4263605

Parameter	Units	10599993002	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.14J	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	65	70			
o-Terphenyl (S)	%	68	72			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10599993

QC Batch: 804470 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4270454 Matrix: Water
Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	1.9J	5.0	1.8	03/18/22 12:33	

LABORATORY CONTROL SAMPLE & LCSD: 4270455		4270456								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.6	43.1	109	108	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4270457					4270458							
Parameter	Units	10599951001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	295	40	40	335	336	101	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4270459		4270460										
Parameter	Units	10600271003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	93.5	40	40	135	135	103	103	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10599993

QC Batch: 803606

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

METHOD BLANK: 4266251

Matrix: Water

Associated Lab Samples: 10599993002, 10599993003, 10599993004, 10599993005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/15/22 01:54	

LABORATORY CONTROL SAMPLE: 4266252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266253 4266254

Parameter	Units	10599993002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	66.2	50	50	114	115	95	97	80-120	1	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266255 4266256

Parameter	Units	10599993003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	89.6	50	50	136	135	92	91	80-120	1	20	E

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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QUALIFIERS

Project: 0633086

Pace Project No.: 10599993

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 adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 802840

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M	During a routine PT failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

REPORT OF LABORATORY ANALYSIS

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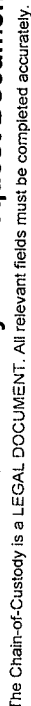
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086
Pace Project No.: 10599993

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10599993002	PEO-MW-40-20220307	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10599993003	PEO-MW-45-20220307	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10599993004	PEO-MW-41-20220307	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10599993005	PEO-MW-Z2-20220307	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10599993001	TRIP BLANK-20220307	NWTPH-Gx	803030		
10599993002	PEO-MW-40-20220307	NWTPH-Gx	803030		
10599993003	PEO-MW-45-20220307	NWTPH-Gx	803030		
10599993004	PEO-MW-41-20220307	NWTPH-Gx	803030		
10599993005	PEO-MW-Z2-20220307	NWTPH-Gx	803030		
10599993002	PEO-MW-40-20220307	EPA 3010A	802739	EPA 6010D	803063
10599993003	PEO-MW-45-20220307	EPA 3010A	802739	EPA 6010D	803063
10599993004	PEO-MW-41-20220307	EPA 3010A	802739	EPA 6010D	803063
10599993005	PEO-MW-Z2-20220307	EPA 3010A	802739	EPA 6010D	803063
10599993002	PEO-MW-40-20220307	EPA 3020A	802769	EPA 6020A	803329
10599993003	PEO-MW-45-20220307	EPA 3020A	802769	EPA 6020A	803329
10599993004	PEO-MW-41-20220307	EPA 3020A	802769	EPA 6020A	803329
10599993005	PEO-MW-Z2-20220307	EPA 3020A	802769	EPA 6020A	803329
10599993002	PEO-MW-40-20220307	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10599993003	PEO-MW-45-20220307	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10599993004	PEO-MW-41-20220307	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10599993005	PEO-MW-Z2-20220307	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10599993001	TRIP BLANK-20220307	EPA 8260D	802840		
10599993002	PEO-MW-40-20220307	EPA 8260D	802840		
10599993003	PEO-MW-45-20220307	EPA 8260D	802840		
10599993004	PEO-MW-41-20220307	EPA 8260D	802840		
10599993005	PEO-MW-Z2-20220307	EPA 8260D	802840		
10599993002	PEO-MW-40-20220307	SM 2320B	804470		
10599993003	PEO-MW-45-20220307	SM 2320B	804470		
10599993004	PEO-MW-41-20220307	SM 2320B	804470		
10599993005	PEO-MW-Z2-20220307	SM 2320B	804470		
10599993002	PEO-MW-40-20220307	EPA 300.0	803606		
10599993003	PEO-MW-45-20220307	EPA 300.0	803606		
10599993004	PEO-MW-41-20220307	EPA 300.0	803606		
10599993005	PEO-MW-Z2-20220307	EPA 300.0	803606		

REPORT OF LABORATORY ANALYSIS

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

F-ALL-Q-020rev.07, 15-Feb-2007

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Page 1 of 1 Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt

Client Name:

ERM

Project #:

WO# : 10599993

PM: JMT

Due Date: 03/23/22

CLIENT: ERM-Oregon

Courier:

☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Pace ☐ Speedee ☐ Commercial

Tracking Number:

See Exceptions ☒
ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

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

Thermometer: ☐ T1(0461) ☒ T2(1336) ☐ T3(0459) ☐ T4(0254) Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted
☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808

Did Samples Originate in West Virginia? ☐ Yes ☒ No Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.2/0.4/0.2 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

Correction Factor: min Cooler Temp Corrected w/temp blank: 0.2/0.4/0.2 °C

USDA Regulated Soil: (☒ N/A, water sample, Other: _____)

Date/Initials of Person Examining Contents: AC3 03-09-22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
-Pace Containers Used? ☒ Yes ☐ No	9.
Containers Intact? <u>3/9/22</u> ☒ Yes ☐ No ☐ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Field Filtered Volume Received for Dissolved Tests? <u>1/1</u> ☒ Yes ☐ No ☐ N/A	11. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? ☒ Yes ☐ No	
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	12. Sample # <u>001-004</u>
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide) ☒ Yes ☐ No ☐ N/A	☐ NaOH ☒ HNO ₃ ☒ H ₂ SO ₄ ☐ Zinc Acetate
Exceptions: <u>VOA, Coliform, TOC/DOC Oil and Grease, PRO/8015 (water) and Dioxin/PFAS</u> ☒ Yes ☐ No ☐ N/A	Positive for Res. ☐ Yes ☐ No See Exception ☐ ENV-FRM-MIN4-0142
<u>AC3 03-09-22</u>	Chlorine? ☐ Yes ☐ No pH Paper Lot#
	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	13. See Exception ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☐ No ☒ N/A	
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>353383 (6)</u>
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

Field Data Required? ☐ Yes ☐ No

Project Manager Review: *Julia Barz*

Date: 3/9/22

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

Labeled by: _____

AC3 (2)

	Document Name: Sample Condition Upon Receipt (SCUR) Exception Form	Document Revised: 04Jun2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0142 Rev.01	Pace Analytical Services - Minneapolis

SCUR Exceptions:
Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? ☐ Yes ☐ No
			If yes, indicate who was contacted/date/time. If no, indicate reason why.
			Multiple Cooler Project? ☐ Yes ☐ No
			If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	
540518171713	0.2
540518171671	0.4
540518171660	0.2

Issue Type:	Container Type	# of Containers
Sample ID	Type	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition? ☐ Yes ☐ No	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

Comments:

	Document Name: Headspace Exception	Document Revised: 26Mar2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0140 Rev.00	Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
PRO-MW-40	1	1	7	9	NO
PEO-MW-45	0	1	8	9	NO
PRO-MW-41	1	2	6	9	NO



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086

Work Order Number: 2203256

March 28, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 5 sample(s) on 3/10/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086
Work Order: 2203256

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203256-001	TRIP BLANK-20220307	03/07/2022 8:00 AM	03/10/2022 9:32 AM
2203256-002	PEO-MW-40-20220307	03/07/2022 9:45 AM	03/10/2022 9:32 AM
2203256-003	PEO-MW-45-20220307	03/07/2022 12:40 PM	03/10/2022 9:32 AM
2203256-004	PEO-MW-41-20220307	03/07/2022 3:15 PM	03/10/2022 9:32 AM
2203256-005	PEO-MW-Z2-20220307	03/07/2022 3:20 PM	03/10/2022 9:32 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2203256
Date Reported: 3/28/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203256-001
Client Sample ID: TRIP BLANK-20220307
Collection Date: 3/7/2022 8:00:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742 Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/15/2022 9:59:09 PM
Surr: 1,4-Difluorobenzene	96.9	60 - 140		%Rec	1	3/15/2022 9:59:09 PM
Surr: Bromofluorobenzene	77.6	60 - 140		%Rec	1	3/15/2022 9:59:09 PM

Lab ID: 2203256-002
Client Sample ID: PEO-MW-40-20220307
Collection Date: 3/7/2022 9:45:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	3/23/2022 12:51:34 AM
Surr: 1-Chlorooctadecane	97.9	60 - 140		%Rec	1	3/23/2022 12:51:34 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742 Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 1:25:53 AM
Surr: 1,4-Difluorobenzene	97.2	60 - 140		%Rec	1	3/16/2022 1:25:53 AM
Surr: Bromofluorobenzene	76.7	60 - 140		%Rec	1	3/16/2022 1:25:53 AM



Work Order: 2203256
Date Reported: 3/28/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203256-003

Client Sample ID: PEO-MW-45-20220307

Collection Date: 3/7/2022 12:40:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/23/2022 1:44:39 AM
Surr: 1-Chlorooctadecane	104	60 - 140		%Rec	1	3/23/2022 1:44:39 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 2:48:10 AM
Surr: 1,4-Difluorobenzene	95.0	60 - 140		%Rec	1	3/16/2022 2:48:10 AM
Surr: Bromofluorobenzene	74.6	60 - 140		%Rec	1	3/16/2022 2:48:10 AM

Lab ID: 2203256-004

Client Sample ID: PEO-MW-41-20220307

Collection Date: 3/7/2022 3:15:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	3/23/2022 2:37:46 AM
Surr: 1-Chlorooctadecane	98.3	60 - 140		%Rec	1	3/23/2022 2:37:46 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 3:29:25 AM
Surr: 1,4-Difluorobenzene	93.6	60 - 140		%Rec	1	3/16/2022 3:29:25 AM
Surr: Bromofluorobenzene	73.6	60 - 140		%Rec	1	3/16/2022 3:29:25 AM



Analytical Report

Work Order: 2203256
Date Reported: 3/28/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203256-005

Collection Date: 3/7/2022 3:20:00 PM

Client Sample ID: PEO-MW-Z2-20220307

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35660

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/23/2022 3:30:49 AM
Surr: 1-Chlorooctadecane	101	60 - 140		%Rec	1	3/23/2022 3:30:49 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 4:10:41 AM
Surr: 1,4-Difluorobenzene	96.8	60 - 140		%Rec	1	3/16/2022 4:10:41 AM
Surr: Bromofluorobenzene	76.1	60 - 140		%Rec	1	3/16/2022 4:10:41 AM

Work Order: 2203256
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-35660		SampType: MBLK			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: MBLKW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518640				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						
Surr: 1-Chlorooctadecane	332		400.0		82.9	60	140				

Sample ID: LCS-35660		SampType: LCS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518641				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	352	40.0	500.0	0	70.4	70	130				
Surr: 1-Chlorooctadecane	416		400.0		104	60	140				

Sample ID: LCSD-35660		SampType: LCSD			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: LCSW02		Batch ID: 35660			Analysis Date: 3/17/2022			SeqNo: 1518642				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	353	40.0	500.0	0	70.6	70	130	352.0	0.318	20	
Surr: 1-Chlorooctadecane	402		400.0		100	60	140		0		

Sample ID: 2203181-001AMS		SampType: MS			Units: µg/L		Prep Date: 3/9/2022			RunNo: 74096		
Client ID: BATCH		Batch ID: 35660			Analysis Date: 3/17/2022					SeqNo: 1518644		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	318	40.7	509.3	0	62.5	70	130				S
Surr: 1-Chlorooctadecane	391		407.5		95.9	60	140				

NOTES:

S - Outlying spike recoveries were associated with this sample.

Work Order: 2203256
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-35742		SampType: LCS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: LCSW		Batch ID: 35742			Analysis Date: 3/15/2022			SeqNo: 1523582				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	232	25.0	200.0	0	116	70	130				
Surr: 1,4-Difluorobenzene	56.6		50.00		113	60	140				
Surr: Bromofluorobenzene	40.4		50.00		80.9	60	140				

Sample ID: MB-35742		SampType: MBLK			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: MBLKW		Batch ID: 35742			Analysis Date: 3/15/2022					SeqNo: 1523552		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	47.9		50.00		95.8	60	140				
Surr: Bromofluorobenzene	38.0		50.00		76.0	60	140				

Sample ID: 2203256-002BDUP		SampType: DUP			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: PEO-MW-40-20220307		Batch ID: 35742			Analysis Date: 3/16/2022			SeqNo: 1523532				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	47.6		50.00		95.1	60	140		0		
Surr: Bromofluorobenzene	38.3		50.00		76.5	60	140		0		

Sample ID: 2203290-004BMS		SampType: MS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: BATCH		Batch ID: 35742			Analysis Date: 3/16/2022			SeqNo: 1523540				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	261	25.0	200.0	18.39	121	70	130				
Surr: 1,4-Difluorobenzene	49.5		50.00		98.9	60	140				
Surr: Bromofluorobenzene	39.7		50.00		79.4	60	140				

Work Order: 2203256
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 2203290-004BMSD		SampType: MSD			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: BATCH		Batch ID: 35742			Analysis Date: 3/16/2022			SeqNo: 1523675				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aliphatic Hydrocarbon (C10-C12)	265	25.0	200.0	18.39	123	70	130	260.7	1.73	30		
Surr: 1,4-Difluorobenzene	46.7		50.00		93.4	60	140		0			
Surr: Bromofluorobenzene	39.8		50.00		79.5	60	140		0			

Client Name: **PACEMI**
 Logged by: **Clare Griggs**

Work Order Number: **2203256**
 Date Received: **3/10/2022 9:32:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☐ No ☒
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

1 of 3 VOAs for sample PEO-MW-Z2-20220307 arrived broken.

Item Information

Item #	Temp °C
Sample	3.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory
 Workorder: 10599993

Workorder Name: 0633086

Results Requested By: 3/23/2022

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Minneapolis, MN 55414
 Phone 612-607-6390
 Email: julie.bowser@pacelabs.com

Fremont Analytical
 3600 Fremont Ave N
 Seattle WA, 98103

P.O. 10599993

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers					Requested Analysis					LAB USE ONLY
1	TRIP BLANK-20220307	3/7/2022 08:00	10599993001	Water	2					NWTPH VPH (Aliphatics C10-C12)					
2	PEO-MW-40-20220307	3/7/2022 09:45	10599993002	Water	5					NWTPH EPH (Aliphatics C10-C12)					
3	PEO-MW-45-20220307	3/7/2022 12:40	10599993003	Water	5										
4	PEO-MW-41-20220307	3/7/2022 15:15	10599993004	Water	5										
5	PEO-MW-Z2-20220307	3/7/2022 15:20	10599993005	Water	5										

Transfers	Released By	Date/Time	Received By	Date/Time	Comments				
1	Julie Bowser	3/9/22 1500	Julie Bowser	3/10/22 9:38	EQUIS EDD needed J flag to MDL				
2									
3									

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

2203256



April 04, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086
Pace Project No.: 10600160

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086

Pace Project No.: 10600160

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01*

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086

Pace Project No.: 10600160

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10600160001	TRIP BLANK-20220308	Water	03/08/22 08:00	03/10/22 08:50
10600160002	PEO-MW-26-20220308	Water	03/08/22 09:45	03/10/22 08:50
10600160003	PEO-MW-39-20220308	Water	03/08/22 11:15	03/10/22 08:50
10600160004	PEO-MW-36-20220308	Water	03/08/22 13:15	03/10/22 08:50
10600160005	PEO-MW-27-20220308	Water	03/08/22 15:45	03/10/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086

Pace Project No.: 10600160

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10600160001	TRIP BLANK-20220308	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	ZH	8	PASI-M
10600160002	PEO-MW-26-20220308	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
10600160003	PEO-MW-39-20220308	EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
10600160004	PEO-MW-36-20220308	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
10600160005	PEO-MW-27-20220308	SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	ZH	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600160

Sample: TRIP BLANK-20220308		Lab ID: 10600160001		Collected: 03/08/22 08:00		Received: 03/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 19:07		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	50-150		1		03/10/22 19:07	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 06:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 06:37	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/11/22 06:37	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 06:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/11/22 06:37	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/11/22 06:37	2199-69-1	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/11/22 06:37	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/11/22 06:37	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600160

Sample: PEO-MW-26-20220308 Lab ID: 10600160002 Collected: 03/08/22 09:45 Received: 03/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.12J	mg/L	0.40	0.12	1	03/17/22 15:10	03/18/22 16:10	68334-30-5	
Motor Oil Range SG	0.38J	mg/L	0.40	0.18	1	03/17/22 15:10	03/18/22 16:10	64742-65-0	
Surrogates									
o-Terphenyl (S)	57	%.	50-150		1	03/17/22 15:10	03/18/22 16:10	84-15-1	
n-Triacontane (S)	52	%.	50-150		1	03/17/22 15:10	03/18/22 16:10		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/10/22 19:22		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	50-150		1		03/10/22 19:22	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	46600	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 10:56		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.4	ug/L	0.50	0.083	1	03/12/22 07:27	03/18/22 15:45	7440-38-2	
Manganese, Dissolved	346	ug/L	0.50	0.20	1	03/12/22 07:27	03/18/22 15:45	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	03/14/22 16:15	03/16/22 18:07	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	03/14/22 16:15	03/16/22 18:07	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/14/22 16:15	03/16/22 18:07	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	03/14/22 16:15	03/16/22 18:07	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	03/14/22 16:15	03/16/22 18:07	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	03/14/22 16:15	03/16/22 18:07	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	03/14/22 16:15	03/16/22 18:07	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	03/14/22 16:15	03/16/22 18:07	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	03/14/22 16:15	03/16/22 18:07	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/14/22 16:15	03/16/22 18:07	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/14/22 16:15	03/16/22 18:07	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	03/14/22 16:15	03/16/22 18:07	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/14/22 16:15	03/16/22 18:07	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	03/14/22 16:15	03/16/22 18:07	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	03/14/22 16:15	03/16/22 18:07	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	03/14/22 16:15	03/16/22 18:07	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	03/14/22 16:15	03/16/22 18:07	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	03/14/22 16:15	03/16/22 18:07	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	62	%.	52-125		1	03/14/22 16:15	03/16/22 18:07	321-60-8	
p-Terphenyl-d14 (S)	64	%.	54-125		1	03/14/22 16:15	03/16/22 18:07	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600160

Sample: PEO-MW-26-20220308		Lab ID: 10600160002		Collected: 03/08/22 09:45		Received: 03/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 06:53	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 06:53	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/11/22 06:53	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 06:53	179601-23-1	
o-Xylene	0.55J	ug/L	1.0	0.18	1		03/11/22 06:53	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/11/22 06:53	2199-69-1	
4-Bromofluorobenzene (S)	94	%.	75-125		1		03/11/22 06:53	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		03/11/22 06:53	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	37.0	mg/L	5.0	1.8	1		03/22/22 12:46		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	28.4	mg/L	1.2	0.43	1		03/16/22 07:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600160

Sample: PEO-MW-39-20220308 Lab ID: 10600160003 Collected: 03/08/22 11:15 Received: 03/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	10.1	mg/L	0.40	0.12	1	03/10/22 13:58	03/16/22 15:05	68334-30-5	
Motor Oil Range SG	0.93	mg/L	0.40	0.18	1	03/10/22 13:58	03/16/22 15:05	64742-65-0	
Surrogates									
o-Terphenyl (S)	63	%.	50-150		1	03/10/22 13:58	03/16/22 15:05	84-15-1	
n-Triacontane (S)	80	%.	50-150		1	03/10/22 13:58	03/16/22 15:05		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	3440	ug/L	500	111	5		03/10/22 19:38		1M
Surrogates									
a,a,a-Trifluorotoluene (S)	92	%.	50-150		5		03/10/22 19:38	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	154000	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 10:58		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	41.0	ug/L	0.50	0.083	1	03/12/22 07:27	03/18/22 15:51	7440-38-2	
Manganese, Dissolved	2490	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 15:54	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	2.0	ug/L	0.040	0.0069	1	03/14/22 16:15	03/16/22 18:28	83-32-9	
Acenaphthylene	0.84	ug/L	0.040	0.0061	1	03/14/22 16:15	03/16/22 18:28	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	03/14/22 16:15	03/16/22 18:28	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	03/14/22 16:15	03/16/22 18:28	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	03/14/22 16:15	03/16/22 18:28	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0095	1	03/14/22 16:15	03/16/22 18:28	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0081	1	03/14/22 16:15	03/16/22 18:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0083	1	03/14/22 16:15	03/16/22 18:28	207-08-9	
Chrysene	ND	ug/L	0.040	0.0094	1	03/14/22 16:15	03/16/22 18:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/14/22 16:15	03/16/22 18:28	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	03/14/22 16:15	03/16/22 18:28	206-44-0	
Fluorene	1.5	ug/L	0.040	0.0060	1	03/14/22 16:15	03/16/22 18:28	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/14/22 16:15	03/16/22 18:28	193-39-5	
1-Methylnaphthalene	4.3	ug/L	0.040	0.0067	1	03/14/22 16:15	03/16/22 18:28	90-12-0	
2-Methylnaphthalene	0.12	ug/L	0.040	0.0083	1	03/14/22 16:15	03/16/22 18:28	91-57-6	B
Naphthalene	2.3	ug/L	0.040	0.0088	1	03/14/22 16:15	03/16/22 18:28	91-20-3	
Phenanthrene	0.15	ug/L	0.040	0.012	1	03/14/22 16:15	03/16/22 18:28	85-01-8	B
Pyrene	0.022J	ug/L	0.040	0.0099	1	03/14/22 16:15	03/16/22 18:28	129-00-0	B
Surrogates									
2-Fluorobiphenyl (S)	74	%.	52-125		1	03/14/22 16:15	03/16/22 18:28	321-60-8	
p-Terphenyl-d14 (S)	62	%.	54-125		1	03/14/22 16:15	03/16/22 18:28	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600160

Sample: PEO-MW-39-20220308		Lab ID: 10600160003		Collected: 03/08/22 11:15		Received: 03/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	17.4	ug/L	1.0	0.10	1		03/15/22 23:52	71-43-2	
Ethylbenzene	5.1	ug/L	1.0	0.11	1		03/15/22 20:43	100-41-4	
Toluene	13.8	ug/L	1.0	0.10	1		03/15/22 23:52	108-88-3	
m&p-Xylene	19.8	ug/L	2.0	0.20	1		03/15/22 23:52	179601-23-1	
o-Xylene	9.3	ug/L	1.0	0.18	1		03/15/22 23:52	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125		1		03/15/22 23:52	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125		1		03/15/22 23:52	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		03/15/22 23:52	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	197	mg/L	5.0	1.8	1		03/22/22 12:49		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	0.67J	mg/L	1.2	0.43	1		03/16/22 07:20	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600160

Sample: PEO-MW-36-20220308 Lab ID: 10600160004 Collected: 03/08/22 13:15 Received: 03/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	2.6	mg/L	0.42	0.12	1	03/10/22 13:58	03/16/22 14:33	68334-30-5	M1,R1
Motor Oil Range SG	0.51	mg/L	0.42	0.19	1	03/10/22 13:58	03/16/22 14:33	64742-65-0	M1,R1
Surrogates									
o-Terphenyl (S)	67	%.	50-150		1	03/10/22 13:58	03/16/22 14:33	84-15-1	
n-Triacontane (S)	75	%.	50-150		1	03/10/22 13:58	03/16/22 14:33		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	65.1J	ug/L	100	22.2	1		03/10/22 20:38		1M,M1
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%.	50-150		1		03/10/22 20:38	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	64400	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:00		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	7.3	ug/L	0.50	0.083	1	03/12/22 07:27	03/18/22 16:03	7440-38-2	
Manganese, Dissolved	856	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 16:18	7439-96-5	M1
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.28	ug/L	0.041	0.0070	1	03/14/22 16:15	03/16/22 18:50	83-32-9	
Acenaphthylene	0.025J	ug/L	0.041	0.0062	1	03/14/22 16:15	03/16/22 18:50	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	03/14/22 16:15	03/16/22 18:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	03/14/22 16:15	03/16/22 18:50	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	03/14/22 16:15	03/16/22 18:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	03/14/22 16:15	03/16/22 18:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	03/14/22 16:15	03/16/22 18:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	03/14/22 16:15	03/16/22 18:50	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	03/14/22 16:15	03/16/22 18:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	03/14/22 16:15	03/16/22 18:50	53-70-3	
Fluoranthene	0.029J	ug/L	0.041	0.014	1	03/14/22 16:15	03/16/22 18:50	206-44-0	B
Fluorene	0.24	ug/L	0.041	0.0062	1	03/14/22 16:15	03/16/22 18:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	03/14/22 16:15	03/16/22 18:50	193-39-5	
1-Methylnaphthalene	0.14	ug/L	0.041	0.0069	1	03/14/22 16:15	03/16/22 18:50	90-12-0	
2-Methylnaphthalene	0.020J	ug/L	0.041	0.0084	1	03/14/22 16:15	03/16/22 18:50	91-57-6	B
Naphthalene	0.24	ug/L	0.041	0.0090	1	03/14/22 16:15	03/16/22 18:50	91-20-3	
Phenanthrene	0.066	ug/L	0.041	0.012	1	03/14/22 16:15	03/16/22 18:50	85-01-8	B
Pyrene	0.029J	ug/L	0.041	0.010	1	03/14/22 16:15	03/16/22 18:50	129-00-0	B
Surrogates									
2-Fluorobiphenyl (S)	78	%.	52-125		1	03/14/22 16:15	03/16/22 18:50	321-60-8	
p-Terphenyl-d14 (S)	54	%.	54-125		1	03/14/22 16:15	03/16/22 18:50	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600160

Sample: PEO-MW-36-20220308		Lab ID: 10600160004		Collected: 03/08/22 13:15		Received: 03/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.24J	ug/L	1.0	0.10	1		03/11/22 07:09	71-43-2	R1
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 07:09	100-41-4	R1
Toluene	0.16J	ug/L	1.0	0.10	1		03/11/22 07:09	108-88-3	R1
m&p-Xylene	0.27J	ug/L	2.0	0.20	1		03/11/22 07:09	179601-23-1	R1
o-Xylene	0.61J	ug/L	1.0	0.18	1		03/11/22 07:09	95-47-6	R1
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		03/11/22 07:09	2199-69-1	HS
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/11/22 07:09	460-00-4	
Toluene-d8 (S)	98	%.	75-125		1		03/11/22 07:09	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	80.3	mg/L	5.0	1.8	1		03/22/22 12:55		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	25.8	mg/L	1.2	0.43	1		03/16/22 08:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600160

Sample: PEO-MW-27-20220308 Lab ID: 10600160005 Collected: 03/08/22 15:45 Received: 03/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.70	mg/L	0.39	0.12	1	03/10/22 13:58	03/15/22 15:21	68334-30-5	
Motor Oil Range SG	0.22J	mg/L	0.39	0.18	1	03/10/22 13:58	03/15/22 15:21	64742-65-0	
Surrogates									
o-Terphenyl (S)	71	%.	50-150		1	03/10/22 13:58	03/15/22 15:21	84-15-1	
n-Triacontane (S)	78	%.	50-150		1	03/10/22 13:58	03/15/22 15:21		
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	62.7J	ug/L	100	22.2	1		03/10/22 21:39		1M
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%.	50-150		1		03/10/22 21:39	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	62300	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:08		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	39.1	ug/L	0.50	0.083	1	03/12/22 07:27	03/18/22 16:32	7440-38-2	
Manganese, Dissolved	1070	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 16:36	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.38	ug/L	0.040	0.0069	1	03/14/22 16:15	03/16/22 19:55	83-32-9	
Acenaphthylene	0.015J	ug/L	0.040	0.0061	1	03/14/22 16:15	03/16/22 19:55	208-96-8	
Anthracene	0.078	ug/L	0.040	0.0054	1	03/14/22 16:15	03/16/22 19:55	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	03/14/22 16:15	03/16/22 19:55	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	03/14/22 16:15	03/16/22 19:55	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0095	1	03/14/22 16:15	03/16/22 19:55	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0081	1	03/14/22 16:15	03/16/22 19:55	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0083	1	03/14/22 16:15	03/16/22 19:55	207-08-9	
Chrysene	ND	ug/L	0.040	0.0094	1	03/14/22 16:15	03/16/22 19:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	03/14/22 16:15	03/16/22 19:55	53-70-3	
Fluoranthene	0.048	ug/L	0.040	0.014	1	03/14/22 16:15	03/16/22 19:55	206-44-0	B
Fluorene	0.33	ug/L	0.040	0.0060	1	03/14/22 16:15	03/16/22 19:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	03/14/22 16:15	03/16/22 19:55	193-39-5	
1-Methylnaphthalene	0.057	ug/L	0.040	0.0067	1	03/14/22 16:15	03/16/22 19:55	90-12-0	B
2-Methylnaphthalene	0.018J	ug/L	0.040	0.0083	1	03/14/22 16:15	03/16/22 19:55	91-57-6	B
Naphthalene	0.073	ug/L	0.040	0.0088	1	03/14/22 16:15	03/16/22 19:55	91-20-3	B
Phenanthrene	0.022J	ug/L	0.040	0.012	1	03/14/22 16:15	03/16/22 19:55	85-01-8	B
Pyrene	0.031J	ug/L	0.040	0.0099	1	03/14/22 16:15	03/16/22 19:55	129-00-0	B
Surrogates									
2-Fluorobiphenyl (S)	65	%.	52-125		1	03/14/22 16:15	03/16/22 19:55	321-60-8	
p-Terphenyl-d14 (S)	58	%.	54-125		1	03/14/22 16:15	03/16/22 19:55	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600160

Sample: PEO-MW-27-20220308		Lab ID: 10600160005		Collected: 03/08/22 15:45		Received: 03/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 07:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 07:25	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/11/22 07:25	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 07:25	179601-23-1	
o-Xylene	0.66J	ug/L	1.0	0.18	1		03/11/22 07:25	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		03/11/22 07:25	2199-69-1	
4-Bromofluorobenzene (S)	97	%.	75-125		1		03/11/22 07:25	460-00-4	
Toluene-d8 (S)	97	%.	75-125		1		03/11/22 07:25	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	38.9	mg/L	5.0	1.8	1		03/22/22 13:08		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	43.1	mg/L	1.2	0.43	1		03/16/22 09:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 803030 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160001, 10600160002, 10600160003, 10600160004, 10600160005

METHOD BLANK: 4263895 Matrix: Water
Associated Lab Samples: 10600160001, 10600160002, 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/10/22 13:32	
a,a,a-Trifluorotoluene (S)	%.	105	50-150		03/10/22 13:32	

METHOD BLANK: 4263896 Matrix: Water
Associated Lab Samples: 10600160001, 10600160002, 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/10/22 17:21	
a,a,a-Trifluorotoluene (S)	%.	89	50-150		03/10/22 17:21	

LABORATORY CONTROL SAMPLE & LCSD: 4263897

		4263898								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1170	1040	117	104	75-125	12	20	1M
a,a,a-Trifluorotoluene (S)	%.				113	104	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4263899 4263900

10600160004												
Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	65.1J	1000	1000	1350	1220	128	116	65-126	10	30	1M,M1
a,a,a-Trifluorotoluene (S)	%.						108	105	50-150			

SAMPLE DUPLICATE: 4263933

Parameter	Units	10599830002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	94	89			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10600160

SAMPLE DUPLICATE: 4263934

Parameter	Units	10600160003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	3440	3540	3	30	1M
a,a,a-Trifluorotoluene (S)	%.	92	94			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 803338 Analysis Method: EPA 6020A
QC Batch Method: EPA 3020A Analysis Description: 6020A Water Dissolved UPD4
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

METHOD BLANK: 4265179 Matrix: Water
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	03/18/22 15:39	
Manganese, Dissolved	ug/L	ND	0.50	0.20	03/18/22 15:39	

LABORATORY CONTROL SAMPLE: 4265180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	107	107	80-120	
Manganese, Dissolved	ug/L	100	104	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4265181 4265182

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	7.3	100	100	107	108	100	101	75-125	1	20	
Manganese, Dissolved	ug/L	856	100	100	994	973	138	116	75-125	2	20 P6	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 803155 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV UST-WATER
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160001, 10600160002, 10600160004, 10600160005

METHOD BLANK: 4264368 Matrix: Water
Associated Lab Samples: 10600160001, 10600160002, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/11/22 02:37	
Ethylbenzene	ug/L	ND	1.0	0.11	03/11/22 02:37	
m&p-Xylene	ug/L	ND	2.0	0.20	03/11/22 02:37	
o-Xylene	ug/L	ND	1.0	0.18	03/11/22 02:37	
Toluene	ug/L	ND	1.0	0.10	03/11/22 02:37	
1,2-Dichlorobenzene-d4 (S)	%	101	75-125		03/11/22 02:37	
4-Bromofluorobenzene (S)	%	96	75-125		03/11/22 02:37	
Toluene-d8 (S)	%	102	75-125		03/11/22 02:37	

LABORATORY CONTROL SAMPLE: 4264369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.6	93	73-125	
Ethylbenzene	ug/L	20	17.3	87	75-125	
m&p-Xylene	ug/L	40	37.1	93	72-125	
o-Xylene	ug/L	20	18.7	93	73-125	
Toluene	ug/L	20	18.1	91	74-125	
1,2-Dichlorobenzene-d4 (S)	%			99	75-125	
4-Bromofluorobenzene (S)	%			96	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4264370 4264371

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	0.24J	30	20	32.9	20.8	109	103	65-140	45	30	R1
Ethylbenzene	ug/L	ND	30	20	31.5	18.1	105	91	66-126	54	30	R1
m&p-Xylene	ug/L	0.27J	60	40	63.8	36.8	106	91	69-134	54	30	R1
o-Xylene	ug/L	0.61J	30	20	32.9	19.9	108	97	73-133	49	30	R1
Toluene	ug/L	0.16J	30	20	32.1	19.4	107	96	69-131	49	30	R1
1,2-Dichlorobenzene-d4 (S)	%						99	100	75-125			HS
4-Bromofluorobenzene (S)	%						99	95	75-125			
Toluene-d8 (S)	%						103	98	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 1060016003

QC Batch: 803555	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV UST-WATER
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600160003

METHOD BLANK: 4266057 Matrix: Water

Associated Lab Samples: 10600160003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/14/22 18:44	
m&p-Xylene	ug/L	ND	2.0	0.20	03/14/22 18:44	
o-Xylene	ug/L	ND	1.0	0.18	03/14/22 18:44	
Toluene	ug/L	ND	1.0	0.10	03/14/22 18:44	
1,2-Dichlorobenzene-d4 (S)	%	100	75-125		03/14/22 18:44	
4-Bromofluorobenzene (S)	%	97	75-125		03/14/22 18:44	
Toluene-d8 (S)	%	99	75-125		03/14/22 18:44	

LABORATORY CONTROL SAMPLE & LCSD: 4266058

LABORATORY CONTROL SAMPLE & LCSD: 4266058			4266059							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	17.5	19.0	87	95	73-125	9	20	
m&p-Xylene	ug/L	40	33.1	36.3	83	91	72-125	9	20	
o-Xylene	ug/L	20	17.2	18.4	86	92	73-125	6	20	
Toluene	ug/L	20	17.4	18.8	87	94	74-125	8	20	
1,2-Dichlorobenzene-d4 (S)	%				98	100	75-125			
4-Bromofluorobenzene (S)	%				94	95	75-125			
Toluene-d8 (S)	%				101	101	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch:	803749	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600160003

METHOD BLANK: 4266751 Matrix: Water

Associated Lab Samples: 10600160003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethylbenzene	ug/L	ND	1.0	0.11	03/15/22 20:27	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		03/15/22 20:27	
4-Bromofluorobenzene (S)	%	98	75-125		03/15/22 20:27	
Toluene-d8 (S)	%	101	75-125		03/15/22 20:27	

LABORATORY CONTROL SAMPLE: 4266752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	22.3	112	75-125	
1,2-Dichlorobenzene-d4 (S)	%			100	75-125	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4268101 4268102

Parameter	Units	10600115004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethylbenzene	ug/L	4.1	20	20	24.3	22.6	101	92	66-126	7	30	
1,2-Dichlorobenzene-d4 (S)	%						99	100	75-125			
4-Bromofluorobenzene (S)	%						98	99	75-125			
Toluene-d8 (S)	%						103	103	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 803628 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

METHOD BLANK: 4266339 Matrix: Water
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	0.011J	0.040	0.0067	03/16/22 13:46	
2-Methylnaphthalene	ug/L	0.015J	0.040	0.0083	03/16/22 13:46	
Acenaphthene	ug/L	ND	0.040	0.0069	03/16/22 13:46	
Acenaphthylene	ug/L	ND	0.040	0.0061	03/16/22 13:46	
Anthracene	ug/L	ND	0.040	0.0054	03/16/22 13:46	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	03/16/22 13:46	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	03/16/22 13:46	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	03/16/22 13:46	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	03/16/22 13:46	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	03/16/22 13:46	
Chrysene	ug/L	ND	0.040	0.0094	03/16/22 13:46	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	03/16/22 13:46	
Fluoranthene	ug/L	0.015J	0.040	0.014	03/16/22 13:46	
Fluorene	ug/L	ND	0.040	0.0060	03/16/22 13:46	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	03/16/22 13:46	
Naphthalene	ug/L	0.014J	0.040	0.0088	03/16/22 13:46	
Phenanthrene	ug/L	0.024J	0.040	0.012	03/16/22 13:46	
Pyrene	ug/L	0.013J	0.040	0.0099	03/16/22 13:46	
2-Fluorobiphenyl (S)	%	67	52-125		03/16/22 13:46	
p-Terphenyl-d14 (S)	%	70	54-125		03/16/22 13:46	

LABORATORY CONTROL SAMPLE: 4266340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.99	99	43-125	
2-Methylnaphthalene	ug/L	1	0.78	78	42-125	
Acenaphthene	ug/L	1	0.91	91	56-125	
Acenaphthylene	ug/L	1	0.90	90	55-125	
Anthracene	ug/L	1	1.1	106	64-125	
Benzo(a)anthracene	ug/L	1	0.89	89	65-125	
Benzo(a)pyrene	ug/L	1	0.95	95	64-125	
Benzo(b)fluoranthene	ug/L	1	0.93	93	70-125	
Benzo(g,h,i)perylene	ug/L	1	0.85	85	49-125	
Benzo(k)fluoranthene	ug/L	1	0.95	95	69-125	
Chrysene	ug/L	1	0.93	93	70-125	
Dibenz(a,h)anthracene	ug/L	1	0.88	88	41-125	
Fluoranthene	ug/L	1	0.90	90	67-125	
Fluorene	ug/L	1	0.92	92	59-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.94	94	57-125	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

LABORATORY CONTROL SAMPLE: 4266340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.93	93	49-125	
Phenanthrene	ug/L	1	0.77	77	65-125	
Pyrene	ug/L	1	0.85	85	67-125	
2-Fluorobiphenyl (S)	%			79	52-125	
p-Terphenyl-d14 (S)	%			73	54-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266341 4266342

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	0.14	1.1	1	0.70	0.82	53	67	30-150	15	30	
2-Methylnaphthalene	ug/L	0.020J	1.1	1	0.82	0.77	76	74	35-125	6	30	
Acenaphthene	ug/L	0.28	1.1	1	1.2	1.1	91	79	45-125	14	30	
Acenaphthylene	ug/L	0.025J	1.1	1	0.99	0.95	92	92	47-125	4	30	
Anthracene	ug/L	ND	1.1	1	0.86	0.81	81	80	44-125	6	30	
Benzo(a)anthracene	ug/L	ND	1.1	1	0.78	0.69	74	68	43-125	13	30	
Benzo(a)pyrene	ug/L	ND	1.1	1	0.71	0.64	67	63	36-125	10	30	
Benzo(b)fluoranthene	ug/L	ND	1.1	1	0.68	0.59	65	59	38-125	14	30	
Benzo(g,h,i)perylene	ug/L	ND	1.1	1	0.65	0.59	62	58	30-125	10	30	
Benzo(k)fluoranthene	ug/L	ND	1.1	1	0.71	0.63	67	62	32-131	12	30	
Chrysene	ug/L	ND	1.1	1	0.82	0.73	77	72	40-125	11	30	
Dibenz(a,h)anthracene	ug/L	ND	1.1	1	0.69	0.62	65	61	30-125	10	30	
Fluoranthene	ug/L	0.029J	1.1	1	1.0	0.96	96	92	56-125	8	30	
Fluorene	ug/L	0.24	1.1	1	1.3	1.1	99	87	46-125	14	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	1.1	1	0.65	0.58	62	57	30-125	12	30	
Naphthalene	ug/L	0.24	1.1	1	0.95	0.77	68	52	42-125	21	30	
Phenanthrene	ug/L	0.066	1.1	1	1.0	0.96	89	88	49-125	5	30	
Pyrene	ug/L	0.029J	1.1	1	0.80	0.73	73	69	50-125	10	30	
2-Fluorobiphenyl (S)	%						78	73	52-125			
p-Terphenyl-d14 (S)	%						59	53	54-125			S5

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 802974 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160003, 10600160004, 10600160005

METHOD BLANK: 4263602 Matrix: Water
Associated Lab Samples: 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/15/22 12:59	
Motor Oil Range SG	mg/L	ND	0.40	0.18	03/15/22 12:59	
n-Triacontane (S)	%	68	50-150		03/15/22 12:59	
o-Terphenyl (S)	%	67	50-150		03/15/22 12:59	

LABORATORY CONTROL SAMPLE & LCSD: 4263603

LABORATORY CONTROL SAMPLE & LCSD: 4263603			4263604							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.4	1.5	69	74	50-150	7	20	
Motor Oil Range SG	mg/L	2	1.4	1.5	71	77	50-150	8	20	
n-Triacontane (S)	%.				71	74	50-150			
o-Terphenyl (S)	%.				71	74	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4263912

		4263913										
Parameter	Units	10600160004	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result										
Diesel Fuel Range SG	mg/L	2.6	2	2	2.3	4.7	-11	108	50-150	67	30	M1,R1
Motor Oil Range SG	mg/L	0.51	2	2	1.2	1.9	34	73	50-150	48	30	M1,R1
n-Triacontane (S)	%						59	90	50-150			
o-Terphenyl (S)	%						58	75	50-150			

SAMPLE DUPLICATE: 4263605

		10599993002				
Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.14J	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	65	70			
o-Terphenyl (S)	%	68	72			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch:	804314	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10600160002		

METHOD BLANK: 4269496 Matrix: Water
Associated Lab Samples: 10600160002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/18/22 15:37	
Motor Oil Range SG	mg/L	ND	0.40	0.18	03/18/22 15:37	
n-Triacontane (S)	%.	62	50-150		03/18/22 15:37	
o-Terphenyl (S)	%.	72	50-150		03/18/22 15:37	

LABORATORY CONTROL SAMPLE & LCSD: 4269497		4269498								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.5	1.5	77	73	50-150	5	20	
Motor Oil Range SG	mg/L	2	1.6	1.6	79	78	50-150	2	20	
n-Triacontane (S)	%.				68	62	50-150			
o-Terphenyl (S)	%.				76	73	50-150			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 804944 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

METHOD BLANK: 4272544 Matrix: Water
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	03/22/22 11:24	

LABORATORY CONTROL SAMPLE & LCSD: 4272545		4272546								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.3	43.1	108	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4272547					4272548							
Parameter	Units	10600130002	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike Conc.	Spike Conc.								Result
Alkalinity, Total as CaCO3	mg/L	303	40	40	347	347	108	110	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4272549		4272550										
Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	80.3	40	40	119	119	97	98	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600160

QC Batch: 803767 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

METHOD BLANK: 4266870 Matrix: Water
Associated Lab Samples: 10600160002, 10600160003, 10600160004, 10600160005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/16/22 03:37	

LABORATORY CONTROL SAMPLE: 4266871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.2	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266872 4266873

Parameter	Units	10600160003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	0.67J	50	50	51.6	51.7	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4266874 4266875

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	25.8	50	50	74.7	74.3	98	97	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0633086
Pace Project No.: 10600160

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 adjusted reporting limit.
 TNTC - Too Numerous To Count
 J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
 MDL - Adjusted Method Detection Limit.
 PQL - Practical Quantitation Limit.
 RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
 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.
 N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
 Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
 Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
 TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 803555

[1] The continuing calibration verification was below the method acceptance limit ethylbenzene. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

ANALYTE QUALIFIERS

1M	During a routine PT failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high.
B	Analyte was detected in the associated method blank.
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.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086

Pace Project No.: 10600160

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10600160002	PEO-MW-26-20220308	EPA Mod. 3510C	804314	NWTPH-Dx	804529
10600160003	PEO-MW-39-20220308	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10600160004	PEO-MW-36-20220308	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10600160005	PEO-MW-27-20220308	EPA Mod. 3510C	802974	NWTPH-Dx	803634
10600160001	TRIP BLANK-20220308	NWTPH-Gx	803030		
10600160002	PEO-MW-26-20220308	NWTPH-Gx	803030		
10600160003	PEO-MW-39-20220308	NWTPH-Gx	803030		
10600160004	PEO-MW-36-20220308	NWTPH-Gx	803030		
10600160005	PEO-MW-27-20220308	NWTPH-Gx	803030		
10600160002	PEO-MW-26-20220308	EPA 3010A	803337	EPA 6010D	803425
10600160003	PEO-MW-39-20220308	EPA 3010A	803337	EPA 6010D	803425
10600160004	PEO-MW-36-20220308	EPA 3010A	803337	EPA 6010D	803425
10600160005	PEO-MW-27-20220308	EPA 3010A	803337	EPA 6010D	803425
10600160002	PEO-MW-26-20220308	EPA 3020A	803338	EPA 6020A	803448
10600160003	PEO-MW-39-20220308	EPA 3020A	803338	EPA 6020A	803448
10600160004	PEO-MW-36-20220308	EPA 3020A	803338	EPA 6020A	803448
10600160005	PEO-MW-27-20220308	EPA 3020A	803338	EPA 6020A	803448
10600160002	PEO-MW-26-20220308	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10600160003	PEO-MW-39-20220308	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10600160004	PEO-MW-36-20220308	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10600160005	PEO-MW-27-20220308	EPA Mod. 3510C	803628	EPA 8270E by SIM	804263
10600160001	TRIP BLANK-20220308	EPA 8260D	803155		
10600160002	PEO-MW-26-20220308	EPA 8260D	803155		
10600160003	PEO-MW-39-20220308	EPA 8260D	803555		
10600160003	PEO-MW-39-20220308	EPA 8260D	803749		
10600160004	PEO-MW-36-20220308	EPA 8260D	803155		
10600160005	PEO-MW-27-20220308	EPA 8260D	803155		
10600160002	PEO-MW-26-20220308	SM 2320B	804944		
10600160003	PEO-MW-39-20220308	SM 2320B	804944		
10600160004	PEO-MW-36-20220308	SM 2320B	804944		
10600160005	PEO-MW-27-20220308	SM 2320B	804944		
10600160002	PEO-MW-26-20220308	EPA 300.0	803767		
10600160003	PEO-MW-39-20220308	EPA 300.0	803767		
10600160004	PEO-MW-36-20220308	EPA 300.0	803767		
10600160005	PEO-MW-27-20220308	EPA 300.0	803767		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeedDee ☐ Commercial Tracking Number: _____	Client Name: <u>RNM</u> Project #: _____ See Exceptions ☒ ENV-FRM-MIN4-0142	WO#: 10600160 PM: JMT Due Date: 03/24/22 CLIENT: ERM-Oregon

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ Thermometer: ☐ T1(0461) ☒ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808	Seals Intact? ☒ Yes ☐ No Temp Blank? ☒ Yes ☐ No Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted	Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Did Samples Originate in West Virginia? ☐ Yes ☒ No Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: <u>1.0/0.3/1.6/3.3/1.3</u> °C Correction Factor: <u>1.0/0.3/1.6/3.3/1.3</u> °C Cooler Temp Corrected w/temp blank: <u>1.0/0.3/1.6/3.3/1.3</u> °C	Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☒ N/A, water sample/Other: _____) Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.	Date/Initials of Person Examining Contents: <u>AC3 03.10.22</u> Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No -Pace Containers Used? ☒ Yes ☐ No	8.
Containers Intact? ☒ Yes ☐ No	9.
Field Filtered Volume Received for Dissolved Tests? ☐ Yes ☐ No ☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	11. If no, write ID/ Date/Time on Container Below: ☐ See Exception ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide) ☒ Yes ☐ No ☐ N/A	12. Sample # <u>002,003,005</u> <u>44 44</u> ☐ NaOH ☒ HNO ₃ ☒ H ₂ SO ₄ ☐ Zinc Acetate <u>004 3/3 3/3</u> Positive for Res. ☐ Yes ☐ No Chlorine? ☐ Yes ☐ No pH Paper Lot# Res. Chlorine <u>Q-6 Roll 212521</u> <u>0-6 Strip</u> <u>0-14 Strip</u> ☐ See Exception ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	13. ☐ See Exception ENV-FRM-MIN4-0140
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☐ No ☒ N/A	
Trip Blank Present? ☒ Yes ☐ No ☐ N/A Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>353983</u> <u>6</u>

CLIENT NOTIFICATION/RESOLUTION Person Contacted: _____ Comments/Resolution: _____	Field Data Required? ☐ Yes ☐ No Date/Time: _____

Project Manager Review: <u>Julie Barz</u> Date: 3/10/22

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

	Document Name: Sample Condition Upon Receipt (SCUR) Exception Form	Document Revised: 04Jun2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0142 Rev.01	Pace Analytical Services - Minneapolis

SCUR Exceptions:
Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? ☐ Yes ☐ No
			If yes, indicate who was contacted/date/time. If no, indicate reason why.
			Multiple Cooler Project? ☐ Yes ☐ No
			If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature		
54051817	1682	1.0
↓	1888	0.9
	1877	1.6
	1708	3.3
	1693	1.3

Issue Type:	Container Type	# of Containers
Sample ID	Type	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition? ☐ Yes ☐ No	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

Comments:

	Document Name: Headspace Exception	Document Revised: 26Mar2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0140 Rev.00	Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
PRO-MW-26	0	1	8	9	NO
PRO-MW-33	0	1	8	9	NO
PRO-MW-36	6	11	10	27	NO
PEO-MW-27	1	0	8	9	NO

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Analytical

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Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086

Work Order Number: 2203290

March 28, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 5 sample(s) on 3/11/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086
Work Order: 2203290

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203290-001	TRIP BLANK-20220308	03/08/2022 8:00 AM	03/11/2022 11:11 AM
2203290-002	PEO-MW-26-20220308	03/08/2022 9:45 AM	03/11/2022 11:11 AM
2203290-003	PEO-MW-39-20220308	03/08/2022 11:15 AM	03/11/2022 11:11 AM
2203290-004	PEO-MW-36-20220308	03/08/2022 1:15 PM	03/11/2022 11:11 AM
2203290-005	PEO-MW-27-20220308	03/08/2022 3:45 PM	03/11/2022 11:11 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Work Order: 2203290
Date Reported: 3/28/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203290-001

Client Sample ID: TRIP BLANK-20220308

Collection Date: 3/8/2022 8:00:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742 Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/15/2022 10:40:33 PM
Surr: 1,4-Difluorobenzene	95.2	60 - 140		%Rec	1	3/15/2022 10:40:33 PM
Surr: Bromofluorobenzene	76.1	60 - 140		%Rec	1	3/15/2022 10:40:33 PM

Lab ID: 2203290-002

Client Sample ID: PEO-MW-26-20220308

Collection Date: 3/8/2022 9:45:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	3/24/2022 6:57:17 PM
Surr: 1-Chlorooctadecane	94.0	60 - 140		%Rec	1	3/24/2022 6:57:17 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742 Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 4:51:57 AM
Surr: 1,4-Difluorobenzene	93.9	60 - 140		%Rec	1	3/16/2022 4:51:57 AM
Surr: Bromofluorobenzene	74.9	60 - 140		%Rec	1	3/16/2022 4:51:57 AM



Analytical Report

Work Order: 2203290
Date Reported: 3/28/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203290-003

Client Sample ID: PEO-MW-39-20220308

Collection Date: 3/8/2022 11:15:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/24/2022 7:50:41 PM
Surr: 1-Chlorooctadecane	83.5	60 - 140		%Rec	1	3/24/2022 7:50:41 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	378	12.2		µg/L	1	3/16/2022 5:33:13 AM
Surr: 1,4-Difluorobenzene	139	60 - 140		%Rec	1	3/16/2022 5:33:13 AM
Surr: Bromofluorobenzene	73.7	60 - 140		%Rec	1	3/16/2022 5:33:13 AM

Lab ID: 2203290-004

Client Sample ID: PEO-MW-36-20220308

Collection Date: 3/8/2022 1:15:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/25/2022 5:34:47 AM
Surr: 1-Chlorooctadecane	72.1	60 - 140		%Rec	1	3/25/2022 5:34:47 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	18.4	12.2	J	µg/L	1	3/16/2022 9:40:25 AM
Surr: 1,4-Difluorobenzene	95.7	60 - 140		%Rec	1	3/16/2022 9:40:25 AM
Surr: Bromofluorobenzene	76.4	60 - 140		%Rec	1	3/16/2022 9:40:25 AM



Analytical Report

Work Order: 2203290
Date Reported: 3/28/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203290-005

Collection Date: 3/8/2022 3:45:00 PM

Client Sample ID: PEO-MW-27-20220308

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	3/24/2022 8:43:52 PM
Surr: 1-Chlorooctadecane	71.4	60 - 140		%Rec	1	3/24/2022 8:43:52 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 10:21:42 AM
Surr: 1,4-Difluorobenzene	93.6	60 - 140		%Rec	1	3/16/2022 10:21:42 AM
Surr: Bromofluorobenzene	75.3	60 - 140		%Rec	1	3/16/2022 10:21:42 AM

Work Order: 2203290
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-35726		SampType: MBLK			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: MBLKW		Batch ID: 35726			Analysis Date: 3/25/2022					SeqNo: 1524508		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						
Surr: 1-Chlorooctadecane	277		400.0		69.4	60	140				

Sample ID: 2203290-004AMS		SampType: MS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: PEO-MW-36-20220308		Batch ID: 35726			Analysis Date: 3/25/2022			SeqNo: 1524501				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	241	39.4	492.3	0	49.0	70	130				S
Surr: 1-Chlorooctadecane	328		393.8		83.2	60	140				

NOTES:

S - Outlying spike recovery for (C10-C12) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: 2203290-004AMSD	SampType: MSD	Units: µg/L				Prep Date: 3/15/2022				RunNo: 74309		
Client ID: PEO-MW-36-20220308	Batch ID: 35726					Analysis Date: 3/25/2022				SeqNo: 1524502		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	292	39.8	497.7	0	58.6	70	130	241.1	19.0	30	S
Surr: 1-Chlorooctadecane	405		398.1		102	60	140		0		

NOTES:

S - Outlying spike recovery for (C10-C12) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: LCS-35726		SampType: LCS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: LCSW		Batch ID: 35726			Analysis Date: 3/25/2022					SeqNo: 1524504		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	350	40.0	500.0	0	70.0	70	130				
Surr: 1-Chlorooctadecane	452		400.0		113	60	140				



Work Order: 2203290
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-35742		SampType: LCS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: LCSW		Batch ID: 35742			Analysis Date: 3/15/2022			SeqNo: 1523582				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	232	25.0	200.0	0	116	70	130				
Surr: 1,4-Difluorobenzene	56.6		50.00		113	60	140				
Surr: Bromofluorobenzene	40.4		50.00		80.9	60	140				

Sample ID: MB-35742		SampType: MBLK			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: MBLKW		Batch ID: 35742			Analysis Date: 3/15/2022			SeqNo: 1523552				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	47.9		50.00		95.8	60	140				
Surr: Bromofluorobenzene	38.0		50.00		76.0	60	140				

Sample ID: 2203256-002BDUP		SampType: DUP			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: BATCH		Batch ID: 35742			Analysis Date: 3/16/2022				SeqNo: 1523532			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	47.6		50.00		95.1	60	140		0		
Surr: Bromofluorobenzene	38.3		50.00		76.5	60	140		0		

Sample ID: 2203290-004BMS		SampType: MS		Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286			
Client ID: PEO-MW-36-20220308		Batch ID: 35742					Analysis Date: 3/16/2022			SeqNo: 1523540		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	261	25.0	200.0	18.39	121	70	130				
Surr: 1,4-Difluorobenzene	49.5		50.00		98.9	60	140				
Surr: Bromofluorobenzene	39.7		50.00		79.4	60	140				

Work Order: 2203290
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 2203290-004BMSD		SampType: MSD		Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: PEO-MW-36-20220308		Batch ID: 35742				Analysis Date: 3/16/2022			SeqNo: 1523675		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	265	25.0	200.0	18.39	123	70	130	260.7	1.73	30	
Surr: 1,4-Difluorobenzene	46.7		50.00		93.4	60	140		0		
Surr: Bromofluorobenzene	39.8		50.00		79.5	60	140		0		

Client Name: **PACEMI**
 Logged by: **Clare Griggs**

Work Order Number: **2203290**
 Date Received: **3/11/2022 11:11:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☒ No ☐ NA ☐
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Headspace observed in 4 of the VOAs for MW36.

Item Information

Item #	Temp °C
Sample	4.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

PASI Minnesota Laboratory



Workorder: 10600160

Workorder Name: 0633086

Results Requested By: 3/24/2022

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser

Pace Analytical Minnesota

1700 Elm Street

Minneapolis, MN 55414

Phone 612-607-6390

Email: julie.bowser@pacelabs.com

10600160
P.O. _____

Fremont Analytical
3600 Fremont Ave N
Seattle, WA 98103

State of Sample Origin: OR

[illegible]

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	31/10/22 (14:40)	Alex Stiles FAS	31/10/2022 11:11	EQUIS EDD needed J flag to MDL
2					
3					

**EQUIS EDD needed
J flag to MDL**

Cooler Temperature on Receipt	4.9 °C	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N

April 04, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086
Pace Project No.: 10600362

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 11, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086

Pace Project No.: 10600362

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01*

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009*

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014*

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605*

Georgia Certification #: 959

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086*

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064*

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137*

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240*

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081*

New Jersey Certification #: MN002

New York Certification #: 11647*

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Ohio VAP Certification (1800) #: CL110*

Oklahoma Certification #: 9507*

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001*

Pennsylvania Certification #: 68-00563*

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192*

Utah Certification #: MN00064*

Vermont Certification #: VT-027053137

Virginia Certification #: 460163*

Washington Certification #: C486*

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Please Note: Applicable air certifications are denoted with an asterisk ().

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086

Pace Project No.: 10600362

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10600362001	TRIP BLANK-20220309	Water	03/09/22 08:00	03/11/22 08:50
10600362002	PEO-MW-37-20220309	Water	03/09/22 09:30	03/11/22 08:50
10600362003	PEO-MW-35-20220309	Water	03/09/22 11:10	03/11/22 08:50
10600362004	PEO-MW-34-20220309	Water	03/09/22 12:10	03/11/22 08:50
10600362005	PEO-MW-02-20220309	Water	03/09/22 13:50	03/11/22 08:50
10600362006	PEO-MW-11-20220309	Water	03/09/22 15:15	03/11/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086

Pace Project No.: 10600362

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10600362001	TRIP BLANK-20220309	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	MAM	8	PASI-M
10600362002	PEO-MW-37-20220309	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
10600362003	PEO-MW-35-20220309	EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
10600362004	PEO-MW-34-20220309	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
10600362005	PEO-MW-02-20220309	SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
10600362006	PEO-MW-11-20220309	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086

Pace Project No.: 10600362

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020A	JFB	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	MAM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600362

Sample: TRIP BLANK-20220309		Lab ID: 10600362001		Collected: 03/09/22 08:00		Received: 03/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/18/22 14:54		
Surrogates									
a,a,a-Trifluorotoluene (S)	114	%.	50-150		1		03/18/22 14:54	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 15:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 15:37	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/11/22 15:37	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 15:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		03/11/22 15:37	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	107	%.	75-125		1		03/11/22 15:37	2199-69-1	
4-Bromofluorobenzene (S)	107	%.	75-125		1		03/11/22 15:37	460-00-4	
Toluene-d8 (S)	101	%.	75-125		1		03/11/22 15:37	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600362

Sample: PEO-MW-37-20220309 Lab ID: 10600362002 Collected: 03/09/22 09:30 Received: 03/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.15J	mg/L	0.42	0.12	1	03/11/22 15:33	03/16/22 17:50	68334-30-5	
Motor Oil Range SG	0.25J	mg/L	0.42	0.19	1	03/11/22 15:33	03/16/22 17:50	64742-65-0	B
Surrogates									
o-Terphenyl (S)	83	%.	50-150		1	03/11/22 15:33	03/16/22 17:50	84-15-1	
n-Triacontane (S)	83	%.	50-150		1	03/11/22 15:33	03/16/22 17:50		
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.2	1		03/18/22 15:09		
Surrogates									
a,a,a-Trifluorotoluene (S)	108	%.	50-150		1		03/18/22 15:09	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	78200	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:13		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.8	ug/L	0.50	0.083	1	03/12/22 07:27	03/18/22 16:39	7440-38-2	
Manganese, Dissolved	276	ug/L	0.50	0.20	1	03/12/22 07:27	03/18/22 16:39	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.041	0.0070	1	03/11/22 16:06	03/15/22 16:39	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0062	1	03/11/22 16:06	03/15/22 16:39	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	03/11/22 16:06	03/15/22 16:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	03/11/22 16:06	03/15/22 16:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	03/11/22 16:06	03/15/22 16:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	03/11/22 16:06	03/15/22 16:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	03/11/22 16:06	03/15/22 16:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	03/11/22 16:06	03/15/22 16:39	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	03/11/22 16:06	03/15/22 16:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	03/11/22 16:06	03/15/22 16:39	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.014	1	03/11/22 16:06	03/15/22 16:39	206-44-0	
Fluorene	ND	ug/L	0.041	0.0062	1	03/11/22 16:06	03/15/22 16:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	03/11/22 16:06	03/15/22 16:39	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	03/11/22 16:06	03/15/22 16:39	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0084	1	03/11/22 16:06	03/15/22 16:39	91-57-6	
Naphthalene	ND	ug/L	0.041	0.0090	1	03/11/22 16:06	03/15/22 16:39	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.012	1	03/11/22 16:06	03/15/22 16:39	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	03/11/22 16:06	03/15/22 16:39	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	03/11/22 16:06	03/15/22 16:39	321-60-8	
p-Terphenyl-d14 (S)	72	%.	54-125		1	03/11/22 16:06	03/15/22 16:39	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600362

Sample: PEO-MW-37-20220309		Lab ID: 10600362002		Collected: 03/09/22 09:30		Received: 03/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 15:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 15:52	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/11/22 15:52	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 15:52	179601-23-1	
o-Xylene	0.70J	ug/L	1.0	0.18	1		03/11/22 15:52	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125		1		03/11/22 15:52	2199-69-1	
4-Bromofluorobenzene (S)	110	%.	75-125		1		03/11/22 15:52	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		03/11/22 15:52	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	55.6	mg/L	5.0	1.8	1		03/22/22 13:02		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	42.1	mg/L	1.2	0.43	1		03/17/22 11:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600362

Sample: PEO-MW-35-20220309 Lab ID: 10600362003 Collected: 03/09/22 11:10 Received: 03/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.8	mg/L	0.44	0.13	1	03/18/22 13:02	03/23/22 21:33	68334-30-5	
Motor Oil Range SG	0.34J	mg/L	0.44	0.20	1	03/18/22 13:02	03/23/22 21:33	64742-65-0	B
Surrogates									
o-Terphenyl (S)	70	%.	50-150		1	03/18/22 13:02	03/23/22 21:33	84-15-1	P2
n-Triacontane (S)	39	%.	50-150		1	03/18/22 13:02	03/23/22 21:33		S0
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	23.2J	ug/L	100	22.2	1		03/18/22 15:40		1M
Surrogates									
a,a,a-Trifluorotoluene (S)	101	%.	50-150		1		03/18/22 15:40	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	76400	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:15		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	10.3	ug/L	0.50	0.083	1	03/12/22 07:27	03/18/22 16:45	7440-38-2	
Manganese, Dissolved	1320	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 16:48	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.61	ug/L	0.042	0.0072	1	03/11/22 16:06	03/15/22 16:59	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0063	1	03/11/22 16:06	03/15/22 16:59	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	03/11/22 16:06	03/15/22 16:59	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0094	1	03/11/22 16:06	03/15/22 16:59	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0092	1	03/11/22 16:06	03/15/22 16:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0099	1	03/11/22 16:06	03/15/22 16:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	03/11/22 16:06	03/15/22 16:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0086	1	03/11/22 16:06	03/15/22 16:59	207-08-9	
Chrysene	ND	ug/L	0.042	0.0098	1	03/11/22 16:06	03/15/22 16:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	03/11/22 16:06	03/15/22 16:59	53-70-3	
Fluoranthene	0.048	ug/L	0.042	0.015	1	03/11/22 16:06	03/15/22 16:59	206-44-0	
Fluorene	ND	ug/L	0.042	0.0063	1	03/11/22 16:06	03/15/22 16:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	03/11/22 16:06	03/15/22 16:59	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.042	0.0070	1	03/11/22 16:06	03/15/22 16:59	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0086	1	03/11/22 16:06	03/15/22 16:59	91-57-6	
Naphthalene	0.061	ug/L	0.042	0.0092	1	03/11/22 16:06	03/15/22 16:59	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	03/11/22 16:06	03/15/22 16:59	85-01-8	
Pyrene	0.056	ug/L	0.042	0.010	1	03/11/22 16:06	03/15/22 16:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%.	52-125		1	03/11/22 16:06	03/15/22 16:59	321-60-8	
p-Terphenyl-d14 (S)	73	%.	54-125		1	03/11/22 16:06	03/15/22 16:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600362

Sample: PEO-MW-35-20220309		Lab ID: 10600362003		Collected: 03/09/22 11:10		Received: 03/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 16:07	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 16:07	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		03/11/22 16:07	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 16:07	179601-23-1	
o-Xylene	1.1	ug/L	1.0	0.18	1		03/11/22 16:07	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	104	%	75-125		1		03/11/22 16:07	2199-69-1	
4-Bromofluorobenzene (S)	108	%	75-125		1		03/11/22 16:07	460-00-4	
Toluene-d8 (S)	100	%	75-125		1		03/11/22 16:07	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	95.4	mg/L	5.0	1.8	1		03/22/22 13:07		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	19.3	mg/L	1.2	0.43	1		03/17/22 11:47	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600362

Sample: PEO-MW-34-20220309 Lab ID: 10600362004 Collected: 03/09/22 12:10 Received: 03/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	18.0	mg/L	4.0	1.2	10	03/18/22 13:02	03/25/22 13:19	68334-30-5	
Motor Oil Range SG	0.74	mg/L	0.40	0.18	1	03/18/22 13:02	03/23/22 21:44	64742-65-0	B
Surrogates									
o-Terphenyl (S)	61	%.	50-150		1	03/18/22 13:02	03/23/22 21:44	84-15-1	P2
n-Triacontane (S)	38	%.	50-150		1	03/18/22 13:02	03/23/22 21:44		2M
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	161	ug/L	100	22.2	1		03/18/22 15:55		1M
Surrogates									
a,a,a-Trifluorotoluene (S)	89	%.	50-150		1		03/18/22 15:55	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	163000	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:17		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	10.2	ug/L	5.0	0.83	10	03/12/22 07:27	03/18/22 16:51	7440-38-2	
Manganese, Dissolved	2470	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 16:51	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	5.1	ug/L	0.083	0.014	2	03/11/22 16:06	03/16/22 15:34	83-32-9	
Acenaphthylene	11.0	ug/L	0.083	0.013	2	03/11/22 16:06	03/16/22 15:34	208-96-8	
Anthracene	ND	ug/L	0.083	0.011	2	03/11/22 16:06	03/16/22 15:34	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.083	0.019	2	03/11/22 16:06	03/16/22 15:34	56-55-3	
Benzo(a)pyrene	0.027J	ug/L	0.083	0.018	2	03/11/22 16:06	03/16/22 15:34	50-32-8	
Benzo(b)fluoranthene	0.028J	ug/L	0.083	0.020	2	03/11/22 16:06	03/16/22 15:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.083	0.017	2	03/11/22 16:06	03/16/22 15:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.083	0.017	2	03/11/22 16:06	03/16/22 15:34	207-08-9	
Chrysene	ND	ug/L	0.083	0.020	2	03/11/22 16:06	03/16/22 15:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.083	0.017	2	03/11/22 16:06	03/16/22 15:34	53-70-3	
Fluoranthene	ND	ug/L	0.083	0.029	2	03/11/22 16:06	03/16/22 15:34	206-44-0	
Fluorene	0.34	ug/L	0.083	0.013	2	03/11/22 16:06	03/16/22 15:34	86-73-7	
Indeno(1,2,3-cd)pyrene	0.034J	ug/L	0.083	0.023	2	03/11/22 16:06	03/16/22 15:34	193-39-5	
1-Methylnaphthalene	0.68	ug/L	0.083	0.014	2	03/11/22 16:06	03/16/22 15:34	90-12-0	
2-Methylnaphthalene	0.36	ug/L	0.083	0.017	2	03/11/22 16:06	03/16/22 15:34	91-57-6	
Naphthalene	0.19	ug/L	0.083	0.018	2	03/11/22 16:06	03/16/22 15:34	91-20-3	
Phenanthrene	ND	ug/L	0.083	0.025	2	03/11/22 16:06	03/16/22 15:34	85-01-8	
Pyrene	0.070J	ug/L	0.083	0.021	2	03/11/22 16:06	03/16/22 15:34	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	83	%.	52-125		2	03/11/22 16:06	03/16/22 15:34	321-60-8	D3
p-Terphenyl-d14 (S)	44	%.	54-125		2	03/11/22 16:06	03/16/22 15:34	1718-51-0	S5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600362

Sample: PEO-MW-34-20220309		Lab ID: 10600362004		Collected: 03/09/22 12:10		Received: 03/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		03/11/22 16:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 16:22	100-41-4	
Toluene	0.13J	ug/L	1.0	0.10	1		03/11/22 16:22	108-88-3	
m&p-Xylene	0.20J	ug/L	2.0	0.20	1		03/11/22 16:22	179601-23-1	
o-Xylene	1.1	ug/L	1.0	0.18	1		03/11/22 16:22	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125		1		03/11/22 16:22	2199-69-1	
4-Bromofluorobenzene (S)	105	%.	75-125		1		03/11/22 16:22	460-00-4	
Toluene-d8 (S)	102	%.	75-125		1		03/11/22 16:22	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	83.2	mg/L	5.0	1.8	1		03/22/22 13:12		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	113	mg/L	2.4	0.86	2		03/18/22 00:55	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600362

Sample: PEO-MW-02-20220309 Lab ID: 10600362005 Collected: 03/09/22 13:50 Received: 03/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	49.8	mg/L	4.8	1.4	10	03/18/22 13:02	03/25/22 13:30	68334-30-5	
Motor Oil Range SG	1.2	mg/L	0.48	0.22	1	03/18/22 13:02	03/23/22 21:55	64742-65-0	B
Surrogates									
o-Terphenyl (S)	87	%.	50-150		1	03/18/22 13:02	03/23/22 21:55	84-15-1	P2
n-Triacontane (S)	43	%.	50-150		1	03/18/22 13:02	03/23/22 21:55		2M
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	222	ug/L	100	22.2	1		03/18/22 16:10		1M,HS
Surrogates									
a,a,a-Trifluorotoluene (S)	88	%.	50-150		1		03/18/22 16:10	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	231000	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:18		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	29.8	ug/L	5.0	0.83	10	03/12/22 07:27	03/18/22 16:54	7440-38-2	
Manganese, Dissolved	3020	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 16:54	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.23	ug/L	0.082	0.014	2	03/11/22 16:06	03/16/22 17:02	83-32-9	
Acenaphthylene	3.8	ug/L	0.082	0.013	2	03/11/22 16:06	03/16/22 17:02	208-96-8	
Anthracene	ND	ug/L	0.082	0.011	2	03/11/22 16:06	03/16/22 17:02	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.082	0.019	2	03/11/22 16:06	03/16/22 17:02	56-55-3	
Benzo(a)pyrene	0.065J	ug/L	0.082	0.018	2	03/11/22 16:06	03/16/22 17:02	50-32-8	
Benzo(b)fluoranthene	0.052J	ug/L	0.082	0.020	2	03/11/22 16:06	03/16/22 17:02	205-99-2	
Benzo(g,h,i)perylene	0.11	ug/L	0.082	0.017	2	03/11/22 16:06	03/16/22 17:02	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.082	0.017	2	03/11/22 16:06	03/16/22 17:02	207-08-9	
Chrysene	ND	ug/L	0.082	0.019	2	03/11/22 16:06	03/16/22 17:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.082	0.016	2	03/11/22 16:06	03/16/22 17:02	53-70-3	
Fluoranthene	ND	ug/L	0.082	0.029	2	03/11/22 16:06	03/16/22 17:02	206-44-0	
Fluorene	0.31	ug/L	0.082	0.012	2	03/11/22 16:06	03/16/22 17:02	86-73-7	
Indeno(1,2,3-cd)pyrene	0.089	ug/L	0.082	0.023	2	03/11/22 16:06	03/16/22 17:02	193-39-5	
1-Methylnaphthalene	0.38	ug/L	0.082	0.014	2	03/11/22 16:06	03/16/22 17:02	90-12-0	
2-Methylnaphthalene	0.18	ug/L	0.082	0.017	2	03/11/22 16:06	03/16/22 17:02	91-57-6	
Naphthalene	0.26	ug/L	0.082	0.018	2	03/11/22 16:06	03/16/22 17:02	91-20-3	
Phenanthrene	ND	ug/L	0.082	0.025	2	03/11/22 16:06	03/16/22 17:02	85-01-8	
Pyrene	0.22	ug/L	0.082	0.020	2	03/11/22 16:06	03/16/22 17:02	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	72	%.	52-125		2	03/11/22 16:06	03/16/22 17:02	321-60-8	D3
p-Terphenyl-d14 (S)	40	%.	54-125		2	03/11/22 16:06	03/16/22 17:02	1718-51-0	S5

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600362

Sample: PEO-MW-02-20220309		Lab ID: 10600362005		Collected: 03/09/22 13:50		Received: 03/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.14J	ug/L	1.0	0.10	1		03/11/22 16:36	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 16:36	100-41-4	
Toluene	0.11J	ug/L	1.0	0.10	1		03/11/22 16:36	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		03/11/22 16:36	179601-23-1	
o-Xylene	0.72J	ug/L	1.0	0.18	1		03/11/22 16:36	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125		1		03/11/22 16:36	2199-69-1	
4-Bromofluorobenzene (S)	106	%.	75-125		1		03/11/22 16:36	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		03/11/22 16:36	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	269	mg/L	5.0	1.8	1		03/22/22 13:19		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	19.2	mg/L	1.2	0.43	1		03/17/22 13:44	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086
Pace Project No.: 10600362

Sample: PEO-MW-11-20220309 Lab ID: 10600362006 Collected: 03/09/22 15:15 Received: 03/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	70.1	mg/L	5.4	1.6	10	03/18/22 13:02	03/25/22 13:41	68334-30-5	
Motor Oil Range SG	1.3	mg/L	0.54	0.25	1	03/18/22 13:02	03/23/22 22:06	64742-65-0	B
Surrogates									
o-Terphenyl (S)	96	%.	50-150		1	03/18/22 13:02	03/23/22 22:06	84-15-1	P2
n-Triacontane (S)	43	%.	50-150		1	03/18/22 13:02	03/23/22 22:06		2M
NWTPH-Gx GCV Analytical Method: NWTPH-Gx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
TPH as Gas	486	ug/L	100	22.2	1		03/18/22 16:25		1M
Surrogates									
a,a,a-Trifluorotoluene (S)	74	%.	50-150		1		03/18/22 16:25	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	305000	ug/L	3300	76.7	1	03/12/22 07:01	03/16/22 11:20		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	46.3	ug/L	5.0	0.83	10	03/12/22 07:27	03/18/22 16:57	7440-38-2	
Manganese, Dissolved	2640	ug/L	5.0	2.0	10	03/12/22 07:27	03/18/22 16:57	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.38	ug/L	0.080	0.014	2	03/11/22 16:06	03/16/22 17:23	83-32-9	
Acenaphthylene	2.3	ug/L	0.080	0.012	2	03/11/22 16:06	03/16/22 17:23	208-96-8	
Anthracene	ND	ug/L	0.080	0.011	2	03/11/22 16:06	03/16/22 17:23	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.080	0.018	2	03/11/22 16:06	03/16/22 17:23	56-55-3	
Benzo(a)pyrene	0.037J	ug/L	0.080	0.018	2	03/11/22 16:06	03/16/22 17:23	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.080	0.019	2	03/11/22 16:06	03/16/22 17:23	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.080	0.016	2	03/11/22 16:06	03/16/22 17:23	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.080	0.017	2	03/11/22 16:06	03/16/22 17:23	207-08-9	
Chrysene	ND	ug/L	0.080	0.019	2	03/11/22 16:06	03/16/22 17:23	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.080	0.016	2	03/11/22 16:06	03/16/22 17:23	53-70-3	
Fluoranthene	ND	ug/L	0.080	0.028	2	03/11/22 16:06	03/16/22 17:23	206-44-0	
Fluorene	0.37	ug/L	0.080	0.012	2	03/11/22 16:06	03/16/22 17:23	86-73-7	
Indeno(1,2,3-cd)pyrene	0.036J	ug/L	0.080	0.022	2	03/11/22 16:06	03/16/22 17:23	193-39-5	
1-Methylnaphthalene	0.45	ug/L	0.080	0.013	2	03/11/22 16:06	03/16/22 17:23	90-12-0	
2-Methylnaphthalene	0.21	ug/L	0.080	0.017	2	03/11/22 16:06	03/16/22 17:23	91-57-6	
Naphthalene	0.48	ug/L	0.080	0.018	2	03/11/22 16:06	03/16/22 17:23	91-20-3	
Phenanthrene	ND	ug/L	0.080	0.024	2	03/11/22 16:06	03/16/22 17:23	85-01-8	
Pyrene	ND	ug/L	0.080	0.020	2	03/11/22 16:06	03/16/22 17:23	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%.	52-125		2	03/11/22 16:06	03/16/22 17:23	321-60-8	D3
p-Terphenyl-d14 (S)	46	%.	54-125		2	03/11/22 16:06	03/16/22 17:23	1718-51-0	S5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086

Pace Project No.: 10600362

Sample: PEO-MW-11-20220309		Lab ID: 10600362006		Collected: 03/09/22 15:15		Received: 03/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	2.6	ug/L	1.0	0.10	1		03/11/22 16:51	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		03/11/22 16:51	100-41-4	
Toluene	1.6	ug/L	1.0	0.10	1		03/11/22 16:51	108-88-3	
m&p-Xylene	0.76J	ug/L	2.0	0.20	1		03/11/22 16:51	179601-23-1	
o-Xylene	1.3	ug/L	1.0	0.18	1		03/11/22 16:51	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		03/11/22 16:51	2199-69-1	
4-Bromofluorobenzene (S)	106	%	75-125		1		03/11/22 16:51	460-00-4	
Toluene-d8 (S)	104	%	75-125		1		03/11/22 16:51	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	341	mg/L	5.0	1.8	1		03/22/22 13:30		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	ND	mg/L	1.2	0.43	1		03/18/22 03:19	14808-79-8	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600362

QC Batch: 804506 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362001, 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

METHOD BLANK: 4270653 Matrix: Water
Associated Lab Samples: 10600362001, 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/18/22 14:39	
a,a,a-Trifluorotoluene (S)	%	113	50-150		03/18/22 14:39	

METHOD BLANK: 4270654 Matrix: Water
Associated Lab Samples: 10600362001, 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.2	03/18/22 17:11	
a,a,a-Trifluorotoluene (S)	%	99	50-150		03/18/22 17:11	

LABORATORY CONTROL SAMPLE & LCSD: 4270655		4270656									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
TPH as Gas	ug/L	1000	1110	1010	111	101	75-125	10	20		
a.a.a-Trifluorotoluene (S)	%				130	104	50-150				

SAMPLE DUPLICATE: 4270661

Parameter	Units	10600362002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%	108	108			

SAMPLE DUPLICATE: 4270662

Parameter	Units	10600948006 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	<22.2	ND		30	
a,a,a-Trifluorotoluene (S)	%	98	103			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600362

QC Batch: 803338 Analysis Method: EPA 6020A
QC Batch Method: EPA 3020A Analysis Description: 6020A Water Dissolved UPD4
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

METHOD BLANK: 4265179 Matrix: Water
Associated Lab Samples: 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	03/18/22 15:39	
Manganese, Dissolved	ug/L	ND	0.50	0.20	03/18/22 15:39	

LABORATORY CONTROL SAMPLE: 4265180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	107	107	80-120	
Manganese, Dissolved	ug/L	100	104	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4265181 4265182

Parameter	Units	10600160004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	7.3	100	100	107	108	100	101	75-125	1	20	
Manganese, Dissolved	ug/L	856	100	100	994	973	138	116	75-125	2	20 P6	

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600362

QC Batch:	803367	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362001, 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

METHOD BLANK: 4265316 Matrix: Water
Associated Lab Samples: 10600362001, 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	03/11/22 15:07	
Ethylbenzene	ug/L	ND	1.0	0.11	03/11/22 15:07	
m&p-Xylene	ug/L	ND	2.0	0.20	03/11/22 15:07	
o-Xylene	ug/L	ND	1.0	0.18	03/11/22 15:07	
Toluene	ug/L	ND	1.0	0.10	03/11/22 15:07	
1,2-Dichlorobenzene-d4 (S)	%	103	75-125		03/11/22 15:07	
4-Bromofluorobenzene (S)	%	108	75-125		03/11/22 15:07	
Toluene-d8 (S)	%	101	75-125		03/11/22 15:07	

LABORATORY CONTROL SAMPLE & LCSD: 4265317

Parameter	Units	4265318								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Benzene	ug/L	20	18.0	20.2	90	101	73-125	11	20	
Ethylbenzene	ug/L	20	19.0	21.9	95	110	75-125	14	20	
m&p-Xylene	ug/L	40	37.5	43.2	94	108	72-125	14	20	
o-Xylene	ug/L	20	19.5	22.3	97	112	73-125	14	20	
Toluene	ug/L	20	16.6	19.3	83	97	74-125	15	20	
1,2-Dichlorobenzene-d4 (S)	%				105	104	75-125			
4-Bromofluorobenzene (S)	%				106	107	75-125			
Toluene-d8 (S)	%				93	94	75-125			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600362

QC Batch: 803214 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

METHOD BLANK: 4264651 Matrix: Water
Associated Lab Samples: 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	03/16/22 12:34	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	03/16/22 12:34	
Acenaphthene	ug/L	ND	0.040	0.0069	03/16/22 12:34	
Acenaphthylene	ug/L	ND	0.040	0.0061	03/16/22 12:34	
Anthracene	ug/L	ND	0.040	0.0054	03/16/22 12:34	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	03/16/22 12:34	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	03/16/22 12:34	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	03/16/22 12:34	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	03/16/22 12:34	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	03/16/22 12:34	
Chrysene	ug/L	ND	0.040	0.0094	03/16/22 12:34	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	03/16/22 12:34	
Fluoranthene	ug/L	ND	0.040	0.014	03/16/22 12:34	
Fluorene	ug/L	ND	0.040	0.0060	03/16/22 12:34	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	03/16/22 12:34	
Naphthalene	ug/L	ND	0.040	0.0088	03/16/22 12:34	
Phenanthrene	ug/L	ND	0.040	0.012	03/16/22 12:34	
Pyrene	ug/L	ND	0.040	0.0099	03/16/22 12:34	
2-Fluorobiphenyl (S)	%	67	52-125		03/16/22 12:34	
p-Terphenyl-d14 (S)	%	73	54-125		03/16/22 12:34	

LABORATORY CONTROL SAMPLE & LCSD: 4264652

LABORATORY CONTROL SAMPLE & LCSD: 4264652			4264653							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.90	0.89	90	89	43-125	1	20	
2-Methylnaphthalene	ug/L	1	0.90	0.88	90	88	42-125	3	20	
Acenaphthene	ug/L	1	0.87	0.85	87	85	56-125	2	20	
Acenaphthylene	ug/L	1	0.87	0.84	87	84	55-125	3	20	
Anthracene	ug/L	1	0.82	0.72	82	72	64-125	13	20	
Benzo(a)anthracene	ug/L	1	0.78	0.79	78	79	65-125	1	20	
Benzo(a)pyrene	ug/L	1	0.88	0.91	88	91	64-125	3	20	
Benzo(b)fluoranthene	ug/L	1	0.87	0.88	87	88	70-125	1	20	
Benzo(g,h,i)perylene	ug/L	1	0.87	0.89	87	89	49-125	2	20	
Benzo(k)fluoranthene	ug/L	1	0.95	0.91	95	91	69-125	4	20	
Chrysene	ug/L	1	0.97	0.98	97	98	70-125	0	20	
Dibenz(a,h)anthracene	ug/L	1	0.83	0.91	83	91	41-125	9	20	
Fluoranthene	ug/L	1	0.82	0.82	82	82	67-125	0	20	
Fluorene	ug/L	1	0.87	0.85	87	85	59-125	2	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.86	0.88	86	88	57-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600362

LABORATORY CONTROL SAMPLE & LCSD: 4264652			4264653							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Naphthalene	ug/L	1	0.89	0.87	89	87	49-125	2	20	
Phenanthrene	ug/L	1	0.79	0.78	79	78	65-125	2	20	
Pyrene	ug/L	1	0.90	0.88	90	88	67-125	2	20	
2-Fluorobiphenyl (S)	%.				77	72	52-125			
p-Terphenyl-d14 (S)	%.				76	76	54-125			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10600362

QC Batch: 803215

QC Batch Method: EPA Mod. 3510C

Analysis Method: NWTPH-Dx

Analysis Description: NWTPH-Dx GCS LV SG

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362002

METHOD BLANK: 4264657

Matrix: Water

Associated Lab Samples: 10600362002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	03/16/22 16:44	
Motor Oil Range SG	mg/L	0.37J	0.40	0.18	03/16/22 16:44	
n-Triacontane (S)	%.	87	50-150		03/16/22 16:44	
o-Terphenyl (S)	%.	85	50-150		03/16/22 16:44	

LABORATORY CONTROL SAMPLE & LCSD: 4264658

4264659

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.9	1.9	93	94	50-150	1	20	
Motor Oil Range SG	mg/L	2	2.1	2.1	105	103	50-150	2	20	
n-Triacontane (S)	%.				86	90	50-150			
o-Terphenyl (S)	%.				84	86	50-150			

SAMPLE DUPLICATE: 4265089

Parameter	Units	10600362002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.15J	0.14J		30	
Motor Oil Range SG	mg/L	0.25J	0.29J		30	
n-Triacontane (S)	%.	83	70			
o-Terphenyl (S)	%.	83	61			

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10600362

QC Batch:	804469	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362003, 10600362004, 10600362005, 10600362006

METHOD BLANK: 4270446 Matrix: Water

Associated Lab Samples: 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	0.16J	0.40	0.12	03/23/22 20:17	
Motor Oil Range SG	mg/L	0.43	0.40	0.18	03/23/22 20:17	
n-Triacontane (S)	%	61	50-150		03/23/22 20:17	
o-Terphenyl (S)	%	66	50-150		03/23/22 20:17	

LABORATORY CONTROL SAMPLE & LCSD: 4270447

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.7	1.4	86	71	50-150	19	20	
Motor Oil Range SG	mg/L	2	2.3	1.7	114	86	50-150	27	20	R1
n-Triacontane (S)	%				71	59	50-150			
o-Terphenyl (S)	%				69	60	50-150			

SAMPLE DUPLICATE: 4270449

Parameter	Units	10601140001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.30J	0.21J		30	
Motor Oil Range SG	mg/L	0.74	0.33J		30	
n-Triacontane (S)	%	53	63			
o-Terphenyl (S)	%	62	60			

SAMPLE DUPLICATE: 4270539

Parameter	Units	10601140006 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.25J	0.26J		30	
Motor Oil Range SG	mg/L	0.37J	0.32J		30	
n-Triacontane (S)	%	24	47			2M
o-Terphenyl (S)	%	49	61			

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QUALITY CONTROL DATA

Project: 0633086
Pace Project No.: 10600362

QC Batch: 804945 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

METHOD BLANK: 4272555 Matrix: Water
Associated Lab Samples: 10600362002, 10600362003, 10600362004, 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	03/22/22 11:35	

LABORATORY CONTROL SAMPLE & LCSD: 4272556		4272557								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.5	42.4	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4272558					4272559							
Parameter	Units	10600155004	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike Conc.	Spike Conc.								Result
Alkalinity, Total as CaCO3	mg/L	228	40	40	270	270	103	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4272560		4272561										
Parameter	Units	10600366007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	25.3	40	40	66.1	66.2	102	102	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086

Pace Project No.: 10600362

QC Batch: 804059

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362002, 10600362003, 10600362004

METHOD BLANK: 4268347

Matrix: Water

Associated Lab Samples: 10600362002, 10600362003, 10600362004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/17/22 03:09	

LABORATORY CONTROL SAMPLE: 4268348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4268349 4268350

Parameter	Units	10600352001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	1450	1000	1000	2520	2510	107	106	80-120	0	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4268351 4268352

Parameter	Units	10600555004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	11900	12500	12500	25600	25500	109	109	80-120	0	20	E

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: 0633086

Pace Project No.: 10600362

QC Batch: 804247

QC Batch Method: EPA 300.0

Analysis Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10600362005, 10600362006

METHOD BLANK: 4269180

Matrix: Water

Associated Lab Samples: 10600362005, 10600362006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	03/17/22 23:51	

LABORATORY CONTROL SAMPLE: 4269181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4269182 4269183

Parameter	Units	10600362005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	19.2	50	50	68.0	69.1	98	100	80-120	2	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0633086
Pace Project No.: 10600362

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 adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
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.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 803367
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 803831
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 804506
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M	During a routine PT failure investigation, it was discovered that standards used were causing bias in the NWTPH-Gx (Toluene to Napthalene) range calibration curve. Reported results may be biased high
2M	Surrogate recovery outside laboratory control limits due to emulsion.
B	Analyte was detected in the associated method blank.
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).
P2	Re-extraction or re-analysis could not be performed due to insufficient sample amount.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0633086
Pace Project No.: 10600362

ANALYTE QUALIFIERS

R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086
Pace Project No.: 10600362

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10600362002	PEO-MW-37-20220309	EPA Mod. 3510C	803215	NWTPH-Dx	804051
10600362003	PEO-MW-35-20220309	EPA Mod. 3510C	804469	NWTPH-Dx	805092
10600362004	PEO-MW-34-20220309	EPA Mod. 3510C	804469	NWTPH-Dx	805092
10600362005	PEO-MW-02-20220309	EPA Mod. 3510C	804469	NWTPH-Dx	805092
10600362006	PEO-MW-11-20220309	EPA Mod. 3510C	804469	NWTPH-Dx	805092
10600362001	TRIP BLANK-20220309	NWTPH-Gx	804506		
10600362002	PEO-MW-37-20220309	NWTPH-Gx	804506		
10600362003	PEO-MW-35-20220309	NWTPH-Gx	804506		
10600362004	PEO-MW-34-20220309	NWTPH-Gx	804506		
10600362005	PEO-MW-02-20220309	NWTPH-Gx	804506		
10600362006	PEO-MW-11-20220309	NWTPH-Gx	804506		
10600362002	PEO-MW-37-20220309	EPA 3010A	803337	EPA 6010D	803425
10600362003	PEO-MW-35-20220309	EPA 3010A	803337	EPA 6010D	803425
10600362004	PEO-MW-34-20220309	EPA 3010A	803337	EPA 6010D	803425
10600362005	PEO-MW-02-20220309	EPA 3010A	803337	EPA 6010D	803425
10600362006	PEO-MW-11-20220309	EPA 3010A	803337	EPA 6010D	803425
10600362002	PEO-MW-37-20220309	EPA 3020A	803338	EPA 6020A	803448
10600362003	PEO-MW-35-20220309	EPA 3020A	803338	EPA 6020A	803448
10600362004	PEO-MW-34-20220309	EPA 3020A	803338	EPA 6020A	803448
10600362005	PEO-MW-02-20220309	EPA 3020A	803338	EPA 6020A	803448
10600362006	PEO-MW-11-20220309	EPA 3020A	803338	EPA 6020A	803448
10600362002	PEO-MW-37-20220309	EPA Mod. 3510C	803214	EPA 8270E by SIM	803831
10600362003	PEO-MW-35-20220309	EPA Mod. 3510C	803214	EPA 8270E by SIM	803831
10600362004	PEO-MW-34-20220309	EPA Mod. 3510C	803214	EPA 8270E by SIM	803831
10600362005	PEO-MW-02-20220309	EPA Mod. 3510C	803214	EPA 8270E by SIM	803831
10600362006	PEO-MW-11-20220309	EPA Mod. 3510C	803214	EPA 8270E by SIM	803831
10600362001	TRIP BLANK-20220309	EPA 8260D	803367		
10600362002	PEO-MW-37-20220309	EPA 8260D	803367		
10600362003	PEO-MW-35-20220309	EPA 8260D	803367		
10600362004	PEO-MW-34-20220309	EPA 8260D	803367		
10600362005	PEO-MW-02-20220309	EPA 8260D	803367		
10600362006	PEO-MW-11-20220309	EPA 8260D	803367		
10600362002	PEO-MW-37-20220309	SM 2320B	804945		
10600362003	PEO-MW-35-20220309	SM 2320B	804945		
10600362004	PEO-MW-34-20220309	SM 2320B	804945		
10600362005	PEO-MW-02-20220309	SM 2320B	804945		
10600362006	PEO-MW-11-20220309	SM 2320B	804945		
10600362002	PEO-MW-37-20220309	EPA 300.0	804059		
10600362003	PEO-MW-35-20220309	EPA 300.0	804059		
10600362004	PEO-MW-34-20220309	EPA 300.0	804059		
10600362005	PEO-MW-02-20220309	EPA 300.0	804247		
10600362006	PEO-MW-11-20220309	EPA 300.0	804247		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ERM	Report To:	Rita Cooper	Attention:	
Address:	1050 SW 6th Ave, Suite 1650	Copy To:		Company Name:	
Email To:	rta.cooper@erm.com	Purchase Order No.:		Address:	
Phone:	207-329-6320	Project Name:		Pace Quote Reference:	
Fax:		Pace Project Manager:	Julie Bowser	Pace Profile #:	
Requested Due Date/TAT: Standard		Project Number: 0633086			
				REGULATORY AGENCY	
				☐ NPDES	☐ GROUND WATER
				☐ UST	☐ RCRA
				☐	☐ DRINKING WATER
				☐	☐ OTHER
				Site Location	OR
				STATE:	

[illegible]

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
							Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)		
WO#: 10600362  Page 30 of 10500362	Erin McNeill TERM	3/10/22	8:43am	CSM / PACC	3-11-22	8:50	Y	Y	Y	Y	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Erin McNeill

SIGNATURE of SAMPLER: *Erin McNeill*

DATE Signed (MM/DD/YY): 3/10/22

WO#: 10600362



10600362

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt	Client Name: ERM	Project #:	WO# : 10600362 PM: JMT Due Date: 03/25/22 CLIENT: ERM-Oregon
	Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Speedee ☐ Commercial	Tracking Number:	

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No	Seals Intact? ☒ Yes ☐ No	Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A
Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: _____	Temp Blank? ☒ Yes ☐ No	
Thermometer: ☐ T1(0461) ☒ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808	Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted	

Did Samples Originate in West Virginia? ☐ Yes ☒ No	Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A
Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.2, 0.6, 0.7, 2.8</u> °C
Correction Factor: <u>True</u>	Cooler Temp Corrected w/temp blank: <u>0.2, 0.6, 0.7, 2.8</u> °C
Average Corrected Temp (no temp blank only): _____ °C	☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: CSM 3-11-22
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No
 If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other _____
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
-Pace Containers Used? ☒ Yes ☐ No	9.
Containers Intact? ☒ Yes ☐ No	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☐ No ☒ N/A	11. If no, write ID/ Date/Time on Container Below: ☐ See Exception ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	12. Sample # <u>001-005</u> ☐ NaOH ☒ HNO ₃ ☒ H ₂ SO ₄ ☐ Zinc Acetate Positive for Res. ☐ Yes ☐ No Chlorine? ☐ Yes ☐ No pH Paper Lot# _____ Res. Chlorine ☐ 0-6 Roll ☐ 0-6 Strip ☐ 0-14 Strip <u>212521</u>
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, <u>DRO</u> 8015 (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	
Headspace in VOA Vials (greater than 6mm)? ☒ Yes ☐ No ☐ N/A	13. ☐ See Exception ENV-FRM-MIN4-0142
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>353983</u>
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____

Project Manager Review: [Signature] Date: 03/11/2022
 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).
 Labeled by: CSM (2) Page 31 of 45

	Document Name: Headspace Exception	Document Revised: 26Mar2020 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0140 Rev.00	Pace Analytical Services - Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
PEO-MW-37	0	0	9	9	NO
PEO-MW-35	1	0	8	9	NO
PEO-MW-34	4	0	5	9	NO
PEO-MW-02	7	0	2	9	NO
PEO-MW-11	4	0	5	9	NO

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Fremont
Analytical

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Seattle, WA 98103
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F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086

Work Order Number: 2203361

April 01, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 6 sample(s) on 3/15/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086
Work Order: 2203361

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203361-001	TRIP BLANK-20220309	03/09/2022 8:00 AM	03/15/2022 11:22 AM
2203361-002	PEO-MW-37-20220309	03/09/2022 9:30 AM	03/15/2022 11:22 AM
2203361-003	PEO-MW-35-20220309	03/09/2022 11:10 AM	03/15/2022 11:22 AM
2203361-004	PEO-MW-34-20220309	03/09/2022 12:10 PM	03/15/2022 11:22 AM
2203361-005	PEO-MW-02-20220309	03/09/2022 1:50 PM	03/15/2022 11:22 AM
2203361-006	PEO-MW-11-20220309	03/09/2022 3:15 PM	03/15/2022 11:22 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2203361
Date Reported: 4/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203361-001
Client Sample ID: TRIP BLANK-20220309
Collection Date: 3/9/2022 8:00:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Volatile Petroleum Hydrocarbons by NWVPH</u>				Batch ID: 35742		Analyst: MS
Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/15/2022 11:22:00 PM
Surr: 1,4-Difluorobenzene	97.4	60 - 140		%Rec	1	3/15/2022 11:22:00 PM
Surr: Bromofluorobenzene	77.0	60 - 140		%Rec	1	3/15/2022 11:22:00 PM

Lab ID: 2203361-002
Client Sample ID: PEO-MW-37-20220309
Collection Date: 3/9/2022 9:30:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Extractable Petroleum Hydrocarbons by NWEPH</u>				Batch ID: 35726		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	3/24/2022 9:37:07 PM
Surr: 1-Chlorooctadecane	94.3	60 - 140		%Rec	1	3/24/2022 9:37:07 PM

<u>Volatile Petroleum Hydrocarbons by NWVPH</u>				Batch ID: 35742		Analyst: MS
Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 11:03:06 AM
Surr: 1,4-Difluorobenzene	94.8	60 - 140		%Rec	1	3/16/2022 11:03:06 AM
Surr: Bromofluorobenzene	75.1	60 - 140		%Rec	1	3/16/2022 11:03:06 AM



Analytical Report

Work Order: 2203361
Date Reported: 4/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203361-003

Client Sample ID: PEO-MW-35-20220309

Collection Date: 3/9/2022 11:10:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	3/24/2022 10:30:12 PM
Surr: 1-Chlorooctadecane	73.9	60 - 140		%Rec	1	3/24/2022 10:30:12 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 11:44:25 AM
Surr: 1,4-Difluorobenzene	95.5	60 - 140		%Rec	1	3/16/2022 11:44:25 AM
Surr: Bromofluorobenzene	75.3	60 - 140		%Rec	1	3/16/2022 11:44:25 AM

Lab ID: 2203361-004

Client Sample ID: PEO-MW-34-20220309

Collection Date: 3/9/2022 12:10:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	41.9	20.3		µg/L	1	3/25/2022 12:31:25 PM
Surr: 1-Chlorooctadecane	25.3	60 - 140	S	%Rec	1	3/25/2022 12:31:25 PM

NOTES:

S - Outlying surrogate recovery(ies) observed. The sample was re-extracted with similar results indicating a possible matrix effect.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	3/16/2022 12:25:28 PM
Surr: 1,4-Difluorobenzene	95.3	60 - 140		%Rec	1	3/16/2022 12:25:28 PM
Surr: Bromofluorobenzene	79.4	60 - 140		%Rec	1	3/16/2022 12:25:28 PM



Analytical Report

Work Order: 2203361
Date Reported: 4/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086

Lab ID: 2203361-005

Collection Date: 3/9/2022 1:50:00 PM

Client Sample ID: PEO-MW-02-20220309

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	165	20.5		µg/L	1	3/25/2022 1:25:13 PM
Surr: 1-Chlorooctadecane	63.8	60 - 140		%Rec	1	3/25/2022 1:25:13 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	38.8	12.2		µg/L	1	3/16/2022 1:06:36 PM
Surr: 1,4-Difluorobenzene	94.5	60 - 140		%Rec	1	3/16/2022 1:06:36 PM
Surr: Bromofluorobenzene	80.3	60 - 140		%Rec	1	3/16/2022 1:06:36 PM

Lab ID: 2203361-006

Collection Date: 3/9/2022 3:15:00 PM

Client Sample ID: PEO-MW-11-20220309

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35726

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	319	20.6		µg/L	1	3/25/2022 2:18:49 PM
Surr: 1-Chlorooctadecane	75.8	60 - 140		%Rec	1	3/25/2022 2:18:49 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35742

Analyst: MS

Aliphatic Hydrocarbon (C10-C12)	39.0	12.2		µg/L	1	3/16/2022 1:47:43 PM
Surr: 1,4-Difluorobenzene	96.9	60 - 140		%Rec	1	3/16/2022 1:47:43 PM
Surr: Bromofluorobenzene	80.1	60 - 140		%Rec	1	3/16/2022 1:47:43 PM

Work Order: 2203361
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-35726		SampType: MBLK			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: MBLKW		Batch ID: 35726			Analysis Date: 3/25/2022			SeqNo: 1524508				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						
Surr: 1-Chlorooctadecane	277		400.0		69.4	60	140				

Sample ID: 2203290-004AMS		SampType: MS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: BATCH		Batch ID: 35726			Analysis Date: 3/25/2022			SeqNo: 1524501				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	241	39.4	492.3	0	49.0	70	130				S
Surr: 1-Chlorooctadecane	328		393.8		83.2	60	140				

NOTES:

S - Outlying spike recovery for (C10-C12) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: 2203290-004AMSD		SampType: MSD			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: BATCH		Batch ID: 35726			Analysis Date: 3/25/2022					SeqNo: 1524502		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	292	39.8	497.7	0	58.6	70	130	241.1	19.0	30	S
Surr: 1-Chlorooctadecane	405		398.1		102	60	140		0		

NOTES:

S - Outlying spike recovery for (C10-C12) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: LCS-35726		SampType: LCS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74309		
Client ID: LCSW		Batch ID: 35726			Analysis Date: 3/25/2022					SeqNo: 1524504		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	350	40.0	500.0	0	70.0	70	130				
Surr: 1-Chlorooctadecane	452		400.0		113	60	140				

Work Order: 2203361
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-35742		SampType: LCS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: LCSW		Batch ID: 35742			Analysis Date: 3/15/2022			SeqNo: 1523582				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	232	25.0	200.0	0	116	70	130				
Surr: 1,4-Difluorobenzene	56.6		50.00		113	60	140				
Surr: Bromofluorobenzene	40.4		50.00		80.9	60	140				

Sample ID: MB-35742		SampType: MBLK			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: MBLKW		Batch ID: 35742			Analysis Date: 3/15/2022					SeqNo: 1523552		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	47.9		50.00		95.8	60	140				
Surr: Bromofluorobenzene	38.0		50.00		76.0	60	140				

Sample ID: 2203256-002BDUP		SampType: DUP			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: BATCH		Batch ID: 35742			Analysis Date: 3/16/2022			SeqNo: 1523532				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	47.6		50.00		95.1	60	140		0		
Surr: Bromofluorobenzene	38.3		50.00		76.5	60	140		0		

Sample ID: 2203290-004BMS		SampType: MS			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: BATCH		Batch ID: 35742			Analysis Date: 3/16/2022				SeqNo: 1523540			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	261	25.0	200.0	18.39	121	70	130				
Surr: 1,4-Difluorobenzene	49.5		50.00		98.9	60	140				
Surr: Bromofluorobenzene	39.7		50.00		79.4	60	140				

Work Order: 2203361
CLIENT: Pace Analytical Minnesota
Project: 0633086

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 2203290-004BMSD		SampType: MSD			Units: µg/L		Prep Date: 3/15/2022			RunNo: 74286		
Client ID: BATCH		Batch ID: 35742			Analysis Date: 3/16/2022			SeqNo: 1523675				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aliphatic Hydrocarbon (C10-C12)	265	25.0	200.0	18.39	123	70	130	260.7	1.73	30		
Surr: 1,4-Difluorobenzene	46.7		50.00		93.4	60	140		0			
Surr: Bromofluorobenzene	39.8		50.00		79.5	60	140		0			

Client Name: **PACEMI**

Work Order Number: **2203361**

Logged by: **Gabrielle Coeuille**

Date Received: **3/15/2022 11:22:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? UPS

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☒ No ☐ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	3.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10600362

Workorder Name: 0633086

Results Requested By: 3/25/2022

2203361

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@paceclabs.com

Fremont Analytical
3600 Fremont Ave N
Seattle WA, 98103

P.O. 10600362

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Requested Analysis				LAB USE ONLY
					VG9H + HCL	AG1H			NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)			
1	TRIP BLANK-20220309	3/9/2022 08:00	10600362001	Water	2				X				
2	PEO-MW-37-20220309	3/9/2022 09:30	10600362002	Water	5				X	X			
3	PEO-MW-35-20220309	3/9/2022 11:10	10600362003	Water	5				X	X			
4	PEO-MW-34-20220309	3/9/2022 12:10	10600362004	Water	5				X	X			
5	PEO-MW-02-20220309	3/9/2022 13:50	10600362005	Water	5				X	X			
6	PEO-MW-11-20220309	3/9/2022 15:15	10600362006	Water	5				X	X			

Comments

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	Julie	3/14/22 15:05	Julie Bowser	3/15/22 11:22				
2								
3								

EQUIS EDD needed
J flag to MDL

°C

Custody Seal

Y or N

Received on Ice

Y or N

Samples Intact

Y or N

**Memorandum**

To	Rita Cooper
From	Jack James
Date	15 June 2022
Reference	0633086
Subject	Data Review of PEO Groundwater Sampling, Second Quarter 2022 Pace Analytical Services, LLC Data Packages 10607062, 10607257, 10607576, 10607807, and 10607954.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020. Field duplicates were assessed following *Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures*, September 2020.

SAMPLE RECEIPT COMMENTS

In report 10607257, the laboratory described that a container for sample PEO-MW-26-20220505 arrived without a label. The laboratory identified the sample and it was logged in per the chain-of-custody (COC). Additionally, the laboratory noted samples PEO-MW-06-20220504 and PEO-MW-18-20220504 could not be analyzed for volatile petroleum hydrocarbons as the vials froze and cracked during transit between Pace and Fremont Analytical.

In report 10607576, the laboratory described that a sample was received, but was not included on the COC. The laboratory logged the sample in using the labels and proceeded with the project required analyses. Additionally, Pace did not send the trip blank sample with the original shipment to Fremont Analytical. Instead, extra volume for location MW-37 was sent. Fremont Analytical returned the extra volume for MW-37 and Pace sent the trip blank separately.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection with several exceptions. Fremont Analytical indicated several samples were not analyzed within the 14 day hold time for Volatile Petroleum Hydrocarbons (VPH) from report 10607257; however, these samples were analyzed within hold when the time of day is taken into consideration for sampling and analysis. No qualifications were necessary. The VPH analysis for all samples from report 10607576 was conducted one to six days past the 14 day hold time. All detected results were qualified as estimates (J). Non-detect project results were compared to the previous sampling events and were found to be in agreement for non-quality control samples; therefore, they were qualified as estimates (UJ). The non-detect result for sample TRIP BLANK-20220509 was rejected since

historical data is not applicable in this instance for the quality control sample. Additionally, a laboratory duplicate and matrix spike duplicate (MSD) were analyzed past the 14 day hold time. Qualifications were not applied to project sample results based on laboratory quality control samples analyzed out-of-hold. The qualified results are presented in Table 1.

The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. The samples arrived in good condition and properly preserved with several exceptions. The laboratory noted that headspace was present in a volatile organic analysis (VOA) vial for sample PEO-MW-26-20220505. Sufficient headspace-free VOA vials remained for analysis and qualifications were not necessary.

BLANK EVALUATION

The method and trip blank results were non-detected for each of the target analytes, with the exceptions noted in Table 2. Non-detected results or results greater than five times the blank concentrations for organics (ten times for inorganics) were considered not affected by the laboratory contamination and were not qualified. Results less than the reporting limit (RL) were qualified as non-detect (U) at the RL. Results within five times the blank concentration (ten times for inorganics), as adjusted for dilution, and greater than or equal to the RL were qualified as estimated with a high bias (J+), with the exception of motor oil range silica gel (SG) result for sample PEO-MW-34-2022050 and EPH Aliphatic Hydrocarbon (C10-C12) for sample PEO-MW-02-20220509 which were qualified as estimates with no bias (J) due to additional low surrogate recoveries.

The VPH trip blank associated with report 10607576 was shipped in a separate cooler and analyzed beyond the 14 day hold time and the non-detect result was rejected. Consequently, it is not possible to assess whether (VPH) detections in associated samples PEO-MW-34-20220506, PEO-MW-39-20220506, and PEO-MW-29-20220508 were potentially influenced by cross-contamination during shipment, handling, and storage.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with the exceptions noted in Table 3. No data were qualified for RPD exceedance alone when the associated sample result was non-detected. Non-detect results associated with low a LCS recovery were qualified as estimates (UJ). Detected sample results associated with high LCS/LCSD RPDs were qualified as estimates with no bias (J). The diesel fuel range SG result for sample PEO-MW-31-20220504 was qualified as non-detect (U) at the RL due to additional method blank contamination.

MATRIX SPIKE EVALUATION

The laboratories prepared both project and non-project samples for matrix spike (MS) and MSD analysis. Matrix spike samples from non-project parent samples are not representative of the matrix for this project and were therefore not reviewed in this validation effort. For the MS/MSDs prepared from project samples, the recoveries and RPDs were within laboratory limits of acceptance with the exceptions noted in Table 3. No data were qualified if the sample result was greater than four times the spike concentration. Non-detected sample results associated with low MS/MSD recoveries were qualified as estimates (UJ) and detected results as estimated with a low bias (J-).

SURROGATE SPIKE EVALUATION

The surrogate recoveries for project samples were within acceptable limits with the exceptions noted in Table 4. Qualifications to laboratory quality control samples due to surrogate recoveries outside laboratory control limits were not necessary. Additionally, qualifications were not necessary if the samples were analyzed at a dilution of ten or greater. Sample results associated with low surrogate recoveries were qualified as estimates with a low bias (J-) for detects and (UJ) for non-detects. The polynuclear aromatic hydrocarbons (PAHs) by 8270E-SIM surrogate recoveries were less than 30 percent for sample PEO-MW-34-20220506. PAHs were not detected in the sample and the results were qualified as estimated non-detects (UJ). The motor oil range SG result for sample PEO-MW-34-2022050 and the EPH Aliphatic Hydrocarbon (C10-C12) result for sample PEO-MW-02-20220509 were qualified as estimates with no bias (J) due to additional blank contamination.

CALIBRATION RANGE EXCEEDANCES

Several MS/MSD sample results exceeded the instrument calibration range. Qualifications were not applied to the parent samples based on the MS/MSD results exceeding the calibration range as the parent sample results were within range.

LABORATORY DUPLICATE EVALUATION

The laboratories prepared both project and non-project samples for laboratory duplicate analysis. Laboratory duplicate samples from non-project parent samples are not representative of the matrix for this project and were therefore not reviewed in this validation effort. For the laboratory duplicates prepared from project samples, the RPDs for detected analytes were within the control limits, with the exception in Table 5. The detected result associated with the RPD exceedance was qualified as an estimate (J).

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 6. An RPD control limit of 30 was used when both the sample and the field duplicate results were greater than or equal to five times the RL. A control limit of $\pm$ two times the RL was used when at least one of the results was less than five times the reporting limit. Precision criteria was not applied if both results were less than the RL or non-detected. All field duplicate comparisons were within the control criteria, indicating good field precision.

OVERALL ASSESSMENT

The non-detect VPH sample result for TRIP BLANK-20220509 was rejected due to the analysis conducted past the recommended hold time. With exception of the rejected result, all of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically-defensible documents.

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Table 1
Samples with Exceeded Holding Times
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Analysis Holding Time	Time Exceeded	Affected Analyte	ERM Qualifier
10607576	TRIP BLANK-20220509	NWVPH	14 days	1 day	VPH	R
	PEO-MW-34-20220506	NWVPH	14 days	6 days	VPH	J
	PEO-MW-35-20220506	NWVPH	14 days	6 days	VPH	UJ
	PEO-MW-39-20220506	NWVPH	14 days	5 days	VPH	J
	PEO-MW-45-20220506	NWVPH	14 days	5 days	VPH	UJ
	PEO-MW-21-20220508	NWVPH	14 days	4 days	VPH	UJ
	PEO-MW-25-20220508	NWVPH	14 days	4 days	VPH	UJ
	PEO-MW-03-20220508	NWVPH	14 days	4 days	VPH	UJ
	PEO-MW-29-20220508	NWVPH	14 days	4 days	VPH	J
	PEO-MW-40-20220508	NWVPH	14 days	4 days	VPH	UJ
	PEO-MW-37-20220505	NWVPH	14 days	4 days	VPH	UJ
	2205257-002ADUP (PEO-MW-34-20220506)	NWVPH	14 days	6 days	VPH	--
10607807	2205274-003BMSD (PEO-MW-36-20220509)	NWVPH	14 days	1 day	VPH	--

Lab packages reviewed: 10607062, 10607257, 10607576, 10607807, and 10607954

Notes:

J = Estimated detected result

NWVPH = Northwest Volatile Petroleum Hydrocarbons

R = Result is rejected

UJ = Nondetected, estimated report limit

Table 2
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10607062	MB 4312731	None for qualification	Acenaphthene	0.0092	0.040	--	--	µg/L	--
			Chrysene	0.017	0.040	--	--	µg/L	--
			Fluoranthene	0.020	0.040	--	--	µg/L	--
			Fluorene	0.0074	0.040	--	--	µg/L	--
			Naphthalene	0.016	0.040	--	--	µg/L	--
			Phenanthrene	0.018	0.040	--	--	µg/L	--
			Pyrene	0.016	0.040	--	--	µg/L	--
	MB 4316471	PEO-MW-32-20220503	Acenaphthene	0.012	0.040	0.041	0.041	µg/L	J+
		PEO-MW-33-20220503				0.033	0.040	µg/L	0.040 U
		PEO-MW-32-20220503	Naphthalene	0.018	0.040	0.049	0.041	µg/L	J+
		PEO-MW-33-20220503				0.016	0.040	µg/L	0.040 U
		PEO-MW-32-20220503	Phenanthrene	0.013	0.040	0.034	0.041	µg/L	0.041 U
10607257	MB R3792257-2	TRIP BLANK-20220504	TPH (C06-C12)	58.4	100	49.7	100	µg/L	100 U
		PEO-MW-19-20220504				63.2	100	µg/L	100 U
		PEO-MW-30-20220504				62.7	100	µg/L	100 U
		PEO-MW-18-20220504				57.7	100	µg/L	100 U
		PEO-MW-26-20220505				42.8	100	µg/L	100 U
		PEO-MW-44-20220505				50.6	100	µg/L	100 U
		PEO-MW-2z2-20220505				52.0	100	µg/L	100 U
	MB 4319476	PEO-MW-31-20220504	Diesel Fuel Range SG	0.12	0.40	0.23	0.50	mg/L	0.50 U
		None for qualification	Motor Oil Range SG	0.24	0.40	--	--	mg/L	--
	TRIP BLANK-20220504	PEO-MW-31-20220504	VPH Aliphatic Hydrocarbon (C10-C12)	25.5	25.0	14.9	25.0	µg/L	25.0 U
10607576	MB 4316763	PEO-MW-34-20220506	Motor Oil Range SG	0.51	0.40	0.67	0.40	mg/L	J ¹
	MB 4327362	PEO-MW-39-20220506	Sulfate	0.50	1.2	0.80	1.2	mg/L	1.2 U
		PEO-MW-21-20220508				3.80	1.2	mg/L	J+
		PEO-MW-29-20220508				1.2	1.2	mg/L	J+

Table 2
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10607954	MB R3793942-2	TRIP BLANK-20220510	TPH (C06-C12)	82.8	100	74.7	100	µg/L	100 U
		PEO-MW-28a-20220510				67.2	100	µg/L	100 U
		PEO-MW-11-20220510				1220	500	µg/L	J+
		PEO-MW-41-20220510				60.6	100	µg/L	100 U
	MB 4320933	None for qualification	Naphthalene	0.0097	0.040	--	--	µg/L	--
		PEO-MW-28a-20220510	Phenanthrene	0.020	0.040	0.023	0.042	µg/L	0.042 U
		PEO-MW-41-20220510				0.042	0.040	µg/L	J+
	MB 4329006	None for qualification	Alkalinity, Total as CaCO ₃	1.8	5.0	--	--	mg/L	--
	MB-36459	PEO-MW-41-20220510	EPH Aliphatic Hydrocarbon (C10-C12)	31.1	39.8	29.3	39.8	µg/L	39.8 U
10607807	MB-36459	PEO-MW-02-20220509	EPH Aliphatic Hydrocarbon (C10-C12)	31.1	39.8	52.2	39.8	µg/L	J ¹

Lab packages reviewed: 10607062, 10607257, 10607576, 10607807, and 10607954

Notes:

1 = Qualified as an estimate with no bias due to additional low surrogate recovery

MB = Method blank

mg/L = Milligrams per liter

J = Estimated detected result

J+ = Detected results are estimated with a high bias

SG = Silica gel

U = Non-detected

VPH = Volatile Petroleum Hydrocarbons

µg/L = Micrograms per liter

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
10607062	LCS 36377	PEO-MW-32-20220503	EPH Aliphatic Hydrocarbon (C10-C12)	52.8	70-130	--	--	ND	µg/L	UJ
		PEO-MW-33-20220503						ND	µg/L	UJ
		PEO-MW-42-20220503						ND	µg/L	UJ
		PEO-MW-24A-20220503						ND	µg/L	UJ
		PEO-MW-08-20220503						ND	µg/L	UJ
		PEO-MW-Z1-20220503						ND	µg/L	UJ
10607257	LCS 4319477 LCSD 4319478	PEO-MW-31-20220504	Diesel Fuel Range SG	60/84	50-150	32	20	0.23	mg/L	0.50 U ¹
		None for qualification	Motor Oil Range SG	62/85	50-150	31	20	--	--	--
10607954	LCS 4319477 LCSD 4319478	PEO-MW-11-20220510	Diesel Fuel Range SG	60/84	50-150	32	20	26.9	mg/L	J
		PEO-MW-41-20220510						0.15	mg/L	J
		None for qualification	Motor Oil Range SG	62/85	50-150	31	20	--	--	--
MS/MSD										
10607062	PEO-MW-32-20220503 MS	PEO-MW-32-20220503	EPH Aliphatic Hydrocarbon (C10-C12)	49.3	70-130	--	--	ND	µg/L	UJ
10607257	PEO-MW-26-20220505 MS	PEO-MW-26-20220505	EPH Aliphatic Hydrocarbon (C10-C12)	59.5	70-130	--	--	ND	µg/L	UJ

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
10607576 10607807	PEO-MW-36-20220509 MS/MSD	PEO-MW-36-20220509	Manganese, Dissolved	57/38	75-125	1	20	4X	--	--
			Sulfate	77/62	80-120	8	20	57.5	mg/L	J-

Lab packages reviewed: 10607062, 10607257, 10607576, 10607807, and 10607954

Notes:

1 = Qualified non-detect at the reporting limit due to additional blank contamination

4X = The unspiked sample result was greater than four times the spike concentration

EPH = Extractable petroleum hydrocarbons

J = Estimated detected result

J- = Detected results are estimated with a low bias

LCS/LCSD = Laboratory control sample/laboratory control sample duplicate

mg/L = Milligrams per liter

MS/MSD = Matrix spike/matrix spike duplicate

ND = Not detected

RPD = Relative percent difference

SG = Silica gel

µg/L = Micrograms per liter

U = Non-detected

UJ = Nondetected, estimated report limit

Table 4
Surrogate Recovery Results out of Acceptable Limits
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
10607576	PEO-MW-34-20220506	NWTPH-Dx	o-Terphenyl	25	50-150	Diesel Fuel Range SG	1	J-
			n-Triacontane	15	50-150	Motor Oil Range SG	1	J ¹
		8270E SIM	2-Fluorobiphenyl	27	52-125	All in group	1	UJ
			p-Terphenyl-d14	18	54-125			
	PEO-MW-35-20220506	8270E SIM	1-Chlorooctadecane	17.6	50-150	EPH Aliphatic Hydrocarbon (C10-C12)	1	J-
			2-Fluorobiphenyl	47	52-125	All in group	1	Detects J- Non-detects UJ
		NWTPH-Dx	p-Terphenyl-d14	41	54-125			
			o-Terphenyl	14	50-150	Diesel Fuel Range SG	--	--
10607954	PEO-MW-11-20220510	NWTPH-Dx	n-Triacontane	32	50-150	Motor Oil Range SG	10	--
			2-Fluorobiphenyl	31	52-125	All in group	1	UJ
		8270E SIM	p-Terphenyl-d14	42	54-125			
10607807	PEO-MW-02-20220509	NWTPH-Dx	n-Triacontane	34	50-150	Motor Oil Range SG	5	J
			2-Fluorobiphenyl	22	52-125	All in group	1	Detects J- Non-detects UJ
		8270E SIM	p-Terphenyl-d14	30	54-125			
			1-Chlorooctadecane	24.2	50-150	EPH Aliphatic Hydrocarbon (C10-C12)	1	J ¹
		NWTPH-Dx						

Lab packages reviewed: 10607062, 10607257, 10607576, 10607807, and 10607954

Notes:

1 = Qualified as an estimate with no bias due to additional blank contamination

J = Estimated detected result

J- = Detected results are estimated with a low bias

NWEPH = Northwest extractable petroleum hydrocarbons

NWTPH = Northwest total petroleum hydrocarbons

SIM = Selected ion monitoring

SG = Silica gel

UJ = Non-detected, estimated report limit

Table 5
Lab Duplicate Results and Calculated Relative Percent Differences
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Sample ID	Analyte	Concentration		Report Limit	Units	RPD	ERM Qualifier
			Sample	Duplicate				
10607062 10607257	PEO-MW-30-20220504	Diesel Fuel Range SG	9.1	5.9	0.48	mg/L	43	J

Lab packages reviewed: 10607062, 10607257, 10607576, 10607807, and 10607954

Notes:

J = Estimated detected result

mg/L = Milligrams per liter

RPD = Relative percent difference

SG = Silica gel

Table 6
Field Duplicate Evaluation
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
10607062	PEO-MW-08-20220503 PEO-MW-Z1-20220503	Diesel Fuel Range SG	0.38	0.36	0.40	0.40	NA	NA	mg/L	NA	NA	--
		Motor Oil Range SG	0.18	ND	0.40	0.40	NA	NA	mg/L	NA	NA	--
		Total Hardness	52600	52000	3300	3300	--	--	µg/L	1.1	30	--
		Arsenic, Dissolved	0.47	0.50	0.50	0.50	0.03	1.00	µg/L	--	--	--
		Manganese, Dissolved	1640	1540	5.0	5.0	--	--	µg/L	6.3	30	--
		Acenaphthene	0.10	ND	0.040	0.042	NA	NA	µg/L	NA	NA	--
		Alkalinity, Total as CaCO3	31.5	31.3	5.0	5.0	--	--	mg/L	0.6	30	--
		Sulfate	70.0	68.2	1.2	1.2	--	--	mg/L	2.6	30	--

Table 6
Field Duplicate Evaluation
PEO Groundwater Sampling
Second Quarter 2022
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
10607257	PEO-MW-44-20220505 PEO-MW-2z2-20220505	TPH (C06-C12)	ND ¹	ND ¹	100	100	NA	NA	mg/L	NA	NA	--
		Total Hardness	90700	89100	3300	3300	--	--	mg/L	1.8	30	--
		Arsenic, Dissolved	0.90	0.98	0.50	0.50	0.08	1.00	µg/L	--	--	--
		Manganese, Dissolved	72.1	84.8	0.50	0.50	--	--	µg/L	16	30	--
		Acenaphthene	0.011	0.014	0.042	0.046	NA	NA	µg/L	NA	NA	--
		Fluorene	0.013	0.017	0.042	0.046	NA	NA	µg/L	NA	NA	--
		1-Methylnaphthalene	0.014	ND	0.042	0.046	NA	NA	µg/L	NA	NA	--
		2-Methylnaphthalene	0.021	ND	0.042	0.046	NA	NA	µg/L	NA	NA	--
		Naphthalene	0.014	0.012	0.042	0.046	NA	NA	µg/L	NA	NA	--
		Phenanthrene	ND	0.019	0.042	0.046	NA	NA	µg/L	NA	NA	--
		Alkalinity, Total as CaCO ₃	111	111	5.0	5.0	--	--	mg/L	0.0	30	--
		Sulfate	15.7	15.9	1.2	1.2	--	--	mg/L	1.3	30	--

Lab packages reviewed: 10607062, 10607257, 10607576, 10607807, and 10607954

Notes:

mg/L = Milligrams per liter

NA = Not applicable

RPD = Relative percent difference

SG = Silica gel

µg/L = Micrograms per liter

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May 23, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086.02
Pace Project No.: 10607062

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086.02
Pace Project No.: 10607062

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064

Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
Please Note: Applicable air certifications are denoted with an asterisk ().

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008

Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

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CERTIFICATIONS

Project: 0633086.02

Pace Project No.: 10607062

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

New Jersey Certification #: TN002

New Mexico DW Certification

New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41

North Carolina Drinking Water Certification #: 21704

North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140

Ohio VAP Certification #: CL0069

Oklahoma Certification #: 9915

Oregon Certification #: TN200002

Pennsylvania Certification #: 68-02979

Rhode Island Certification #: LAO00356

South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Mold Certification #: LAB0152

Texas Certification #: T 104704245-17-14

USDA Soil Permit #: P330-15-00234

Utah Certification #: TN00003

Vermont Dept. of Health: ID# VT-2006

Virginia Certification #: VT2006

Virginia Certification #: 460132

Washington Certification #: C847

West Virginia Certification #: 233

Wisconsin Certification #: 998093910

Wyoming UST Certification #: via A2LA 2926.01

A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02

AIHA-LAP/LLC EMLAP Certification #:100789

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086.02

Pace Project No.: 10607062

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10607062001	TRIP BLANK-20220503	Water	05/03/22 08:00	05/05/22 08:50
10607062002	PEO-MW-32-20220503	Water	05/03/22 08:55	05/05/22 08:50
10607062003	PEO-MW-33-20220503	Water	05/03/22 10:55	05/05/22 08:50
10607062004	PEO-MW-42-20220503	Water	05/03/22 12:30	05/05/22 08:50
10607062005	PEO-MW-24A-20220503	Water	05/03/22 13:55	05/05/22 08:50
10607062006	PEO-MW-08-20220503	Water	05/03/22 15:25	05/05/22 08:50
10607062007	PEO-MW-Z1-20220503	Water	05/03/22 15:30	05/05/22 08:50

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607062

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607062001	TRIP BLANK-20220503	NWTPH-Gx	CAM	2	PAN
		EPA 8260D	JEM	8	PASI-M
10607062002	PEO-MW-32-20220503	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
10607062003	PEO-MW-33-20220503	EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10607062004	PEO-MW-42-20220503	EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
10607062005	PEO-MW-24A-20220503	SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10607062006	PEO-MW-08-20220503	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
		EPA 6010D	IP	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607062

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607062007	PEO-MW-Z1-20220503	EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	CAM	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: TRIP BLANK-20220503		Lab ID: 10607062001		Collected: 05/03/22 08:00		Received: 05/05/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/12/22 14:45	05/12/22 14:45		
Surrogates									
a,a,a-Trifluorotoluene (FID)	112	%	78.0-120		1	05/12/22 14:45	05/12/22 14:45	98-08-8FID	
8260D MSV UST Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/05/22 16:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 16:45	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 16:45	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 16:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 16:45	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/05/22 16:45	2199-69-1	
4-Bromofluorobenzene (S)	97	%	75-125		1		05/05/22 16:45	460-00-4	
Toluene-d8 (S)	105	%	75-125		1		05/05/22 16:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607062

Sample: PEO-MW-32-20220503 Lab ID: 10607062002 Collected: 05/03/22 08:55 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.22J	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 21:12	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 21:12	64742-65-0	
Surrogates									
o-Terphenyl (S)	64	%	50-150		1	05/06/22 15:19	05/10/22 21:12	84-15-1	
n-Triacontane (S)	61	%	50-150		1	05/06/22 15:19	05/10/22 21:12		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	47.8J	ug/L	100	31.6	1	05/12/22 15:06	05/12/22 15:06		J
Surrogates									
a,a,a-Trifluorotoluene (FID)	106	%	78.0-120		1	05/12/22 15:06	05/12/22 15:06	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	88100	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:15		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	10.1	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 14:24	7440-38-2	
Manganese, Dissolved	3.1	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 14:24	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.041	ug/L	0.041	0.0070	1	05/10/22 11:11	05/11/22 14:07	83-32-9	B
Acenaphthylene	ND	ug/L	0.041	0.0062	1	05/10/22 11:11	05/11/22 14:07	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	05/10/22 11:11	05/11/22 14:07	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	05/10/22 11:11	05/11/22 14:07	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	05/10/22 11:11	05/11/22 14:07	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	05/10/22 11:11	05/11/22 14:07	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	05/10/22 11:11	05/11/22 14:07	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	05/10/22 11:11	05/11/22 14:07	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	05/10/22 11:11	05/11/22 14:07	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	05/10/22 11:11	05/11/22 14:07	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.014	1	05/10/22 11:11	05/11/22 14:07	206-44-0	
Fluorene	0.032J	ug/L	0.041	0.0062	1	05/10/22 11:11	05/11/22 14:07	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	05/10/22 11:11	05/11/22 14:07	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	05/10/22 11:11	05/11/22 14:07	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0084	1	05/10/22 11:11	05/11/22 14:07	91-57-6	
Naphthalene	0.049	ug/L	0.041	0.0090	1	05/10/22 11:11	05/11/22 14:07	91-20-3	B
Phenanthrene	0.034J	ug/L	0.041	0.012	1	05/10/22 11:11	05/11/22 14:07	85-01-8	B
Pyrene	0.014J	ug/L	0.041	0.010	1	05/10/22 11:11	05/11/22 14:07	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	52	%	52-125		1	05/10/22 11:11	05/11/22 14:07	321-60-8	
p-Terphenyl-d14 (S)	61	%	54-125		1	05/10/22 11:11	05/11/22 14:07	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-32-20220503		Lab ID: 10607062002		Collected: 05/03/22 08:55		Received: 05/05/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.37J	ug/L	1.0	0.10	1		05/05/22 17:02	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 17:02	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 17:02	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 17:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 17:02	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	103	%.	75-125		1		05/05/22 17:02	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/05/22 17:02	460-00-4	
Toluene-d8 (S)	101	%.	75-125		1		05/05/22 17:02	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	102	mg/L	5.0	1.8	1		05/17/22 09:18		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	26.7	mg/L	1.2	0.43	1		05/06/22 13:06	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607062

Sample: PEO-MW-33-20220503 Lab ID: 10607062003 Collected: 05/03/22 10:55 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 21:35	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 21:35	64742-65-0	
Surrogates									
o-Terphenyl (S)	59	%	50-150		1	05/06/22 15:19	05/10/22 21:35	84-15-1	
n-Triacontane (S)	64	%	50-150		1	05/06/22 15:19	05/10/22 21:35		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/12/22 15:28	05/12/22 15:28		
Surrogates									
a,a,a-Trifluorotoluene (FID)	111	%	78.0-120		1	05/12/22 15:28	05/12/22 15:28	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	121000	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:17		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	10.2	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 14:57	7440-38-2	
Manganese, Dissolved	705	ug/L	5.0	2.0	10	05/10/22 05:30	05/17/22 15:01	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.033J	ug/L	0.040	0.0070	1	05/10/22 11:11	05/11/22 14:29	83-32-9	B
Acenaphthylene	ND	ug/L	0.040	0.0061	1	05/10/22 11:11	05/11/22 14:29	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/10/22 11:11	05/11/22 14:29	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	05/10/22 11:11	05/11/22 14:29	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	05/10/22 11:11	05/11/22 14:29	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	05/10/22 11:11	05/11/22 14:29	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	05/10/22 11:11	05/11/22 14:29	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/10/22 11:11	05/11/22 14:29	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	05/10/22 11:11	05/11/22 14:29	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/10/22 11:11	05/11/22 14:29	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/10/22 11:11	05/11/22 14:29	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/10/22 11:11	05/11/22 14:29	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 11:11	05/11/22 14:29	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	05/10/22 11:11	05/11/22 14:29	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	05/10/22 11:11	05/11/22 14:29	91-57-6	
Naphthalene	0.016J	ug/L	0.040	0.0089	1	05/10/22 11:11	05/11/22 14:29	91-20-3	B
Phenanthrene	ND	ug/L	0.040	0.012	1	05/10/22 11:11	05/11/22 14:29	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	05/10/22 11:11	05/11/22 14:29	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%	52-125		1	05/10/22 11:11	05/11/22 14:29	321-60-8	
p-Terphenyl-d14 (S)	75	%	54-125		1	05/10/22 11:11	05/11/22 14:29	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-33-20220503		Lab ID: 10607062003		Collected: 05/03/22 10:55		Received: 05/05/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/05/22 17:19	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 17:19	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 17:19	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 17:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 17:19	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		05/05/22 17:19	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/05/22 17:19	460-00-4	
Toluene-d8 (S)	101	%.	75-125		1		05/05/22 17:19	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	92.9	mg/L	5.0	1.8	1		05/17/22 09:28		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	62.0	mg/L	1.2	0.43	1		05/06/22 13:22	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607062

Sample: PEO-MW-42-20220503 Lab ID: 10607062004 Collected: 05/03/22 12:30 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 21:46	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 21:46	64742-65-0	
Surrogates									
o-Terphenyl (S)	55	%	50-150		1	05/06/22 15:19	05/10/22 21:46	84-15-1	
n-Triacontane (S)	55	%	50-150		1	05/06/22 15:19	05/10/22 21:46		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/12/22 15:49	05/12/22 15:49		
Surrogates									
a,a,a-Trifluorotoluene (FID)	110	%	78.0-120		1	05/12/22 15:49	05/12/22 15:49	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	123000	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:19		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	4.6	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:04	7440-38-2	
Manganese, Dissolved	80.9	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 15:04	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.041	0.0071	1	05/10/22 11:11	05/11/22 14:51	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0063	1	05/10/22 11:11	05/11/22 14:51	208-96-8	
Anthracene	ND	ug/L	0.041	0.0056	1	05/10/22 11:11	05/11/22 14:51	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0094	1	05/10/22 11:11	05/11/22 14:51	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0092	1	05/10/22 11:11	05/11/22 14:51	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0099	1	05/10/22 11:11	05/11/22 14:51	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0084	1	05/10/22 11:11	05/11/22 14:51	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0086	1	05/10/22 11:11	05/11/22 14:51	207-08-9	
Chrysene	ND	ug/L	0.041	0.0097	1	05/10/22 11:11	05/11/22 14:51	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0082	1	05/10/22 11:11	05/11/22 14:51	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.015	1	05/10/22 11:11	05/11/22 14:51	206-44-0	
Fluorene	ND	ug/L	0.041	0.0063	1	05/10/22 11:11	05/11/22 14:51	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.012	1	05/10/22 11:11	05/11/22 14:51	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0070	1	05/10/22 11:11	05/11/22 14:51	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0086	1	05/10/22 11:11	05/11/22 14:51	91-57-6	
Naphthalene	ND	ug/L	0.041	0.0091	1	05/10/22 11:11	05/11/22 14:51	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.013	1	05/10/22 11:11	05/11/22 14:51	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	05/10/22 11:11	05/11/22 14:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%	52-125		1	05/10/22 11:11	05/11/22 14:51	321-60-8	
p-Terphenyl-d14 (S)	75	%	54-125		1	05/10/22 11:11	05/11/22 14:51	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-42-20220503		Lab ID: 10607062004		Collected: 05/03/22 12:30		Received: 05/05/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/05/22 17:36	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 17:36	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 17:36	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 17:36	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 17:36	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		05/05/22 17:36	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/05/22 17:36	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/05/22 17:36	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	89.5	mg/L	5.0	1.8	1		05/17/22 09:33		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	58.4	mg/L	1.2	0.43	1		05/07/22 01:12	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-24A-20220503 Lab ID: 10607062005 Collected: 05/03/22 13:55 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 21:57	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 21:57	64742-65-0	
Surrogates									
o-Terphenyl (S)	57	%	50-150		1	05/06/22 15:19	05/10/22 21:57	84-15-1	
n-Triacontane (S)	62	%	50-150		1	05/06/22 15:19	05/10/22 21:57		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/12/22 16:11	05/12/22 16:11		
Surrogates									
a,a,a-Trifluorotoluene (FID)	112	%	78.0-120		1	05/12/22 16:11	05/12/22 16:11	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	55500	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:20		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.83	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:11	7440-38-2	
Manganese, Dissolved	284	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 15:11	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0068	1	05/05/22 17:40	05/09/22 18:04	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0060	1	05/05/22 17:40	05/09/22 18:04	208-96-8	
Anthracene	ND	ug/L	0.040	0.0053	1	05/05/22 17:40	05/09/22 18:04	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	05/05/22 17:40	05/09/22 18:04	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	05/05/22 17:40	05/09/22 18:04	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0094	1	05/05/22 17:40	05/09/22 18:04	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0080	1	05/05/22 17:40	05/09/22 18:04	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0082	1	05/05/22 17:40	05/09/22 18:04	207-08-9	
Chrysene	ND	ug/L	0.040	0.0093	1	05/05/22 17:40	05/09/22 18:04	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/05/22 17:40	05/09/22 18:04	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/05/22 17:40	05/09/22 18:04	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	05/05/22 17:40	05/09/22 18:04	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/05/22 17:40	05/09/22 18:04	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0067	1	05/05/22 17:40	05/09/22 18:04	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0082	1	05/05/22 17:40	05/09/22 18:04	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0087	1	05/05/22 17:40	05/09/22 18:04	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/05/22 17:40	05/09/22 18:04	85-01-8	
Pyrene	ND	ug/L	0.040	0.0098	1	05/05/22 17:40	05/09/22 18:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%	52-125		1	05/05/22 17:40	05/09/22 18:04	321-60-8	
p-Terphenyl-d14 (S)	86	%	54-125		1	05/05/22 17:40	05/09/22 18:04	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-24A-20220503 Lab ID: 10607062005 Collected: 05/03/22 13:55 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/05/22 18:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 18:00	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 18:00	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 18:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 18:00	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		05/05/22 18:00	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/05/22 18:00	460-00-4	
Toluene-d8 (S)	105	%.	75-125		1		05/05/22 18:00	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	67.8	mg/L	5.0	1.8	1		05/17/22 09:36		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	3.7	mg/L	1.2	0.43	1		05/07/22 01:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-08-20220503 Lab ID: 10607062006 Collected: 05/03/22 15:25 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.38J	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 22:09	68334-30-5	
Motor Oil Range SG	0.18J	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 22:09	64742-65-0	
Surrogates									
o-Terphenyl (S)	60	%	50-150		1	05/06/22 15:19	05/10/22 22:09	84-15-1	
n-Triacontane (S)	66	%	50-150		1	05/06/22 15:19	05/10/22 22:09		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/12/22 16:32	05/12/22 16:32		
Surrogates									
a,a,a-Trifluorotoluene (FID)	110	%	78.0-120		1	05/12/22 16:32	05/12/22 16:32	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	52600	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:22		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.47J	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:18	7440-38-2	
Manganese, Dissolved	1640	ug/L	5.0	2.0	10	05/10/22 05:30	05/17/22 15:21	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.10	ug/L	0.040	0.0068	1	05/10/22 11:11	05/11/22 15:12	83-32-9	B
Acenaphthylene	ND	ug/L	0.040	0.0060	1	05/10/22 11:11	05/11/22 15:12	208-96-8	
Anthracene	ND	ug/L	0.040	0.0053	1	05/10/22 11:11	05/11/22 15:12	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	05/10/22 11:11	05/11/22 15:12	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	05/10/22 11:11	05/11/22 15:12	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0094	1	05/10/22 11:11	05/11/22 15:12	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0080	1	05/10/22 11:11	05/11/22 15:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0082	1	05/10/22 11:11	05/11/22 15:12	207-08-9	
Chrysene	ND	ug/L	0.040	0.0093	1	05/10/22 11:11	05/11/22 15:12	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/10/22 11:11	05/11/22 15:12	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/10/22 11:11	05/11/22 15:12	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	05/10/22 11:11	05/11/22 15:12	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 11:11	05/11/22 15:12	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0067	1	05/10/22 11:11	05/11/22 15:12	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0082	1	05/10/22 11:11	05/11/22 15:12	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0087	1	05/10/22 11:11	05/11/22 15:12	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/10/22 11:11	05/11/22 15:12	85-01-8	
Pyrene	ND	ug/L	0.040	0.0098	1	05/10/22 11:11	05/11/22 15:12	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	58	%	52-125		1	05/10/22 11:11	05/11/22 15:12	321-60-8	
p-Terphenyl-d14 (S)	62	%	54-125		1	05/10/22 11:11	05/11/22 15:12	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-08-20220503		Lab ID: 10607062006		Collected: 05/03/22 15:25		Received: 05/05/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/05/22 18:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 18:16	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 18:16	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 18:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 18:16	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/05/22 18:16	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/05/22 18:16	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		05/05/22 18:16	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	31.5	mg/L	5.0	1.8	1		05/17/22 09:48		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	70.0	mg/L	1.2	0.43	1		05/07/22 01:44	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-Z1-20220503 Lab ID: 10607062007 Collected: 05/03/22 15:30 Received: 05/05/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.36J	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 22:20	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 22:20	64742-65-0	
Surrogates									
o-Terphenyl (S)	74	%	50-150		1	05/06/22 15:19	05/10/22 22:20	84-15-1	
n-Triacontane (S)	78	%	50-150		1	05/06/22 15:19	05/10/22 22:20		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/12/22 16:54	05/12/22 16:54		
Surrogates									
a,a,a-Trifluorotoluene (FID)	111	%	78.0-120		1	05/12/22 16:54	05/12/22 16:54	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	52000	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:24		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.50	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:25	7440-38-2	
Manganese, Dissolved	1540	ug/L	5.0	2.0	10	05/10/22 05:30	05/17/22 15:28	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.042	0.0072	1	05/05/22 17:40	05/09/22 18:44	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0063	1	05/05/22 17:40	05/09/22 18:44	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	05/05/22 17:40	05/09/22 18:44	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0094	1	05/05/22 17:40	05/09/22 18:44	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0092	1	05/05/22 17:40	05/09/22 18:44	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0099	1	05/05/22 17:40	05/09/22 18:44	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	05/05/22 17:40	05/09/22 18:44	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0086	1	05/05/22 17:40	05/09/22 18:44	207-08-9	
Chrysene	ND	ug/L	0.042	0.0098	1	05/05/22 17:40	05/09/22 18:44	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	05/05/22 17:40	05/09/22 18:44	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	05/05/22 17:40	05/09/22 18:44	206-44-0	
Fluorene	ND	ug/L	0.042	0.0063	1	05/05/22 17:40	05/09/22 18:44	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	05/05/22 17:40	05/09/22 18:44	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.042	0.0070	1	05/05/22 17:40	05/09/22 18:44	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0086	1	05/05/22 17:40	05/09/22 18:44	91-57-6	
Naphthalene	ND	ug/L	0.042	0.0092	1	05/05/22 17:40	05/09/22 18:44	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	05/05/22 17:40	05/09/22 18:44	85-01-8	
Pyrene	ND	ug/L	0.042	0.010	1	05/05/22 17:40	05/09/22 18:44	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	66	%	52-125		1	05/05/22 17:40	05/09/22 18:44	321-60-8	
p-Terphenyl-d14 (S)	85	%	54-125		1	05/05/22 17:40	05/09/22 18:44	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607062

Sample: PEO-MW-Z1-20220503		Lab ID: 10607062007		Collected: 05/03/22 15:30		Received: 05/05/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/05/22 18:33	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/05/22 18:33	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/05/22 18:33	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/05/22 18:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/05/22 18:33	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		05/05/22 18:33	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/05/22 18:33	460-00-4	
Toluene-d8 (S)	103	%.	75-125		1		05/05/22 18:33	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	31.3	mg/L	5.0	1.8	1		05/17/22 09:51		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	68.2	mg/L	1.2	0.43	1		05/07/22 02:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch:	1861963	Analysis Method:	NWTPH-Gx
QC Batch Method:	8021B/NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10607062001, 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

METHOD BLANK: R3791523-2

Matrix: Water

Associated Lab Samples: 10607062001, 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	ND	100	31.6	05/12/22 13:57	
a,a,a-Trifluorotoluene (FID)	%	112	78.0-120		05/12/22 13:57	

LABORATORY CONTROL SAMPLE: R3791523-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	4680	85.1	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			102	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3791523-3

R3791523-4

Parameter	Units	L1490993-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	54000	27500	27500	68600	72200	53.1	66.2	10.0-155	5.11	21	E
a,a,a-Trifluorotoluene (FID)	%						96.9	96.6	78.0-120			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch:	1861963	Analysis Method:	NWTPH-Gx
QC Batch Method:	NWTPHGX	Analysis Description:	VOA (GC) NWTPHGX
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10607062001, 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

METHOD BLANK: R3791523-2

Matrix: Water

Associated Lab Samples: 10607062001, 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	ND	100	31.6	05/12/22 13:57	
a,a,a-Trifluorotoluene (FID)	%	112	78.0-120		05/12/22 13:57	

LABORATORY CONTROL SAMPLE: R3791523-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	4680	85.1	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			102	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3791523-3

R3791523-4

Parameter	Units	L1490993-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	54000	27500	27500	68600	72200	53.1	66.2	10.0-155	5.11	21	E
a,a,a-Trifluorotoluene (FID)	%						96.9	96.6	78.0-120			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch:	813813	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007		

METHOD BLANK: 4315100

Matrix: Water

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	05/17/22 14:18	
Manganese, Dissolved	ug/L	ND	0.50	0.20	05/17/22 14:18	

LABORATORY CONTROL SAMPLE: 4315101

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	106	106	80-120	
Manganese, Dissolved	ug/L	100	103	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4315102 4315103

Parameter	Units	10607062002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	10.1	100	100	118	118	108	108	75-125	0	20	
Manganese, Dissolved	ug/L	3.1	100	100	110	110	107	107	75-125	0	20	

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QUALITY CONTROL DATA

Project: 0633086.02
Pace Project No.: 10607062

QC Batch:	813429	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607062001, 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

METHOD BLANK: 4312703 Matrix: Water
Associated Lab Samples: 10607062001, 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/05/22 13:19	
Ethylbenzene	ug/L	ND	1.0	0.11	05/05/22 13:19	
m&p-Xylene	ug/L	ND	2.0	0.20	05/05/22 13:19	
o-Xylene	ug/L	ND	1.0	0.18	05/05/22 13:19	
Toluene	ug/L	ND	1.0	0.10	05/05/22 13:19	
1,2-Dichlorobenzene-d4 (S)	%	101	75-125		05/05/22 13:19	
4-Bromofluorobenzene (S)	%	98	75-125		05/05/22 13:19	
Toluene-d8 (S)	%	102	75-125		05/05/22 13:19	

LABORATORY CONTROL SAMPLE: 4312704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.2	101	73-125	
Ethylbenzene	ug/L	20	20.0	100	75-125	
m&p-Xylene	ug/L	40	40.6	101	72-125	
o-Xylene	ug/L	20	20.7	103	73-125	
Toluene	ug/L	20	19.2	96	74-125	
1,2-Dichlorobenzene-d4 (S)	%			99	75-125	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323174 4323175

Parameter	Units	10606664001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	<0.10	20	20	13.8	12.3	69	62	65-140	11	30	M1
Ethylbenzene	ug/L	<0.11	20	20	13.1	11.3	66	57	66-126	15	30	M1
m&p-Xylene	ug/L	<0.20	40	40	26.1	22.9	65	57	69-134	13	30	M1
o-Xylene	ug/L	<0.18	20	20	13.8	11.8	69	59	73-133	15	30	M1
Toluene	ug/L	<0.10	20	20	12.8	11.7	64	59	69-131	8	30	M1
1,2-Dichlorobenzene-d4 (S)	%						100	99	75-125			
4-Bromofluorobenzene (S)	%						102	100	75-125			
Toluene-d8 (S)	%						96	98	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch: 813437

Analysis Method: EPA 8270E by SIM

QC Batch Method: EPA Mod. 3510C

Analysis Description: 8270E Water PAH by SIM MSSV

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607062005, 10607062007

METHOD BLANK: 4312731

Matrix: Water

Associated Lab Samples: 10607062005, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	05/09/22 10:08	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	05/09/22 10:08	
Acenaphthene	ug/L	0.0092J	0.040	0.0069	05/09/22 10:08	
Acenaphthylene	ug/L	ND	0.040	0.0061	05/09/22 10:08	
Anthracene	ug/L	ND	0.040	0.0054	05/09/22 10:08	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	05/09/22 10:08	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/09/22 10:08	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	05/09/22 10:08	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	05/09/22 10:08	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	05/09/22 10:08	
Chrysene	ug/L	0.017J	0.040	0.0094	05/09/22 10:08	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	05/09/22 10:08	
Fluoranthene	ug/L	0.020J	0.040	0.014	05/09/22 10:08	
Fluorene	ug/L	0.0074J	0.040	0.0060	05/09/22 10:08	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	05/09/22 10:08	
Naphthalene	ug/L	0.016J	0.040	0.0088	05/09/22 10:08	
Phenanthrene	ug/L	0.018J	0.040	0.012	05/09/22 10:08	
Pyrene	ug/L	0.016J	0.040	0.0099	05/09/22 10:08	
2-Fluorobiphenyl (S)	%	60	52-125		05/09/22 10:08	
p-Terphenyl-d14 (S)	%	91	54-125		05/09/22 10:08	

LABORATORY CONTROL SAMPLE: 4312732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.76	76	43-125	
2-Methylnaphthalene	ug/L	1	0.80	80	42-125	
Acenaphthene	ug/L	1	0.81	81	56-125	
Acenaphthylene	ug/L	1	0.78	78	55-125	
Anthracene	ug/L	1	1.0	101	64-125	
Benzo(a)anthracene	ug/L	1	0.94	94	65-125	
Benzo(a)pyrene	ug/L	1	0.92	92	64-125	
Benzo(b)fluoranthene	ug/L	1	0.92	92	70-125	
Benzo(g,h,i)perylene	ug/L	1	0.91	91	49-125	
Benzo(k)fluoranthene	ug/L	1	0.94	94	69-125	
Chrysene	ug/L	1	0.98	98	70-125	
Dibenz(a,h)anthracene	ug/L	1	0.86	86	41-125	
Fluoranthene	ug/L	1	0.98	98	67-125	
Fluorene	ug/L	1	0.83	83	59-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.80	80	57-125	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

LABORATORY CONTROL SAMPLE: 4312732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.81	81	49-125	
Phenanthrene	ug/L	1	1.0	101	65-125	
Pyrene	ug/L	1	0.97	97	67-125	
2-Fluorobiphenyl (S)	%			66	52-125	
p-Terphenyl-d14 (S)	%			95	54-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4313272 4313273

Parameter	Units	10607753001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	<0.022	3.3	3.3	3.0	3.0	91	89	30-150	1	30	
2-Methylnaphthalene	ug/L	<0.028	3.3	3.3	2.3	2.3	70	69	35-125	0	30	
Acenaphthene	ug/L	<0.023	3.3	3.3	2.6	2.5	79	76	45-125	4	30	
Acenaphthylene	ug/L	<0.020	3.3	3.3	2.4	2.3	72	70	47-125	3	30	
Anthracene	ug/L	0.030J	3.3	3.3	3.2	3.2	96	97	44-125	0	30	
Benzo(a)anthracene	ug/L	<0.030	3.3	3.3	2.6	2.7	78	80	43-125	4	30	
Benzo(a)pyrene	ug/L	<0.030	3.3	3.3	2.9	3.2	88	96	36-125	9	30	
Benzo(b)fluoranthene	ug/L	<0.032	3.3	3.3	2.6	2.7	79	82	38-125	3	30	
Benzo(g,h,i)perylene	ug/L	<0.027	3.3	3.3	3.2	3.4	96	101	30-125	5	30	
Benzo(k)fluoranthene	ug/L	<0.028	3.3	3.3	3.3	3.5	98	106	32-131	8	30	
Chrysene	ug/L	<0.031	3.3	3.3	3.4	3.8	103	113	40-125	9	30	
Dibenz(a,h)anthracene	ug/L	<0.026	3.3	3.3	3.1	3.2	94	96	30-125	2	30	
Fluoranthene	ug/L	<0.047	3.3	3.3	2.9	3.0	86	89	56-125	4	30	
Fluorene	ug/L	<0.020	3.3	3.3	2.6	2.4	77	72	46-125	7	30	
Indeno(1,2,3-cd)pyrene	ug/L	<0.037	3.3	3.3	2.3	2.7	68	81	30-125	17	30	
Naphthalene	ug/L	<0.029	3.3	3.3	2.7	2.7	80	81	42-125	2	30	
Phenanthrene	ug/L	<0.041	3.3	3.3	2.6	2.6	77	78	49-125	2	30	
Pyrene	ug/L	<0.033	3.3	3.3	3.5	3.8	105	114	50-125	8	30	
2-Fluorobiphenyl (S)	%						76	71	52-125			P1
p-Terphenyl-d14 (S)	%						99	113	54-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch:	814178	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062006

METHOD BLANK: 4316471

Matrix: Water

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	05/11/22 10:28	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	05/11/22 10:28	
Acenaphthene	ug/L	0.012J	0.040	0.0069	05/11/22 10:28	
Acenaphthylene	ug/L	ND	0.040	0.0061	05/11/22 10:28	
Anthracene	ug/L	ND	0.040	0.0054	05/11/22 10:28	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	05/11/22 10:28	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/11/22 10:28	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	05/11/22 10:28	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	05/11/22 10:28	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	05/11/22 10:28	
Chrysene	ug/L	ND	0.040	0.0094	05/11/22 10:28	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	05/11/22 10:28	
Fluoranthene	ug/L	ND	0.040	0.014	05/11/22 10:28	
Fluorene	ug/L	ND	0.040	0.0060	05/11/22 10:28	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	05/11/22 10:28	
Naphthalene	ug/L	0.018J	0.040	0.0088	05/11/22 10:28	
Phenanthrene	ug/L	0.013J	0.040	0.012	05/11/22 10:28	
Pyrene	ug/L	ND	0.040	0.0099	05/11/22 10:28	
2-Fluorobiphenyl (S)	%	75	52-125		05/11/22 10:28	
p-Terphenyl-d14 (S)	%	71	54-125		05/11/22 10:28	

LABORATORY CONTROL SAMPLE & LCSD: 4316472

4316473

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.67	0.79	67	79	43-125	16	20	
2-Methylnaphthalene	ug/L	1	0.63	0.69	63	69	42-125	9	20	
Acenaphthene	ug/L	1	0.75	0.75	75	75	56-125	1	20	
Acenaphthylene	ug/L	1	0.75	0.77	75	77	55-125	3	20	
Anthracene	ug/L	1	0.78	0.87	78	87	64-125	11	20	
Benzo(a)anthracene	ug/L	1	0.71	0.73	71	73	65-125	3	20	
Benzo(a)pyrene	ug/L	1	0.77	0.80	77	80	64-125	4	20	
Benzo(b)fluoranthene	ug/L	1	0.70	0.78	70	78	70-125	11	20	
Benzo(g,h,i)perylene	ug/L	1	0.67	0.68	67	68	49-125	0	20	
Benzo(k)fluoranthene	ug/L	1	0.82	0.82	82	82	69-125	1	20	
Chrysene	ug/L	1	0.79	0.88	79	88	70-125	11	20	
Dibenz(a,h)anthracene	ug/L	1	0.63	0.63	63	63	41-125	0	20	
Fluoranthene	ug/L	1	0.74	0.79	74	79	67-125	6	20	
Fluorene	ug/L	1	0.74	0.74	74	74	59-125	0	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.72	0.72	72	72	57-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

LABORATORY CONTROL SAMPLE & LCSD: 4316472			4316473								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.68	0.73	68	73	49-125	7	20		
Phenanthrene	ug/L	1	0.67	0.74	67	74	65-125	10	20		
Pyrene	ug/L	1	0.75	0.80	75	80	67-125	6	20		
2-Fluorobiphenyl (S)	%.				71	70	52-125				
p-Terphenyl-d14 (S)	%.				73	78	54-125				

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch:	813598	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

METHOD BLANK: 4313529

Matrix: Water

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	05/10/22 20:38	
Motor Oil Range SG	mg/L	ND	0.40	0.18	05/10/22 20:38	
n-Triacontane (S)	%	62	50-150		05/10/22 20:38	
o-Terphenyl (S)	%	57	50-150		05/10/22 20:38	

LABORATORY CONTROL SAMPLE & LCSD: 4313530

4313531

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.3	1.4	67	68	50-150	2	20	
Motor Oil Range SG	mg/L	2	1.6	1.5	78	77	50-150	1	20	
n-Triacontane (S)	%				67	60	50-150			
o-Terphenyl (S)	%				64	65	50-150			

SAMPLE DUPLICATE: 4313532

Parameter	Units	10607062002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.22J	0.20J		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	61	58			
o-Terphenyl (S)	%	64	54			

SAMPLE DUPLICATE: 4313932

Parameter	Units	10607257005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	9.1	5.9	42	30	D6
Motor Oil Range SG	mg/L	0.27J	ND		30	
n-Triacontane (S)	%	56	60			
o-Terphenyl (S)	%	69	70			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch: 815598

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

METHOD BLANK: 4323564

Matrix: Water

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	05/17/22 08:49	

LABORATORY CONTROL SAMPLE & LCSD: 4323565

4323566

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.9	42.6	107	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323567

4323568

Parameter	Units	10607062002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	102	40	40	138	139	91	94	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323569

4323570

Parameter	Units	10607442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	285	40	40	327	327	106	106	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607062

QC Batch:	813594	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007

METHOD BLANK:	4313517	Matrix:	Water
Associated Lab Samples:	10607062002, 10607062003, 10607062004, 10607062005, 10607062006, 10607062007		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	05/06/22 18:16	

LABORATORY CONTROL SAMPLE: 4313518						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.7	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:												
4313519					4313520							
		10607062002	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Parameter	Units	Result										
Sulfate	mg/L	26.7	50	50	73.5	73.4	94	93	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:												
4313954					4313955							
		10607062003	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Parameter	Units	Result										
Sulfate	mg/L	62.0	50	50	105	106	87	88	80-120	0	20 E	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0633086.02

Pace Project No.: 10607062

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 adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.

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

P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607062

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607062002	PEO-MW-32-20220503	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607062003	PEO-MW-33-20220503	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607062004	PEO-MW-42-20220503	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607062005	PEO-MW-24A-20220503	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607062006	PEO-MW-08-20220503	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607062007	PEO-MW-Z1-20220503	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607062001	TRIP BLANK-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062002	PEO-MW-32-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062003	PEO-MW-33-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062004	PEO-MW-42-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062005	PEO-MW-24A-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062006	PEO-MW-08-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062007	PEO-MW-Z1-20220503	NWTPHGx	1861963	NWTPH-Gx	1861963
10607062002	PEO-MW-32-20220503	EPA 3010A	813270	EPA 6010D	814276
10607062003	PEO-MW-33-20220503	EPA 3010A	813270	EPA 6010D	814276
10607062004	PEO-MW-42-20220503	EPA 3010A	813270	EPA 6010D	814276
10607062005	PEO-MW-24A-20220503	EPA 3010A	813270	EPA 6010D	814276
10607062006	PEO-MW-08-20220503	EPA 3010A	813270	EPA 6010D	814276
10607062007	PEO-MW-Z1-20220503	EPA 3010A	813270	EPA 6010D	814276
10607062002	PEO-MW-32-20220503	EPA 3020A	813813	EPA 6020A	814255
10607062003	PEO-MW-33-20220503	EPA 3020A	813813	EPA 6020A	814255
10607062004	PEO-MW-42-20220503	EPA 3020A	813813	EPA 6020A	814255
10607062005	PEO-MW-24A-20220503	EPA 3020A	813813	EPA 6020A	814255
10607062006	PEO-MW-08-20220503	EPA 3020A	813813	EPA 6020A	814255
10607062007	PEO-MW-Z1-20220503	EPA 3020A	813813	EPA 6020A	814255
10607062002	PEO-MW-32-20220503	EPA Mod. 3510C	814178	EPA 8270E by SIM	814544
10607062003	PEO-MW-33-20220503	EPA Mod. 3510C	814178	EPA 8270E by SIM	814544
10607062004	PEO-MW-42-20220503	EPA Mod. 3510C	814178	EPA 8270E by SIM	814544
10607062005	PEO-MW-24A-20220503	EPA Mod. 3510C	813437	EPA 8270E by SIM	813903
10607062006	PEO-MW-08-20220503	EPA Mod. 3510C	814178	EPA 8270E by SIM	814544
10607062007	PEO-MW-Z1-20220503	EPA Mod. 3510C	813437	EPA 8270E by SIM	813903
10607062001	TRIP BLANK-20220503	EPA 8260D	813429		
10607062002	PEO-MW-32-20220503	EPA 8260D	813429		
10607062003	PEO-MW-33-20220503	EPA 8260D	813429		
10607062004	PEO-MW-42-20220503	EPA 8260D	813429		
10607062005	PEO-MW-24A-20220503	EPA 8260D	813429		
10607062006	PEO-MW-08-20220503	EPA 8260D	813429		
10607062007	PEO-MW-Z1-20220503	EPA 8260D	813429		
10607062002	PEO-MW-32-20220503	SM 2320B	815598		
10607062003	PEO-MW-33-20220503	SM 2320B	815598		
10607062004	PEO-MW-42-20220503	SM 2320B	815598		
10607062005	PEO-MW-24A-20220503	SM 2320B	815598		
10607062006	PEO-MW-08-20220503	SM 2320B	815598		
10607062007	PEO-MW-Z1-20220503	SM 2320B	815598		

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607062

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607062002	PEO-MW-32-20220503	EPA 300.0	813594		
10607062003	PEO-MW-33-20220503	EPA 300.0	813594		
10607062004	PEO-MW-42-20220503	EPA 300.0	813594		
10607062005	PEO-MW-24A-20220503	EPA 300.0	813594		
10607062006	PEO-MW-08-20220503	EPA 300.0	813594		
10607062007	PEO-MW-Z1-20220503	EPA 300.0	813594		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Pace
ANALYTICAL SERVICES

DC# Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Simple Condition Upon Receipt

Client Name: **ERM** Project #: **WO# : 10607062**

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

Tracking Number: ☒ See Exceptions
☒ ENV-FRM-MIN4-0142

PM: JMT Due Date: 05/19/22
 CLIENT: ERM-Oregon

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

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

Thermometer: ☒ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235)
☐ T7(0042) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **2.1, 1.1, 3.9, 3.3, 1.6 °C**

Correction Factor: **True** Cooler Temp Corrected w/temp blank: **2.1, 1.1, 3.9, 3.3, 1.6 °C**

Average Corrected Temp (no temp blank only): ☐ See Exceptions
 ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☒ N/A (water sample/Other:) Date/Initials of Person Examining Contents: **ED 5.5.22**

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome
Rush Turn Around Time Requested? ☐ Yes ☒ No	6. ☐ Turbidity ☒ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
Pace Containers Used? ☒ Yes ☐ No	9.
Containers Intact? ☒ Yes ☐ No	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☐ No ☐ N/A	11. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? ☒ Yes ☐ No	12. Sample # 002-007
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other	☐ NaOH ☒ HNO ₃ ☐ H ₂ SO ₄ ☐ Zinc Acetate
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	1/1
All containers needing preservation are found to be in compliance with EPA recommendation? ☒ Yes ☐ No ☐ N/A	Positive for Res. ☐ Yes ☒ No
(HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	Chlorine? ☐ Yes ☒ No
Exceptions: VOA , Coliform, TOC/DOC Oil and Grease, DRO3015 (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	pH Paper Lot# ☐ See Exception ☐ ENV-FRM-MIN4-0142
Headspace: In Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	Res. Chlorine ☐ 0-6 Roll ☐ 0-6 Strip ☐ 0-14 Strip
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	212521
Headspace: In VOA Vials (greater than 6mm)? ☐ Yes ☒ No ☐ N/A	13. See Exception ☐ ENV-FRM-MIN4-0140
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): 361506 (6)
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____ Field Data Required? ☐ Yes ☐ No

Project Manager Review: **Julie R...** Date: **5/5/22**

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

Labeled by: **ED (1)**

Internal Transfer Chain of Custody



☐ Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed: ☒ Yes ☐ No

Owner Received Date: 5/5/2022 Results Requested By: 5/19/2022



Workorder: 10607062

Workorder Name: 0633086.02

Report To

Subcontract To

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390

Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Requested Analysis

NWTPH-GX

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HCL V/G9H													L1490517 LAB USE ONLY
1	TRIP BLANK-20220503	PS	5/3/2022 08:00	10607062001	Water	3						X							-01
2	PEO-MW-32-20220503	PS	5/3/2022 08:55	10607062002	Water	3						X							-02
3	PEO-MW-33-20220503	PS	5/3/2022 10:55	10607062003	Water	3						X							-03
4	PEO-MW-42-20220503	PS	5/3/2022 12:30	10607062004	Water	3						X							-04
5	PEO-MW-24A-20220503	PS	5/3/2022 13:55	10607062005	Water	3						X							-05
6	PEO-MW-08-20220503	PS	5/3/2022 15:25	10607062006	Water	3						X							-06
7	PEO-MW-Z1-20220503	PS	5/3/2022 15:30	10607062007	Water	3						X							-07

Comments

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM pace	5/5/22 16:10	[Signature]	5/6/22 10 ⁰⁰
2				
3				

Cooler Temperature on Receipt	°C	Custody Seal (Y) or N	Received on Ice (Y) or N	Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

5466 8884 5280

Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y ☐ N	If Applicable	☐ Y ☐ N
COC Signed/Accurate:	☒ Y ☐ N	VOA Zero Headspace:	☒ Y ☐ N
Bottles arrive intact:	☒ Y ☐ N	Pres. Correct/Check:	☒ Y ☐ N
Correct bottles used:	☒ Y ☐ N		
Sufficient volume sent:	☒ Y ☐ N		
RAD Screen <0.5 mR/hr:	☒ Y ☐ N		

DRAFT 2410-24

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Fremont
Analytical

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info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086.02

Work Order Number: 2205165

May 23, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 7 sample(s) on 5/6/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086.02
Work Order: 2205165

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205165-001	TRIP BLANK-20220503	05/03/2022 8:00 AM	05/06/2022 9:53 AM
2205165-002	PEO-MW-32-20220503	05/03/2022 8:55 AM	05/06/2022 9:53 AM
2205165-003	PEO-MW-33-20220503	05/03/2022 10:55 AM	05/06/2022 9:53 AM
2205165-004	PEO-MW-42-20220503	05/03/2022 12:30 PM	05/06/2022 9:53 AM
2205165-005	PEO-MW-24A-20220503	05/03/2022 1:55 PM	05/06/2022 9:53 AM
2205165-006	PEO-MW-08-20220503	05/03/2022 3:25 PM	05/06/2022 9:53 AM
2205165-007	PEO-MW-Z1-20220503	05/03/2022 3:30 PM	05/06/2022 9:53 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2205165
Date Reported: 5/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205165-001

Collection Date: 5/3/2022 8:00:00 AM

Client Sample ID: TRIP BLANK-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/16/2022 10:54:54 PM
Surr: 1,4-Difluorobenzene	92.9	60 - 140		%Rec	1	5/16/2022 10:54:54 PM
Surr: Bromofluorobenzene	86.1	60 - 140		%Rec	1	5/16/2022 10:54:54 PM

Lab ID: 2205165-002

Collection Date: 5/3/2022 8:55:00 AM

Client Sample ID: PEO-MW-32-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36377

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6	*	µg/L	1	5/16/2022 8:15:39 PM
Surr: 1-Chlorooctadecane	74.9	60 - 140		%Rec	1	5/16/2022 8:15:39 PM

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2022 6:14:17 PM
Surr: 1,4-Difluorobenzene	92.4	60 - 140		%Rec	1	5/17/2022 6:14:17 PM
Surr: Bromofluorobenzene	88.8	60 - 140		%Rec	1	5/17/2022 6:14:17 PM



Analytical Report

Work Order: 2205165
Date Reported: 5/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205165-003

Collection Date: 5/3/2022 10:55:00 AM

Client Sample ID: PEO-MW-33-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36377

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.7	*	µg/L	1	5/16/2022 10:02:20 PM
Surr: 1-Chlorooctadecane	69.9	60 - 140		%Rec	1	5/16/2022 10:02:20 PM

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2022 6:55:49 PM
Surr: 1,4-Difluorobenzene	90.4	60 - 140		%Rec	1	5/17/2022 6:55:49 PM
Surr: Bromofluorobenzene	81.4	60 - 140		%Rec	1	5/17/2022 6:55:49 PM

Lab ID: 2205165-004

Collection Date: 5/3/2022 12:30:00 PM

Client Sample ID: PEO-MW-42-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36377

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.7	*	µg/L	1	5/16/2022 10:55:43 PM
Surr: 1-Chlorooctadecane	71.5	60 - 140		%Rec	1	5/16/2022 10:55:43 PM

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2022 7:37:28 PM
Surr: 1,4-Difluorobenzene	91.9	60 - 140		%Rec	1	5/17/2022 7:37:28 PM
Surr: Bromofluorobenzene	89.8	60 - 140		%Rec	1	5/17/2022 7:37:28 PM



Analytical Report

Work Order: 2205165
Date Reported: 5/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205165-005

Collection Date: 5/3/2022 1:55:00 PM

Client Sample ID: PEO-MW-24A-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36377

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6	*	µg/L	1	5/17/2022 12:42:08 AM
Surr: 1-Chlorooctadecane	82.0	60 - 140		%Rec	1	5/17/2022 12:42:08 AM

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2022 8:18:54 PM
Surr: 1,4-Difluorobenzene	90.6	60 - 140		%Rec	1	5/17/2022 8:18:54 PM
Surr: Bromofluorobenzene	76.6	60 - 140		%Rec	1	5/17/2022 8:18:54 PM

Lab ID: 2205165-006

Collection Date: 5/3/2022 3:25:00 PM

Client Sample ID: PEO-MW-08-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36377

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.7	*	µg/L	1	5/17/2022 1:35:11 AM
Surr: 1-Chlorooctadecane	78.2	60 - 140		%Rec	1	5/17/2022 1:35:11 AM

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2022 9:00:22 PM
Surr: 1,4-Difluorobenzene	90.0	60 - 140		%Rec	1	5/17/2022 9:00:22 PM
Surr: Bromofluorobenzene	84.1	60 - 140		%Rec	1	5/17/2022 9:00:22 PM



Analytical Report

Work Order: 2205165
Date Reported: 5/23/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205165-007

Collection Date: 5/3/2022 3:30:00 PM

Client Sample ID: PEO-MW-Z1-20220503

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36377

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6	*	µg/L	1	5/17/2022 2:28:26 AM
Surr: 1-Chlorooctadecane	63.8	60 - 140		%Rec	1	5/17/2022 2:28:26 AM

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36462

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2022 9:41:43 PM
Surr: 1,4-Difluorobenzene	89.8	60 - 140		%Rec	1	5/17/2022 9:41:43 PM
Surr: Bromofluorobenzene	76.5	60 - 140		%Rec	1	5/17/2022 9:41:43 PM

Work Order: 2205165
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-36377		SampType: MBLK			Units: µg/L		Prep Date: 5/10/2022			RunNo: 75558		
Client ID: MBLKW		Batch ID: 36377			Analysis Date: 5/16/2022			SeqNo: 1550465				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	40.0		0	0						*
Surr: 1-Chlorooctadecane	318		399.6		79.7	60	140				

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Sample ID: 2205165-002AMS		SampType: MS			Units: µg/L		Prep Date: 5/10/2022			RunNo: 75558		
Client ID: PEO-MW-32-20220503		Batch ID: 36377						Analysis Date: 5/16/2022			SeqNo: 1550467	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	245	39.8	497.8	0	49.3	70	130				S
Surr: 1-Chlorooctadecane	329		398.2		82.7	60	140				

NOTES:

S - Outlying spike recovery observed.

Sample ID: 2205165-004ADUP		SampType: DUP			Units: µg/L		Prep Date: 5/10/2022			RunNo: 75558		
Client ID: PEO-MW-42-20220503		Batch ID: 36377						Analysis Date: 5/16/2022			SeqNo: 1550470	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	44.5		0	0			0	0	25	*
Surr: 1-Chlorooctadecane	300		444.6		67.4	60	140		0		

NOTES:

* - Associated LCS does not meet acceptance criteria; refer to QC summary.

Sample ID: LCS-36377		SampType: LCS			Units: µg/L		Prep Date: 5/10/2022			RunNo: 75558		
Client ID: LCSW		Batch ID: 36377			Analysis Date: 5/17/2022			SeqNo: 1550479				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	264	40.0	500.2	0	52.8	70	130				S
Surr: 1-Chlorooctadecane	365		400.2		91.3	60	140				

NOTES:

S - Outlying spike recovery observed (C10-C12). Samples will be qualified with a *.

Work Order: 2205165
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-36462		SampType: LCS			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75622		
Client ID: LCSW		Batch ID: 36462			Analysis Date: 5/16/2022					SeqNo: 1551588		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	205	25.0	200.0	0	102	70	130				
Surr: 1,4-Difluorobenzene	58.7		50.00		117	60	140				
Surr: Bromofluorobenzene	45.0		50.00		89.9	60	140				

Sample ID: MB-36462		SampType: MBLK			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75622		
Client ID: MBLKW		Batch ID: 36462			Analysis Date: 5/16/2022					SeqNo: 1551518		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	46.0		50.00		91.9	60	140				
Surr: Bromofluorobenzene	38.9		50.00		77.9	60	140				

Sample ID: 2205165-007BDUP		SampType: DUP			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75622		
Client ID: PEO-MW-Z1-20220503		Batch ID: 36462			Analysis Date: 5/17/2022			SeqNo: 1551585				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	44.8		50.00		89.5	60	140		0		
Surr: Bromofluorobenzene	41.9		50.00		83.7	60	140		0		

Client Name: PACEMI

Work Order Number: 2205165

Logged by: Clare Griggs

Date Received: 5/6/2022 9:53:00 AM

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	4.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

May 31, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086.02
Pace Project No.: 10607257

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 06, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086.02
Pace Project No.: 10607257

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064

Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
Please Note: Applicable air certifications are denoted with an asterisk ().

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008

Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086.02

Pace Project No.: 10607257

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006
Texas Mold Certification #: LAB0152
Texas Certification #: T 104704245-17-14
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086.02

Pace Project No.: 10607257

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10607257001	TRIP BLANK-20220504	Water	05/04/22 08:00	05/06/22 08:50
10607257002	PEO-MW-06-20220504	Water	05/04/22 09:40	05/06/22 08:50
10607257003	PEO-MW-19-20220504	Water	05/04/22 11:10	05/06/22 08:50
10607257004	PEO-MW-31-20220504	Water	05/04/22 12:50	05/06/22 08:50
10607257005	PEO-MW-30-20220504	Water	05/04/22 14:20	05/06/22 08:50
10607257006	PEO-MW-18-20220504	Water	05/04/22 15:30	05/06/22 08:50
10607257007	PEO-MW-26-20220505	Water	05/05/22 10:15	05/06/22 08:50
10607257008	PEO-MW-44-20220505	Water	05/05/22 13:20	05/06/22 08:50
10607257009	PEO-MW-2z2-20220505	Water	05/05/22 13:25	05/06/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607257

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607257001	TRIP BLANK-20220504	NWTPH-Gx	JHH	2	PAN
		EPA 8260D	JEM	8	PASI-M
10607257002	PEO-MW-06-20220504	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
10607257003	PEO-MW-19-20220504	EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10607257004	PEO-MW-31-20220504	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
10607257005	PEO-MW-30-20220504	SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10607257006	PEO-MW-18-20220504	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607257

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607257007	PEO-MW-26-20220505	EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
10607257008	PEO-MW-44-20220505	EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
10607257009	PEO-MW-2z2-20220505	NWTPH-Gx	JHH	2	PAN
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: TRIP BLANK-20220504		Lab ID: 10607257001		Collected: 05/04/22 08:00		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	49.7J	ug/L	100	31.6	1	05/15/22 11:36	05/15/22 11:36		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	101	%	78.0-120		1	05/15/22 11:36	05/15/22 11:36	98-08-8FID	
8260D MSV UST Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/12/22 13:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 13:32	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/12/22 13:32	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 13:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/12/22 13:32	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/12/22 13:32	2199-69-1	
4-Bromofluorobenzene (S)	102	%	75-125		1		05/12/22 13:32	460-00-4	
Toluene-d8 (S)	101	%	75-125		1		05/12/22 13:32	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-06-20220504 Lab ID: 10607257002 Collected: 05/04/22 09:40 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.94	mg/L	0.42	0.12	1	05/06/22 15:19	05/10/22 22:31	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	05/06/22 15:19	05/10/22 22:31	64742-65-0	
Surrogates									
o-Terphenyl (S)	62	%	50-150		1	05/06/22 15:19	05/10/22 22:31	84-15-1	
n-Triacontane (S)	58	%	50-150		1	05/06/22 15:19	05/10/22 22:31		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	1640	ug/L	100	31.6	1	05/15/22 16:02	05/15/22 16:02		
Surrogates									
a,a,a-Trifluorotoluene (FID)	96.5	%	78.0-120		1	05/15/22 16:02	05/15/22 16:02	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	20600	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:25		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	5.2	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:38	7440-38-2	
Manganese, Dissolved	409	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 15:38	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.96	ug/L	0.045	0.0078	1	05/06/22 14:08	05/09/22 16:36	83-32-9	
Acenaphthylene	0.33	ug/L	0.045	0.0069	1	05/06/22 14:08	05/09/22 16:36	208-96-8	
Anthracene	0.17	ug/L	0.045	0.0061	1	05/06/22 14:08	05/09/22 16:36	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.045	0.010	1	05/06/22 14:08	05/09/22 16:36	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.045	0.010	1	05/06/22 14:08	05/09/22 16:36	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.045	0.011	1	05/06/22 14:08	05/09/22 16:36	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.045	0.0092	1	05/06/22 14:08	05/09/22 16:36	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.045	0.0094	1	05/06/22 14:08	05/09/22 16:36	207-08-9	
Chrysene	ND	ug/L	0.045	0.011	1	05/06/22 14:08	05/09/22 16:36	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.045	0.0090	1	05/06/22 14:08	05/09/22 16:36	53-70-3	
Fluoranthene	0.040J	ug/L	0.045	0.016	1	05/06/22 14:08	05/09/22 16:36	206-44-0	
Fluorene	2.2	ug/L	0.045	0.0069	1	05/06/22 14:08	05/09/22 16:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.045	0.013	1	05/06/22 14:08	05/09/22 16:36	193-39-5	
1-Methylnaphthalene	58.4	ug/L	0.45	0.076	10	05/06/22 14:08	05/11/22 15:34	90-12-0	
2-Methylnaphthalene	73.5	ug/L	0.45	0.094	10	05/06/22 14:08	05/11/22 15:34	91-57-6	
Naphthalene	6.0	ug/L	0.045	0.010	1	05/06/22 14:08	05/09/22 16:36	91-20-3	
Phenanthrene	0.93	ug/L	0.045	0.014	1	05/06/22 14:08	05/09/22 16:36	85-01-8	
Pyrene	0.043J	ug/L	0.045	0.011	1	05/06/22 14:08	05/09/22 16:36	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	76	%	52-125		1	05/06/22 14:08	05/09/22 16:36	321-60-8	
p-Terphenyl-d14 (S)	72	%	54-125		1	05/06/22 14:08	05/09/22 16:36	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-06-20220504		Lab ID: 10607257002		Collected: 05/04/22 09:40		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/12/22 13:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 13:49	100-41-4	
Toluene	0.40J	ug/L	1.0	0.10	1		05/12/22 13:49	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 13:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/12/22 13:49	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125		1		05/12/22 13:49	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/12/22 13:49	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/12/22 13:49	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	36.9	mg/L	5.0	1.8	1		05/17/22 09:54		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	1.1J	mg/L	1.2	0.43	1		05/18/22 18:44	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-19-20220504 Lab ID: 10607257003 Collected: 05/04/22 11:10 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.43	0.13	1	05/06/22 15:19	05/10/22 22:43	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.20	1	05/06/22 15:19	05/10/22 22:43	64742-65-0	
Surrogates									
o-Terphenyl (S)	60	%	50-150		1	05/06/22 15:19	05/10/22 22:43	84-15-1	
n-Triacontane (S)	66	%	50-150		1	05/06/22 15:19	05/10/22 22:43		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	63.2J	ug/L	100	31.6	1	05/15/22 16:23	05/15/22 16:23		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	101	%	78.0-120		1	05/15/22 16:23	05/15/22 16:23	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	81300	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:27		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.26J	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:45	7440-38-2	
Manganese, Dissolved	43.1	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 15:45	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.011J	ug/L	0.039	0.0068	1	05/06/22 14:08	05/09/22 16:57	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0060	1	05/06/22 14:08	05/09/22 16:57	208-96-8	
Anthracene	ND	ug/L	0.039	0.0053	1	05/06/22 14:08	05/09/22 16:57	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0089	1	05/06/22 14:08	05/09/22 16:57	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0087	1	05/06/22 14:08	05/09/22 16:57	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0093	1	05/06/22 14:08	05/09/22 16:57	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0080	1	05/06/22 14:08	05/09/22 16:57	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0081	1	05/06/22 14:08	05/09/22 16:57	207-08-9	
Chrysene	ND	ug/L	0.039	0.0092	1	05/06/22 14:08	05/09/22 16:57	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/06/22 14:08	05/09/22 16:57	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.014	1	05/06/22 14:08	05/09/22 16:57	206-44-0	
Fluorene	0.018J	ug/L	0.039	0.0059	1	05/06/22 14:08	05/09/22 16:57	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.011	1	05/06/22 14:08	05/09/22 16:57	193-39-5	
1-Methylnaphthalene	0.043	ug/L	0.039	0.0066	1	05/06/22 14:08	05/09/22 16:57	90-12-0	
2-Methylnaphthalene	0.042	ug/L	0.039	0.0081	1	05/06/22 14:08	05/09/22 16:57	91-57-6	
Naphthalene	0.017J	ug/L	0.039	0.0086	1	05/06/22 14:08	05/09/22 16:57	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.012	1	05/06/22 14:08	05/09/22 16:57	85-01-8	
Pyrene	ND	ug/L	0.039	0.0097	1	05/06/22 14:08	05/09/22 16:57	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%	52-125		1	05/06/22 14:08	05/09/22 16:57	321-60-8	
p-Terphenyl-d14 (S)	82	%	54-125		1	05/06/22 14:08	05/09/22 16:57	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-19-20220504		Lab ID: 10607257003		Collected: 05/04/22 11:10		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/12/22 14:21	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 14:21	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/12/22 14:21	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 14:21	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/12/22 14:21	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		05/12/22 14:21	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/12/22 14:21	460-00-4	
Toluene-d8 (S)	106	%.	75-125		1		05/12/22 14:21	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	122	mg/L	5.0	1.8	1		05/17/22 09:59		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	9.1	mg/L	1.2	0.43	1		05/18/22 18:58	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-31-20220504 Lab ID: 10607257004 Collected: 05/04/22 12:50 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.23J	mg/L	0.50	0.15	1	05/12/22 15:29	05/13/22 14:09	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.50	0.23	1	05/12/22 15:29	05/13/22 14:09	64742-65-0	
Surrogates									
o-Terphenyl (S)	73	%	50-150		1	05/12/22 15:29	05/13/22 14:09	84-15-1	
n-Triacontane (S)	70	%	50-150		1	05/12/22 15:29	05/13/22 14:09		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	49.5J	ug/L	100	31.6	1	05/15/22 16:45	05/15/22 16:45		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	101	%	78.0-120		1	05/15/22 16:45	05/15/22 16:45	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	94300	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:28		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.24J	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:52	7440-38-2	
Manganese, Dissolved	28.7	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 15:52	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.20	ug/L	0.041	0.0070	1	05/06/22 14:08	05/09/22 17:42	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0062	1	05/06/22 14:08	05/09/22 17:42	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	05/06/22 14:08	05/09/22 17:42	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0092	1	05/06/22 14:08	05/09/22 17:42	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0090	1	05/06/22 14:08	05/09/22 17:42	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0097	1	05/06/22 14:08	05/09/22 17:42	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0083	1	05/06/22 14:08	05/09/22 17:42	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0084	1	05/06/22 14:08	05/09/22 17:42	207-08-9	
Chrysene	ND	ug/L	0.041	0.0096	1	05/06/22 14:08	05/09/22 17:42	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	05/06/22 14:08	05/09/22 17:42	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.014	1	05/06/22 14:08	05/09/22 17:42	206-44-0	
Fluorene	0.013J	ug/L	0.041	0.0062	1	05/06/22 14:08	05/09/22 17:42	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.011	1	05/06/22 14:08	05/09/22 17:42	193-39-5	
1-Methylnaphthalene	0.017J	ug/L	0.041	0.0069	1	05/06/22 14:08	05/09/22 17:42	90-12-0	
2-Methylnaphthalene	0.015J	ug/L	0.041	0.0084	1	05/06/22 14:08	05/09/22 17:42	91-57-6	
Naphthalene	0.011J	ug/L	0.041	0.0090	1	05/06/22 14:08	05/09/22 17:42	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.012	1	05/06/22 14:08	05/09/22 17:42	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	05/06/22 14:08	05/09/22 17:42	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	79	%	52-125		1	05/06/22 14:08	05/09/22 17:42	321-60-8	
p-Terphenyl-d14 (S)	75	%	54-125		1	05/06/22 14:08	05/09/22 17:42	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-31-20220504		Lab ID: 10607257004		Collected: 05/04/22 12:50		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/12/22 14:38	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 14:38	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/12/22 14:38	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 14:38	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/12/22 14:38	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/12/22 14:38	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/12/22 14:38	460-00-4	
Toluene-d8 (S)	101	%	75-125		1		05/12/22 14:38	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	88.2	mg/L	5.0	1.8	1		05/17/22 10:06		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	34.1	mg/L	1.2	0.43	1		05/18/22 19:13	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-30-20220504 Lab ID: 10607257005 Collected: 05/04/22 14:20 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	9.1	mg/L	0.48	0.14	1	05/06/22 15:19	05/10/22 23:05	68334-30-5	D6
Motor Oil Range SG	0.27J	mg/L	0.48	0.22	1	05/06/22 15:19	05/10/22 23:05	64742-65-0	
Surrogates									
o-Terphenyl (S)	69	%	50-150		1	05/06/22 15:19	05/10/22 23:05	84-15-1	
n-Triacontane (S)	56	%	50-150		1	05/06/22 15:19	05/10/22 23:05		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	62.7J	ug/L	100	31.6	1	05/15/22 17:06	05/15/22 17:06		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	97.5	%	78.0-120		1	05/15/22 17:06	05/15/22 17:06	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	307000	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:30		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	7.3	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 15:59	7440-38-2	
Manganese, Dissolved	1630	ug/L	5.0	2.0	10	05/10/22 05:30	05/17/22 16:02	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	1.6	ug/L	0.041	0.0071	1	05/06/22 14:08	05/09/22 18:04	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0063	1	05/06/22 14:08	05/09/22 18:04	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	05/06/22 14:08	05/09/22 18:04	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0093	1	05/06/22 14:08	05/09/22 18:04	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0091	1	05/06/22 14:08	05/09/22 18:04	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0098	1	05/06/22 14:08	05/09/22 18:04	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0084	1	05/06/22 14:08	05/09/22 18:04	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0085	1	05/06/22 14:08	05/09/22 18:04	207-08-9	
Chrysene	ND	ug/L	0.041	0.0097	1	05/06/22 14:08	05/09/22 18:04	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0082	1	05/06/22 14:08	05/09/22 18:04	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.015	1	05/06/22 14:08	05/09/22 18:04	206-44-0	
Fluorene	ND	ug/L	0.041	0.0062	1	05/06/22 14:08	05/09/22 18:04	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.012	1	05/06/22 14:08	05/09/22 18:04	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	05/06/22 14:08	05/09/22 18:04	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0085	1	05/06/22 14:08	05/09/22 18:04	91-57-6	
Naphthalene	0.44	ug/L	0.041	0.0091	1	05/06/22 14:08	05/09/22 18:04	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.013	1	05/06/22 14:08	05/09/22 18:04	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	05/06/22 14:08	05/09/22 18:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	62	%	52-125		1	05/06/22 14:08	05/09/22 18:04	321-60-8	
p-Terphenyl-d14 (S)	63	%	54-125		1	05/06/22 14:08	05/09/22 18:04	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-30-20220504		Lab ID: 10607257005		Collected: 05/04/22 14:20		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.21J	ug/L	1.0	0.10	1		05/12/22 15:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 15:00	100-41-4	
Toluene	0.25J	ug/L	1.0	0.10	1		05/12/22 15:00	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 15:00	179601-23-1	
o-Xylene	0.23J	ug/L	1.0	0.18	1		05/12/22 15:00	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/12/22 15:00	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		05/12/22 15:00	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		05/12/22 15:00	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	173	mg/L	5.0	1.8	1		05/17/22 10:11		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	162	mg/L	6.0	2.1	5		05/18/22 21:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-18-20220504 Lab ID: 10607257006 Collected: 05/04/22 15:30 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.51	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 23:28	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 23:28	64742-65-0	
Surrogates									
o-Terphenyl (S)	65	%	50-150		1	05/06/22 15:19	05/10/22 23:28	84-15-1	
n-Triacontane (S)	68	%	50-150		1	05/06/22 15:19	05/10/22 23:28		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	57.7J	ug/L	100	31.6	1	05/15/22 17:28	05/15/22 17:28		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	96.9	%	78.0-120		1	05/15/22 17:28	05/15/22 17:28	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	143000	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:35		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	3.9	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 16:06	7440-38-2	
Manganese, Dissolved	900	ug/L	5.0	2.0	10	05/10/22 05:30	05/17/22 16:09	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.093	ug/L	0.040	0.0070	1	05/06/22 14:08	05/09/22 18:26	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	05/06/22 14:08	05/09/22 18:26	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/06/22 14:08	05/09/22 18:26	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	05/06/22 14:08	05/09/22 18:26	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	05/06/22 14:08	05/09/22 18:26	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	05/06/22 14:08	05/09/22 18:26	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	05/06/22 14:08	05/09/22 18:26	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/06/22 14:08	05/09/22 18:26	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	05/06/22 14:08	05/09/22 18:26	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/06/22 14:08	05/09/22 18:26	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/06/22 14:08	05/09/22 18:26	206-44-0	
Fluorene	0.027J	ug/L	0.040	0.0061	1	05/06/22 14:08	05/09/22 18:26	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/06/22 14:08	05/09/22 18:26	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	05/06/22 14:08	05/09/22 18:26	90-12-0	
2-Methylnaphthalene	0.018J	ug/L	0.040	0.0084	1	05/06/22 14:08	05/09/22 18:26	91-57-6	
Naphthalene	0.034J	ug/L	0.040	0.0089	1	05/06/22 14:08	05/09/22 18:26	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/06/22 14:08	05/09/22 18:26	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	05/06/22 14:08	05/09/22 18:26	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	72	%	52-125		1	05/06/22 14:08	05/09/22 18:26	321-60-8	
p-Terphenyl-d14 (S)	64	%	54-125		1	05/06/22 14:08	05/09/22 18:26	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-18-20220504		Lab ID: 10607257006		Collected: 05/04/22 15:30		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.11J	ug/L	1.0	0.10	1		05/12/22 15:17	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 15:17	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/12/22 15:17	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 15:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/12/22 15:17	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/12/22 15:17	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/12/22 15:17	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/12/22 15:17	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	136	mg/L	5.0	1.8	1		05/17/22 10:20		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	50.7	mg/L	1.2	0.43	1		05/18/22 19:27	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-26-20220505 Lab ID: 10607257007 Collected: 05/05/22 10:15 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.23J	mg/L	0.40	0.12	1	05/06/22 15:19	05/10/22 23:39	68334-30-5	
Motor Oil Range SG	0.73	mg/L	0.40	0.18	1	05/06/22 15:19	05/10/22 23:39	64742-65-0	
Surrogates									
o-Terphenyl (S)	54	%	50-150		1	05/06/22 15:19	05/10/22 23:39	84-15-1	
n-Triacontane (S)	66	%	50-150		1	05/06/22 15:19	05/10/22 23:39		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	42.8J	ug/L	100	31.6	1	05/15/22 17:49	05/15/22 17:49		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	97.9	%	78.0-120		1	05/15/22 17:49	05/15/22 17:49	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	39700	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:37		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.4	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 16:19	7440-38-2	
Manganese, Dissolved	123	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 16:19	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.018J	ug/L	0.042	0.0073	1	05/06/22 14:08	05/09/22 18:48	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0064	1	05/06/22 14:08	05/09/22 18:48	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	05/06/22 14:08	05/09/22 18:48	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0095	1	05/06/22 14:08	05/09/22 18:48	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0093	1	05/06/22 14:08	05/09/22 18:48	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.010	1	05/06/22 14:08	05/09/22 18:48	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	05/06/22 14:08	05/09/22 18:48	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0087	1	05/06/22 14:08	05/09/22 18:48	207-08-9	
Chrysene	ND	ug/L	0.042	0.0099	1	05/06/22 14:08	05/09/22 18:48	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0084	1	05/06/22 14:08	05/09/22 18:48	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	05/06/22 14:08	05/09/22 18:48	206-44-0	
Fluorene	0.026J	ug/L	0.042	0.0064	1	05/06/22 14:08	05/09/22 18:48	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	05/06/22 14:08	05/09/22 18:48	193-39-5	
1-Methylnaphthalene	0.010J	ug/L	0.042	0.0071	1	05/06/22 14:08	05/09/22 18:48	90-12-0	
2-Methylnaphthalene	0.013J	ug/L	0.042	0.0087	1	05/06/22 14:08	05/09/22 18:48	91-57-6	
Naphthalene	0.015J	ug/L	0.042	0.0093	1	05/06/22 14:08	05/09/22 18:48	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	05/06/22 14:08	05/09/22 18:48	85-01-8	
Pyrene	ND	ug/L	0.042	0.010	1	05/06/22 14:08	05/09/22 18:48	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	65	%	52-125		1	05/06/22 14:08	05/09/22 18:48	321-60-8	
p-Terphenyl-d14 (S)	73	%	54-125		1	05/06/22 14:08	05/09/22 18:48	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-26-20220505		Lab ID: 10607257007		Collected: 05/05/22 10:15		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/12/22 15:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/12/22 15:41	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/12/22 15:41	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/12/22 15:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/12/22 15:41	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%	75-125		1		05/12/22 15:41	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/12/22 15:41	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/12/22 15:41	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	30.3	mg/L	5.0	1.8	1		05/17/22 10:25		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	28.4	mg/L	1.2	0.43	1		05/18/22 19:42	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-44-20220505 Lab ID: 10607257008 Collected: 05/05/22 13:20 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.50	0.15	1	05/06/22 15:19	05/10/22 23:51	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.50	0.23	1	05/06/22 15:19	05/10/22 23:51	64742-65-0	
Surrogates									
o-Terphenyl (S)	72	%	50-150		1	05/06/22 15:19	05/10/22 23:51	84-15-1	
n-Triacontane (S)	82	%	50-150		1	05/06/22 15:19	05/10/22 23:51		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	50.6J	ug/L	100	31.6	1	05/15/22 18:11	05/15/22 18:11		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.3	%	78.0-120		1	05/15/22 18:11	05/15/22 18:11	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	90700	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:39		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.90	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 16:26	7440-38-2	
Manganese, Dissolved	72.1	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 16:26	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.011J	ug/L	0.042	0.0072	1	05/06/22 14:08	05/09/22 19:09	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0063	1	05/06/22 14:08	05/09/22 19:09	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	05/06/22 14:08	05/09/22 19:09	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0094	1	05/06/22 14:08	05/09/22 19:09	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0092	1	05/06/22 14:08	05/09/22 19:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0099	1	05/06/22 14:08	05/09/22 19:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	05/06/22 14:08	05/09/22 19:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0086	1	05/06/22 14:08	05/09/22 19:09	207-08-9	
Chrysene	ND	ug/L	0.042	0.0098	1	05/06/22 14:08	05/09/22 19:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	05/06/22 14:08	05/09/22 19:09	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	05/06/22 14:08	05/09/22 19:09	206-44-0	
Fluorene	0.013J	ug/L	0.042	0.0063	1	05/06/22 14:08	05/09/22 19:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	05/06/22 14:08	05/09/22 19:09	193-39-5	
1-Methylnaphthalene	0.014J	ug/L	0.042	0.0070	1	05/06/22 14:08	05/09/22 19:09	90-12-0	
2-Methylnaphthalene	0.021J	ug/L	0.042	0.0086	1	05/06/22 14:08	05/09/22 19:09	91-57-6	
Naphthalene	0.014J	ug/L	0.042	0.0092	1	05/06/22 14:08	05/09/22 19:09	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.013	1	05/06/22 14:08	05/09/22 19:09	85-01-8	
Pyrene	ND	ug/L	0.042	0.010	1	05/06/22 14:08	05/09/22 19:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	59	%	52-125		1	05/06/22 14:08	05/09/22 19:09	321-60-8	
p-Terphenyl-d14 (S)	71	%	54-125		1	05/06/22 14:08	05/09/22 19:09	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-44-20220505		Lab ID: 10607257008		Collected: 05/05/22 13:20		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 16:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 16:25	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 16:25	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 16:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 16:25	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		05/13/22 16:25	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/13/22 16:25	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/13/22 16:25	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	111	mg/L	5.0	1.8	1		05/17/22 10:29		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	15.7	mg/L	1.2	0.43	1		05/16/22 16:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607257

Sample: PEO-MW-2z2-20220505 Lab ID: 10607257009 Collected: 05/05/22 13:25 Received: 05/06/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.53	0.16	1	05/06/22 15:19	05/11/22 00:02	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.53	0.24	1	05/06/22 15:19	05/11/22 00:02	64742-65-0	
Surrogates									
o-Terphenyl (S)	72	%	50-150		1	05/06/22 15:19	05/11/22 00:02	84-15-1	
n-Triacontane (S)	77	%	50-150		1	05/06/22 15:19	05/11/22 00:02		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	52.0J	ug/L	100	31.6	1	05/15/22 18:32	05/15/22 18:32		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	101	%	78.0-120		1	05/15/22 18:32	05/15/22 18:32	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	89100	ug/L	3300	76.7	1	05/10/22 05:19	05/12/22 14:40		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.98	ug/L	0.50	0.083	1	05/10/22 05:30	05/17/22 16:33	7440-38-2	
Manganese, Dissolved	84.8	ug/L	0.50	0.20	1	05/10/22 05:30	05/17/22 16:33	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.014J	ug/L	0.046	0.0079	1	05/06/22 14:08	05/09/22 19:31	83-32-9	
Acenaphthylene	ND	ug/L	0.046	0.0070	1	05/06/22 14:08	05/09/22 19:31	208-96-8	
Anthracene	ND	ug/L	0.046	0.0062	1	05/06/22 14:08	05/09/22 19:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.046	0.010	1	05/06/22 14:08	05/09/22 19:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.046	0.010	1	05/06/22 14:08	05/09/22 19:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.046	0.011	1	05/06/22 14:08	05/09/22 19:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.046	0.0093	1	05/06/22 14:08	05/09/22 19:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.046	0.0095	1	05/06/22 14:08	05/09/22 19:31	207-08-9	
Chrysene	ND	ug/L	0.046	0.011	1	05/06/22 14:08	05/09/22 19:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.046	0.0091	1	05/06/22 14:08	05/09/22 19:31	53-70-3	
Fluoranthene	ND	ug/L	0.046	0.016	1	05/06/22 14:08	05/09/22 19:31	206-44-0	
Fluorene	0.017J	ug/L	0.046	0.0069	1	05/06/22 14:08	05/09/22 19:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.046	0.013	1	05/06/22 14:08	05/09/22 19:31	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.046	0.0077	1	05/06/22 14:08	05/09/22 19:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.046	0.0095	1	05/06/22 14:08	05/09/22 19:31	91-57-6	
Naphthalene	0.012J	ug/L	0.046	0.010	1	05/06/22 14:08	05/09/22 19:31	91-20-3	
Phenanthrene	0.019J	ug/L	0.046	0.014	1	05/06/22 14:08	05/09/22 19:31	85-01-8	
Pyrene	ND	ug/L	0.046	0.011	1	05/06/22 14:08	05/09/22 19:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	61	%	52-125		1	05/06/22 14:08	05/09/22 19:31	321-60-8	
p-Terphenyl-d14 (S)	68	%	54-125		1	05/06/22 14:08	05/09/22 19:31	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607257

Sample: PEO-MW-2z2-20220505		Lab ID: 10607257009		Collected: 05/05/22 13:25		Received: 05/06/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 16:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 16:40	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 16:40	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 16:40	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 16:40	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		05/13/22 16:40	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/13/22 16:40	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/13/22 16:40	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	111	mg/L	5.0	1.8	1		05/17/22 11:05		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	15.9	mg/L	1.2	0.43	1		05/16/22 17:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	1863155	Analysis Method:	NWTPH-Gx
QC Batch Method:	8021B/NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet
Associated Lab Samples:	10607257001, 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

METHOD BLANK:	R3792257-2	Matrix:	Water
Associated Lab Samples:	10607257001, 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	58.4J	100	31.6	05/15/22 10:31	J
a,a,a-Trifluorotoluene (FID)	%	101	78.0-120		05/15/22 10:31	

LABORATORY CONTROL SAMPLE:	R3792257-1					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	5120	93.1	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			111	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	R3792257-3			R3792257-4								
Parameter	Units	L1490530-07 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	52.0	5500	5500	5120	4970	92.1	89.4	10.0-155	2.97	21	
a,a,a-Trifluorotoluene (FID)	%						109	107	78.0-120			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	1863155	Analysis Method:	NWTPH-Gx
QC Batch Method:	NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet
Associated Lab Samples:	10607257001, 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

METHOD BLANK:	R3792257-2	Matrix:	Water
Associated Lab Samples:	10607257001, 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	58.4J	100	31.6	05/15/22 10:31	J
a,a,a-Trifluorotoluene (FID)	%	101	78.0-120		05/15/22 10:31	

LABORATORY CONTROL SAMPLE: R3792257-1						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	5120	93.1	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			111	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:					R3792257-3								R3792257-4							
Parameter	Units	L1490530-07	MS	MSD	MS	MSD	MS	MSD	% Rec	RPD	Max	Qual								
		Result	Spike Conc.	Spike Conc.									Result	Result	% Rec	% Rec	Limits	RPD		
TPH (C06-C12)	ug/L	52.0	5500	5500	5120	4970	92.1	89.4	10.0-155	2.97	21									
a.a.a-Trifluorotoluene (FID)	%						109	107	78.0-120											

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	813813	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

METHOD BLANK:	4315100	Matrix:	Water
Associated Lab Samples:	10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	05/17/22 14:18	
Manganese, Dissolved	ug/L	ND	0.50	0.20	05/17/22 14:18	

LABORATORY CONTROL SAMPLE:	4315101					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	106	106	80-120	
Manganese, Dissolved	ug/L	100	103	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	4315102			4315103								
Parameter	Units	10607062002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	10.1	100	100	118	118	108	108	75-125	0	20	
Manganese, Dissolved	ug/L	3.1	100	100	110	110	107	107	75-125	0	20	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	814039	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257001, 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007

METHOD BLANK: 4315972

Matrix: Water

Associated Lab Samples: 10607257001, 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/12/22 11:40	
Ethylbenzene	ug/L	ND	1.0	0.11	05/12/22 11:40	
m&p-Xylene	ug/L	ND	2.0	0.20	05/12/22 11:40	
o-Xylene	ug/L	ND	1.0	0.18	05/12/22 11:40	
Toluene	ug/L	ND	1.0	0.10	05/12/22 11:40	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		05/12/22 11:40	
4-Bromofluorobenzene (S)	%	101	75-125		05/12/22 11:40	
Toluene-d8 (S)	%	107	75-125		05/12/22 11:40	

LABORATORY CONTROL SAMPLE & LCSD: 4315973

4315980

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.6	20.1	98	101	73-125	3	20	
Ethylbenzene	ug/L	20	19.2	20.8	96	104	75-125	8	20	
m&p-Xylene	ug/L	40	38.7	42.2	97	106	72-125	9	20	
o-Xylene	ug/L	20	19.6	21.4	98	107	73-125	9	20	
Toluene	ug/L	20	19.0	19.8	95	99	74-125	4	20	
1,2-Dichlorobenzene-d4 (S)	%				101	100	75-125			
4-Bromofluorobenzene (S)	%				101	102	75-125			
Toluene-d8 (S)	%				99	98	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02
Pace Project No.: 10607257

QC Batch:	815190	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257008, 10607257009

METHOD BLANK: 4321370 Matrix: Water

Associated Lab Samples: 10607257008, 10607257009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/13/22 15:22	
Ethylbenzene	ug/L	ND	1.0	0.11	05/13/22 15:22	
m&p-Xylene	ug/L	ND	2.0	0.20	05/13/22 15:22	
o-Xylene	ug/L	ND	1.0	0.18	05/13/22 15:22	
Toluene	ug/L	ND	1.0	0.10	05/13/22 15:22	
1,2-Dichlorobenzene-d4 (S)	%	102	75-125		05/13/22 15:22	
4-Bromofluorobenzene (S)	%	100	75-125		05/13/22 15:22	
Toluene-d8 (S)	%	99	75-125		05/13/22 15:22	

LABORATORY CONTROL SAMPLE: 4321371

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.0	100	73-125	
Ethylbenzene	ug/L	20	20.9	105	75-125	
m&p-Xylene	ug/L	40	43.7	109	72-125	
o-Xylene	ug/L	20	21.8	109	73-125	
Toluene	ug/L	20	19.6	98	74-125	
1,2-Dichlorobenzene-d4 (S)	%			101	75-125	
4-Bromofluorobenzene (S)	%			103	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4321372 4321373

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	0.55J	20	20	21.8	23.0	106	112	65-140	5	30	
Ethylbenzene	ug/L	ND	20	20	20.6	21.7	103	109	66-126	5	30	
m&p-Xylene	ug/L	0.29J	40	40	41.4	42.1	103	105	69-134	2	30	
o-Xylene	ug/L	ND	20	20	19.3	20.2	96	100	73-133	5	30	
Toluene	ug/L	0.20J	20	20	21.5	21.8	107	108	69-131	1	30	
1,2-Dichlorobenzene-d4 (S)	%						98	98	75-125			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						101	100	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	813577	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

METHOD BLANK:	4313480	Matrix:	Water
Associated Lab Samples:	10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	05/09/22 15:07	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	05/09/22 15:07	
Acenaphthene	ug/L	ND	0.040	0.0069	05/09/22 15:07	
Acenaphthylene	ug/L	ND	0.040	0.0061	05/09/22 15:07	
Anthracene	ug/L	ND	0.040	0.0054	05/09/22 15:07	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	05/09/22 15:07	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/09/22 15:07	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	05/09/22 15:07	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	05/09/22 15:07	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	05/09/22 15:07	
Chrysene	ug/L	ND	0.040	0.0094	05/09/22 15:07	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	05/09/22 15:07	
Fluoranthene	ug/L	ND	0.040	0.014	05/09/22 15:07	
Fluorene	ug/L	ND	0.040	0.0060	05/09/22 15:07	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	05/09/22 15:07	
Naphthalene	ug/L	ND	0.040	0.0088	05/09/22 15:07	
Phenanthrene	ug/L	ND	0.040	0.012	05/09/22 15:07	
Pyrene	ug/L	ND	0.040	0.0099	05/09/22 15:07	
2-Fluorobiphenyl (S)	%	74	52-125		05/09/22 15:07	
p-Terphenyl-d14 (S)	%	78	54-125		05/09/22 15:07	

LABORATORY CONTROL SAMPLE & LCSD: 4313481			4313482							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.63	0.68	63	68	43-125	8	20	
2-Methylnaphthalene	ug/L	1	0.71	0.79	71	79	42-125	11	20	
Acenaphthene	ug/L	1	0.71	0.85	71	85	56-125	17	20	
Acenaphthylene	ug/L	1	0.77	0.84	77	84	55-125	9	20	
Anthracene	ug/L	1	0.92	1.1	92	111	64-125	19	20	
Benzo(a)anthracene	ug/L	1	0.92	0.92	92	92	65-125	1	20	
Benzo(a)pyrene	ug/L	1	0.98	0.92	98	92	64-125	5	20	
Benzo(b)fluoranthene	ug/L	1	0.96	0.90	96	90	70-125	6	20	
Benzo(g,h,i)perylene	ug/L	1	0.94	0.94	94	94	49-125	0	20	
Benzo(k)fluoranthene	ug/L	1	1.0	1.0	105	103	69-125	1	20	
Chrysene	ug/L	1	1.0	1.0	101	104	70-125	4	20	
Dibenz(a,h)anthracene	ug/L	1	0.88	0.91	88	91	41-125	3	20	
Fluoranthene	ug/L	1	0.94	1.0	94	101	67-125	7	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

LABORATORY CONTROL SAMPLE & LCSD: 4313481			4313482							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Fluorene	ug/L	1	0.79	0.85	79	85	59-125	8	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.95	0.92	95	92	57-125	3	20	
Naphthalene	ug/L	1	0.74	0.84	74	84	49-125	12	20	
Phenanthrene	ug/L	1	0.79	0.90	79	90	65-125	13	20	
Pyrene	ug/L	1	0.93	0.95	93	95	67-125	2	20	
2-Fluorobiphenyl (S)	%				71	78	52-125			
p-Terphenyl-d14 (S)	%				93	94	54-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	813598	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257002, 10607257003, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009

METHOD BLANK: 4313529

Matrix: Water

Associated Lab Samples: 10607257002, 10607257003, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	05/10/22 20:38	
Motor Oil Range SG	mg/L	ND	0.40	0.18	05/10/22 20:38	
n-Triacontane (S)	%	62	50-150		05/10/22 20:38	
o-Terphenyl (S)	%	57	50-150		05/10/22 20:38	

LABORATORY CONTROL SAMPLE & LCSD: 4313530

4313531

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.3	1.4	67	68	50-150	2	20	
Motor Oil Range SG	mg/L	2	1.6	1.5	78	77	50-150	1	20	
n-Triacontane (S)	%				67	60	50-150			
o-Terphenyl (S)	%				64	65	50-150			

SAMPLE DUPLICATE: 4313532

Parameter	Units	10607062002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.22J	0.20J		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	61	58			
o-Terphenyl (S)	%	64	54			

SAMPLE DUPLICATE: 4313932

Parameter	Units	10607257005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	9.1	5.9	42	30	D6
Motor Oil Range SG	mg/L	0.27J	ND		30	
n-Triacontane (S)	%	56	60			
o-Terphenyl (S)	%	69	70			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch: 814893

Analysis Method: NWTPH-Dx

QC Batch Method: EPA Mod. 3510C

Analysis Description: NWTPH-Dx GCS LV SG

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257004

METHOD BLANK: 4319476

Matrix: Water

Associated Lab Samples: 10607257004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	0.12J	0.40	0.12	05/13/22 13:35	
Motor Oil Range SG	mg/L	0.24J	0.40	0.18	05/13/22 13:35	
n-Triacontane (S)	%.	71	50-150		05/13/22 13:35	
o-Terphenyl (S)	%.	68	50-150		05/13/22 13:35	

LABORATORY CONTROL SAMPLE & LCSD: 4319477

4319478

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.2	1.7	60	84	50-150	32	20	R1
Motor Oil Range SG	mg/L	2	1.2	1.7	62	85	50-150	31	20	R1
n-Triacontane (S)	%.				51	67	50-150			
o-Terphenyl (S)	%.				53	77	50-150			

SAMPLE DUPLICATE: 4319479

Parameter	Units	10607954002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.72		30	
Motor Oil Range SG	mg/L	ND	0.39J		30	
n-Triacontane (S)	%.	64	64			
o-Terphenyl (S)	%.	71	70			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch: 815600

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009

METHOD BLANK: 4323571

Matrix: Water

Associated Lab Samples: 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007, 10607257008, 10607257009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	05/17/22 08:54	

LABORATORY CONTROL SAMPLE & LCSD: 4323572

4323573

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.3	42.0	106	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323574

4323575

Parameter	Units	10607073001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	22.1	40	40	62.3	62.4	100	101	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323576

4323577

Parameter	Units	10607257008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	111	40	40	152	153	101	103	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch:	815223	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007

METHOD BLANK:	4321633	Matrix:	Water

Associated Lab Samples: 10607257002, 10607257003, 10607257004, 10607257005, 10607257006, 10607257007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	05/18/22 08:29	

LABORATORY CONTROL SAMPLE: 4321634						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4321635					4321636							
Parameter	Units	10607864001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	0.62J	50	50	51.3	51.3	101	101	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4321637					4321638							
Parameter	Units	10607257005	MS	MSD	MS	MSD	MS	MSD	% Rec	RPD	Max	Qual
		Result	Spike Conc.	Spike Conc.								
Sulfate	mg/L	162	250	250	426	420	105	103	80-120	1	20	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607257

QC Batch: 815325

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607257008, 10607257009

METHOD BLANK: 4322443

Matrix: Water

Associated Lab Samples: 10607257008, 10607257009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	05/16/22 18:04	

LABORATORY CONTROL SAMPLE: 4322444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4322445 4322446

Parameter	Units	10607257008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	15.7	50	50	65.7	64.3	100	97	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4322447 4322448

Parameter	Units	10607756003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	744	500	500	1360	1440	123	139	80-120	6	20	E,M1

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QUALIFIERS

Project: 0633086.02

Pace Project No.: 10607257

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 adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 813896

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 814039

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.

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

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607257

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607257002	PEO-MW-06-20220504	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257003	PEO-MW-19-20220504	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257004	PEO-MW-31-20220504	EPA Mod. 3510C	814893	NWTPH-Dx	815184
10607257005	PEO-MW-30-20220504	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257006	PEO-MW-18-20220504	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257007	PEO-MW-26-20220505	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257008	PEO-MW-44-20220505	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257009	PEO-MW-2z2-20220505	EPA Mod. 3510C	813598	NWTPH-Dx	814251
10607257001	TRIP BLANK-20220504	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257002	PEO-MW-06-20220504	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257003	PEO-MW-19-20220504	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257004	PEO-MW-31-20220504	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257005	PEO-MW-30-20220504	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257006	PEO-MW-18-20220504	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257007	PEO-MW-26-20220505	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257008	PEO-MW-44-20220505	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257009	PEO-MW-2z2-20220505	NWTPHGX	1863155	NWTPH-Gx	1863155
10607257002	PEO-MW-06-20220504	EPA 3010A	813270	EPA 6010D	814276
10607257003	PEO-MW-19-20220504	EPA 3010A	813270	EPA 6010D	814276
10607257004	PEO-MW-31-20220504	EPA 3010A	813270	EPA 6010D	814276
10607257005	PEO-MW-30-20220504	EPA 3010A	813270	EPA 6010D	814276
10607257006	PEO-MW-18-20220504	EPA 3010A	813270	EPA 6010D	814276
10607257007	PEO-MW-26-20220505	EPA 3010A	813270	EPA 6010D	814276
10607257008	PEO-MW-44-20220505	EPA 3010A	813270	EPA 6010D	814276
10607257009	PEO-MW-2z2-20220505	EPA 3010A	813270	EPA 6010D	814276
10607257002	PEO-MW-06-20220504	EPA 3020A	813813	EPA 6020A	814255
10607257003	PEO-MW-19-20220504	EPA 3020A	813813	EPA 6020A	814255
10607257004	PEO-MW-31-20220504	EPA 3020A	813813	EPA 6020A	814255
10607257005	PEO-MW-30-20220504	EPA 3020A	813813	EPA 6020A	814255
10607257006	PEO-MW-18-20220504	EPA 3020A	813813	EPA 6020A	814255
10607257007	PEO-MW-26-20220505	EPA 3020A	813813	EPA 6020A	814255
10607257008	PEO-MW-44-20220505	EPA 3020A	813813	EPA 6020A	814255
10607257009	PEO-MW-2z2-20220505	EPA 3020A	813813	EPA 6020A	814255
10607257002	PEO-MW-06-20220504	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257003	PEO-MW-19-20220504	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257004	PEO-MW-31-20220504	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257005	PEO-MW-30-20220504	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257006	PEO-MW-18-20220504	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257007	PEO-MW-26-20220505	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257008	PEO-MW-44-20220505	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257009	PEO-MW-2z2-20220505	EPA Mod. 3510C	813577	EPA 8270E by SIM	813896
10607257001	TRIP BLANK-20220504	EPA 8260D	814039		
10607257002	PEO-MW-06-20220504	EPA 8260D	814039		
10607257003	PEO-MW-19-20220504	EPA 8260D	814039		
10607257004	PEO-MW-31-20220504	EPA 8260D	814039		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607257

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607257005	PEO-MW-30-20220504	EPA 8260D	814039		
10607257006	PEO-MW-18-20220504	EPA 8260D	814039		
10607257007	PEO-MW-26-20220505	EPA 8260D	814039		
10607257008	PEO-MW-44-20220505	EPA 8260D	815190		
10607257009	PEO-MW-2z2-20220505	EPA 8260D	815190		
10607257002	PEO-MW-06-20220504	SM 2320B	815600		
10607257003	PEO-MW-19-20220504	SM 2320B	815600		
10607257004	PEO-MW-31-20220504	SM 2320B	815600		
10607257005	PEO-MW-30-20220504	SM 2320B	815600		
10607257006	PEO-MW-18-20220504	SM 2320B	815600		
10607257007	PEO-MW-26-20220505	SM 2320B	815600		
10607257008	PEO-MW-44-20220505	SM 2320B	815600		
10607257009	PEO-MW-2z2-20220505	SM 2320B	815600		
10607257002	PEO-MW-06-20220504	EPA 300.0	815223		
10607257003	PEO-MW-19-20220504	EPA 300.0	815223		
10607257004	PEO-MW-31-20220504	EPA 300.0	815223		
10607257005	PEO-MW-30-20220504	EPA 300.0	815223		
10607257006	PEO-MW-18-20220504	EPA 300.0	815223		
10607257007	PEO-MW-26-20220505	EPA 300.0	815223		
10607257008	PEO-MW-44-20220505	EPA 300.0	815325		
10607257009	PEO-MW-2z2-20220505	EPA 300.0	815325		

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Pace ANALYTICAL SERVICES

DC# Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: ERM

Project #: WO# : 10607257

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

See Exceptions ☒ ENV-FRM-MIN4-0142

Tracking Number: _____

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

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: _____

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235) ☐ T7(0042) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808

Seals Intact? ☒ Yes ☐ No

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Temp Blank? ☒ Yes ☐ No

Type of Ice: ☒ Wet ☒ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No

Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: _____ °C

Average Corrected Temp (no temp blank only): _____ °C

Correction Factor: True Cooler Temp Corrected w/temp blank: _____ °C

See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☒ N/A, water sample/Other: _____

Date/Initials of Person Examining Contents: 5-6-22 RA

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

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

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☒ Yes ☐ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hrs, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☒ Yes ☒ No JMB 5/6/22	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☒ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
-Pace Containers Used? ☒ Yes ☐ No	9.
Containers Intact? ☒ Yes ☐ No	10. Is sediment visible in the dissolved container? ☐ Yes ☒ No
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☐ No ☐ N/A	11. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? ☒ Yes ☐ No	12. Sample # <u>CO2-009</u>
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	☐ NaOH ☒ HNO ₃ ☐ H ₂ SO ₄ ☐ Zinc Acetate
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	Positive for Res. ☐ Yes ☐ No pH Paper Lot#
All containers needing preservation are found to be in compliance with EPA recommendation? ☒ Yes ☐ No ☐ N/A	Res. Chlorine 0-6 Roll <u>212521</u> 0-6 Strip 0-14 Strip
(HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	
Exception: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	13. See Exception ☒ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? ☒ Yes ☐ No ☐ N/A	
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	14. Pace Trip Blank Lot # (if purchased): <u>361506</u>
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Field Data Required? ☐ Yes ☐ No

Project Manager Review: [Signature] Date: 5/6/22

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

Labeled by: RF ①



Document Name:
Headspace Exception

Document No.:
ENV-FRM-MIN4-0140 Rev.00

Document Revised: 26Mar2020
Page 1 of 1

Pace Analytical Services -
Minneapolis

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
PEO-MW-26-20220505	1	0	8	9	no

F046



☐ Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed: ☒ Yes ☐ No

Owner Received Date: 5/6/2022

Results Requested By: 5/20/2022

Workorder: 10607257

Workorder Name: 0633086.02

[illegible]

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as this information is available in the owner laboratory.

$$0.5 + 0 = 0.5$$

DR47

Sample Receipt Checklist		If Applicable	
COC Seal Present/Intact:	~~Y~~ N	VOA Zero Headspace:	~~Y~~ N
COC Signed/Accurate:	~~Y~~ N	Pres. Correct/Check:	~~Y~~ N
Bottles arrive intact:	~~Y~~ N		
Correct bottles used:	~~Y~~ N		
Sufficient volume sent:	~~Y~~ N		
RAD Screen <0.5 mR/hr:	~~Y~~ N		

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Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086.02

Work Order Number: 2205253

May 27, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 9 sample(s) on 5/12/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086.02
Work Order: 2205253

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205253-001	TRIP BLANK-20220504	05/04/2022 8:00 AM	05/12/2022 1:55 PM
2205253-002	PEO-MW-06-20220504	05/04/2022 9:40 AM	05/12/2022 1:55 PM
2205253-003	PEO-MW-19-20220504	05/04/2022 11:10 AM	05/12/2022 1:55 PM
2205253-004	PEO-MW-31-20220504	05/04/2022 12:50 PM	05/12/2022 1:55 PM
2205253-005	PEO-MW-30-20220504	05/04/2022 2:20 PM	05/12/2022 1:55 PM
2205253-006	PEO-MW-18-20220504	05/04/2022 3:30 PM	05/12/2022 1:55 PM
2205253-007	PEO-MW-26-20220505	05/05/2022 10:15 AM	05/12/2022 1:55 PM
2205253-008	PEO-MW-44-20220505	05/05/2022 1:20 PM	05/12/2022 1:55 PM
2205253-009	PEO-MW-2z2-20220505	05/05/2022 1:25 PM	05/12/2022 1:55 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Samples PEO-MW-06-20220504 & PEO-MW-18-20220504 could not be analyzed for VPH. The vials froze and cracked.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2205253
Date Reported: 5/27/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205253-001
Client Sample ID: TRIP BLANK-20220504
Collection Date: 5/4/2022 8:00:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Volatile Petroleum Hydrocarbons by NWVPH</u>				Batch ID: 36505		Analyst: SG
Aliphatic Hydrocarbon (C10-C12)	25.5	12.2	H	µg/L	1	5/19/2022 12:30:25 AM
Surr: 1,4-Difluorobenzene	87.3	60 - 140	H	%Rec	1	5/19/2022 12:30:25 AM
Surr: Bromofluorobenzene	80.1	60 - 140	H	%Rec	1	5/19/2022 12:30:25 AM

Lab ID: 2205253-002
Client Sample ID: PEO-MW-06-20220504
Collection Date: 5/4/2022 9:40:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Extractable Petroleum Hydrocarbons by NWEPH</u>				Batch ID: 36439		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	59.6	20.5		µg/L	1	5/24/2022 6:39:56 PM
Surr: 1-Chlorooctadecane	75.9	50 - 150		%Rec	1	5/24/2022 6:39:56 PM

Lab ID: 2205253-003
Client Sample ID: PEO-MW-19-20220504
Collection Date: 5/4/2022 11:10:00 AM
Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Extractable Petroleum Hydrocarbons by NWEPH</u>				Batch ID: 36439		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	20.2		µg/L	1	5/24/2022 7:00:25 PM
Surr: 1-Chlorooctadecane	74.4	50 - 150		%Rec	1	5/24/2022 7:00:25 PM

<u>Volatile Petroleum Hydrocarbons by NWVPH</u>				Batch ID: 36505		Analyst: SG
Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/19/2022 1:11:31 AM
Surr: 1,4-Difluorobenzene	82.4	60 - 140	H	%Rec	1	5/19/2022 1:11:31 AM
Surr: Bromofluorobenzene	70.9	60 - 140	H	%Rec	1	5/19/2022 1:11:31 AM

CLIENT: Pace Analytical Minnesota
 Project: 0633086.02

Lab ID: 2205253-004

Client Sample ID: PEO-MW-31-20220504

Collection Date: 5/4/2022 12:50:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/24/2022 7:21:01 PM
Surr: 1-Chlorooctadecane	76.9	50 - 150		%Rec	1	5/24/2022 7:21:01 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36505

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	14.9	12.2	JH	µg/L	1	5/19/2022 1:52:50 AM
Surr: 1,4-Difluorobenzene	81.9	60 - 140	H	%Rec	1	5/19/2022 1:52:50 AM
Surr: Bromofluorobenzene	71.3	60 - 140	H	%Rec	1	5/19/2022 1:52:50 AM

Lab ID: 2205253-005

Client Sample ID: PEO-MW-30-20220504

Collection Date: 5/4/2022 2:20:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/24/2022 7:41:28 PM
Surr: 1-Chlorooctadecane	69.2	50 - 150		%Rec	1	5/24/2022 7:41:28 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36505

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/19/2022 2:34:04 AM
Surr: 1,4-Difluorobenzene	84.9	60 - 140	H	%Rec	1	5/19/2022 2:34:04 AM
Surr: Bromofluorobenzene	81.7	60 - 140	H	%Rec	1	5/19/2022 2:34:04 AM

Lab ID: 2205253-006

Client Sample ID: PEO-MW-18-20220504

Collection Date: 5/4/2022 3:30:00 PM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/24/2022 8:01:53 PM
Surr: 1-Chlorooctadecane	73.3	50 - 150		%Rec	1	5/24/2022 8:01:53 PM



Analytical Report

Work Order: 2205253
Date Reported: 5/27/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205253-007

Collection Date: 5/5/2022 10:15:00 AM

Client Sample ID: PEO-MW-26-20220505

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/24/2022 8:22:28 PM
Surr: 1-Chlorooctadecane	79.1	50 - 150		%Rec	1	5/24/2022 8:22:28 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36505

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/19/2022 3:15:23 AM
Surr: 1,4-Difluorobenzene	85.4	60 - 140		%Rec	1	5/19/2022 3:15:23 AM
Surr: Bromofluorobenzene	72.2	60 - 140		%Rec	1	5/19/2022 3:15:23 AM

Lab ID: 2205253-008

Collection Date: 5/5/2022 1:20:00 PM

Client Sample ID: PEO-MW-44-20220505

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/26/2022 3:51:35 PM
Surr: 1-Chlorooctadecane	57.2	50 - 150		%Rec	1	5/26/2022 3:51:35 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36505

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/19/2022 3:56:49 AM
Surr: 1,4-Difluorobenzene	79.5	60 - 140		%Rec	1	5/19/2022 3:56:49 AM
Surr: Bromofluorobenzene	62.9	60 - 140		%Rec	1	5/19/2022 3:56:49 AM



Analytical Report

Work Order: 2205253
Date Reported: 5/27/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205253-009

Collection Date: 5/5/2022 1:25:00 PM

Client Sample ID: PEO-MW-2z2-20220505

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/26/2022 4:15:22 PM
Surr: 1-Chlorooctadecane	63.5	50 - 150		%Rec	1	5/26/2022 4:15:22 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36505

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/19/2022 4:38:09 AM
Surr: 1,4-Difluorobenzene	84.3	60 - 140		%Rec	1	5/19/2022 4:38:09 AM
Surr: Bromofluorobenzene	70.1	60 - 140		%Rec	1	5/19/2022 4:38:09 AM



Work Order: 2205253
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-36439	SampType: MBLK	Units: µg/L				Prep Date: 5/13/2022			RunNo: 75752		
Client ID: MBLKW	Batch ID: 36439					Analysis Date: 5/24/2022			SeqNo: 1554145		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	39.4		0	0						
Surr: 1-Chlorooctadecane	273		393.6		69.3	50	150				

Sample ID: LCS-36439		SampType: LCS		Units: µg/L		Prep Date: 5/13/2022			RunNo: 75752		
Client ID: LCSW		Batch ID: 36439					Analysis Date: 5/26/2022			SeqNo: 1554201	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	353	39.7	496.1	0	71.1	70	130				
Surr: 1-Chlorooctadecane	341		396.9		85.8	50	150				

Sample ID: 2205253-007BMS	SampType: MS	Units: µg/L				Prep Date: 5/13/2022			RunNo: 75752		
Client ID: PEO-MW-26-20220505	Batch ID: 36439					Analysis Date: 5/26/2022			SeqNo: 1554202		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	293	39.3	491.9	0	59.5	70	130				S
Surr: 1-Chlorooctadecane	252		393.5		64.1	50	150				

NOTES:

S - Outlying spike recoveries were associated with this sample.



Work Order: 2205253
 CLIENT: Pace Analytical Minnesota
 Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-36505		SampType: LCS		Units: µg/L		Prep Date: 5/18/2022			RunNo: 75627		
Client ID: LCSW		Batch ID: 36505					Analysis Date: 5/18/2022			SeqNo: 1551642	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	169	25.0	200.0	0	84.6	70	130				
Surr: 1,4-Difluorobenzene	55.7		50.00		111	60	140				
Surr: Bromofluorobenzene	39.0		50.00		77.9	60	140				

Sample ID: MB-36505	SampType: MBLK	Units: µg/L			Prep Date: 5/18/2022			RunNo: 75627			
Client ID: MBLKW	Batch ID: 36505				Analysis Date: 5/18/2022			SeqNo: 1551606			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	42.8		50.00		85.7	60	140				
Surr: Bromofluorobenzene	40.0		50.00		80.1	60	140				

Sample ID: LCSD-36505		SampType: LCSD		Units: µg/L		Prep Date: 5/18/2022			RunNo: 75627		
Client ID: LCSW02		Batch ID: 36505		Analysis Date: 5/18/2022						SeqNo: 1551604	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	195	25.0	200.0	0	97.3	70	130	169.2	13.9	20	
Surr: 1,4-Difluorobenzene	53.3		50.00		107	60	140		0		
Surr: Bromofluorobenzene	43.2		50.00		86.4	60	140		0		

Client Name: PACEMI

Work Order Number: 2205253

Logged by: Gabrielle Coeuille

Date Received: 5/12/2022 1:55:00 PM

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☐ No ☒

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

PEO-MW-06-20220504 & PEO-MW-18-20220504 could not be analyzed for VPH. The vials froze and cracked. Some samples could not be analyzed within holding time.

Item Information

Item #	Temp °C
Sample 1	4.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10607257

Workorder Name: 0633086.02

Results Requested By: 5/20/2022

2205253

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@pace labs.com

Fremont Analytical
3600 Fremont Ave N
Seattle, WA 98103

P.O. 10607257

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	HCL	Preserved Containers	NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)	LAB USE ONLY
1	TRIP BLANK-20220504	5/4/2022 08:00	10607257001	Water	2		2		
2	PEO-MW-06-20220504	5/4/2022 09:40	10607257002	Water	5		3	2	
3	PEO-MW-19-20220504	5/4/2022 11:10	10607257003	Water	5		3	2	
4	PEO-MW-31-20220504	5/4/2022 12:50	10607257004	Water	5		3	2	
5	PEO-MW-30-20220504	5/4/2022 14:20	10607257005	Water	5		3	2	
6	PEO-MW-18-20220504	5/4/2022 15:30	10607257006	Water	5		3	2	
7	PEO-MW-26-20220505	5/5/2022 10:15	10607257007	Water	5		3	2	
8	PEO-MW-44-20220505	5/5/2022 13:20	10607257008	Water	5		3	2	
9	PEO-MW-22-20220505	5/5/2022 13:25	10607257009	Water	5		3	2	
10									
11									
12									
13									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	CSM/pace	5-11-22 11:30	ANNA KROG	5-12-22 13:55	J flag to MDL EQUIS EDD needed
2					
3					

Cooler Temperature on Receipt 4.0 °C Custody Seal ☒ Y or ☐ N Received on Ice ☒ Y or ☐ N Samples Intact ☒ Y or ☐ N



June 02, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086.02
Pace Project No.: 10607576

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086.02
Pace Project No.: 10607576

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064

Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
Please Note: Applicable air certifications are denoted with an asterisk ().

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008

Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

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CERTIFICATIONS

Project: 0633086.02

Pace Project No.: 10607576

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

New Jersey Certification #: TN002

New Mexico DW Certification

New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41

North Carolina Drinking Water Certification #: 21704

North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140

Ohio VAP Certification #: CL0069

Oklahoma Certification #: 9915

Oregon Certification #: TN200002

Pennsylvania Certification #: 68-02979

Rhode Island Certification #: LAO00356

South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Mold Certification #: LAB0152

Texas Certification #: T 104704245-17-14

USDA Soil Permit #: P330-15-00234

Utah Certification #: TN00003

Vermont Dept. of Health: ID# VT-2006

Virginia Certification #: VT2006

Virginia Certification #: 460132

Washington Certification #: C847

West Virginia Certification #: 233

Wisconsin Certification #: 998093910

Wyoming UST Certification #: via A2LA 2926.01

A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02

AIHA-LAP/LLC EMLAP Certification #:100789

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086.02

Pace Project No.: 10607576

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10607576001	TRIP BLANK-20220509	Water	05/09/22 08:00	05/10/22 08:50
10607576002	PEO-MW-34-20220506	Water	05/06/22 10:15	05/10/22 08:50
10607576003	PEO-MW-35-20220506	Water	05/06/22 12:40	05/10/22 08:50
10607576004	PEO-MW-39-20220506	Water	05/06/22 15:20	05/10/22 08:50
10607576005	PEO-MW-45-20220506	Water	05/06/22 17:50	05/10/22 08:50
10607576006	PEO-MW-21-20220508	Water	05/08/22 09:00	05/10/22 08:50
10607576007	PEO-MW-25-20220508	Water	05/08/22 10:30	05/10/22 08:50
10607576008	PEO-MW-03-20220508	Water	05/08/22 12:20	05/10/22 08:50
10607576009	PEO-MW-29-20220508	Water	05/08/22 14:00	05/10/22 08:50
10607576010	PEO-MW-40-20220508	Water	05/08/22 16:05	05/10/22 08:50
10607576011	PEO-MW-37-20220505	Water	05/05/22 16:15	05/10/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607576

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607576001	TRIP BLANK-20220509	NWTPH-Gx	MGF	2	PAN
		EPA 8260D	JEM	8	PASI-M
10607576002	PEO-MW-34-20220506	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	MGF	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
10607576003	PEO-MW-35-20220506	EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10607576004	PEO-MW-39-20220506	EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
10607576005	PEO-MW-45-20220506	SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
10607576006	PEO-MW-21-20220508	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607576

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607576007	PEO-MW-25-20220508	EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
10607576008	PEO-MW-03-20220508	NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
10607576009	PEO-MW-29-20220508	EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
10607576010	PEO-MW-40-20220508	EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	JEM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607576

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607576011	PEO-MW-37-20220505	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	SP2	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: TRIP BLANK-20220509		Lab ID: 10607576001		Collected: 05/09/22 08:00		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 14:16	05/17/22 14:16		
Surrogates									
a,a,a-Trifluorotoluene (FID)	100	%	78.0-120		1	05/17/22 14:16	05/17/22 14:16	98-08-8FID	
8260D MSV UST Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 14:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 14:57	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 14:57	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 14:57	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 14:57	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/13/22 14:57	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/13/22 14:57	460-00-4	
Toluene-d8 (S)	105	%	75-125		1		05/13/22 14:57	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-34-20220506 Lab ID: 10607576002 Collected: 05/06/22 10:15 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	7.1	mg/L	0.40	0.12	1	05/10/22 15:26	05/11/22 22:48	68334-30-5	
Motor Oil Range SG	0.67	mg/L	0.40	0.18	1	05/10/22 15:26	05/11/22 22:48	64742-65-0	B,P2
Surrogates									
o-Terphenyl (S)	25	%	50-150		1	05/10/22 15:26	05/11/22 22:48	84-15-1	1M,S0
n-Triacontane (S)	15	%	50-150		1	05/10/22 15:26	05/11/22 22:48		1M,S0
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	200	ug/L	100	31.6	1	05/17/22 15:51	05/17/22 15:51		
Surrogates									
a,a,a-Trifluorotoluene (FID)	101	%	78.0-120		1	05/17/22 15:51	05/17/22 15:51	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	115000	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 13:55		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	12.7	ug/L	2.5	0.41	5	05/18/22 03:14	05/20/22 22:02	7440-38-2	
Manganese, Dissolved	2040	ug/L	2.5	1.0	5	05/18/22 03:14	05/20/22 22:02	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0069	1	05/10/22 17:52	05/11/22 20:19	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	05/10/22 17:52	05/11/22 20:19	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/10/22 17:52	05/11/22 20:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	05/10/22 17:52	05/11/22 20:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	05/10/22 17:52	05/11/22 20:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0095	1	05/10/22 17:52	05/11/22 20:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0081	1	05/10/22 17:52	05/11/22 20:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0083	1	05/10/22 17:52	05/11/22 20:19	207-08-9	
Chrysene	ND	ug/L	0.040	0.0094	1	05/10/22 17:52	05/11/22 20:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/10/22 17:52	05/11/22 20:19	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/10/22 17:52	05/11/22 20:19	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	05/10/22 17:52	05/11/22 20:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 17:52	05/11/22 20:19	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0067	1	05/10/22 17:52	05/11/22 20:19	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0083	1	05/10/22 17:52	05/11/22 20:19	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0088	1	05/10/22 17:52	05/11/22 20:19	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/10/22 17:52	05/11/22 20:19	85-01-8	
Pyrene	ND	ug/L	0.040	0.0099	1	05/10/22 17:52	05/11/22 20:19	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	27	%	52-125		1	05/10/22 17:52	05/11/22 20:19	321-60-8	S2
p-Terphenyl-d14 (S)	18	%	54-125		1	05/10/22 17:52	05/11/22 20:19	1718-51-0	S2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-34-20220506		Lab ID: 10607576002		Collected: 05/06/22 10:15		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.12J	ug/L	1.0	0.10	1		05/13/22 15:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 15:20	100-41-4	
Toluene	0.40J	ug/L	1.0	0.10	1		05/13/22 15:20	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 15:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 15:20	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/13/22 15:20	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/13/22 15:20	460-00-4	
Toluene-d8 (S)	105	%.	75-125		1		05/13/22 15:20	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	141	mg/L	5.0	1.8	1		05/18/22 12:19		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	10.5	mg/L	1.2	0.43	1		05/20/22 03:51	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-35-20220506 Lab ID: 10607576003 Collected: 05/06/22 12:40 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.46	mg/L	0.45	0.13	1	05/13/22 15:04	05/19/22 15:33	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.45	0.21	1	05/13/22 15:04	05/19/22 15:33	64742-65-0	
Surrogates									
o-Terphenyl (S)	68	%	50-150		1	05/13/22 15:04	05/19/22 15:33	84-15-1	
n-Triacontane (S)	59	%	50-150		1	05/13/22 15:04	05/19/22 15:33		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 16:14	05/17/22 16:14		
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.8	%	78.0-120		1	05/17/22 16:14	05/17/22 16:14	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	34500	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 13:56		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	8.6	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:09	7440-38-2	
Manganese, Dissolved	772	ug/L	5.0	2.0	10	05/18/22 03:14	05/20/22 22:12	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.083	ug/L	0.038	0.0065	1	05/10/22 17:52	05/11/22 20:41	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0057	1	05/10/22 17:52	05/11/22 20:41	208-96-8	
Anthracene	ND	ug/L	0.038	0.0051	1	05/10/22 17:52	05/11/22 20:41	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0085	1	05/10/22 17:52	05/11/22 20:41	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0083	1	05/10/22 17:52	05/11/22 20:41	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0090	1	05/10/22 17:52	05/11/22 20:41	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0077	1	05/10/22 17:52	05/11/22 20:41	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0078	1	05/10/22 17:52	05/11/22 20:41	207-08-9	
Chrysene	ND	ug/L	0.038	0.0089	1	05/10/22 17:52	05/11/22 20:41	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0075	1	05/10/22 17:52	05/11/22 20:41	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.013	1	05/10/22 17:52	05/11/22 20:41	206-44-0	
Fluorene	ND	ug/L	0.038	0.0057	1	05/10/22 17:52	05/11/22 20:41	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.011	1	05/10/22 17:52	05/11/22 20:41	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0063	1	05/10/22 17:52	05/11/22 20:41	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0078	1	05/10/22 17:52	05/11/22 20:41	91-57-6	
Naphthalene	ND	ug/L	0.038	0.0083	1	05/10/22 17:52	05/11/22 20:41	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.012	1	05/10/22 17:52	05/11/22 20:41	85-01-8	
Pyrene	0.024J	ug/L	0.038	0.0093	1	05/10/22 17:52	05/11/22 20:41	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	47	%	52-125		1	05/10/22 17:52	05/11/22 20:41	321-60-8	S2
p-Terphenyl-d14 (S)	41	%	54-125		1	05/10/22 17:52	05/11/22 20:41	1718-51-0	S2

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-35-20220506		Lab ID: 10607576003		Collected: 05/06/22 12:40		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 15:42	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 15:42	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 15:42	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 15:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 15:42	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		05/13/22 15:42	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/13/22 15:42	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		05/13/22 15:42	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	42.9	mg/L	5.0	1.8	1		05/18/22 12:26		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	14.8	mg/L	1.2	0.43	1		05/20/22 04:05	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-39-20220506 Lab ID: 10607576004 Collected: 05/06/22 15:20 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	4.1	mg/L	0.42	0.12	1	05/13/22 15:04	05/19/22 15:44	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	05/13/22 15:04	05/19/22 15:44	64742-65-0	
Surrogates									
o-Terphenyl (S)	59	%	50-150		1	05/13/22 15:04	05/19/22 15:44	84-15-1	
n-Triacontane (S)	51	%	50-150		1	05/13/22 15:04	05/19/22 15:44		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	2530	ug/L	2000	632	20	05/17/22 22:01	05/17/22 22:01		
Surrogates									
a,a,a-Trifluorotoluene (FID)	98.7	%	78.0-120		20	05/17/22 22:01	05/17/22 22:01	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	122000	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 13:58		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	39.7	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:16	7440-38-2	
Manganese, Dissolved	2180	ug/L	5.0	2.0	10	05/18/22 03:14	05/20/22 22:19	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	1.6	ug/L	0.038	0.0066	1	05/10/22 17:52	05/11/22 21:02	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0058	1	05/10/22 17:52	05/11/22 21:02	208-96-8	
Anthracene	0.24	ug/L	0.038	0.0052	1	05/10/22 17:52	05/11/22 21:02	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0087	1	05/10/22 17:52	05/11/22 21:02	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/10/22 17:52	05/11/22 21:02	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0092	1	05/10/22 17:52	05/11/22 21:02	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0078	1	05/10/22 17:52	05/11/22 21:02	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0080	1	05/10/22 17:52	05/11/22 21:02	207-08-9	
Chrysene	ND	ug/L	0.038	0.0090	1	05/10/22 17:52	05/11/22 21:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/10/22 17:52	05/11/22 21:02	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.014	1	05/10/22 17:52	05/11/22 21:02	206-44-0	
Fluorene	0.88	ug/L	0.038	0.0058	1	05/10/22 17:52	05/11/22 21:02	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.011	1	05/10/22 17:52	05/11/22 21:02	193-39-5	
1-Methylnaphthalene	4.1	ug/L	0.038	0.0065	1	05/10/22 17:52	05/11/22 21:02	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0080	1	05/10/22 17:52	05/11/22 21:02	91-57-6	
Naphthalene	3.5	ug/L	0.038	0.0085	1	05/10/22 17:52	05/11/22 21:02	91-20-3	
Phenanthrene	0.13	ug/L	0.038	0.012	1	05/10/22 17:52	05/11/22 21:02	85-01-8	
Pyrene	ND	ug/L	0.038	0.0095	1	05/10/22 17:52	05/11/22 21:02	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	60	%	52-125		1	05/10/22 17:52	05/11/22 21:02	321-60-8	
p-Terphenyl-d14 (S)	54	%	54-125		1	05/10/22 17:52	05/11/22 21:02	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-39-20220506		Lab ID: 10607576004		Collected: 05/06/22 15:20		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	7.5	ug/L	1.0	0.10	1		05/13/22 16:04	71-43-2	
Ethylbenzene	1.9	ug/L	1.0	0.11	1		05/13/22 16:04	100-41-4	
Toluene	7.3	ug/L	1.0	0.10	1		05/13/22 16:04	108-88-3	
m&p-Xylene	13.9	ug/L	2.0	0.20	1		05/13/22 16:04	179601-23-1	
o-Xylene	7.3	ug/L	1.0	0.18	1		05/13/22 16:04	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	97	%.	75-125		1		05/13/22 16:04	2199-69-1	
4-Bromofluorobenzene (S)	105	%.	75-125		1		05/13/22 16:04	460-00-4	
Toluene-d8 (S)	95	%.	75-125		1		05/13/22 16:04	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	211	mg/L	5.0	1.8	1		05/18/22 12:30		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	0.80J	mg/L	1.2	0.43	1		05/20/22 04:19	14808-79-8	B

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-45-20220506 Lab ID: 10607576005 Collected: 05/06/22 17:50 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	05/13/22 15:04	05/19/22 15:55	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/13/22 15:04	05/19/22 15:55	64742-65-0	
Surrogates									
o-Terphenyl (S)	71	%	50-150		1	05/13/22 15:04	05/19/22 15:55	84-15-1	
n-Triacontane (S)	69	%	50-150		1	05/13/22 15:04	05/19/22 15:55		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 16:38	05/17/22 16:38		
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.4	%	78.0-120		1	05/17/22 16:38	05/17/22 16:38	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	59100	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:00		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.12J	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:23	7440-38-2	
Manganese, Dissolved	210	ug/L	0.50	0.20	1	05/18/22 03:14	05/20/22 22:23	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0068	1	05/10/22 17:52	05/11/22 21:24	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0060	1	05/10/22 17:52	05/11/22 21:24	208-96-8	
Anthracene	ND	ug/L	0.040	0.0053	1	05/10/22 17:52	05/11/22 21:24	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	05/10/22 17:52	05/11/22 21:24	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	05/10/22 17:52	05/11/22 21:24	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0094	1	05/10/22 17:52	05/11/22 21:24	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0080	1	05/10/22 17:52	05/11/22 21:24	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0082	1	05/10/22 17:52	05/11/22 21:24	207-08-9	
Chrysene	ND	ug/L	0.040	0.0093	1	05/10/22 17:52	05/11/22 21:24	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/10/22 17:52	05/11/22 21:24	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/10/22 17:52	05/11/22 21:24	206-44-0	
Fluorene	ND	ug/L	0.040	0.0060	1	05/10/22 17:52	05/11/22 21:24	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 17:52	05/11/22 21:24	193-39-5	
1-Methylnaphthalene	0.034J	ug/L	0.040	0.0067	1	05/10/22 17:52	05/11/22 21:24	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0082	1	05/10/22 17:52	05/11/22 21:24	91-57-6	
Naphthalene	0.0093J	ug/L	0.040	0.0087	1	05/10/22 17:52	05/11/22 21:24	91-20-3	
Phenanthrene	0.028J	ug/L	0.040	0.012	1	05/10/22 17:52	05/11/22 21:24	85-01-8	
Pyrene	ND	ug/L	0.040	0.0098	1	05/10/22 17:52	05/11/22 21:24	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	81	%	52-125		1	05/10/22 17:52	05/11/22 21:24	321-60-8	
p-Terphenyl-d14 (S)	74	%	54-125		1	05/10/22 17:52	05/11/22 21:24	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-45-20220506		Lab ID: 10607576005		Collected: 05/06/22 17:50		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 16:27	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 16:27	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 16:27	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 16:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 16:27	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/13/22 16:27	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		05/13/22 16:27	460-00-4	
Toluene-d8 (S)	105	%.	75-125		1		05/13/22 16:27	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	2.6J	mg/L	5.0	1.8	1		05/18/22 13:35		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	61.2	mg/L	1.2	0.43	1		05/20/22 04:33	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-21-20220508 Lab ID: 10607576006 Collected: 05/08/22 09:00 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.43	0.13	1	05/13/22 15:04	05/19/22 16:06	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.20	1	05/13/22 15:04	05/19/22 16:06	64742-65-0	
Surrogates									
o-Terphenyl (S)	62	%	50-150		1	05/13/22 15:04	05/19/22 16:06	84-15-1	
n-Triacontane (S)	59	%	50-150		1	05/13/22 15:04	05/19/22 16:06		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 17:04	05/17/22 17:04		
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.7	%	78.0-120		1	05/17/22 17:04	05/17/22 17:04	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	38400	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:01		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.22J	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:37	7440-38-2	
Manganese, Dissolved	31.2	ug/L	0.50	0.20	1	05/18/22 03:14	05/20/22 22:37	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	05/10/22 17:52	05/20/22 13:48	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	05/10/22 17:52	05/20/22 13:48	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/10/22 17:52	05/20/22 13:48	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	05/10/22 17:52	05/20/22 13:48	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	05/10/22 17:52	05/20/22 13:48	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	05/10/22 17:52	05/20/22 13:48	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	05/10/22 17:52	05/20/22 13:48	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/10/22 17:52	05/20/22 13:48	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	05/10/22 17:52	05/20/22 13:48	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/10/22 17:52	05/20/22 13:48	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/10/22 17:52	05/20/22 13:48	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/10/22 17:52	05/20/22 13:48	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 17:52	05/20/22 13:48	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	05/10/22 17:52	05/20/22 13:48	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	05/10/22 17:52	05/20/22 13:48	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	05/10/22 17:52	05/20/22 13:48	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/10/22 17:52	05/20/22 13:48	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	05/10/22 17:52	05/20/22 13:48	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	63	%	52-125		1	05/10/22 17:52	05/20/22 13:48	321-60-8	
p-Terphenyl-d14 (S)	75	%	54-125		1	05/10/22 17:52	05/20/22 13:48	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-21-20220508		Lab ID: 10607576006		Collected: 05/08/22 09:00		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 16:48	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 16:48	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 16:48	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 16:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 16:48	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/13/22 16:48	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		05/13/22 16:48	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		05/13/22 16:48	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	47.7	mg/L	5.0	1.8	1		05/18/22 12:39		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	3.8	mg/L	1.2	0.43	1		05/20/22 05:16	14808-79-8	B

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-25-20220508 Lab ID: 10607576007 Collected: 05/08/22 10:30 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.41	0.12	1	05/13/22 15:04	05/19/22 16:18	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.41	0.19	1	05/13/22 15:04	05/19/22 16:18	64742-65-0	
Surrogates									
o-Terphenyl (S)	74	%	50-150		1	05/13/22 15:04	05/19/22 16:18	84-15-1	
n-Triacontane (S)	72	%	50-150		1	05/13/22 15:04	05/19/22 16:18		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 17:28	05/17/22 17:28		
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.8	%	78.0-120		1	05/17/22 17:28	05/17/22 17:28	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	54400	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:03		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.19J	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:44	7440-38-2	
Manganese, Dissolved	0.67	ug/L	0.50	0.20	1	05/18/22 03:14	05/20/22 22:44	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0068	1	05/10/22 17:52	05/20/22 14:09	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0060	1	05/10/22 17:52	05/20/22 14:09	208-96-8	
Anthracene	ND	ug/L	0.039	0.0053	1	05/10/22 17:52	05/20/22 14:09	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0089	1	05/10/22 17:52	05/20/22 14:09	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0087	1	05/10/22 17:52	05/20/22 14:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0093	1	05/10/22 17:52	05/20/22 14:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0080	1	05/10/22 17:52	05/20/22 14:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0081	1	05/10/22 17:52	05/20/22 14:09	207-08-9	
Chrysene	ND	ug/L	0.039	0.0092	1	05/10/22 17:52	05/20/22 14:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/10/22 17:52	05/20/22 14:09	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.014	1	05/10/22 17:52	05/20/22 14:09	206-44-0	
Fluorene	ND	ug/L	0.039	0.0059	1	05/10/22 17:52	05/20/22 14:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.011	1	05/10/22 17:52	05/20/22 14:09	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0066	1	05/10/22 17:52	05/20/22 14:09	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0081	1	05/10/22 17:52	05/20/22 14:09	91-57-6	
Naphthalene	ND	ug/L	0.039	0.0086	1	05/10/22 17:52	05/20/22 14:09	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.012	1	05/10/22 17:52	05/20/22 14:09	85-01-8	
Pyrene	ND	ug/L	0.039	0.0097	1	05/10/22 17:52	05/20/22 14:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%	52-125		1	05/10/22 17:52	05/20/22 14:09	321-60-8	
p-Terphenyl-d14 (S)	70	%	54-125		1	05/10/22 17:52	05/20/22 14:09	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-25-20220508		Lab ID: 10607576007		Collected: 05/08/22 10:30		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 17:11	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 17:11	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 17:11	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 17:11	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 17:11	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		05/13/22 17:11	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125		1		05/13/22 17:11	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		05/13/22 17:11	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	63.9	mg/L	5.0	1.8	1		05/18/22 12:43		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	8.5	mg/L	1.2	0.43	1		05/20/22 05:30	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-03-20220508 Lab ID: 10607576008 Collected: 05/08/22 12:20 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.42	0.12	1	05/13/22 15:04	05/19/22 16:29	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	05/13/22 15:04	05/19/22 16:29	64742-65-0	
Surrogates									
o-Terphenyl (S)	70	%	50-150		1	05/13/22 15:04	05/19/22 16:29	84-15-1	
n-Triacontane (S)	69	%	50-150		1	05/13/22 15:04	05/19/22 16:29		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 17:51	05/17/22 17:51		
Surrogates									
a,a,a-Trifluorotoluene (FID)	100	%	78.0-120		1	05/17/22 17:51	05/17/22 17:51	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	48000	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:05		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.31J	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:51	7440-38-2	
Manganese, Dissolved	30.6	ug/L	0.50	0.20	1	05/18/22 03:14	05/20/22 22:51	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0068	1	05/10/22 17:52	05/20/22 14:31	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0060	1	05/10/22 17:52	05/20/22 14:31	208-96-8	
Anthracene	ND	ug/L	0.039	0.0053	1	05/10/22 17:52	05/20/22 14:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0089	1	05/10/22 17:52	05/20/22 14:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0087	1	05/10/22 17:52	05/20/22 14:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0094	1	05/10/22 17:52	05/20/22 14:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0080	1	05/10/22 17:52	05/20/22 14:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0082	1	05/10/22 17:52	05/20/22 14:31	207-08-9	
Chrysene	ND	ug/L	0.039	0.0093	1	05/10/22 17:52	05/20/22 14:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/10/22 17:52	05/20/22 14:31	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.014	1	05/10/22 17:52	05/20/22 14:31	206-44-0	
Fluorene	ND	ug/L	0.039	0.0060	1	05/10/22 17:52	05/20/22 14:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.011	1	05/10/22 17:52	05/20/22 14:31	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0066	1	05/10/22 17:52	05/20/22 14:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0082	1	05/10/22 17:52	05/20/22 14:31	91-57-6	
Naphthalene	ND	ug/L	0.039	0.0087	1	05/10/22 17:52	05/20/22 14:31	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.012	1	05/10/22 17:52	05/20/22 14:31	85-01-8	
Pyrene	ND	ug/L	0.039	0.0097	1	05/10/22 17:52	05/20/22 14:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	65	%	52-125		1	05/10/22 17:52	05/20/22 14:31	321-60-8	
p-Terphenyl-d14 (S)	73	%	54-125		1	05/10/22 17:52	05/20/22 14:31	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-03-20220508		Lab ID: 10607576008		Collected: 05/08/22 12:20		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 17:33	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 17:33	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 17:33	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 17:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 17:33	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125		1		05/13/22 17:33	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		05/13/22 17:33	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		05/13/22 17:33	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	52.5	mg/L	5.0	1.8	1		05/18/22 13:04		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	6.7	mg/L	1.2	0.43	1		05/20/22 06:31	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-29-20220508 Lab ID: 10607576009 Collected: 05/08/22 14:00 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	3.4	mg/L	0.39	0.12	1	05/13/22 15:04	05/19/22 16:40	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.39	0.18	1	05/13/22 15:04	05/19/22 16:40	64742-65-0	
Surrogates									
o-Terphenyl (S)	77	%	50-150		1	05/13/22 15:04	05/19/22 16:40	84-15-1	
n-Triacontane (S)	80	%	50-150		1	05/13/22 15:04	05/19/22 16:40		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	2750	ug/L	100	31.6	1	05/17/22 18:15	05/17/22 18:15		
Surrogates									
a,a,a-Trifluorotoluene (FID)	95.4	%	78.0-120		1	05/17/22 18:15	05/17/22 18:15	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	217000	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:06		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	49.0	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 22:58	7440-38-2	
Manganese, Dissolved	3630	ug/L	5.0	2.0	10	05/18/22 03:14	05/20/22 23:01	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	1.5	ug/L	0.040	0.0070	1	05/10/22 17:52	05/20/22 14:53	83-32-9	
Acenaphthylene	0.23	ug/L	0.040	0.0061	1	05/10/22 17:52	05/20/22 14:53	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/10/22 17:52	05/20/22 14:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	05/10/22 17:52	05/20/22 14:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	05/10/22 17:52	05/20/22 14:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	05/10/22 17:52	05/20/22 14:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	05/10/22 17:52	05/20/22 14:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/10/22 17:52	05/20/22 14:53	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	05/10/22 17:52	05/20/22 14:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/10/22 17:52	05/20/22 14:53	53-70-3	
Fluoranthene	0.057	ug/L	0.040	0.014	1	05/10/22 17:52	05/20/22 14:53	206-44-0	
Fluorene	1.5	ug/L	0.040	0.0061	1	05/10/22 17:52	05/20/22 14:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 17:52	05/20/22 14:53	193-39-5	
1-Methylnaphthalene	0.94	ug/L	0.040	0.0068	1	05/10/22 17:52	05/20/22 14:53	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	05/10/22 17:52	05/20/22 14:53	91-57-6	
Naphthalene	2.1	ug/L	0.040	0.0089	1	05/10/22 17:52	05/20/22 14:53	91-20-3	
Phenanthrene	0.82	ug/L	0.040	0.012	1	05/10/22 17:52	05/20/22 14:53	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	05/10/22 17:52	05/20/22 14:53	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	61	%	52-125		1	05/10/22 17:52	05/20/22 14:53	321-60-8	
p-Terphenyl-d14 (S)	68	%	54-125		1	05/10/22 17:52	05/20/22 14:53	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-29-20220508		Lab ID: 10607576009		Collected: 05/08/22 14:00		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.65J	ug/L	1.0	0.10	1		05/20/22 15:19	71-43-2	
Ethylbenzene	1.2	ug/L	1.0	0.11	1		05/20/22 15:19	100-41-4	
Toluene	1.9	ug/L	1.0	0.10	1		05/20/22 15:19	108-88-3	
m&p-Xylene	4.6	ug/L	2.0	0.20	1		05/20/22 15:19	179601-23-1	
o-Xylene	1.0	ug/L	1.0	0.18	1		05/20/22 15:19	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	103	%.	75-125		1		05/20/22 15:19	2199-69-1	
4-Bromofluorobenzene (S)	91	%.	75-125		1		05/20/22 15:19	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/20/22 15:19	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	275	mg/L	5.0	1.8	1		05/18/22 13:08		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	1.2	mg/L	1.2	0.43	1		05/20/22 06:45	14808-79-8	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-40-20220508 Lab ID: 10607576010 Collected: 05/08/22 16:05 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.12	1	05/13/22 15:04	05/19/22 16:51	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.18	1	05/13/22 15:04	05/19/22 16:51	64742-65-0	
Surrogates									
o-Terphenyl (S)	80	%	50-150		1	05/13/22 15:04	05/19/22 16:51	84-15-1	
n-Triacontane (S)	82	%	50-150		1	05/13/22 15:04	05/19/22 16:51		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	68.9J	ug/L	100	31.6	1	05/17/22 18:38	05/17/22 18:38		J
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.2	%	78.0-120		1	05/17/22 18:38	05/17/22 18:38	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	89100	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:13		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	4.6	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 23:04	7440-38-2	
Manganese, Dissolved	1230	ug/L	5.0	2.0	10	05/18/22 03:14	05/20/22 23:08	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.022J	ug/L	0.039	0.0067	1	05/10/22 17:52	05/20/22 15:15	83-32-9	
Acenaphthylene	0.0070J	ug/L	0.039	0.0059	1	05/10/22 17:52	05/20/22 15:15	208-96-8	
Anthracene	ND	ug/L	0.039	0.0052	1	05/10/22 17:52	05/20/22 15:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0088	1	05/10/22 17:52	05/20/22 15:15	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/10/22 17:52	05/20/22 15:15	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0092	1	05/10/22 17:52	05/20/22 15:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0079	1	05/10/22 17:52	05/20/22 15:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0080	1	05/10/22 17:52	05/20/22 15:15	207-08-9	
Chrysene	ND	ug/L	0.039	0.0091	1	05/10/22 17:52	05/20/22 15:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/10/22 17:52	05/20/22 15:15	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.014	1	05/10/22 17:52	05/20/22 15:15	206-44-0	
Fluorene	0.021J	ug/L	0.039	0.0059	1	05/10/22 17:52	05/20/22 15:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.011	1	05/10/22 17:52	05/20/22 15:15	193-39-5	
1-Methylnaphthalene	0.0073J	ug/L	0.039	0.0065	1	05/10/22 17:52	05/20/22 15:15	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0080	1	05/10/22 17:52	05/20/22 15:15	91-57-6	
Naphthalene	0.019J	ug/L	0.039	0.0085	1	05/10/22 17:52	05/20/22 15:15	91-20-3	
Phenanthrene	0.016J	ug/L	0.039	0.012	1	05/10/22 17:52	05/20/22 15:15	85-01-8	
Pyrene	ND	ug/L	0.039	0.0096	1	05/10/22 17:52	05/20/22 15:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	59	%	52-125		1	05/10/22 17:52	05/20/22 15:15	321-60-8	
p-Terphenyl-d14 (S)	73	%	54-125		1	05/10/22 17:52	05/20/22 15:15	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-40-20220508		Lab ID: 10607576010		Collected: 05/08/22 16:05		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 17:55	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 17:55	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 17:55	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 17:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 17:55	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		05/13/22 17:55	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125		1		05/13/22 17:55	460-00-4	
Toluene-d8 (S)	104	%.	75-125		1		05/13/22 17:55	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	54.6	mg/L	5.0	1.8	1		05/18/22 13:16		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	52.6	mg/L	1.2	0.43	1		05/20/22 07:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607576

Sample: PEO-MW-37-20220505 Lab ID: 10607576011 Collected: 05/05/22 16:15 Received: 05/10/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.39	0.12	1	05/13/22 15:04	05/19/22 17:03	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.39	0.18	1	05/13/22 15:04	05/19/22 17:03	64742-65-0	
Surrogates									
o-Terphenyl (S)	69	%	50-150		1	05/13/22 15:04	05/19/22 17:03	84-15-1	
n-Triacontane (S)	72	%	50-150		1	05/13/22 15:04	05/19/22 17:03		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	ND	ug/L	100	31.6	1	05/17/22 19:02	05/17/22 19:02		
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.6	%	78.0-120		1	05/17/22 19:02	05/17/22 19:02	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	55500	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:15		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.5	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 23:18	7440-38-2	
Manganese, Dissolved	91.9	ug/L	0.50	0.20	1	05/18/22 03:14	05/20/22 23:18	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	05/10/22 17:52	05/11/22 15:56	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	05/10/22 17:52	05/11/22 15:56	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/10/22 17:52	05/11/22 15:56	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	05/10/22 17:52	05/11/22 15:56	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	05/10/22 17:52	05/11/22 15:56	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	05/10/22 17:52	05/11/22 15:56	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0082	1	05/10/22 17:52	05/11/22 15:56	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/10/22 17:52	05/11/22 15:56	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	05/10/22 17:52	05/11/22 15:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/10/22 17:52	05/11/22 15:56	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/10/22 17:52	05/11/22 15:56	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/10/22 17:52	05/11/22 15:56	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/10/22 17:52	05/11/22 15:56	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	05/10/22 17:52	05/11/22 15:56	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	05/10/22 17:52	05/11/22 15:56	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	05/10/22 17:52	05/11/22 15:56	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/10/22 17:52	05/11/22 15:56	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	05/10/22 17:52	05/11/22 15:56	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	85	%	52-125		1	05/10/22 17:52	05/11/22 15:56	321-60-8	
p-Terphenyl-d14 (S)	80	%	54-125		1	05/10/22 17:52	05/11/22 15:56	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607576

Sample: PEO-MW-37-20220505		Lab ID: 10607576011		Collected: 05/05/22 16:15		Received: 05/10/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/16/22 22:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/16/22 22:56	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/16/22 22:56	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/16/22 22:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/16/22 22:56	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/16/22 22:56	2199-69-1	
4-Bromofluorobenzene (S)	102	%	75-125		1		05/16/22 22:56	460-00-4	
Toluene-d8 (S)	100	%	75-125		1		05/16/22 22:56	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	41.5	mg/L	5.0	1.8	1		05/18/22 13:20		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	19.0	mg/L	1.2	0.43	1		05/20/22 07:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	1864798	Analysis Method:	NWTPH-Gx
QC Batch Method:	NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet
Associated Lab Samples:	10607576001, 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK:	R3792853-2	Matrix:	Water
Associated Lab Samples:	10607576001, 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	ND	100	31.6	05/17/22 13:03	
a,a,a-Trifluorotoluene (FID)	%	99.4	78.0-120		05/17/22 13:03	

LABORATORY CONTROL SAMPLE: R3792853-1						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	4870	88.5	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			103	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:					R3792853-3								R3792853-4							
Parameter	Units	L1492883-03	MS	MSD	MS	MSD	MS	MSD	% Rec	RPD	Max	Qual								
		Result	Spike Conc.	Spike Conc.									Result	Result	% Rec	% Rec	Limits	RPD		
TPH (C06-C12)	ug/L	182	5500	5500	6290	5670	111	99.8	10.0-155	10.4	21									
a.a.a-Trifluorotoluene (FID)	%						101	100	78.0-120											

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	1864798	Analysis Method:	NWTPH-Gx
QC Batch Method:	8021B/NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet
Associated Lab Samples:	10607576001, 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK:	R3792853-2	Matrix:	Water
Associated Lab Samples:	10607576001, 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	ND	100	31.6	05/17/22 13:03	
a,a,a-Trifluorotoluene (FID)	%	99.4	78.0-120		05/17/22 13:03	

LABORATORY CONTROL SAMPLE:	R3792853-1					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	4870	88.5	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			103	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	R3792853-3	R3792853-4										
Parameter	Units	L1492883-03 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	182	5500	5500	6290	5670	111	99.8	10.0-155	10.4	21	
a,a,a-Trifluorotoluene (FID)	%						101	100	78.0-120			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	815733	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK:	4324003	Matrix:	Water
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	05/20/22 21:55	
Manganese, Dissolved	ug/L	ND	0.50	0.20	05/20/22 21:55	

LABORATORY CONTROL SAMPLE:	4324004					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	105	105	80-120	
Manganese, Dissolved	ug/L	100	101	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	4324005			4324006								
Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	17.2	100	100	123	123	106	106	75-125	0	20	
Manganese, Dissolved	ug/L	1480	100	100	1540	1520	57	38	75-125	1	20	E,P6

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	815188	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607576001, 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576010		

METHOD BLANK:	4321352	Matrix:	Water
Associated Lab Samples:	10607576001, 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/13/22 14:15	
Ethylbenzene	ug/L	ND	1.0	0.11	05/13/22 14:15	
m&p-Xylene	ug/L	ND	2.0	0.20	05/13/22 14:15	
o-Xylene	ug/L	ND	1.0	0.18	05/13/22 14:15	
Toluene	ug/L	ND	1.0	0.10	05/13/22 14:15	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		05/13/22 14:15	
4-Bromofluorobenzene (S)	%	100	75-125		05/13/22 14:15	
Toluene-d8 (S)	%	111	75-125		05/13/22 14:15	

LABORATORY CONTROL SAMPLE & LCSD:		4321353								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.3	20.5	97	103	73-125	6	20	
Ethylbenzene	ug/L	20	19.5	20.5	97	103	75-125	5	20	
m&p-Xylene	ug/L	40	40.2	42.3	101	106	72-125	5	20	
o-Xylene	ug/L	20	20.0	21.6	100	108	73-125	7	20	
Toluene	ug/L	20	18.9	20.4	95	102	74-125	7	20	
1,2-Dichlorobenzene-d4 (S)	%				100	101	75-125			
4-Bromofluorobenzene (S)	%				102	102	75-125			
Toluene-d8 (S)	%				98	100	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch: 815528

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV UST-WATER

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607576011

METHOD BLANK: 4323112

Matrix: Water

Associated Lab Samples: 10607576011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/16/22 21:23	
Ethylbenzene	ug/L	ND	1.0	0.11	05/16/22 21:23	
m&p-Xylene	ug/L	ND	2.0	0.20	05/16/22 21:23	
o-Xylene	ug/L	ND	1.0	0.18	05/16/22 21:23	
Toluene	ug/L	ND	1.0	0.10	05/16/22 21:23	
1,2-Dichlorobenzene-d4 (S)	%	101	75-125		05/16/22 21:23	
4-Bromofluorobenzene (S)	%	101	75-125		05/16/22 21:23	
Toluene-d8 (S)	%	98	75-125		05/16/22 21:23	

LABORATORY CONTROL SAMPLE & LCSD: 4323113

4323114

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	21.4	22.2	107	111	73-125	4	20	
Ethylbenzene	ug/L	20	22.4	22.6	112	113	75-125	1	20	
m&p-Xylene	ug/L	40	46.1	47.5	115	119	72-125	3	20	
o-Xylene	ug/L	20	23.3	23.6	116	118	73-125	1	20	
Toluene	ug/L	20	21.0	21.8	105	109	74-125	4	20	
1,2-Dichlorobenzene-d4 (S)	%				101	101	75-125			
4-Bromofluorobenzene (S)	%				100	102	75-125			
Toluene-d8 (S)	%				98	99	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch: 816478

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV UST-WATER

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607576009

METHOD BLANK: 4327254

Matrix: Water

Associated Lab Samples: 10607576009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/20/22 13:47	
Ethylbenzene	ug/L	ND	1.0	0.11	05/20/22 13:47	
m&p-Xylene	ug/L	ND	2.0	0.20	05/20/22 13:47	
o-Xylene	ug/L	ND	1.0	0.18	05/20/22 13:47	
Toluene	ug/L	ND	1.0	0.10	05/20/22 13:47	
1,2-Dichlorobenzene-d4 (S)	%	96	75-125		05/20/22 13:47	
4-Bromofluorobenzene (S)	%	93	75-125		05/20/22 13:47	
Toluene-d8 (S)	%	99	75-125		05/20/22 13:47	

LABORATORY CONTROL SAMPLE & LCSD: 4327255

4327256

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	18.5	19.6	92	98	73-125	6	20	
Ethylbenzene	ug/L	20	20.1	20.6	100	103	75-125	3	20	
m&p-Xylene	ug/L	40	40.1	40.6	100	101	72-125	1	20	
o-Xylene	ug/L	20	19.1	19.7	95	98	73-125	3	20	
Toluene	ug/L	20	18.3	19.6	91	98	74-125	7	20	
1,2-Dichlorobenzene-d4 (S)	%				99	98	75-125			
4-Bromofluorobenzene (S)	%				95	95	75-125			
Toluene-d8 (S)	%				98	98	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	814360	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK: 4317102

Matrix: Water

Associated Lab Samples: 10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	05/11/22 11:33	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	05/11/22 11:33	
Acenaphthene	ug/L	ND	0.040	0.0069	05/11/22 11:33	
Acenaphthylene	ug/L	ND	0.040	0.0061	05/11/22 11:33	
Anthracene	ug/L	ND	0.040	0.0054	05/11/22 11:33	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	05/11/22 11:33	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/11/22 11:33	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	05/11/22 11:33	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	05/11/22 11:33	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	05/11/22 11:33	
Chrysene	ug/L	ND	0.040	0.0094	05/11/22 11:33	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	05/11/22 11:33	
Fluoranthene	ug/L	ND	0.040	0.014	05/11/22 11:33	
Fluorene	ug/L	ND	0.040	0.0060	05/11/22 11:33	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	05/11/22 11:33	
Naphthalene	ug/L	ND	0.040	0.0088	05/11/22 11:33	
Phenanthrene	ug/L	ND	0.040	0.012	05/11/22 11:33	
Pyrene	ug/L	ND	0.040	0.0099	05/11/22 11:33	
2-Fluorobiphenyl (S)	%	72	52-125		05/11/22 11:33	
p-Terphenyl-d14 (S)	%	77	54-125		05/11/22 11:33	

LABORATORY CONTROL SAMPLE: 4317103

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.78	78	43-125	
2-Methylnaphthalene	ug/L	1	0.70	70	42-125	
Acenaphthene	ug/L	1	0.77	77	56-125	
Acenaphthylene	ug/L	1	0.77	77	55-125	
Anthracene	ug/L	1	0.93	93	64-125	
Benzo(a)anthracene	ug/L	1	0.78	78	65-125	
Benzo(a)pyrene	ug/L	1	0.83	83	64-125	
Benzo(b)fluoranthene	ug/L	1	0.78	78	70-125	
Benzo(g,h,i)perylene	ug/L	1	0.71	71	49-125	
Benzo(k)fluoranthene	ug/L	1	0.88	88	69-125	
Chrysene	ug/L	1	0.94	94	70-125	
Dibenz(a,h)anthracene	ug/L	1	0.65	65	41-125	
Fluoranthene	ug/L	1	0.81	81	67-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

LABORATORY CONTROL SAMPLE: 4317103

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/L	1	0.78	78	59-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.76	76	57-125	
Naphthalene	ug/L	1	0.77	77	49-125	
Phenanthrene	ug/L	1	0.73	73	65-125	
Pyrene	ug/L	1	0.82	82	67-125	
2-Fluorobiphenyl (S)	%			69	52-125	
p-Terphenyl-d14 (S)	%			80	54-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4317104 4317105

Parameter	Units	10607517002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	ND	0.94	0.94	0.73	0.84	78	89	30-150	13	30	
2-Methylnaphthalene	ug/L	ND	0.94	0.94	0.53	0.64	56	67	35-125	18	30	
Acenaphthene	ug/L	ND	0.94	0.94	0.64	0.76	67	80	45-125	18	30	
Acenaphthylene	ug/L	ND	0.94	0.94	0.62	0.75	66	79	47-125	18	30	
Anthracene	ug/L	ND	0.94	0.94	0.75	0.88	80	93	44-125	15	30	
Benzo(a)anthracene	ug/L	ND	0.94	0.94	0.59	0.67	63	71	43-125	12	30	
Benzo(a)pyrene	ug/L	ND	0.94	0.94	0.65	0.74	69	79	36-125	13	30	
Benzo(b)fluoranthene	ug/L	ND	0.94	0.94	0.60	0.67	63	71	38-125	12	30	
Benzo(g,h,i)perylene	ug/L	ND	0.94	0.94	0.69	0.77	73	82	30-125	11	30	
Benzo(k)fluoranthene	ug/L	ND	0.94	0.94	0.71	0.84	76	89	32-131	17	30	
Chrysene	ug/L	ND	0.94	0.94	0.75	0.83	79	88	40-125	10	30	
Dibenz(a,h)anthracene	ug/L	ND	0.94	0.94	0.70	0.76	74	80	30-125	8	30	
Fluoranthene	ug/L	ND	0.94	0.94	0.67	0.75	71	79	56-125	12	30	
Fluorene	ug/L	ND	0.94	0.94	0.62	0.72	66	76	46-125	15	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.94	0.94	0.59	0.67	62	71	30-125	13	30	
Naphthalene	ug/L	ND	0.94	0.94	0.60	0.70	64	74	42-125	15	30	
Phenanthrene	ug/L	ND	0.94	0.94	0.57	0.65	61	68	49-125	12	30	
Pyrene	ug/L	ND	0.94	0.94	0.69	0.75	73	80	50-125	9	30	
2-Fluorobiphenyl (S)	%						64	78	52-125			
p-Terphenyl-d14 (S)	%						71	78	54-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch: 814285

Analysis Method: NWTPH-Dx

QC Batch Method: EPA Mod. 3510C

Analysis Description: NWTPH-Dx GCS LV SG

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607576002

METHOD BLANK: 4316763

Matrix: Water

Associated Lab Samples: 10607576002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	05/11/22 22:14	
Motor Oil Range SG	mg/L	0.51	0.40	0.18	05/11/22 22:14	
n-Triacontane (S)	%.	79	50-150		05/11/22 22:14	
o-Terphenyl (S)	%.	66	50-150		05/11/22 22:14	

LABORATORY CONTROL SAMPLE & LCSD: 4316764

4316765

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.2	1.2	59	62	50-150	4	20	
Motor Oil Range SG	mg/L	2	1.4	1.5	72	76	50-150	5	20	
n-Triacontane (S)	%.				64	65	50-150			
o-Terphenyl (S)	%.				59	59	50-150			

SAMPLE DUPLICATE: 4316766

Parameter	Units	10607576002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	7.1	8.8	21	30	
Motor Oil Range SG	mg/L	0.67	0.57	17	30	
n-Triacontane (S)	%.	15	14			1M,S0
o-Terphenyl (S)	%.	25	35			1M,P2,S0

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	815122	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK: 4320928

Matrix: Water

Associated Lab Samples: 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	05/19/22 14:58	
Motor Oil Range SG	mg/L	ND	0.40	0.18	05/19/22 14:58	
n-Triacontane (S)	%.	81	50-150		05/19/22 14:58	
o-Terphenyl (S)	%.	78	50-150		05/19/22 14:58	

LABORATORY CONTROL SAMPLE & LCSD: 4320929

4320930

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.5	1.7	77	87	50-150	12	20	
Motor Oil Range SG	mg/L	2	1.7	1.9	86	94	50-150	8	20	
n-Triacontane (S)	%.				73	82	50-150			
o-Terphenyl (S)	%.				70	77	50-150			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	816038	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK:	4325297	Matrix:	Water
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	05/18/22 11:18	

LABORATORY CONTROL SAMPLE & LCSD:		4325298	4325299							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.8	42.9	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:					4325301							
Parameter	Units	10607563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	86.9	40	40	128	128	104	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:												
4325302					4325303							
		10607576007	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Parameter	Units	Result										
Alkalinity, Total as CaCO3	mg/L	63.9	40	40	104	105	100	102	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607576

QC Batch:	816505	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

METHOD BLANK:	4327362	Matrix:	Water
Associated Lab Samples:	10607576002, 10607576003, 10607576004, 10607576005, 10607576006, 10607576007, 10607576008, 10607576009, 10607576010, 10607576011		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	0.50J	1.2	0.43	05/20/22 02:07	

LABORATORY CONTROL SAMPLE: 4327363						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.3	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:					4327364								4327365			
Parameter	Units	10608434002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual				
Sulfate	mg/L	130	250	250	358	359	91	91	80-120	0	20					

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:													4327366	4327367			
			MS	MSD													
		10607576007	Spike	Spike		MS	MSD	MS	MSD	% Rec		Max					
Parameter	Units	Result	Conc.	Conc.		Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual				
Sulfate	mg/L	8.5	50	50		53.9	54.1	91	91	80-120	0	20					

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QUALIFIERS

Project: 0633086.02
Pace Project No.: 10607576

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 adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
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.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 10607576004

[1] Volatile Organic Compounds (GC) by Method NWTPHGX - Lowest possible dilution due to sample foaming.

BATCH QUALIFIERS

Batch: 815188

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 815528

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 816478

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M Surrogate recovery outside laboratory control limits due to matrix interference.
B Analyte was detected in the associated method blank.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.
P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: 0633086.02

Pace Project No.: 10607576

ANALYTE QUALIFIERS

P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
S0	Surrogate recovery outside laboratory control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607576

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607576002	PEO-MW-34-20220506	EPA Mod. 3510C	814285	NWTPH-Dx	814670
10607576003	PEO-MW-35-20220506	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576004	PEO-MW-39-20220506	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576005	PEO-MW-45-20220506	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576006	PEO-MW-21-20220508	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576007	PEO-MW-25-20220508	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576008	PEO-MW-03-20220508	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576009	PEO-MW-29-20220508	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576010	PEO-MW-40-20220508	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576011	PEO-MW-37-20220505	EPA Mod. 3510C	815122	NWTPH-Dx	816081
10607576001	TRIP BLANK-20220509	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576002	PEO-MW-34-20220506	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576003	PEO-MW-35-20220506	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576004	PEO-MW-39-20220506	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576005	PEO-MW-45-20220506	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576006	PEO-MW-21-20220508	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576007	PEO-MW-25-20220508	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576008	PEO-MW-03-20220508	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576009	PEO-MW-29-20220508	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576010	PEO-MW-40-20220508	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576011	PEO-MW-37-20220505	NWTPHGX	1864798	NWTPH-Gx	1864798
10607576002	PEO-MW-34-20220506	EPA 3010A	815736	EPA 6010D	816266
10607576003	PEO-MW-35-20220506	EPA 3010A	815736	EPA 6010D	816266
10607576004	PEO-MW-39-20220506	EPA 3010A	815736	EPA 6010D	816266
10607576005	PEO-MW-45-20220506	EPA 3010A	815736	EPA 6010D	816266
10607576006	PEO-MW-21-20220508	EPA 3010A	815736	EPA 6010D	816266
10607576007	PEO-MW-25-20220508	EPA 3010A	815736	EPA 6010D	816266
10607576008	PEO-MW-03-20220508	EPA 3010A	815736	EPA 6010D	816266
10607576009	PEO-MW-29-20220508	EPA 3010A	815736	EPA 6010D	816266
10607576010	PEO-MW-40-20220508	EPA 3010A	815736	EPA 6010D	816266
10607576011	PEO-MW-37-20220505	EPA 3010A	815736	EPA 6010D	816266
10607576002	PEO-MW-34-20220506	EPA 3020A	815733	EPA 6020A	816296
10607576003	PEO-MW-35-20220506	EPA 3020A	815733	EPA 6020A	816296
10607576004	PEO-MW-39-20220506	EPA 3020A	815733	EPA 6020A	816296
10607576005	PEO-MW-45-20220506	EPA 3020A	815733	EPA 6020A	816296
10607576006	PEO-MW-21-20220508	EPA 3020A	815733	EPA 6020A	816296
10607576007	PEO-MW-25-20220508	EPA 3020A	815733	EPA 6020A	816296
10607576008	PEO-MW-03-20220508	EPA 3020A	815733	EPA 6020A	816296
10607576009	PEO-MW-29-20220508	EPA 3020A	815733	EPA 6020A	816296
10607576010	PEO-MW-40-20220508	EPA 3020A	815733	EPA 6020A	816296
10607576011	PEO-MW-37-20220505	EPA 3020A	815733	EPA 6020A	816296
10607576002	PEO-MW-34-20220506	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576003	PEO-MW-35-20220506	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576004	PEO-MW-39-20220506	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576005	PEO-MW-45-20220506	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576006	PEO-MW-21-20220508	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607576

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607576007	PEO-MW-25-20220508	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576008	PEO-MW-03-20220508	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576009	PEO-MW-29-20220508	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576010	PEO-MW-40-20220508	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576011	PEO-MW-37-20220505	EPA Mod. 3510C	814360	EPA 8270E by SIM	814543
10607576001	TRIP BLANK-20220509	EPA 8260D	815188		
10607576002	PEO-MW-34-20220506	EPA 8260D	815188		
10607576003	PEO-MW-35-20220506	EPA 8260D	815188		
10607576004	PEO-MW-39-20220506	EPA 8260D	815188		
10607576005	PEO-MW-45-20220506	EPA 8260D	815188		
10607576006	PEO-MW-21-20220508	EPA 8260D	815188		
10607576007	PEO-MW-25-20220508	EPA 8260D	815188		
10607576008	PEO-MW-03-20220508	EPA 8260D	815188		
10607576009	PEO-MW-29-20220508	EPA 8260D	816478		
10607576010	PEO-MW-40-20220508	EPA 8260D	815188		
10607576011	PEO-MW-37-20220505	EPA 8260D	815528		
10607576002	PEO-MW-34-20220506	SM 2320B	816038		
10607576003	PEO-MW-35-20220506	SM 2320B	816038		
10607576004	PEO-MW-39-20220506	SM 2320B	816038		
10607576005	PEO-MW-45-20220506	SM 2320B	816038		
10607576006	PEO-MW-21-20220508	SM 2320B	816038		
10607576007	PEO-MW-25-20220508	SM 2320B	816038		
10607576008	PEO-MW-03-20220508	SM 2320B	816038		
10607576009	PEO-MW-29-20220508	SM 2320B	816038		
10607576010	PEO-MW-40-20220508	SM 2320B	816038		
10607576011	PEO-MW-37-20220505	SM 2320B	816038		
10607576002	PEO-MW-34-20220506	EPA 300.0	816505		
10607576003	PEO-MW-35-20220506	EPA 300.0	816505		
10607576004	PEO-MW-39-20220506	EPA 300.0	816505		
10607576005	PEO-MW-45-20220506	EPA 300.0	816505		
10607576006	PEO-MW-21-20220508	EPA 300.0	816505		
10607576007	PEO-MW-25-20220508	EPA 300.0	816505		
10607576008	PEO-MW-03-20220508	EPA 300.0	816505		
10607576009	PEO-MW-29-20220508	EPA 300.0	816505		
10607576010	PEO-MW-40-20220508	EPA 300.0	816505		
10607576011	PEO-MW-37-20220505	EPA 300.0	816505		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Page: _____ of _____	
Company: ERM		Report To: Rita Cooper		Attention:			
Address: 1050 SW 6th Ave, Suite 1650		Copy To: Joel Casey		Company Name:			
Portland, OR 97204				Address:			
Email To: rita.cooper@erm.com		Purchase Order No.:		Price Quote Reference:		☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER _____	
Phone: 207-329-6320 Fax:		Project Name:		Price Project Manager:		Site Location _____ OR _____ STATE: _____	
Requested Due Date/TAT: Standard		Project Number: 0633085.02		Price Profile #:			

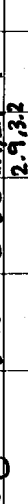
[illegible]

WO#: 10607576



Pa

10607576

SAMPLER NAME AND SIGNATURE		DATE Signed (MM/DD/YY)
PRINT Name of SAMPLER:	SIGNATURE of SAMPLER:	
Erin McNeill		

Temp in °C		Received on	Ice (Y/N)	Custody	Sealed Cooler	(Y/N)	Samples Intact	(Y/N)
		5-10-22	Y	Y	Y	Y	Y	Y
		8:50						
		3:20						
		2:42						
		2:9:32						
		4:1:22						

WO#: 10607576



10607576

Pace
ANALYTICAL SERVICES

DC# Title: ENV-FRM-MIN4-0150 v05 Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Simple Condition Upon Receipt

Client Name: **ERM** Project #: **WO# : 10607576**

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

Tracking Number: ☒ See Exceptions ENV-FRM-MIN4-0142

PM: JMT Due Date: 05/24/22
CLIENT: ERM-Oregon

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No Seals Intact? ☒ Yes ☐ No Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

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

Thermometer: ☒ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235)
☐ T7(0042) ☐ 01339252/1710 ☐ 122659816 ☐ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **4.1, 2.2**
3.2, 2.0, 2.4, 2.1, 2.9, 3.2 °C

Correction Factor: **true** Cooler Temp Corrected w/temp blank: **3.2, 2.0, 2.4, 2.1, 2.9**
3.2, 4.1, 2.2 °C

Average Corrected Temp (no temp blank only): °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: ☒ N/A water sample/Other: _____ Date/Initials of Person Examining Contents: **ED 5.10.22**

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out? ☒ Yes ☐ No	1.
Chain of Custody Relinquished? ☐ Yes ☒ No	2.
Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A	3.
Samples Arrived within Hold Time? ☒ Yes ☐ No	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested? ☐ Yes ☒ No	6.
Sufficient Volume? ☒ Yes ☐ No	7.
Correct Containers Used? ☒ Yes ☐ No	8.
Pace Containers Used? ☒ Yes ☐ No	9. field filtered
Containers Intact? ☒ Yes ☐ No	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Field Filtered Volume Received for Dissolved Tests? ☒ Yes ☒ No ☐ N/A	11. If no, write ID/ Date/Time on Container Below: See Exception ☒ ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the JMB 5/10/22 samples to the COC? ☒ Yes ☐ No	12. Sample # 002-06 011 ☐ NaOH ☒ HNO ₃ ☐ H ₂ SO ₄ ☐ Zinc Acetate 1/1
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	Positive for Res. ☐ Yes ☐ No pH Paper Lot#
All containers needing acid/base preservation have been checked? ☒ Yes ☐ No ☐ N/A	Res. Chlorine 0-6 Roll 212521 0-6 Strip 0-14 Strip
All containers needing preservation are found to be in compliance with EPA recommendation? ☒ Yes ☐ No ☐ N/A	13. See Exception ☐ ENV-FRM-MIN4-0140
(HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	14. Pace Trip Blank Lot # (if purchased): 361506 (6)
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO 8015 (water) and Dioxin/PFAS ☒ Yes ☐ No ☐ N/A	
Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A	
Extra labels present on soil VOA or WIDRO containers? ☐ Yes ☐ No ☒ N/A	
Headspace in VOA Vials (greater than 6mm)? ☐ Yes ☒ No ☐ N/A	
Trip Blank Present? ☒ Yes ☐ No ☐ N/A	
Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

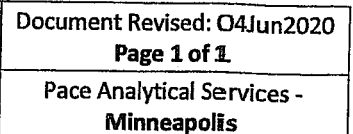
Person Contacted: _____ Date/Time: _____ Field Data Required? ☐ Yes ☐ No

Comments/Resolution: _____ emailed about extra sample in cooler and to verify if we should proceed with analysis of it.

Project Manager Review: **Julia Barz** Date: 5/10/22

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

Labeled by: _____





Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086.02

Work Order Number: 2205345

May 27, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 1 sample(s) on 5/17/2022 for the analyses presented in the following report.

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com



Date: 05/27/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02
Work Order: 2205345

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205345-001	TRIP BLANK-20220509	05/09/2022 6:00 AM	05/17/2022 4:12 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2205345
Date Reported: 5/27/2022

Client: Pace Analytical Minnesota

Collection Date: 5/9/2022 6:00:00 AM

Project: 0633086.02

Lab ID: 2205345-001

Matrix: Water

Client Sample ID: TRIP BLANK-20220509

Analyses	Result	RL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	25.0	H	µg/L	1	5/24/2022 4:03:49 PM
Surr: 1,4-Difluorobenzene	93.0	60 - 140	H	%Rec	1	5/24/2022 4:03:49 PM
Surr: Bromofluorobenzene	88.6	60 - 140	H	%Rec	1	5/24/2022 4:03:49 PM



Work Order: 2205345
 CLIENT: Pace Analytical Minnesota
 Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVP

Sample ID: LCS-36578		SampType: LCS			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: LCSW		Batch ID: 36578			Analysis Date: 5/24/2022			SeqNo: 1552939				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

212
48.0
51.2

25.0

200.0
50.00
50.00

0

106
96.0
102

70
60
60

130
140
140

Sample ID: MB-36578		SampType: MBLK			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: MBLKW		Batch ID: 36578			Analysis Date: 5/24/2022			SeqNo: 1552938				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

ND
46.2
47.2

25.0

0

0

92.4
94.5

60
60

140
140

Sample ID: LCSD-36578		SampType: LCSD			Units: µg/L		Prep Date: 5/25/2022			RunNo: 75694		
Client ID: LCSW02		Batch ID: 36578			Analysis Date: 5/25/2022			SeqNo: 1552937				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

177
47.4
50.2

25.0

200.0
50.00
50.00

0

88.3
94.9
100

70
60
60

130
140
140

211.8

18.1
0
0

20

Client Name: PACEMI

Work Order Number: 2205345

Logged by: Gabrielle Coeulle

Date Received: 5/17/2022 4:12:00 PM

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☐ No ☒

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	3.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10607576

Workorder Name: 0633086.02

Results Requested By: 5/24/2022

Report / Invoice To

Subcontract To

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@pace labs.com

Fremont Analytical
3600 Fremont Ave N
Seattle WA 98103

P.O. 10607576

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers										LAB USE ONLY
					HCL										
1	TRIP BLANK-20220509	5/9/2022 08:00	10607576001	Water	2										
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

2205345



					Comments	
Transfers	Released By	Date/Time	Received By	Date/Time	J flag to MDL Provide EQUIS EDD	
1	CSM/Pace	5-16-22 9:40	Young Dean	05/17/22 16:12		
2						
3						
Cooler Temperature on Receipt		°C	Custody Seal	Y or N	Received on Ice	Y or N
					Samples Intact	Y or N

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Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086.02

Work Order Number: 2205257

June 01, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 11 sample(s) on 5/12/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086.02
Work Order: 2205257

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205257-001	TRIP BLANK-20220509	05/09/2022 8:00 AM	05/12/2022 2:37 PM
2205257-002	PEO-MW-34-20220506	05/06/2022 10:15 AM	05/12/2022 2:37 PM
2205257-003	PEO-MW-35-20220506	05/06/2022 12:40 PM	05/12/2022 2:37 PM
2205257-004	PEO-MW-39-20220506	05/06/2022 3:20 PM	05/12/2022 2:37 PM
2205257-005	PEO-MW-45-20220506	05/06/2022 5:50 PM	05/12/2022 2:37 PM
2205257-006	PEO-MW-21-20220508	05/08/2022 9:00 AM	05/12/2022 2:37 PM
2205257-007	PEO-MW-25-20220508	05/08/2022 10:30 AM	05/12/2022 2:37 PM
2205257-008	PEO-MW-03-20220508	05/08/2022 12:20 PM	05/12/2022 2:37 PM
2205257-009	PEO-MW-29-20220508	05/08/2022 2:00 PM	05/12/2022 2:37 PM
2205257-010	PEO-MW-40-20220508	05/08/2022 4:05 PM	05/12/2022 2:37 PM
2205257-011	PEO-MW-37-20220505	05/08/2022 4:15 PM	05/12/2022 2:37 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Analytical Report

Work Order: 2205257
Date Reported: 6/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205257-002 Collection Date: 5/6/2022 10:15:00 AM
Client Sample ID: PEO-MW-34-20220506 Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH Batch ID: 36439 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	51.8	20.6		µg/L	1	5/26/2022 4:39:17 PM
Surr: 1-Chlorooctadecane	17.6	50 - 150	S	%Rec	1	5/26/2022 4:39:17 PM

NOTES:

S - Outlying surrogate recovery attributed to matrix interference. Review of historical data indicates that outlying surrogate recoveries are typical of this sampling point.

Volatile Petroleum Hydrocarbons by NWVPH Batch ID: 36607 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	84.1	12.2	H	µg/L	1	5/26/2022 1:06:53 PM
Surr: 1,4-Difluorobenzene	90.6	60 - 140	H	%Rec	1	5/26/2022 1:06:53 PM
Surr: Bromofluorobenzene	106	60 - 140	H	%Rec	1	5/26/2022 1:06:53 PM

Lab ID: 2205257-003 Collection Date: 5/6/2022 12:40:00 PM
Client Sample ID: PEO-MW-35-20220506 Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH Batch ID: 36439 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/26/2022 5:03:02 PM
Surr: 1-Chlorooctadecane	55.9	50 - 150		%Rec	1	5/26/2022 5:03:02 PM

Volatile Petroleum Hydrocarbons by NWVPH Batch ID: 36607 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 2:28:19 PM
Surr: 1,4-Difluorobenzene	86.8	60 - 140	H	%Rec	1	5/26/2022 2:28:19 PM
Surr: Bromofluorobenzene	89.0	60 - 140	H	%Rec	1	5/26/2022 2:28:19 PM



Analytical Report

Work Order: 2205257
Date Reported: 6/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205257-004

Collection Date: 5/6/2022 3:20:00 PM

Client Sample ID: PEO-MW-39-20220506

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	40.1	20.5		µg/L	1	5/26/2022 5:26:48 PM
Surr: 1-Chlorooctadecane	63.3	50 - 150		%Rec	1	5/26/2022 5:26:48 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	446	12.2	H	µg/L	1	5/26/2022 3:09:03 PM
Surr: 1,4-Difluorobenzene	106	60 - 140	H	%Rec	1	5/26/2022 3:09:03 PM
Surr: Bromofluorobenzene	108	60 - 140	H	%Rec	1	5/26/2022 3:09:03 PM

Lab ID: 2205257-005

Collection Date: 5/6/2022 5:50:00 PM

Client Sample ID: PEO-MW-45-20220506

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/26/2022 5:50:41 PM
Surr: 1-Chlorooctadecane	69.2	50 - 150		%Rec	1	5/26/2022 5:50:41 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 3:49:52 PM
Surr: 1,4-Difluorobenzene	90.2	60 - 140	H	%Rec	1	5/26/2022 3:49:52 PM
Surr: Bromofluorobenzene	92.2	60 - 140	H	%Rec	1	5/26/2022 3:49:52 PM

Work Order: **2205257**
 Date Reported: **6/1/2022**

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205257-006

Collection Date: 5/8/2022 9:00:00 AM

Client Sample ID: PEO-MW-21-20220508

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/26/2022 6:14:23 PM
Surr: 1-Chlorooctadecane	66.1	50 - 150		%Rec	1	5/26/2022 6:14:23 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 4:30:37 PM
Surr: 1,4-Difluorobenzene	91.1	60 - 140	H	%Rec	1	5/26/2022 4:30:37 PM
Surr: Bromofluorobenzene	92.5	60 - 140	H	%Rec	1	5/26/2022 4:30:37 PM

Lab ID: 2205257-007

Collection Date: 5/8/2022 10:30:00 AM

Client Sample ID: PEO-MW-25-20220508

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/26/2022 6:38:05 PM
Surr: 1-Chlorooctadecane	68.3	50 - 150		%Rec	1	5/26/2022 6:38:05 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607 Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 5:11:21 PM
Surr: 1,4-Difluorobenzene	91.0	60 - 140	H	%Rec	1	5/26/2022 5:11:21 PM
Surr: Bromofluorobenzene	91.6	60 - 140	H	%Rec	1	5/26/2022 5:11:21 PM



Analytical Report

Work Order: 2205257
Date Reported: 6/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205257-008

Collection Date: 5/8/2022 12:20:00 PM

Client Sample ID: PEO-MW-03-20220508

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/26/2022 7:01:58 PM
Surr: 1-Chlorooctadecane	58.6	50 - 150		%Rec	1	5/26/2022 7:01:58 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 5:52:02 PM
Surr: 1,4-Difluorobenzene	93.6	60 - 140	H	%Rec	1	5/26/2022 5:52:02 PM
Surr: Bromofluorobenzene	93.7	60 - 140	H	%Rec	1	5/26/2022 5:52:02 PM

Lab ID: 2205257-009

Collection Date: 5/8/2022 2:00:00 PM

Client Sample ID: PEO-MW-29-20220508

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	62.9	20.5		µg/L	1	5/26/2022 7:25:41 PM
Surr: 1-Chlorooctadecane	66.7	50 - 150		%Rec	1	5/26/2022 7:25:41 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	466	12.2	H	µg/L	1	5/26/2022 6:32:46 PM
Surr: 1,4-Difluorobenzene	103	60 - 140	H	%Rec	1	5/26/2022 6:32:46 PM
Surr: Bromofluorobenzene	105	60 - 140	H	%Rec	1	5/26/2022 6:32:46 PM



Analytical Report

Work Order: 2205257
Date Reported: 6/1/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205257-010

Collection Date: 5/8/2022 4:05:00 PM

Client Sample ID: PEO-MW-40-20220508

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.2		µg/L	1	5/26/2022 7:49:22 PM
Surr: 1-Chlorooctadecane	64.3	50 - 150		%Rec	1	5/26/2022 7:49:22 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 7:13:26 PM
Surr: 1,4-Difluorobenzene	90.6	60 - 140	H	%Rec	1	5/26/2022 7:13:26 PM
Surr: Bromofluorobenzene	92.6	60 - 140	H	%Rec	1	5/26/2022 7:13:26 PM

Lab ID: 2205257-011

Collection Date: 5/8/2022 4:15:00 PM

Client Sample ID: PEO-MW-37-20220505

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36439

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/26/2022 8:13:13 PM
Surr: 1-Chlorooctadecane	67.8	50 - 150		%Rec	1	5/26/2022 8:13:13 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36607

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2	H	µg/L	1	5/26/2022 7:54:10 PM
Surr: 1,4-Difluorobenzene	92.4	60 - 140	H	%Rec	1	5/26/2022 7:54:10 PM
Surr: Bromofluorobenzene	95.2	60 - 140	H	%Rec	1	5/26/2022 7:54:10 PM



Work Order: 2205257
 CLIENT: Pace Analytical Minnesota
 Project: 0633086.02

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-36439	SampType: MBLK	Units: µg/L			Prep Date: 5/13/2022			RunNo: 75752			
Client ID: MBLKW	Batch ID: 36439				Analysis Date: 5/24/2022			SeqNo: 1554145			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	39.4		0	0						
Surr: 1-Chlorooctadecane	273		393.6		69.3	50	150				

Sample ID: LCS-36439		SampType: LCS			Units: µg/L		Prep Date: 5/13/2022		RunNo: 75752		
Client ID: LCSW		Batch ID: 36439			Analysis Date: 5/26/2022				SeqNo: 1554201		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	353	39.7	496.1	0	71.1	70	130				
Surr: 1-Chlorooctadecane	341		396.9		85.8	50	150				

Sample ID: 2205253-007BMS	SampType: MS	Units: µg/L				Prep Date: 5/13/2022			RunNo: 75752		
Client ID: BATCH	Batch ID: 36439					Analysis Date: 5/26/2022			SeqNo: 1554202		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	293	39.3	491.9	0	59.5	70	130				S
Surr: 1-Chlorooctadecane	252		393.5		64.1	50	150				

NOTES:

S - Outlying spike recoveries were associated with this sample.

Work Order: 2205257
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-36607		SampType: LCS		Units: µg/L		Prep Date: 5/26/2022			RunNo: 75768		
Client ID: LCSW		Batch ID: 36607		Analysis Date: 5/26/2022			SeqNo: 1554437				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

177
 50.4
 48.1

25.0

200.0
 50.00
 50.00

0

88.3
 101
 96.2

70
 60
 60

130
 140
 140

Sample ID: MB-36607		SampType: MBLK		Units: µg/L		Prep Date: 5/26/2022			RunNo: 75768		
Client ID: MBLKW		Batch ID: 36607		Analysis Date: 5/26/2022			SeqNo: 1554425				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

ND
 44.7
 46.1

25.0

0

0
 89.3
 92.1

60
 60
 60

140
 140
 140

Sample ID: 2205257-002ADUP		SampType: DUP		Units: µg/L		Prep Date: 5/26/2022			RunNo: 75768			
Client ID: PEO-MW-34-20220506		Batch ID: 36607					Analysis Date: 5/26/2022			SeqNo: 1554422		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

74.1
 45.8
 53.1

25.0

0

0
 91.5
 106

60
 60
 60

140
 140
 140

84.07

12.6
 0
 0

25

H
 H
 H

Client Name: PACEMI

Work Order Number: 2205257

Logged by: Gabrielle Coeuille

Date Received: 5/12/2022 2:37:00 PM

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☐ No ☒

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☒ No ☐ NA ☐

Person Notified:	<u>Julie Bowser</u>	Date:	<u>5/13/2022</u>
By Whom:	<u>Brianna Barnes</u>	Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	<u>No volume received for trip blank; extra volume rec'd for MW37</u>		
Client Instructions:	<u>Return volume for MW37, trip blank volume will be submitted separately</u>		

19. Additional remarks:

Due to instrumentation issues, the VPH analysis could not be analyzed within the recommended holding time.

Item Information

Item #	Temp °C
Sample 1	0.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

PASI Minnesota Laboratory



Workorder Name: 0633086.02

Results Requested By: 5/24/2022

2205257



Subcontract To

P.O. 10607576

Fremont Analytical
3600 Fremont Ave N
Seattle WA 98103

Email: julie.bowser@pacelabs.com

State of Sample Origin: OR

[illegible]

2209267

						Comments	
Transfers	Released By	Date/Time	Received By	Date/Time	☐ flag to MDL ☐ Provide ☐ EQUIS EDD	Samples Intact	Y or N
1	CSMP/ace	5-11-22 12:20	8/22-18	5/12/22 17:57			
2							
3							
Cooler Temperature on Receipt		°C	Custody Seal	Y or N	Received on Ice	Y or N	

June 13, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086.02
Pace Project No.: 10607807

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 11, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086.02
Pace Project No.: 10607807

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064

Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
Please Note: Applicable air certifications are denoted with an asterisk ().

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008

Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

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CERTIFICATIONS

Project: 0633086.02

Pace Project No.: 10607807

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

New Jersey Certification #: TN002

New Mexico DW Certification

New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41

North Carolina Drinking Water Certification #: 21704

North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140

Ohio VAP Certification #: CL0069

Oklahoma Certification #: 9915

Oregon Certification #: TN200002

Pennsylvania Certification #: 68-02979

Rhode Island Certification #: LAO00356

South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Mold Certification #: LAB0152

Texas Certification #: T 104704245-17-14

USDA Soil Permit #: P330-15-00234

Utah Certification #: TN00003

Vermont Dept. of Health: ID# VT-2006

Virginia Certification #: VT2006

Virginia Certification #: 460132

Washington Certification #: C847

West Virginia Certification #: 233

Wisconsin Certification #: 998093910

Wyoming UST Certification #: via A2LA 2926.01

A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02

AIHA-LAP/LLC EMLAP Certification #:100789

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086.02

Pace Project No.: 10607807

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10607807001	TRIP BLANK-20220510	Water	05/10/22 08:00	05/11/22 08:50
10607807002	PEO-MW-27-20220509	Water	05/09/22 09:10	05/11/22 08:50
10607807003	PEO-MW-36-20220509	Water	05/09/22 11:20	05/11/22 08:50
10607807004	PEO-MW-02-20220509	Water	05/09/22 15:00	05/11/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607807

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607807001	TRIP BLANK-20220510	NWTPH-Gx	MGF	2	PAN
		EPA 8260D	NMB	8	PASI-M
10607807002	PEO-MW-27-20220509	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
10607807003	PEO-MW-36-20220509	EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10607807004	PEO-MW-02-20220509	EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6010D	DM	1	PASI-M

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607807

Sample: TRIP BLANK-20220510		Lab ID: 10607807001		Collected: 05/10/22 08:00		Received: 05/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	<31.6	ug/L	100	31.6	1	05/17/22 15:03	05/17/22 15:03		
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.8	%	78.0-120		1	05/17/22 15:03	05/17/22 15:03	98-08-8FID	
8260D MSV UST Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis									
Benzene	<0.10	ug/L	1.0	0.10	1		05/13/22 15:53	71-43-2	
Ethylbenzene	<0.11	ug/L	1.0	0.11	1		05/13/22 15:53	100-41-4	
Toluene	<0.10	ug/L	1.0	0.10	1		05/13/22 15:53	108-88-3	
m&p-Xylene	<0.20	ug/L	2.0	0.20	1		05/13/22 15:53	179601-23-1	
o-Xylene	<0.18	ug/L	1.0	0.18	1		05/13/22 15:53	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/13/22 15:53	2199-69-1	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/13/22 15:53	460-00-4	
Toluene-d8 (S)	99	%	75-125		1		05/13/22 15:53	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607807

Sample: PEO-MW-27-20220509 Lab ID: 10607807002 Collected: 05/09/22 09:10 Received: 05/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.66	mg/L	0.42	0.12	1	05/19/22 17:05	05/23/22 15:58	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	05/19/22 17:05	05/23/22 15:58	64742-65-0	
Surrogates									
o-Terphenyl (S)	51	%	50-150		1	05/19/22 17:05	05/23/22 15:58	84-15-1	
n-Triacontane (S)	57	%	50-150		1	05/19/22 17:05	05/23/22 15:58		
VOA (GC) NWTPHGX									
Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	32.8J	ug/L	100	31.6	1	05/17/22 20:50	05/17/22 20:50		J
Surrogates									
a,a,a-Trifluorotoluene (FID)	99.7	%	78.0-120		1	05/17/22 20:50	05/17/22 20:50	98-08-8FID	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	67100	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:17		
6020A MET ICPMS, Dissolved									
Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	38.0	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 23:25	7440-38-2	
Manganese, Dissolved	1500	ug/L	5.0	2.0	10	05/18/22 03:14	05/20/22 23:28	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.47	ug/L	0.042	0.0073	1	05/11/22 17:01	05/12/22 16:39	83-32-9	
Acenaphthylene	0.030J	ug/L	0.042	0.0064	1	05/11/22 17:01	05/12/22 16:39	208-96-8	
Anthracene	0.098	ug/L	0.042	0.0056	1	05/11/22 17:01	05/12/22 16:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0095	1	05/11/22 17:01	05/12/22 16:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0093	1	05/11/22 17:01	05/12/22 16:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.010	1	05/11/22 17:01	05/12/22 16:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	05/11/22 17:01	05/12/22 16:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0087	1	05/11/22 17:01	05/12/22 16:39	207-08-9	
Chrysene	ND	ug/L	0.042	0.0099	1	05/11/22 17:01	05/12/22 16:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0084	1	05/11/22 17:01	05/12/22 16:39	53-70-3	
Fluoranthene	0.034J	ug/L	0.042	0.015	1	05/11/22 17:01	05/12/22 16:39	206-44-0	
Fluorene	0.36	ug/L	0.042	0.0064	1	05/11/22 17:01	05/12/22 16:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	05/11/22 17:01	05/12/22 16:39	193-39-5	
1-Methylnaphthalene	0.050	ug/L	0.042	0.0071	1	05/11/22 17:01	05/12/22 16:39	90-12-0	
2-Methylnaphthalene	0.029J	ug/L	0.042	0.0087	1	05/11/22 17:01	05/12/22 16:39	91-57-6	
Naphthalene	0.12	ug/L	0.042	0.0093	1	05/11/22 17:01	05/12/22 16:39	91-20-3	
Phenanthrene	0.028J	ug/L	0.042	0.013	1	05/11/22 17:01	05/12/22 16:39	85-01-8	
Pyrene	0.031J	ug/L	0.042	0.010	1	05/11/22 17:01	05/12/22 16:39	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%	52-125		1	05/11/22 17:01	05/12/22 16:39	321-60-8	
p-Terphenyl-d14 (S)	71	%	54-125		1	05/11/22 17:01	05/12/22 16:39	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607807

Sample: PEO-MW-27-20220509		Lab ID: 10607807002		Collected: 05/09/22 09:10		Received: 05/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 16:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 16:56	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 16:56	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 16:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 16:56	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		05/13/22 16:56	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/13/22 16:56	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		05/13/22 16:56	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	70.7	mg/L	5.0	1.8	1		05/20/22 11:09		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	25.2	mg/L	1.2	0.43	1		05/21/22 02:08	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607807

Sample: PEO-MW-36-20220509 Lab ID: 10607807003 Collected: 05/09/22 11:20 Received: 05/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.2	mg/L	0.42	0.12	1	05/11/22 17:44	05/12/22 17:04	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.19	1	05/11/22 17:44	05/12/22 17:04	64742-65-0	
Surrogates									
o-Terphenyl (S)	64	%	50-150		1	05/11/22 17:44	05/12/22 17:04	84-15-1	
n-Triacontane (S)	53	%	50-150		1	05/11/22 17:44	05/12/22 17:04		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	182	ug/L	100	31.6	1	05/17/22 21:13	05/17/22 21:13		
Surrogates									
a,a,a-Trifluorotoluene (FID)	97.1	%	78.0-120		1	05/17/22 21:13	05/17/22 21:13	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	99300	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:18		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	17.2	ug/L	0.50	0.083	1	05/18/22 03:14	05/20/22 23:32	7440-38-2	
Manganese, Dissolved	1480	ug/L	5.0	2.0	10	05/18/22 03:14	05/20/22 23:49	7439-96-5	P6
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.79	ug/L	0.040	0.0069	1	05/11/22 17:01	05/12/22 16:59	83-32-9	
Acenaphthylene	0.16	ug/L	0.040	0.0061	1	05/11/22 17:01	05/12/22 16:59	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/11/22 17:01	05/12/22 16:59	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	05/11/22 17:01	05/12/22 16:59	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	05/11/22 17:01	05/12/22 16:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0095	1	05/11/22 17:01	05/12/22 16:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0081	1	05/11/22 17:01	05/12/22 16:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0083	1	05/11/22 17:01	05/12/22 16:59	207-08-9	
Chrysene	ND	ug/L	0.040	0.0094	1	05/11/22 17:01	05/12/22 16:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/11/22 17:01	05/12/22 16:59	53-70-3	
Fluoranthene	0.029J	ug/L	0.040	0.014	1	05/11/22 17:01	05/12/22 16:59	206-44-0	
Fluorene	0.77	ug/L	0.040	0.0060	1	05/11/22 17:01	05/12/22 16:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/11/22 17:01	05/12/22 16:59	193-39-5	
1-Methylnaphthalene	0.17	ug/L	0.040	0.0067	1	05/11/22 17:01	05/12/22 16:59	90-12-0	
2-Methylnaphthalene	0.028J	ug/L	0.040	0.0083	1	05/11/22 17:01	05/12/22 16:59	91-57-6	
Naphthalene	0.34	ug/L	0.040	0.0088	1	05/11/22 17:01	05/12/22 16:59	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/11/22 17:01	05/12/22 16:59	85-01-8	
Pyrene	ND	ug/L	0.040	0.0099	1	05/11/22 17:01	05/12/22 16:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	79	%	52-125		1	05/11/22 17:01	05/12/22 16:59	321-60-8	
p-Terphenyl-d14 (S)	86	%	54-125		1	05/11/22 17:01	05/12/22 16:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607807

Sample: PEO-MW-36-20220509		Lab ID: 10607807003		Collected: 05/09/22 11:20		Received: 05/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.55J	ug/L	1.0	0.10	1		05/13/22 17:27	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 17:27	100-41-4	
Toluene	0.20J	ug/L	1.0	0.10	1		05/13/22 17:27	108-88-3	
m&p-Xylene	0.29J	ug/L	2.0	0.20	1		05/13/22 17:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 17:27	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125		1		05/13/22 17:27	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		05/13/22 17:27	460-00-4	
Toluene-d8 (S)	100	%.	75-125		1		05/13/22 17:27	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	82.6	mg/L	5.0	1.8	1		05/20/22 11:13		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	57.5	mg/L	1.2	0.43	1		05/20/22 21:37	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607807

Sample: PEO-MW-02-20220509 Lab ID: 10607807004 Collected: 05/09/22 15:00 Received: 05/11/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	16.9	mg/L	2.0	0.59	5	05/11/22 17:44	05/13/22 12:02	68334-30-5	
Motor Oil Range SG	1.1J	mg/L	2.0	0.92	5	05/11/22 17:44	05/13/22 12:02	64742-65-0	
Surrogates									
o-Terphenyl (S)	52	%	50-150		5	05/11/22 17:44	05/13/22 12:02	84-15-1	
n-Triacontane (S)	34	%	50-150		5	05/11/22 17:44	05/13/22 12:02		1M
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	<1580	ug/L	5000	1580	50	05/17/22 22:24	05/17/22 22:24		
Surrogates									
a,a,a-Trifluorotoluene (FID)	100	%	78.0-120		50	05/17/22 22:24	05/17/22 22:24	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	230000	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:28		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	36.5	ug/L	2.5	0.41	5	05/18/22 03:14	05/21/22 00:06	7440-38-2	
Manganese, Dissolved	3790	ug/L	25.0	10	50	05/18/22 03:14	05/21/22 00:09	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0070	1	05/11/22 17:01	05/12/22 18:00	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0061	1	05/11/22 17:01	05/12/22 18:00	208-96-8	
Anthracene	ND	ug/L	0.040	0.0054	1	05/11/22 17:01	05/12/22 18:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0091	1	05/11/22 17:01	05/12/22 18:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0089	1	05/11/22 17:01	05/12/22 18:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0096	1	05/11/22 17:01	05/12/22 18:00	205-99-2	
Benzo(g,h,i)perylene	0.014J	ug/L	0.040	0.0082	1	05/11/22 17:01	05/12/22 18:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/11/22 17:01	05/12/22 18:00	207-08-9	
Chrysene	ND	ug/L	0.040	0.0095	1	05/11/22 17:01	05/12/22 18:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/11/22 17:01	05/12/22 18:00	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.014	1	05/11/22 17:01	05/12/22 18:00	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/11/22 17:01	05/12/22 18:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/11/22 17:01	05/12/22 18:00	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0068	1	05/11/22 17:01	05/12/22 18:00	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0084	1	05/11/22 17:01	05/12/22 18:00	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0089	1	05/11/22 17:01	05/12/22 18:00	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.012	1	05/11/22 17:01	05/12/22 18:00	85-01-8	
Pyrene	ND	ug/L	0.040	0.010	1	05/11/22 17:01	05/12/22 18:00	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	22	%	52-125		1	05/11/22 17:01	05/12/22 18:00	321-60-8	S2
p-Terphenyl-d14 (S)	30	%	54-125		1	05/11/22 17:01	05/12/22 18:00	1718-51-0	S2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607807

Sample: PEO-MW-02-20220509		Lab ID: 10607807004		Collected: 05/09/22 15:00		Received: 05/11/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.35J	ug/L	1.0	0.10	1		05/13/22 17:11	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 17:11	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 17:11	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 17:11	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 17:11	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125		1		05/13/22 17:11	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125		1		05/13/22 17:11	460-00-4	
Toluene-d8 (S)	101	%.	75-125		1		05/13/22 17:11	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	285	mg/L	5.0	1.8	1		05/20/22 11:27		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	9.7	mg/L	1.2	0.43	1		05/21/22 05:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch: 1864798

Analysis Method: NWTPH-Gx

QC Batch Method: NWTPHGx

Analysis Description: VOA (GC) NWTPHGx

Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10607807001, 10607807002, 10607807003, 10607807004

METHOD BLANK: R3792853-2

Matrix: Water

Associated Lab Samples: 10607807001, 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	<31.6	100	31.6	05/17/22 13:03	
a,a,a-Trifluorotoluene (FID)	%	99.4	78.0-120		05/17/22 13:03	

LABORATORY CONTROL SAMPLE: R3792853-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	4870	88.5	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			103	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3792853-3

R3792853-4

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	182	5500	5500	6290	5670	111	99.8	10.0-155	10.4	21	
a,a,a-Trifluorotoluene (FID)	%						101	100	78.0-120			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch:	1864798	Analysis Method:	NWTPH-Gx
QC Batch Method:	8021B/NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10607807001, 10607807002, 10607807003, 10607807004

METHOD BLANK: R3792853-2 Matrix: Water
Associated Lab Samples: 10607807001, 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	<31.6	100	31.6	05/17/22 13:03	
a,a,a-Trifluorotoluene (FID)	%	99.4	78.0-120		05/17/22 13:03	

LABORATORY CONTROL SAMPLE: R3792853-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	4870	88.5	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			103	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3792853-3 R3792853-4

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	182	5500	5500	6290	5670	111	99.8	10.0-155	10.4	21	
a,a,a-Trifluorotoluene (FID)	%						101	100	78.0-120			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch: 815733

Analysis Method: EPA 6020A

QC Batch Method: EPA 3020A

Analysis Description: 6020A Water Dissolved UPD4

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607807002, 10607807003, 10607807004

METHOD BLANK: 4324003

Matrix: Water

Associated Lab Samples: 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	05/20/22 21:55	
Manganese, Dissolved	ug/L	ND	0.50	0.20	05/20/22 21:55	

LABORATORY CONTROL SAMPLE: 4324004

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	105	105	80-120	
Manganese, Dissolved	ug/L	100	101	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4324005 4324006

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	17.2	100	100	123	123	106	106	75-125	0	20	
Manganese, Dissolved	ug/L	1480	100	100	1540	1520	57	38	75-125	1	20	E,P6

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QUALITY CONTROL DATA

Project: 0633086.02
Pace Project No.: 10607807

QC Batch: 815190 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV UST-WATER
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607807001, 10607807002, 10607807003, 10607807004

METHOD BLANK: 4321370 Matrix: Water
Associated Lab Samples: 10607807001, 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	<0.10	1.0	0.10	05/13/22 15:22	
Ethylbenzene	ug/L	<0.11	1.0	0.11	05/13/22 15:22	
m&p-Xylene	ug/L	<0.20	2.0	0.20	05/13/22 15:22	
o-Xylene	ug/L	<0.18	1.0	0.18	05/13/22 15:22	
Toluene	ug/L	<0.10	1.0	0.10	05/13/22 15:22	
1,2-Dichlorobenzene-d4 (S)	%	102	75-125		05/13/22 15:22	
4-Bromofluorobenzene (S)	%	100	75-125		05/13/22 15:22	
Toluene-d8 (S)	%	99	75-125		05/13/22 15:22	

LABORATORY CONTROL SAMPLE: 4321371

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.0	100	73-125	
Ethylbenzene	ug/L	20	20.9	105	75-125	
m&p-Xylene	ug/L	40	43.7	109	72-125	
o-Xylene	ug/L	20	21.8	109	73-125	
Toluene	ug/L	20	19.6	98	74-125	
1,2-Dichlorobenzene-d4 (S)	%			101	75-125	
4-Bromofluorobenzene (S)	%			103	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4321372 4321373

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	0.55J	20	20	21.8	23.0	106	112	65-140	5	30	
Ethylbenzene	ug/L	ND	20	20	20.6	21.7	103	109	66-126	5	30	
m&p-Xylene	ug/L	0.29J	40	40	41.4	42.1	103	105	69-134	2	30	
o-Xylene	ug/L	ND	20	20	19.3	20.2	96	100	73-133	5	30	
Toluene	ug/L	0.20J	20	20	21.5	21.8	107	108	69-131	1	30	
1,2-Dichlorobenzene-d4 (S)	%						98	98	75-125			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						101	100	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch:	814636	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607807002, 10607807003, 10607807004

METHOD BLANK: 4318356 Matrix: Water

Associated Lab Samples: 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	05/12/22 14:38	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	05/12/22 14:38	
Acenaphthene	ug/L	ND	0.040	0.0069	05/12/22 14:38	
Acenaphthylene	ug/L	ND	0.040	0.0061	05/12/22 14:38	
Anthracene	ug/L	ND	0.040	0.0054	05/12/22 14:38	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	05/12/22 14:38	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/12/22 14:38	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	05/12/22 14:38	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	05/12/22 14:38	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	05/12/22 14:38	
Chrysene	ug/L	ND	0.040	0.0094	05/12/22 14:38	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	05/12/22 14:38	
Fluoranthene	ug/L	ND	0.040	0.014	05/12/22 14:38	
Fluorene	ug/L	ND	0.040	0.0060	05/12/22 14:38	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	05/12/22 14:38	
Naphthalene	ug/L	ND	0.040	0.0088	05/12/22 14:38	
Phenanthrene	ug/L	ND	0.040	0.012	05/12/22 14:38	
Pyrene	ug/L	ND	0.040	0.0099	05/12/22 14:38	
2-Fluorobiphenyl (S)	%	79	52-125		05/12/22 14:38	
p-Terphenyl-d14 (S)	%	97	54-125		05/12/22 14:38	

LABORATORY CONTROL SAMPLE: 4318357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.77	77	43-125	
2-Methylnaphthalene	ug/L	1	0.77	77	42-125	
Acenaphthene	ug/L	1	0.80	80	56-125	
Acenaphthylene	ug/L	1	0.77	77	55-125	
Anthracene	ug/L	1	0.82	82	64-125	
Benzo(a)anthracene	ug/L	1	0.83	83	65-125	
Benzo(a)pyrene	ug/L	1	0.82	82	64-125	
Benzo(b)fluoranthene	ug/L	1	0.91	91	70-125	
Benzo(g,h,i)perylene	ug/L	1	0.93	93	49-125	
Benzo(k)fluoranthene	ug/L	1	0.94	94	69-125	
Chrysene	ug/L	1	0.83	83	70-125	
Dibenz(a,h)anthracene	ug/L	1	0.84	84	41-125	
Fluoranthene	ug/L	1	0.82	82	67-125	
Fluorene	ug/L	1	0.78	78	59-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.79	79	57-125	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

LABORATORY CONTROL SAMPLE: 4318357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.77	77	49-125	
Phenanthrene	ug/L	1	0.83	83	65-125	
Pyrene	ug/L	1	0.90	90	67-125	
2-Fluorobiphenyl (S)	%			77	52-125	
p-Terphenyl-d14 (S)	%			95	54-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4318358 4318359

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/L	0.17	1	1	1.1	1.1	89	88	30-150	0	30	
2-Methylnaphthalene	ug/L	0.028J	1	1	0.98	0.99	94	93	35-125	1	30	
Acenaphthene	ug/L	0.79	1	1	1.5	1.6	67	79	45-125	9	30	
Acenaphthylene	ug/L	0.16	1	1	1.0	1.0	84	81	47-125	2	30	
Anthracene	ug/L	ND	1	1	1.0	1.0	99	97	44-125	1	30	
Benzo(a)anthracene	ug/L	ND	1	1	0.96	0.96	94	93	43-125	1	30	
Benzo(a)pyrene	ug/L	ND	1	1	0.72	0.76	71	73	36-125	5	30	
Benzo(b)fluoranthene	ug/L	ND	1	1	0.75	0.83	74	80	38-125	9	30	
Benzo(g,h,i)perylene	ug/L	ND	1	1	0.66	0.70	65	67	30-125	5	30	
Benzo(k)fluoranthene	ug/L	ND	1	1	0.78	0.82	77	79	32-131	4	30	
Chrysene	ug/L	ND	1	1	0.80	0.81	79	79	40-125	2	30	
Dibenz(a,h)anthracene	ug/L	ND	1	1	0.66	0.77	65	74	30-125	15	30	
Fluoranthene	ug/L	0.029J	1	1	0.98	0.98	93	92	56-125	0	30	
Fluorene	ug/L	0.77	1	1	1.6	1.7	79	85	46-125	5	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	1	1	0.68	0.74	67	71	30-125	7	30	
Naphthalene	ug/L	0.34	1	1	1.2	1.2	82	87	42-125	6	30	
Phenanthrene	ug/L	ND	1	1	0.88	0.86	87	83	49-125	3	30	
Pyrene	ug/L	ND	1	1	0.91	0.91	89	88	50-125	0	30	
2-Fluorobiphenyl (S)	%						79	79	52-125			
p-Terphenyl-d14 (S)	%						84	81	54-125			

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: 0633086.02

Pace Project No.: 10607807

QC Batch:	814692	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607807003, 10607807004

METHOD BLANK: 4318825 Matrix: Water

Associated Lab Samples: 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	05/12/22 16:41	
Motor Oil Range SG	mg/L	ND	0.40	0.18	05/12/22 16:41	
n-Triacontane (S)	%	57	50-150		05/12/22 16:41	
o-Terphenyl (S)	%	62	50-150		05/12/22 16:41	

LABORATORY CONTROL SAMPLE: 4318826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.8	90	50-150	
Motor Oil Range SG	mg/L	2	1.9	93	50-150	
n-Triacontane (S)	%			72	50-150	
o-Terphenyl (S)	%			74	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4318827 4318828

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Fuel Range SG	mg/L	1.2	2	2.1	2.4	2.7	61	73	50-150	12	30	
Motor Oil Range SG	mg/L	ND	2	2.1	1.1	1.2	51	53	50-150	8	30	
n-Triacontane (S)	%						63	52	50-150			
o-Terphenyl (S)	%						69	72	50-150			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch:	816476	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607807002

METHOD BLANK: 4327219 Matrix: Water

Associated Lab Samples: 10607807002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.12	05/23/22 15:25	
Motor Oil Range SG	mg/L	ND	0.40	0.18	05/23/22 15:25	
n-Triacontane (S)	%.	66	50-150		05/23/22 15:25	
o-Terphenyl (S)	%.	57	50-150		05/23/22 15:25	

LABORATORY CONTROL SAMPLE & LCSD: 4327220

		4327221								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.2	1.4	61	69	50-150	12	20	
Motor Oil Range SG	mg/L	2	1.3	1.4	63	72	50-150	13	20	
n-Triacontane (S)	%.				52	58	50-150			
o-Terphenyl (S)	%.				57	63	50-150			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch:	816631	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607807002, 10607807003, 10607807004			

METHOD BLANK: 4327904 Matrix: Water

Associated Lab Samples: 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	1.8	05/20/22 10:57	

LABORATORY CONTROL SAMPLE & LCSD: 4327905		4327906								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.1	43.2	108	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4327907					4327908							
		10607807003	MS Spike	MSD Spike								
Parameter	Units	Result	Conc.	Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	82.6	40	40	122	123	99	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4327909					4327910							
Parameter	Units	10607852002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	143	40	40	184	184	102	102	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607807

QC Batch: 816508

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607807002, 10607807003, 10607807004

METHOD BLANK: 4327378

Matrix: Water

Associated Lab Samples: 10607807002, 10607807003, 10607807004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	0.52J	1.2	0.43	05/20/22 21:22	

LABORATORY CONTROL SAMPLE: 4327379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	52.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4327380 4327381

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	57.5	50	50	96.2	88.6	77	62	80-120	8	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4327382 4327383

Parameter	Units	10607815001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	13.9	50	50	59.9	59.8	92	92	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0633086.02
Pace Project No.: 10607807

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 adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
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.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 10607807004

[1] Volatile Organic Compounds (GC) by Method NWTPHGX - Lowest possible dilution due to sample foaming.

ANALYTE QUALIFIERS

1M Surrogate recovery outside laboratory control limits due to emulsion.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
S2 Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607807

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607807002	PEO-MW-27-20220509	EPA Mod. 3510C	816476	NWTPH-Dx	816977
10607807003	PEO-MW-36-20220509	EPA Mod. 3510C	814692	NWTPH-Dx	815020
10607807004	PEO-MW-02-20220509	EPA Mod. 3510C	814692	NWTPH-Dx	815020
10607807001	TRIP BLANK-20220510	NWTPHGX	1864798	NWTPH-Gx	1864798
10607807002	PEO-MW-27-20220509	NWTPHGX	1864798	NWTPH-Gx	1864798
10607807003	PEO-MW-36-20220509	NWTPHGX	1864798	NWTPH-Gx	1864798
10607807004	PEO-MW-02-20220509	NWTPHGX	1864798	NWTPH-Gx	1864798
10607807002	PEO-MW-27-20220509	EPA 3010A	815736	EPA 6010D	816266
10607807003	PEO-MW-36-20220509	EPA 3010A	815736	EPA 6010D	816266
10607807004	PEO-MW-02-20220509	EPA 3010A	815736	EPA 6010D	816266
10607807002	PEO-MW-27-20220509	EPA 3020A	815733	EPA 6020A	816296
10607807003	PEO-MW-36-20220509	EPA 3020A	815733	EPA 6020A	816296
10607807004	PEO-MW-02-20220509	EPA 3020A	815733	EPA 6020A	816296
10607807002	PEO-MW-27-20220509	EPA Mod. 3510C	814636	EPA 8270E by SIM	814881
10607807003	PEO-MW-36-20220509	EPA Mod. 3510C	814636	EPA 8270E by SIM	814881
10607807004	PEO-MW-02-20220509	EPA Mod. 3510C	814636	EPA 8270E by SIM	814881
10607807001	TRIP BLANK-20220510	EPA 8260D	815190		
10607807002	PEO-MW-27-20220509	EPA 8260D	815190		
10607807003	PEO-MW-36-20220509	EPA 8260D	815190		
10607807004	PEO-MW-02-20220509	EPA 8260D	815190		
10607807002	PEO-MW-27-20220509	SM 2320B	816631		
10607807003	PEO-MW-36-20220509	SM 2320B	816631		
10607807004	PEO-MW-02-20220509	SM 2320B	816631		
10607807002	PEO-MW-27-20220509	EPA 300.0	816508		
10607807003	PEO-MW-36-20220509	EPA 300.0	816508		
10607807004	PEO-MW-02-20220509	EPA 300.0	816508		

REPORT OF LABORATORY ANALYSIS

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DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name:

ERM

Project #:

WO#: 10607807

Courier:

☒ Fed Ex
☐ Pace

☐ UPS
☐ Speedee

☐ USPS
☐ Commercial

☐ Client

PM: JMT

Due Date: 05/25/22

CLIENT: ERM-Oregon

See Exceptions
☒ ENV-FRM-MIN4-0142

Tracking Number:

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

Seals Intact? ☒ Yes ☐ No

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Packing Material: ☒ Bubble Wrap

☒ Bubble Bags ☐ None

☐ Other: _____

Temp Blank? ☒ Yes ☐ No

Thermometer:

☒ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235)
☐ T7 (0042) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808

Type of Ice:

☒ Wet

☐ Blue

☐ None

☐ Dry

☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: _____ °C

Average Corrected Temp (no temp blank only): _____ °C

☒ See Exceptions
ENV-FRM-MIN4-0142
☐ 1 Container

Correction Factor: 0.0 Cooler Temp Corrected w/temp blank: _____ °C

USDA Regulated Soil: ☒ N/A, water sample/Other: _____

Date/Initials of Person Examining Contents: MKH 5/11/22

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

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

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☐ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out?	1. ☒ Yes ☐ No
Chain of Custody Relinquished?	2. ☒ Yes ☐ No
Sampler Name and/or Signature on COC?	3. ☒ Yes ☐ No ☐ N/A
Samples Arrived within Hold Time?	4. ☒ Yes ☐ No
Short Hold Time Analysis (<72 hr)?	5. ☒ Yes ☐ No
Rush Turn Around Time Requested?	6. ☐ Yes ☒ No
Sufficient Volume?	7. ☒ Yes ☐ No
Correct Containers Used?	8. ☒ Yes ☐ No
-Pace Containers Used?	9. ☒ Yes ☐ No
Containers Intact?	10. ☒ Yes ☐ No ☐ N/A
Field Filtered Volume Received for Dissolved Tests?	11. Is sediment visible in the dissolved container? ☐ Yes ☒ No
Is sufficient information available to reconcile the samples to the COC?	12. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	13. Sample #
All containers needing acid/base preservation have been checked?	14. ☐ NaOH ☒ HNO ₃ ☐ H ₂ SO ₄ ☐ Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	15. Positive for Res. ☐ Yes ☐ No
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	16. Chlorine? ☐ Yes ☐ No
	17. pH Paper Lot#
	18. Res. Chlorine
	19. 0-6 Roll
	20. 0-6 Strip
	21. 0-14 Strip
Headspace in Methyl Mercury Container?	22. Headspace in Methyl Mercury Container?
Extra labels present on soil VOA or WIDRO containers?	23. Extra labels present on soil VOA or WIDRO containers?
Headspace in VOA Vials (greater than 6mm)?	24. Headspace in VOA Vials (greater than 6mm)?
Trip Blank Present?	25. Trip Blank Present?
Blank Custody Seals Present?	26. Blank Custody Seals Present?

CLIENT NOTIFICATION/RESOLUTION

Noted: _____
Resolution: _____

Date/Time: _____

Field Data Required? ☐ Yes ☐ No

Manager Review: _____

Date: 5/11/22

Agency affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect containers).

Labeled by: _____

RNC

	Document Name:	Document Revised: 04Jun2020
	Sample Condition Upon Receipt (SCUR) Exception Form	Page 1 of 1
	Document No.: ENV-FRM-MIN4-0142 Rev.01	Pace Analytical Services - Minneapolis

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? ☐ Yes ☐ No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			Multiple Cooler Project? ☐ Yes ☐ No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp												
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			

Tracking Number/Temperature			
5405	1818	9835	1.5
"	"	9846	0.9
"	"	9868	1.8
"	"	9859	0.7

Issue Type:	Container Type	# of Containers
Sample ID	Type	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

Comments:

Internal Transfer Chain of Custody



☒ Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed: ☒ Yes

☐ No

Owner Received Date:

5/11/2022

Results Requested By: 5/25/2022

Workorder: 10607807

Workorder Name: 0633086.02

Pace Analytical
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www.pacelabs.com

Report To

Subcontract To

Requested Analysis

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390

Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

VG9H

NWTPH-GX

L149288

Preserved Containers

[illegible]

Comments

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/Pace	5-11-22 15:10	P. Ramsey	5-12-22 9:00
2				
3				

Cooler Temperature on Receipt

°C

Custody Seal Y or NReceived on Ice Y or N

Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as it is available in the owner laboratory.

17 containers total

Sample Receipt Checklist

		If Applicable
COC Seal Present/Intact:	~~Y~~ N	VOA Zero Headspace: ~~Y~~ N
COC Signed/Accurate:	~~Y~~ N	Pres. Correct/Check: ~~Y~~ N
Bottles arrive intact:	~~Y~~ N	
Correct bottles used:	~~Y~~ N	
Sufficient volume sent:	~~Y~~ N	
RAD Screen <0.5 mR/hr:	~~Y~~ N	

PRAT

$$4.0 \times 10^4 = 4.0$$

Tr # 5466 8884 5832



Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 10607807

(To be completed by sending lab)

Sending Project No:	10607807
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	05/11/22
REQUESTED COMPLETION DATE:	5/25/2022

Sending Region	IR 10-Minnesota	Sending Project Mgr.	Julie Bowser
Receiving Region	IR850-Pace National	External Client	ERM Portland
State of Sample Origin	OR	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units ug/L Report Wet or Dry Weight? ☐ IRWO Lab Need to run? Cert. Needed Yes

WORK REQUESTED				
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples
NWTPH-Gx	VG9H	23	HCL	4
			Unit Price	Amount
			\$35.00	\$140.00
			TOTAL	\$140.00

Special Requirements: Report D, QC Limits, MDLs (D), ERM Equis (94)

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
GC Volatiles	33	\$140.00	\$112.00	\$28.00
• Custom Revenue Allocation	TOTAL	\$140.00	\$112.00	\$28.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☒ No

DISPOSITION OF FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

L1492883

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Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086.02

Work Order Number: 2205274

June 09, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 4 sample(s) on 5/13/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Revision v1

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086.02
Work Order: 2205274

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205274-001	TRIP BLANK-20220510	05/10/2022 8:00 AM	05/13/2022 10:20 AM
2205274-002	PEO-MW-27-20220509	05/10/2022 9:10 AM	05/13/2022 10:20 AM
2205274-003	PEO-MW-36-20220509	05/10/2022 11:20 AM	05/13/2022 10:20 AM
2205274-004	PEO-MW-02-20220509	05/10/2022 3:00 PM	05/13/2022 10:20 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Pace Analytical Minnesota**Project:** 0633086.02

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

6/10/2022: Revision 1 includes correction to sample ID per client request.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate



Analytical Report

Work Order: 2205274
Date Reported: 6/9/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205274-001

Client Sample ID: TRIP BLANK-20220510

Collection Date: 5/10/2022 8:00:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/24/2022 5:25:24 PM
Surr: 1,4-Difluorobenzene	91.0	60 - 140		%Rec	1	5/24/2022 5:25:24 PM
Surr: Bromofluorobenzene	91.7	60 - 140		%Rec	1	5/24/2022 5:25:24 PM

Lab ID: 2205274-002

Client Sample ID: PEO-MW-27-20220509

Collection Date: 5/10/2022 9:10:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36459

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/26/2022 10:59:14 PM
Surr: 1-Chlorooctadecane	63.6	50 - 150		%Rec	1	5/26/2022 10:59:14 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/24/2022 8:08:31 PM
Surr: 1,4-Difluorobenzene	91.2	60 - 140		%Rec	1	5/24/2022 8:08:31 PM
Surr: Bromofluorobenzene	94.0	60 - 140		%Rec	1	5/24/2022 8:08:31 PM

Lab ID: 2205274-003

Client Sample ID: PEO-MW-36-20220509

Collection Date: 5/10/2022 11:20:00 AM

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36459

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/26/2022 11:22:52 PM
Surr: 1-Chlorooctadecane	71.3	50 - 150		%Rec	1	5/26/2022 11:22:52 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	13.9	12.2	J	µg/L	1	5/24/2022 8:49:12 PM
Surr: 1,4-Difluorobenzene	97.2	60 - 140		%Rec	1	5/24/2022 8:49:12 PM
Surr: Bromofluorobenzene	99.5	60 - 140		%Rec	1	5/24/2022 8:49:12 PM



Analytical Report

Work Order: 2205274
Date Reported: 6/9/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205274-004

Collection Date: 5/10/2022 3:00:00 PM

Client Sample ID: PEO-MW-02-20220509

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36459

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	24.6	20.5	J	µg/L	1	5/27/2022 12:33:50 AM
Surr: 1-Chlorooctadecane	24.2	50 - 150	S	%Rec	1	5/27/2022 12:33:50 AM

NOTES:

S - Outlying surrogate recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	52.2	12.2		µg/L	1	5/24/2022 9:29:56 PM
Surr: 1,4-Difluorobenzene	93.2	60 - 140		%Rec	1	5/24/2022 9:29:56 PM
Surr: Bromofluorobenzene	94.2	60 - 140		%Rec	1	5/24/2022 9:29:56 PM

Work Order: 2205274
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-36459		SampType: MBLK			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75751		
Client ID: MBLKW		Batch ID: 36459			Analysis Date: 5/26/2022					SeqNo: 1554311		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	31.1	39.8		0	0						J
Surr: 1-Chlorooctadecane	229		398.4		57.5	50	150				

Sample ID: LCS-36459		SampType: LCS			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75751		
Client ID: LCSW		Batch ID: 36459			Analysis Date: 5/26/2022					SeqNo: 1554312		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	378	39.9	498.1	0	75.9	70	130				
Surr: 1-Chlorooctadecane	280		398.5		70.3	50	150				

Sample ID: 2205274-003AMS		SampType: MS			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75751		
Client ID: PEO-MW-36-20220509		Batch ID: 36459			Analysis Date: 5/26/2022					SeqNo: 1554318		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	374	39.8	497.6	0	75.2	70	130				
Surr: 1-Chlorooctadecane	285		398.1		71.6	50	150				

Sample ID: 2205274-003AMSD		SampType: MSD			Units: µg/L		Prep Date: 5/16/2022			RunNo: 75751		
Client ID: PEO-MW-36-20220509		Batch ID: 36459			Analysis Date: 5/27/2022					SeqNo: 1554319		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	350	39.8	497.5	0	70.4	70	130	374.4	6.68	30	
Surr: 1-Chlorooctadecane	285		398.0		71.6	50	150		0		

Work Order: 2205274
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-36578		SampType: LCS			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: LCSW		Batch ID: 36578			Analysis Date: 5/24/2022					SeqNo: 1552939		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	212	25.0	200.0	0	106	70	130				
Surr: 1,4-Difluorobenzene	48.0		50.00		96.0	60	140				
Surr: Bromofluorobenzene	51.2		50.00		102	60	140				

Sample ID: MB-36578		SampType: MBLK			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: MBLKW		Batch ID: 36578			Analysis Date: 5/24/2022					SeqNo: 1552938		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	46.2		50.00		92.4	60	140				
Surr: Bromofluorobenzene	47.2		50.00		94.5	60	140				

Sample ID: 2205274-003BMS		SampType: MS			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: PEO-MW-36-20220509		Batch ID: 36578			Analysis Date: 5/24/2022				SeqNo: 1554413			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	205	25.0	200.0	13.93	95.7	70	130				
Surr: 1,4-Difluorobenzene	49.5		50.00		99.1	60	140				
Surr: Bromofluorobenzene	49.3		50.00		98.6	60	140				

Sample ID: 2205274-003BMSD		SampType: MSD			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: PEO-MW-36-20220509		Batch ID: 36578			Analysis Date: 5/25/2022					SeqNo: 1554414		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)	222	25.0	200.0	13.93	104	70	130	205.4	7.96	30	H
Surr: 1,4-Difluorobenzene	48.6		50.00		97.3	60	140		0		H
Surr: Bromofluorobenzene	49.8		50.00		99.5	60	140		0		H

Work Order: 2205274
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCSD-36578	SampType: LCSD	Units: µg/L			Prep Date: 5/25/2022			RunNo: 75694			
Client ID: LCSW02	Batch ID: 36578	Analysis Date: 5/25/2022						SeqNo: 1552937			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	177	25.0	200.0	0	88.3	70	130	211.8	18.1	20	
Surr: 1,4-Difluorobenzene	47.4		50.00		94.9	60	140		0		
Surr: Bromofluorobenzene	50.2		50.00		100	60	140		0		

Client Name: **PACEMI**
 Logged by: **Clare Griggs**

Work Order Number: **2205274**
 Date Received: **5/13/2022 10:20:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	5.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10607807

Workorder Name: 0633086.02

Results Requested By: 5/25/2022

2205274



Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@pacelabs.com

Fremont Analytical
3600 Fremont Ave N
Seattle, WA 98103

P.O. 10607807

State of Sample Origin: OR

Report / Invoice To		Subcontract To		Requested Analysis																													
Julie Bowser Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 612-607-6390 Email: julie.bowser@pacelabs.com		Fremont Analytical 3600 Fremont Ave N Seattle, WA 98103		P.O. 10607807																													
State of Sample Origin: OR																																	
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers																												
1	TRIP BLANK-20220510	5/10/2022 08:00	10607807001	Water	2																												
2	PEO-MW-27-20220509	5/10/2022 09:10	10607807002	Water	5																												
3	PEO-MW-36-20220509	5/10/2022 11:20	10607807003	Water	15																												
4	PEO-MW-02-20220509	5/10/2022 15:00	10607807004	Water	5																												
5																																	
<table border="1"> <thead> <tr> <th colspan="2">Transfers</th> <th>Released By</th> <th>Date/Time</th> <th>Received By</th> <th>Date/Time</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>Julie Bowser</td> <td>5/10/2022 13:15</td> <td>Julie Bowser</td> <td>5/17/2022 10:57</td> <td>J flag to MDL EOUS EDD needed</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Transfers		Released By	Date/Time	Received By	Date/Time	Comments	1		Julie Bowser	5/10/2022 13:15	Julie Bowser	5/17/2022 10:57	J flag to MDL EOUS EDD needed	2							3						
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2																																	
3																																	
Cooler Temperature on Receipt		°C	Custody Seal	Y or N	Received on Ice	Y or N																											
						Samples Intact Y or N																											

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May 31, 2022

Joe Casey
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0633086.02
Pace Project No.: 10607954

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 12, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser
julie.bowser@pacelabs.com
612-607-6390
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 0633086.02
Pace Project No.: 10607954

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064

Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
Please Note: Applicable air certifications are denoted with an asterisk ().

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008

Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0633086.02

Pace Project No.: 10607954

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

New Jersey Certification #: TN002

New Mexico DW Certification

New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41

North Carolina Drinking Water Certification #: 21704

North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140

Ohio VAP Certification #: CL0069

Oklahoma Certification #: 9915

Oregon Certification #: TN200002

Pennsylvania Certification #: 68-02979

Rhode Island Certification #: LAO00356

South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Mold Certification #: LAB0152

Texas Certification #: T 104704245-17-14

USDA Soil Permit #: P330-15-00234

Utah Certification #: TN00003

Vermont Dept. of Health: ID# VT-2006

Virginia Certification #: VT2006

Virginia Certification #: 460132

Washington Certification #: C847

West Virginia Certification #: 233

Wisconsin Certification #: 998093910

Wyoming UST Certification #: via A2LA 2926.01

A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02

AIHA-LAP/LLC EMLAP Certification #:100789

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0633086.02

Pace Project No.: 10607954

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10607954001	TRIP BLANK-20220510	Water	05/10/22 08:00	05/12/22 08:50
10607954002	PEO-MW-28a-20220510	Water	05/10/22 10:25	05/12/22 08:50
10607954003	PEO-MW-11-20220510	Water	05/10/22 12:35	05/12/22 08:50
10607954004	PEO-MW-41-20220510	Water	05/10/22 14:30	05/12/22 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0633086.02

Pace Project No.: 10607954

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607954001	TRIP BLANK-20220510	NWTPH-Gx	MGF	2	PAN
		EPA 8260D	NMB	8	PASI-M
10607954002	PEO-MW-28a-20220510	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	ACG	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JNG	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	ACG	2	PAN
10607954003	PEO-MW-11-20220510	EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
		EPA 8270E by SIM	JNG	20	PASI-M
		EPA 8260D	JEM, NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	ACG	2	PAN
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	NN2	2	PASI-M
10607954004	PEO-MW-41-20220510	EPA 8270E by SIM	JNG	20	PASI-M
		EPA 8260D	NMB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
		NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	ACG	2	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607954

Sample: TRIP BLANK-20220510		Lab ID: 10607954001		Collected: 05/10/22 08:00		Received: 05/12/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	74.7J	ug/L	100	31.6	1	05/19/22 14:47	05/19/22 14:47		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	97.3	%	78.0-120		1	05/19/22 14:47	05/19/22 14:47	98-08-8FID	
8260D MSV UST Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 20:54	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 20:54	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 20:54	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 20:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 20:54	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/13/22 20:54	2199-69-1	
4-Bromofluorobenzene (S)	97	%	75-125		1		05/13/22 20:54	460-00-4	
Toluene-d8 (S)	101	%	75-125		1		05/13/22 20:54	2037-26-5	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607954

Sample: PEO-MW-28a-20220510 Lab ID: 10607954002 Collected: 05/10/22 10:25 Received: 05/12/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.48	0.14	1	05/12/22 15:29	05/13/22 14:21	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.48	0.22	1	05/12/22 15:29	05/13/22 14:21	64742-65-0	
Surrogates									
o-Terphenyl (S)	71	%	50-150		1	05/12/22 15:29	05/13/22 14:21	84-15-1	
n-Triacontane (S)	64	%	50-150		1	05/12/22 15:29	05/13/22 14:21		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	67.2J	ug/L	100	31.6	1	05/19/22 18:01	05/19/22 18:01		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	97.4	%	78.0-120		1	05/19/22 18:01	05/19/22 18:01	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	52300	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:29		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.18J	ug/L	0.50	0.083	1	05/18/22 03:14	05/21/22 00:13	7440-38-2	
Manganese, Dissolved	2.1	ug/L	0.50	0.20	1	05/18/22 03:14	05/21/22 00:13	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.042	0.0072	1	05/13/22 15:59	05/16/22 16:07	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0063	1	05/13/22 15:59	05/16/22 16:07	208-96-8	
Anthracene	ND	ug/L	0.042	0.0056	1	05/13/22 15:59	05/16/22 16:07	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0094	1	05/13/22 15:59	05/16/22 16:07	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0092	1	05/13/22 15:59	05/16/22 16:07	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0099	1	05/13/22 15:59	05/16/22 16:07	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0085	1	05/13/22 15:59	05/16/22 16:07	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0086	1	05/13/22 15:59	05/16/22 16:07	207-08-9	
Chrysene	ND	ug/L	0.042	0.0098	1	05/13/22 15:59	05/16/22 16:07	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	05/13/22 15:59	05/16/22 16:07	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.015	1	05/13/22 15:59	05/16/22 16:07	206-44-0	
Fluorene	ND	ug/L	0.042	0.0063	1	05/13/22 15:59	05/16/22 16:07	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.012	1	05/13/22 15:59	05/16/22 16:07	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.042	0.0070	1	05/13/22 15:59	05/16/22 16:07	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0086	1	05/13/22 15:59	05/16/22 16:07	91-57-6	
Naphthalene	ND	ug/L	0.042	0.0092	1	05/13/22 15:59	05/16/22 16:07	91-20-3	
Phenanthrene	0.023J	ug/L	0.042	0.013	1	05/13/22 15:59	05/16/22 16:07	85-01-8	B
Pyrene	ND	ug/L	0.042	0.010	1	05/13/22 15:59	05/16/22 16:07	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	76	%	52-125		1	05/13/22 15:59	05/16/22 16:07	321-60-8	
p-Terphenyl-d14 (S)	88	%	54-125		1	05/13/22 15:59	05/16/22 16:07	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607954

Sample: PEO-MW-28a-20220510 Lab ID: 10607954002 Collected: 05/10/22 10:25 Received: 05/12/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 22:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 22:41	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 22:41	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 22:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 22:41	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%	75-125		1		05/13/22 22:41	2199-69-1	
4-Bromofluorobenzene (S)	93	%	75-125		1		05/13/22 22:41	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/13/22 22:41	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	59.1	mg/L	5.0	1.8	1		05/21/22 13:06		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	4.7	mg/L	1.2	0.43	1		05/24/22 06:21	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607954

Sample: PEO-MW-11-20220510 Lab ID: 10607954003 Collected: 05/10/22 12:35 Received: 05/12/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	26.9	mg/L	4.3	1.3	10	05/12/22 15:29	05/19/22 14:35	68334-30-5	
Motor Oil Range SG	ND	mg/L	4.3	2.0	10	05/12/22 15:29	05/19/22 14:35	64742-65-0	
Surrogates									
o-Terphenyl (S)	80	%	50-150		10	05/12/22 15:29	05/19/22 14:35	84-15-1	
n-Triacontane (S)	32	%	50-150		10	05/12/22 15:29	05/19/22 14:35		S4
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	1220	ug/L	500	158	5	05/19/22 21:14	05/19/22 21:14		B
Surrogates									
a,a,a-Trifluorotoluene (FID)	93.7	%	78.0-120		5	05/19/22 21:14	05/19/22 21:14	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	362000	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:37		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	120	ug/L	2.5	0.41	5	05/18/22 03:14	05/21/22 00:20	7440-38-2	
Manganese, Dissolved	4090	ug/L	25.0	10	50	05/18/22 03:14	05/21/22 00:23	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.041	0.0071	1	05/13/22 15:59	05/16/22 16:28	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0063	1	05/13/22 15:59	05/16/22 16:28	208-96-8	
Anthracene	ND	ug/L	0.041	0.0055	1	05/13/22 15:59	05/16/22 16:28	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0093	1	05/13/22 15:59	05/16/22 16:28	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0091	1	05/13/22 15:59	05/16/22 16:28	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0098	1	05/13/22 15:59	05/16/22 16:28	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0084	1	05/13/22 15:59	05/16/22 16:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0085	1	05/13/22 15:59	05/16/22 16:28	207-08-9	
Chrysene	ND	ug/L	0.041	0.0097	1	05/13/22 15:59	05/16/22 16:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0082	1	05/13/22 15:59	05/16/22 16:28	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.015	1	05/13/22 15:59	05/16/22 16:28	206-44-0	
Fluorene	ND	ug/L	0.041	0.0062	1	05/13/22 15:59	05/16/22 16:28	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.012	1	05/13/22 15:59	05/16/22 16:28	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0069	1	05/13/22 15:59	05/16/22 16:28	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0085	1	05/13/22 15:59	05/16/22 16:28	91-57-6	
Naphthalene	ND	ug/L	0.041	0.0091	1	05/13/22 15:59	05/16/22 16:28	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.013	1	05/13/22 15:59	05/16/22 16:28	85-01-8	
Pyrene	ND	ug/L	0.041	0.010	1	05/13/22 15:59	05/16/22 16:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	31	%	52-125		1	05/13/22 15:59	05/16/22 16:28	321-60-8	S5
p-Terphenyl-d14 (S)	42	%	54-125		1	05/13/22 15:59	05/16/22 16:28	1718-51-0	S5

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607954

Sample: PEO-MW-11-20220510		Lab ID: 10607954003		Collected: 05/10/22 12:35		Received: 05/12/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	2.4	ug/L	1.0	0.10	1		05/16/22 22:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/18/22 14:35	100-41-4	
Toluene	1.4	ug/L	1.0	0.10	1		05/16/22 22:40	108-88-3	
m&p-Xylene	0.68J	ug/L	2.0	0.20	1		05/18/22 14:35	179601-23-1	
o-Xylene	0.33J	ug/L	1.0	0.18	1		05/18/22 14:35	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		05/16/22 22:40	2199-69-1	
4-Bromofluorobenzene (S)	105	%.	75-125		1		05/16/22 22:40	460-00-4	
Toluene-d8 (S)	105	%.	75-125		1		05/18/22 14:35	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	409	mg/L	5.0	1.8	1		05/21/22 13:10		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	0.65J	mg/L	1.2	0.43	1		05/24/22 07:23	14808-79-8	

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ANALYTICAL RESULTS

Project: 0633086.02
Pace Project No.: 10607954

Sample: PEO-MW-41-20220510 Lab ID: 10607954004 Collected: 05/10/22 14:30 Received: 05/12/22 08:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	0.15J	mg/L	0.43	0.13	1	05/12/22 15:29	05/13/22 14:55	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	0.20	1	05/12/22 15:29	05/13/22 14:55	64742-65-0	
Surrogates									
o-Terphenyl (S)	69	%	50-150		1	05/12/22 15:29	05/13/22 14:55	84-15-1	
n-Triacontane (S)	64	%	50-150		1	05/12/22 15:29	05/13/22 14:55		
VOA (GC) NWTPHGX Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet									
TPH (C06-C12)	60.6J	ug/L	100	31.6	1	05/19/22 18:22	05/19/22 18:22		B,J
Surrogates									
a,a,a-Trifluorotoluene (FID)	97.5	%	78.0-120		1	05/19/22 18:22	05/19/22 18:22	98-08-8FID	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	50300	ug/L	3300	76.7	1	05/18/22 03:18	05/19/22 14:38		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.29J	ug/L	0.50	0.083	1	05/18/22 03:14	05/21/22 00:27	7440-38-2	
Manganese, Dissolved	119	ug/L	0.50	0.20	1	05/18/22 03:14	05/21/22 00:27	7439-96-5	
8270E MSSV PAH by SIM Analytical Method: EPA 8270E by SIM Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.0093J	ug/L	0.040	0.0068	1	05/13/22 15:59	05/16/22 16:47	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0060	1	05/13/22 15:59	05/16/22 16:47	208-96-8	
Anthracene	ND	ug/L	0.040	0.0053	1	05/13/22 15:59	05/16/22 16:47	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0090	1	05/13/22 15:59	05/16/22 16:47	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0088	1	05/13/22 15:59	05/16/22 16:47	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0094	1	05/13/22 15:59	05/16/22 16:47	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0080	1	05/13/22 15:59	05/16/22 16:47	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0082	1	05/13/22 15:59	05/16/22 16:47	207-08-9	
Chrysene	ND	ug/L	0.040	0.0093	1	05/13/22 15:59	05/16/22 16:47	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/13/22 15:59	05/16/22 16:47	53-70-3	
Fluoranthene	0.015J	ug/L	0.040	0.014	1	05/13/22 15:59	05/16/22 16:47	206-44-0	
Fluorene	0.014J	ug/L	0.040	0.0060	1	05/13/22 15:59	05/16/22 16:47	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.011	1	05/13/22 15:59	05/16/22 16:47	193-39-5	
1-Methylnaphthalene	0.0071J	ug/L	0.040	0.0067	1	05/13/22 15:59	05/16/22 16:47	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0082	1	05/13/22 15:59	05/16/22 16:47	91-57-6	
Naphthalene	ND	ug/L	0.040	0.0087	1	05/13/22 15:59	05/16/22 16:47	91-20-3	
Phenanthrene	0.042	ug/L	0.040	0.012	1	05/13/22 15:59	05/16/22 16:47	85-01-8	B
Pyrene	0.011J	ug/L	0.040	0.0098	1	05/13/22 15:59	05/16/22 16:47	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	64	%	52-125		1	05/13/22 15:59	05/16/22 16:47	321-60-8	
p-Terphenyl-d14 (S)	79	%	54-125		1	05/13/22 15:59	05/16/22 16:47	1718-51-0	

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ANALYTICAL RESULTS

Project: 0633086.02

Pace Project No.: 10607954

Sample: PEO-MW-41-20220510		Lab ID: 10607954004		Collected: 05/10/22 14:30		Received: 05/12/22 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/13/22 22:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/13/22 22:56	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/13/22 22:56	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/13/22 22:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/13/22 22:56	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125		1		05/13/22 22:56	2199-69-1	
4-Bromofluorobenzene (S)	95	%.	75-125		1		05/13/22 22:56	460-00-4	
Toluene-d8 (S)	109	%.	75-125		1		05/13/22 22:56	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	62.0	mg/L	5.0	1.8	1		05/21/22 13:24		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	2.6	mg/L	1.2	0.43	1		05/23/22 13:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch:	1865465	Analysis Method:	NWTPH-Gx
QC Batch Method:	8015/NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10607954001, 10607954002, 10607954003, 10607954004

METHOD BLANK: R3793942-2

Matrix: Water

Associated Lab Samples: 10607954001, 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	82.8J	100	31.6	05/19/22 14:12	J
a,a,a-Trifluorotoluene (FID)	%	97.5	78.0-120		05/19/22 14:12	

LABORATORY CONTROL SAMPLE: R3793942-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	5690	103	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			106	78.0-120	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch:	1865465	Analysis Method:	NWTPH-Gx
QC Batch Method:	8015/8021/8021B/NWTPHGx	Analysis Description:	VOA (GC) NWTPHGx
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10607954001, 10607954002, 10607954003, 10607954004

METHOD BLANK: R3793942-2 Matrix: Water
Associated Lab Samples: 10607954001, 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	82.8J	100	31.6	05/19/22 14:12	J
a,a,a-Trifluorotoluene (FID)	%	97.5	78.0-120		05/19/22 14:12	

LABORATORY CONTROL SAMPLE: R3793942-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	5690	103	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			106	78.0-120	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch:	815733	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607954002, 10607954003, 10607954004		

METHOD BLANK: 4324003 Matrix: Water

Associated Lab Samples: 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.083	05/20/22 21:55	
Manganese, Dissolved	ug/L	ND	0.50	0.20	05/20/22 21:55	

LABORATORY CONTROL SAMPLE: 4324004

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	105	105	80-120	
Manganese, Dissolved	ug/L	100	101	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4324005 4324006

Parameter	Units	10607807003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	17.2	100	100	123	123	106	106	75-125	0	20	
Manganese, Dissolved	ug/L	1480	100	100	1540	1520	57	38	75-125	1	20	E,P6

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch: 815244

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV UST-WATER

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607954001, 10607954002, 10607954004

METHOD BLANK: 4321731

Matrix: Water

Associated Lab Samples: 10607954001, 10607954002, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/13/22 20:39	
Ethylbenzene	ug/L	ND	1.0	0.11	05/13/22 20:39	
m&p-Xylene	ug/L	ND	2.0	0.20	05/13/22 20:39	
o-Xylene	ug/L	ND	1.0	0.18	05/13/22 20:39	
Toluene	ug/L	ND	1.0	0.10	05/13/22 20:39	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		05/13/22 20:39	
4-Bromofluorobenzene (S)	%	96	75-125		05/13/22 20:39	
Toluene-d8 (S)	%	100	75-125		05/13/22 20:39	

LABORATORY CONTROL SAMPLE & LCSD: 4321732

4321734

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.0	22.1	95	110	73-125	15	20	
Ethylbenzene	ug/L	20	18.5	22.0	92	110	75-125	17	20	
m&p-Xylene	ug/L	40	37.0	42.4	92	106	72-125	14	20	
o-Xylene	ug/L	20	17.9	20.3	90	101	73-125	12	20	
Toluene	ug/L	20	18.6	21.6	93	108	74-125	15	20	
1,2-Dichlorobenzene-d4 (S)	%				96	98	75-125			
4-Bromofluorobenzene (S)	%				99	100	75-125			
Toluene-d8 (S)	%				103	100	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch: 815528

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV UST-WATER

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607954003

METHOD BLANK: 4323112

Matrix: Water

Associated Lab Samples: 10607954003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/16/22 21:23	
Toluene	ug/L	ND	1.0	0.10	05/16/22 21:23	
1,2-Dichlorobenzene-d4 (S)	%.	101	75-125		05/16/22 21:23	
4-Bromofluorobenzene (S)	%.	101	75-125		05/16/22 21:23	
Toluene-d8 (S)	%.	98	75-125		05/16/22 21:23	

LABORATORY CONTROL SAMPLE & LCSD: 4323113

4323114

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	21.4	22.2	107	111	73-125	4	20	
Toluene	ug/L	20	21.0	21.8	105	109	74-125	4	20	
1,2-Dichlorobenzene-d4 (S)	%.				101	101	75-125			
4-Bromofluorobenzene (S)	%.				100	102	75-125			
Toluene-d8 (S)	%.				98	99	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch: 816066

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV UST-WATER

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607954003

METHOD BLANK: 4325427

Matrix: Water

Associated Lab Samples: 10607954003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethylbenzene	ug/L	ND	1.0	0.11	05/18/22 12:16	
m&p-Xylene	ug/L	ND	2.0	0.20	05/18/22 12:16	
o-Xylene	ug/L	ND	1.0	0.18	05/18/22 12:16	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		05/18/22 12:16	
4-Bromofluorobenzene (S)	%	102	75-125		05/18/22 12:16	
Toluene-d8 (S)	%	103	75-125		05/18/22 12:16	

LABORATORY CONTROL SAMPLE: 4325428

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethylbenzene	ug/L	20	19.8	99	75-125	
m&p-Xylene	ug/L	40	41.2	103	72-125	
o-Xylene	ug/L	20	20.5	103	73-125	
1,2-Dichlorobenzene-d4 (S)	%			101	75-125	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4325432 4325433

Parameter	Units	10608053002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethylbenzene	ug/L	ND	20	20	14.1	15.6	68	75	66-126	9	30	
m&p-Xylene	ug/L	ND	40	40	28.0	30.2	70	76	69-134	8	30	
o-Xylene	ug/L	ND	20	20	14.1	15.9	70	79	73-133	12	30	M1
1,2-Dichlorobenzene-d4 (S)	%						99	100	75-125			
4-Bromofluorobenzene (S)	%						101	102	75-125			
Toluene-d8 (S)	%						99	98	75-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch:	815123	Analysis Method:	EPA 8270E by SIM
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	8270E Water PAH by SIM MSSV
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607954002, 10607954003, 10607954004

METHOD BLANK: 4320933 Matrix: Water

Associated Lab Samples: 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0067	05/16/22 14:27	
2-Methylnaphthalene	ug/L	ND	0.040	0.0083	05/16/22 14:27	
Acenaphthene	ug/L	ND	0.040	0.0069	05/16/22 14:27	
Acenaphthylene	ug/L	ND	0.040	0.0061	05/16/22 14:27	
Anthracene	ug/L	ND	0.040	0.0054	05/16/22 14:27	
Benzo(a)anthracene	ug/L	ND	0.040	0.0090	05/16/22 14:27	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/16/22 14:27	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0095	05/16/22 14:27	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0081	05/16/22 14:27	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0083	05/16/22 14:27	
Chrysene	ug/L	ND	0.040	0.0094	05/16/22 14:27	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0080	05/16/22 14:27	
Fluoranthene	ug/L	ND	0.040	0.014	05/16/22 14:27	
Fluorene	ug/L	ND	0.040	0.0060	05/16/22 14:27	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.011	05/16/22 14:27	
Naphthalene	ug/L	0.0097J	0.040	0.0088	05/16/22 14:27	
Phenanthrene	ug/L	0.020J	0.040	0.012	05/16/22 14:27	
Pyrene	ug/L	ND	0.040	0.0099	05/16/22 14:27	
2-Fluorobiphenyl (S)	%	62	52-125		05/16/22 14:27	
p-Terphenyl-d14 (S)	%	80	54-125		05/16/22 14:27	

LABORATORY CONTROL SAMPLE & LCSD: 4320934

4320935

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.75	0.78	75	78	43-125	4	20	
2-Methylnaphthalene	ug/L	1	0.76	0.80	76	80	42-125	5	20	
Acenaphthene	ug/L	1	0.75	0.80	75	80	56-125	6	20	
Acenaphthylene	ug/L	1	0.78	0.80	78	80	55-125	3	20	
Anthracene	ug/L	1	0.77	0.79	77	79	64-125	3	20	
Benzo(a)anthracene	ug/L	1	0.82	0.85	82	85	65-125	4	20	
Benzo(a)pyrene	ug/L	1	0.76	0.83	76	83	64-125	9	20	
Benzo(b)fluoranthene	ug/L	1	0.75	0.76	75	76	70-125	2	20	
Benzo(g,h,i)perylene	ug/L	1	0.70	0.75	70	75	49-125	7	20	
Benzo(k)fluoranthene	ug/L	1	0.75	0.79	75	79	69-125	6	20	
Chrysene	ug/L	1	0.80	0.83	80	83	70-125	4	20	
Dibenz(a,h)anthracene	ug/L	1	0.76	0.78	76	78	41-125	3	20	
Fluoranthene	ug/L	1	0.78	0.78	78	78	67-125	0	20	
Fluorene	ug/L	1	0.76	0.78	76	78	59-125	2	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.82	0.81	82	81	57-125	1	20	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

LABORATORY CONTROL SAMPLE & LCSD: 4320934			4320935							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Naphthalene	ug/L	1	0.75	0.78	75	78	49-125	4	20	
Phenanthrene	ug/L	1	0.77	0.80	77	80	65-125	4	20	
Pyrene	ug/L	1	0.79	0.83	79	83	67-125	4	20	
2-Fluorobiphenyl (S)	%.				75	79	52-125			
p-Terphenyl-d14 (S)	%.				80	82	54-125			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch:	814893	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10607954002, 10607954003, 10607954004		

METHOD BLANK: 4319476 Matrix: Water

Associated Lab Samples: 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	0.12J	0.40	0.12	05/13/22 13:35	
Motor Oil Range SG	mg/L	0.24J	0.40	0.18	05/13/22 13:35	
n-Triacontane (S)	%.	71	50-150		05/13/22 13:35	
o-Terphenyl (S)	%.	68	50-150		05/13/22 13:35	

LABORATORY CONTROL SAMPLE & LCSD: 4319477

		4319478								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.2	1.7	60	84	50-150	32	20	R1
Motor Oil Range SG	mg/L	2	1.2	1.7	62	85	50-150	31	20	R1
n-Triacontane (S)	%.				51	67	50-150			
o-Terphenyl (S)	%.				53	77	50-150			

SAMPLE DUPLICATE: 4319479

Parameter	Units	10607954002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.72		30	
Motor Oil Range SG	mg/L	ND	0.39J		30	
n-Triacontane (S)	%.	64	64			
o-Terphenyl (S)	%.	71	70			

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch:	816785	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607954002, 10607954003, 10607954004

METHOD BLANK: 4329006 Matrix: Water

Associated Lab Samples: 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	1.8J	5.0	1.8	05/21/22 11:11	

LABORATORY CONTROL SAMPLE & LCSD: 4329007		4329008								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.8	42.6	107	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4329009					4329010							
		10608388001	MS Spike	MSD Spike								
Parameter	Units	Result	Conc.	Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	307	40	40	347	346	101	99	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4329011		4329012										
Parameter	Units	10607852008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	357	40	40	401	399	108	105	80-120	0	20	

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QUALITY CONTROL DATA

Project: 0633086.02

Pace Project No.: 10607954

QC Batch: 816913

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory:

Pace Analytical Services - Minneapolis

Associated Lab Samples: 10607954002, 10607954003, 10607954004

METHOD BLANK: 4329782

Matrix: Water

Associated Lab Samples: 10607954002, 10607954003, 10607954004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	05/23/22 08:49	

LABORATORY CONTROL SAMPLE: 4329783

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	47.6	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4329784 4329785

Parameter	Units	10607954002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	4.7	50	50	50.2	50.7	91	92	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4329786 4329787

Parameter	Units	10607954003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	0.65J	50	50	43.7	42.0	86	83	80-120	4	20	

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QUALIFIERS

Project: 0633086.02
Pace Project No.: 10607954

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 adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
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.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 815244

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 815528

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1 RPD value was outside control limits.
S4 Surrogate recovery not evaluated against control limits due to sample dilution.
S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0633086.02

Pace Project No.: 10607954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607954002	PEO-MW-28a-20220510	EPA Mod. 3510C	814893	NWTPH-Dx	815184
10607954003	PEO-MW-11-20220510	EPA Mod. 3510C	814893	NWTPH-Dx	815184
10607954004	PEO-MW-41-20220510	EPA Mod. 3510C	814893	NWTPH-Dx	815184
10607954001	TRIP BLANK-20220510	NWTPHGx	1865465	NWTPH-Gx	1865465
10607954002	PEO-MW-28a-20220510	NWTPHGx	1865465	NWTPH-Gx	1865465
10607954003	PEO-MW-11-20220510	NWTPHGx	1865465	NWTPH-Gx	1865465
10607954004	PEO-MW-41-20220510	NWTPHGx	1865465	NWTPH-Gx	1865465
10607954002	PEO-MW-28a-20220510	EPA 3010A	815736	EPA 6010D	816266
10607954003	PEO-MW-11-20220510	EPA 3010A	815736	EPA 6010D	816266
10607954004	PEO-MW-41-20220510	EPA 3010A	815736	EPA 6010D	816266
10607954002	PEO-MW-28a-20220510	EPA 3020A	815733	EPA 6020A	816296
10607954003	PEO-MW-11-20220510	EPA 3020A	815733	EPA 6020A	816296
10607954004	PEO-MW-41-20220510	EPA 3020A	815733	EPA 6020A	816296
10607954002	PEO-MW-28a-20220510	EPA Mod. 3510C	815123	EPA 8270E by SIM	815430
10607954003	PEO-MW-11-20220510	EPA Mod. 3510C	815123	EPA 8270E by SIM	815430
10607954004	PEO-MW-41-20220510	EPA Mod. 3510C	815123	EPA 8270E by SIM	815430
10607954001	TRIP BLANK-20220510	EPA 8260D	815244		
10607954002	PEO-MW-28a-20220510	EPA 8260D	815244		
10607954003	PEO-MW-11-20220510	EPA 8260D	815528		
10607954003	PEO-MW-11-20220510	EPA 8260D	816066		
10607954004	PEO-MW-41-20220510	EPA 8260D	815244		
10607954002	PEO-MW-28a-20220510	SM 2320B	816785		
10607954003	PEO-MW-11-20220510	SM 2320B	816785		
10607954004	PEO-MW-41-20220510	SM 2320B	816785		
10607954002	PEO-MW-28a-20220510	EPA 300.0	816913		
10607954003	PEO-MW-11-20220510	EPA 300.0	816913		
10607954004	PEO-MW-41-20220510	EPA 300.0	816913		

REPORT OF LABORATORY ANALYSIS

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Pace
DC# Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)
Effective Date: 04/12/2022

Sample Condition Upon Receipt
Client Name: ERM
Project #: WO#: 10607954
Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client
☐ Pace ☐ Speedee ☐ Commercial
Tracking Number: 540518189876/9880/9890
See Exceptions ☐ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No
Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:
Thermometer: ☒ T1(0461) ☐ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235) ☐ T7(0042) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808
Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No
Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A
Temp should be above freezing to 6°C
Cooler Temp Read w/temp blank: 1.2, 1.5, 2.9 °C
Average Corrected Temp (no temp blank only): °C
Correction Factor: type Cooler Temp Corrected w/temp blank: 1.2, 1.5, 2.9 °C
See Exceptions ENV-FRM-MIN4-0142
☐ 1 Container

USDA Regulated Soil: ☐ N/A water sample/Other:
Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No
Date/Initials of Person Examining Contents: ED 5.12.22
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No
If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☒ Minneapolis ☐ Virginia	COMMENTS:
Chain of Custody Present and Filled Out?	1.
Chain of Custody Relinquished?	2.
Sampler Name and/or Signature on COC?	3.
Samples Arrived within Hold Time?	4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)?	5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	6.
Sufficient Volume?	7.
Correct Containers Used?	8.
-Pace Containers Used?	
Containers Intact?	9.
Field Filtered Volume Received for Dissolved Tests?	10. Is sediment visible in the dissolved container? ☐ Yes ☒ No
Is sufficient information available to reconcile the samples to the COC?	11. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other-	
All containers needing acid/base preservation have been checked?	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	☐ NaOH ☐ HNO ₃ ☐ H ₂ SO ₄ ☐ Zinc Acetate
Exceptions: ☒ VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	Positive for Res. ☐ Yes ☒ No Chlorine? ☐ Yes ☒ No pH Paper Lot#
	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container?	
Extra labels present on soil VOA or WIDRO containers?	13. See Exception ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	
Trip Blank Present?	14. Pace Trip Blank Lot # (if purchased):
Trip Blank Custody Seals Present?	

CLIENT NOTIFICATION/RESOLUTION
Person Contacted: _____ Date/Time: _____
Comments/Resolution: _____ Field Data Required? ☐ Yes ☒ No

Project Manager Review: _____ Date: 5/12/22
Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).
Labeled by: _____

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Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
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F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota

Julie Bowser
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: 0633086.02

Work Order Number: 2205273

May 31, 2022

Attention Julie Bowser:

Fremont Analytical, Inc. received 4 sample(s) on 5/13/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH

Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

www.fremontanalytical.com

CLIENT: Pace Analytical Minnesota
Project: 0633086.02
Work Order: 2205273

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205273-001	TRIP BLANK-20220510	05/10/2022 8:00 AM	05/13/2022 10:20 AM
2205273-002	PEO-MW-28a-20220510	05/10/2022 10:25 AM	05/13/2022 10:20 AM
2205273-003	PEO-MW-11-20220510	05/10/2022 12:35 PM	05/13/2022 10:20 AM
2205273-004	PEO-MW-41-20220510	05/10/2022 2:30 PM	05/13/2022 10:20 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205273-001

Collection Date: 5/10/2022 8:00:00 AM

Client Sample ID: TRIP BLANK-20220510

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/24/2022 4:44:34 PM
Surr: 1,4-Difluorobenzene	91.2	60 - 140		%Rec	1	5/24/2022 4:44:34 PM
Surr: Bromofluorobenzene	88.9	60 - 140		%Rec	1	5/24/2022 4:44:34 PM

Lab ID: 2205273-002

Collection Date: 5/10/2022 10:25:00 AM

Client Sample ID: PEO-MW-28a-20220510

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36459

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/26/2022 9:48:08 PM
Surr: 1-Chlorooctadecane	63.5	50 - 150		%Rec	1	5/26/2022 9:48:08 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/24/2022 6:06:17 PM
Surr: 1,4-Difluorobenzene	91.6	60 - 140		%Rec	1	5/24/2022 6:06:17 PM
Surr: Bromofluorobenzene	93.7	60 - 140		%Rec	1	5/24/2022 6:06:17 PM

Lab ID: 2205273-003

Collection Date: 5/10/2022 12:35:00 PM

Client Sample ID: PEO-MW-11-20220510

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 36459

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/26/2022 10:11:48 PM
Surr: 1-Chlorooctadecane	54.3	50 - 150		%Rec	1	5/26/2022 10:11:48 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 36578

Analyst: SG

Aliphatic Hydrocarbon (C10-C12)	138	12.2		µg/L	1	5/24/2022 6:47:15 PM
Surr: 1,4-Difluorobenzene	98.9	60 - 140		%Rec	1	5/24/2022 6:47:15 PM
Surr: Bromofluorobenzene	100	60 - 140		%Rec	1	5/24/2022 6:47:15 PM



Analytical Report

Work Order: 2205273
Date Reported: 5/31/2022

CLIENT: Pace Analytical Minnesota
Project: 0633086.02

Lab ID: 2205273-004

Collection Date: 5/10/2022 2:30:00 PM

Client Sample ID: PEO-MW-41-20220510

Matrix: Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
<u>Extractable Petroleum Hydrocarbons by NWEPH</u>				Batch ID: 36459		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	29.3	20.5	J	µg/L	1	5/26/2022 10:35:36 PM
Surr: 1-Chlorooctadecane	70.0	50 - 150		%Rec	1	5/26/2022 10:35:36 PM
<u>Volatile Petroleum Hydrocarbons by NWVPH</u>				Batch ID: 36578		Analyst: SG
Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/24/2022 7:27:51 PM
Surr: 1,4-Difluorobenzene	90.5	60 - 140		%Rec	1	5/24/2022 7:27:51 PM
Surr: Bromofluorobenzene	90.6	60 - 140		%Rec	1	5/24/2022 7:27:51 PM



Work Order: 2205273
 CLIENT: Pace Analytical Minnesota
 Project: 0633086.02

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-36459	SampType: MBLK	Units: µg/L				Prep Date: 5/16/2022			RunNo: 75751		
Client ID: MBLKW	Batch ID: 36459					Analysis Date: 5/26/2022			SeqNo: 1554311		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	31.1	39.8		0	0						J
Surr: 1-Chlorooctadecane	229		398.4		57.5	50	150				

Sample ID: LCS-36459	SampType: LCS	Units: µg/L				Prep Date: 5/16/2022			RunNo: 75751		
Client ID: LCSW	Batch ID: 36459					Analysis Date: 5/26/2022			SeqNo: 1554312		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	378	39.9	498.1	0	75.9	70	130				
Surr: 1-Chlorooctadecane	280		398.5		70.3	50	150				

Sample ID: 2205274-003AMS	SampType: MS	Units: µg/L				Prep Date: 5/16/2022			RunNo: 75751		
Client ID: BATCH	Batch ID: 36459					Analysis Date: 5/26/2022			SeqNo: 1554318		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	374	39.8	497.6	0	75.2	70	130				
Surr: 1-Chlorooctadecane	285		398.1		71.6	50	150				

Sample ID: 2205274-003AMSD	SampType: MSD	Units: µg/L				Prep Date: 5/16/2022			RunNo: 75751		
Client ID: BATCH	Batch ID: 36459					Analysis Date: 5/27/2022			SeqNo: 1554319		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	350	39.8	497.5	0	70.4	70	130	374.4	6.68	30	
Surr: 1-Chlorooctadecane	285		398.0		71.6	50	150		0		

Work Order: 2205273
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-36578		SampType: LCS			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: LCSW		Batch ID: 36578			Analysis Date: 5/24/2022			SeqNo: 1552939				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

212
 48.0
 51.2

25.0

200.0
 50.00
 50.00

0

106
 96.0
 102

70
 60
 60

130
 140
 140

Sample ID: MB-36578		SampType: MBLK			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: MBLKW		Batch ID: 36578			Analysis Date: 5/24/2022					SeqNo: 1552938		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

ND
 46.2
 47.2

25.0

0

 50.00
 50.00

0
 92.4
 94.5

60
 60
 60

140
 140
 140

Sample ID: 2205274-003BMS		SampType: MS			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: BATCH		Batch ID: 36578			Analysis Date: 5/24/2022			SeqNo: 1554413				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

205
 49.5
 49.3

25.0

200.0
 50.00
 50.00

13.93

95.7
 99.1
 98.6

70
 60
 60

130
 140
 140

Sample ID: 2205274-003BMSD		SampType: MSD			Units: µg/L		Prep Date: 5/24/2022			RunNo: 75694		
Client ID: BATCH		Batch ID: 36578			Analysis Date: 5/25/2022					SeqNo: 1554414		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Aliphatic Hydrocarbon (C10-C12)
 Surr: 1,4-Difluorobenzene
 Surr: Bromofluorobenzene

222
 48.6
 49.8

25.0

200.0
 50.00
 50.00

13.93

104
 97.3
 99.5

70
 60
 60

130
 140
 140

205.4

7.96
 0
 0

30

H
 H
 H



Work Order: 2205273
CLIENT: Pace Analytical Minnesota
Project: 0633086.02

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCSD-36578	SampType: LCSD	Units: µg/L				Prep Date: 5/25/2022			RunNo: 75694		
Client ID: LCSW02	Batch ID: 36578	Analysis Date: 5/25/2022							SeqNo: 1552937		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	177	25.0	200.0	0	88.3	70	130	211.8	18.1	20	
Surr: 1,4-Difluorobenzene	47.4		50.00		94.9	60	140		0		
Surr: Bromofluorobenzene	50.2		50.00		100	60	140		0		

Client Name: PACEMI

Work Order Number: 2205273

Logged by: Clare Griggs

Date Received: 5/13/2022 10:20:00 AM

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes ☒ No ☐ Not Present ☐
6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
7. Were all items received at a temperature of >2°C to 6°C * Yes ☒ No ☐ NA ☐
8. Sample(s) in proper container(s)? Yes ☒ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
10. Are samples properly preserved? Yes ☒ No ☐
11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☒ NA ☐
13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
14. Does paperwork match bottle labels? Yes ☒ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
16. Is it clear what analyses were requested? Yes ☒ No ☐
17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	5.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10607954

Workorder Name: 0633086.02

Results Requested By: 5/26/2022

2205213

Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
Phone 612-607-6390
Email: julie.bowser@pacelabs.com

Fremont Analytical
3600 Fremont Ave N
Seattle WA, 98103

P.O. 10607954

State of Sample Origin: OR

Report / Invoice To		Subcontract To		Requested Analysis		Comments	
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	HCL	Preserved Containers	LAB USE ONLY
1	TRIP BLANK-20220510	5/10/2022 08:00	10607954001	Water	2		
2	PEO-MW-28a-20220510	5/10/2022 10:25	10607954002	Water	5		
3	PEO-MW-11-20220510	5/10/2022 12:35	10607954003	Water	5		
4	PEO-MW-41-20220510	5/10/2022 14:30	10607954004	Water	5		
Transfers Released By Date/Time Received By Date/Time							
1	CSM/Pace	5/10/2022 13:30	Julie Bowser	5/11/2022 10:20	EQUIS EDD needed J flag to MDL		
2							
3							
Cooler Temperature on Receipt °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N							