



14 July 2023

Via Electronic Mail

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

Reference: 0680180

Subject: Quarter 2, 2023, Quarterly Progress Report
(April through June 2023)
MMGL / Premier Edible Oils Site (ESCI #2013)

Dear Erin:

On behalf of Burgard, A Series of MMGL LLC (MMGL), Environmental Resources Management, Inc. (ERM) is submitting this Quarterly Progress Report for the Premier Edible Oils 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 (ODEQ), dated 6 March 2001, requires submittal of quarterly progress reports summarizing site activities. This progress report summarizes site activities for Quarter 2, 2023 (April through June).

The attached Figure 1 shows the location of the groundwater monitoring wells, and ERM has presented a summary of monitoring wells in the Quarter 2, 2023, groundwater monitoring program in Attachment A, Table Q2-1.

SITE ACTIVITIES DURING QUARTER 2, 2023

- On 14 April, ERM submitted the Quarter 1, 2023, Quarterly Progress Report to ODEQ.
- On 14 April, ERM conducted the Groundwater Source Control Measure (GW SCM) monthly water level monitoring event, which consisted of manual water level measurements, light non-aqueous phase liquid (LNAPL) observations, and pressure transducer download and recalibration. ERM has presented water level measurements and LNAPL observations in Attachment A, Table Q2-2.
- On 4 May, ERM submitted the Transition Zone Water Sampling and Analysis Plan to ODEQ.
- On 12 May, ERM conducted the GW SCM monthly water level monitoring event. ERM has presented water level measurements and LNAPL observations in Attachment A, Table Q2-3.
- Between 15 May and 20 May, ERM conducted the GW SCM quarterly groundwater monitoring event. The air sparge system was shut down while these activities were conducted. ERM has presented water level measurements and LNAPL observations in Attachment A, Table Q2-7.

- On 17 May, ERM conducted monthly preventative air sparge system maintenance activities. These activities included changing the heat exchanger filters, replacing the intake mufflers, and changing the oil in the shallow zone blower.
- Between 22 May and 23 May, ERM and Steadfast Services NW (Steadfast) extended the well casing at monitoring wells MW-24A, MW-40, MW-41, and MW-45 to keep well boxes above the regraded ground surface. Additionally, ERM and Steadfast performed monitoring well redevelopment at monitoring wells MW-02, MW-08, MW-11, MW-29, MW-33, and MW-34 to improve well yield.
- On 26 May 2023, ODEQ transmitted comments from ODEQ, the United States Environmental Protection Agency, and Five Tribes on the *Semi-Annual GW SCM Performance Monitoring Report, Quarters 3 & 4 2022* to ERM via email. ODEQ approved the proposed reduction in monitoring program except that well MW-25 will be sampled during each groundwater monitoring event. Monthly water level monitoring has been reduced to quarterly since Quarter 2, 2023. Starting in 2024, quarterly groundwater monitoring will be reduced to semiannual.
- On 21 June, ERM conducted pressure transducer download and recalibration. Manual water levels were collected at 16 wells that have pressure transducers. ERM has presented water level measurements and LNAPL observations in Attachment A, Table Q2-4.
- On 21 June, ERM conducted monthly preventative air sparge system maintenance activities.
- On 21 June, ERM collected down-well camera imagery at well MW-29 to evaluate the integrity of the well screen based on observation of sand in purge water during monitoring well redevelopment. The imagery is inconclusive.
- On 26 June, AKS Engineering and Forestry surveyed the elevations of monitoring wells MW-24A, MW-40, MW-41, and MW-45, which were modified on 22 and 23 May. Additionally, AKS Engineering and Forestry surveyed the elevations and horizontal position of monitoring well MW-28A, which was installed in Quarter 2, 2022. ERM has provided the survey data in Attachment B.

DATA RECEIVED IN QUARTER 2, 2023 (APRIL THROUGH JUNE)

- ERM has included field data collected in Quarter 2, 2023, in Attachment A, Tables Q2-1 through Q2-9, and will include them in the Annual GW SCM Semi-Annual Monitoring Report to be submitted in 2024.
- ERM has presented Quarter 2, 2023, analytical data in Attachment A, Tables Q2-10 through Q2-12. Analytical reports and the quality assurance memo are provided in Attachments C and D, respectively. These data will also be included in the Annual GW SCM Semi-Annual Monitoring report to be submitted in 2024.

ISSUES OBSERVED FOR THE AIR SPARGE SYSTEM DURING QUARTER 2, 2023 (APRIL THROUGH JUNE)

Shallow Zone

- No issues were observed with the shallow zone air sparge system in Quarter 2, 2023.

Deep Zone

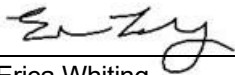
- No issues were observed with the deep zone air sparge system in Quarter 2, 2023.

SITE ACTIVITIES SCHEDULED FOR QUARTER 3, 2023 (JULY THROUGH SEPTEMBER)

- The Quarterly Progress Report for Quarter 2, 2023, will be prepared and submitted.
- Quarterly water level monitoring and quarterly groundwater monitoring events will be conducted.
- Monthly preventative maintenance will be performed on the air sparge systems.
- Transition zone water sampling will be conducted in accordance with the Transition Zone Water Sampling and Analysis Plan.

If you have questions or comments pertaining to this progress report, please contact us at (303) 903-3505 or (425) 614-6684.

Yours sincerely,



Erica Whiting
Project Manager



Miao Zhang
Partner

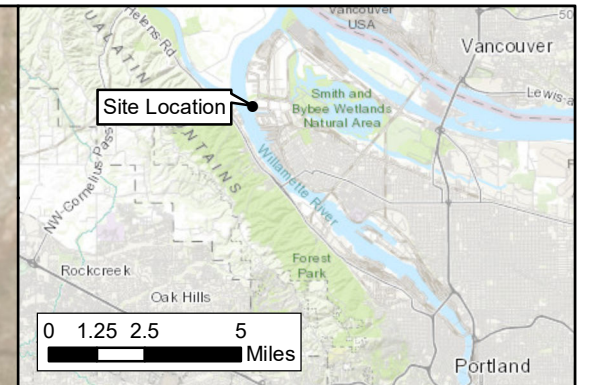
Attachments:

Figure 1 Monitoring Well Locations
Attachment A Data Tables
Attachment B Monitoring Well Survey Data
Attachment C Analytical Report
Attachment D Quality Assurance Memo

Copy with attachments: Tom Graf, GrafCon

FIGURE 1 MONITORING WELL LOCATIONS

FILE: M:\US\Projects\S-U\Schnitzer_Steel\0283866 MMGL Portland PEO Site GW SCM BR\maps\Q1 2023 Report\Fig 2 PEO MW Locations.mxd REVISED: 07/13/2023 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

Notes:
 * Abandoned.
 Aerial Imagery: City of Portland, Summer 2022.

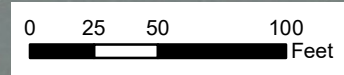


Figure 1
Monitoring Well Locations
 PEO Site
 Portland, Oregon

ATTACHMENT A DATA TABLES

Table Q2-1
Monitoring Well Summary
Premier Edible Oils, 10400 N Burgard Way
Portland, OR

Well Identification	Status	Well Depth (ft)	Screen Zone	Screen Interval (ft bgs)		Measuring Point (Top of Casing)		Sitewide Monitoring Point	Water Level Monitoring Point ^{2,3}	Transducer Installed	Quarterly Monitoring ⁴
				Top	Bottom	ft-NAVD88	ft-NAVD88				
MW-02	Active	26	Shallow	11	26	31.18	31.18	X	X		X
MW-03	Active	26	Shallow	11	26	31.67	31.67	X	X		X
MW-04	Active	26	Shallow	11	26	31.37	31.37				
MW-05	Active	26	Shallow	11	26	31.27	31.27				
MW-06	Active	27	Shallow	12	27	31.23	31.23	X	X		X
MW-07						Decommissioned 1/14/2021					
MW-08	Active	27	Shallow	12	27	30.93	30.93	X	X	X	X
MW-11	Active	27	Shallow	12	27	31.06	31.06	X	X	X	X
MW-18	Active	27	Shallow	12	27	30.87	30.87	X	X	X	X
MW-19	Active	27	Shallow	12	27	31.70	31.70	X	X		X
MW-21	Active	27	Shallow	12	27	31.36	31.36	X	X	X	X
MW-24A	Active	27	Shallow	12	27	32.35	32.35	X	X		X
MW-25	Active	-	Shallow	-	-	31.78	31.78	X	X		X
MW-26	Active	39	Deep	34	39	31.89	31.89	X	X		X
MW-27	Active	40	Deep	35	40	31.46	31.46	X	X	X	X
MW-28*	Abandoned	28	Shallow	13	28	31.26	31.26	X	X	X	X
MW-28A**	Active	29	Shallow	14	29	--	31.81	X	X		X
MW-29	Active	30	Shallow	13	28	31.90	31.90	X	X		X
MW-30	Active	28	Shallow	13	28	31.05	31.05	X	X	X	X
MW-31	Active	28	Shallow	13	28	30.77	30.77	X	X		X
MW-32	Active	40	Deep	35	40	31.08	31.08	X	X	X	X
MW-33	Active	40	Deep	35	40	30.88	30.88	X	X	X	X
MW-34	Active	28	Shallow	13	28	30.72	30.72	X	X	X	X
MW-35	Active	40	Deep	35	40	30.83	30.83	X	X	X	X
MW-36	Active	30	Shallow	15	30	30.16	30.16	X	X	X	X
MW-37	Active	40	Deep	35	40	31.27	31.27	X	X		X
MW-38	Active	27	Shallow	13	27	31.54	31.54	X	X		X
MW-39	Active	30	Shallow	15	30	31.08	31.08	X	X		X
MW-40	Active	40	Deep	35	40	31.71	33.96	X	X	X	X
MW-41	Active	27	Shallow	13	27	31.32	33.80	X	X	X	X
MW-42	Active	40	Deep	35	40	31.94	31.94	X	X	X	X
MW-43	Active	30	Shallow	15	30	31.39	31.39	X	X		X
MW-44	Active	25	Shallow	10	25	30.98	30.98	X	X		X
MW-45	Active	30	Shallow	15	30	31.70	34.15	X	X	X	X

Notes:
ft = feet
bgs = below ground surface
NAVD88 = North America Vertical Datum 1988
ft-NAVD88 = feet above North America Vertical Datum 1988
* = Damaged on 3/2/2022, Abandoned on 4/29/2022
** = MW-28A installed on 4/28/2023, developed on 5/2/2023. Top of casing has not been surveyed yet.
- = not applicable
1 = Elevation was adjusted on May 22-23, 2023 to prevent ponding of surface water over top of monitoring well due to change in site grade.
2 = Manual water level measurement collected monthly
3 = June 2023 manual water level collection reduced from monthly to quarterly per email correspondence dated 26 May 2023.
4 = Groundwater analytical samples

Table Q2-2
Groundwater Elevations - April 2023
Premier Edible Oils, 10400 N Burgard Way
Portland, OR

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater ft-btc	Depth to Product ft-btc	Product Thickness ft	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	4/14/2023	20.03	-	ND	-	11.15
MW-03	Shallow	31.67	4/14/2023	18.69	-	ND	-	12.98
MW-06	Shallow	31.23	4/14/2023	19.34	-	ND	-	11.89
MW-08	Shallow	30.93	4/14/2023	20.53	-	ND	-	10.40
MW-11	Shallow	31.06	4/14/2023	19.29	-	ND	-	11.77
MW-18	Shallow	30.87	4/14/2023	19.49	-	ND	-	11.38
MW-19	Shallow	31.70	4/14/2023	20.36	-	ND	-	11.34
MW-21	Shallow	31.36	4/14/2023	12.77	-	ND	-	18.59
MW-24A	Shallow	32.35	4/14/2023	17.68	-	ND	-	14.67
MW-25	Shallow	31.78	4/14/2023	19.03	-	ND	-	12.75
MW-26	Deep	31.89	4/14/2023	21.72	-	ND	-	10.17
MW-27	Deep	31.46	4/14/2023	20.94	-	ND	-	10.52
MW-28A	Shallow	31.81	4/14/2023	16.80	-	ND	-	15.01
MW-29	Shallow	31.90	4/14/2023	17.86	-	ND	-	14.04
MW-30	Shallow	31.05	4/14/2023	20.24	-	ND	-	10.81
MW-31	Shallow	30.77	4/14/2023	19.52	-	ND	-	11.25
MW-32	Deep	31.08	4/14/2023	19.41	-	ND	-	11.67
MW-33	Deep	30.88	4/14/2023	20.22	-	ND	-	10.66
MW-34	Shallow	30.72	4/14/2023	18.01	-	ND	-	12.71
MW-35	Deep	30.83	4/14/2023	20.57	-	ND	-	10.26
MW-36	Shallow	30.16	4/14/2023	18.40	-	ND	-	11.76
MW-37	Deep	31.27	4/14/2023	21.15	-	ND	-	10.12
MW-38	Shallow	31.54	4/14/2023	18.16	18.11	0.05	0.01	13.42
MW-39	Shallow	31.08	4/17/2023	20.31	-	ND	-	10.77
MW-40	Deep	31.71	4/14/2023	20.71	-	ND	-	11.00
MW-41	Shallow	31.32	4/14/2023	16.00	-	ND	-	15.32
MW-42	Deep	31.94	4/14/2023	20.94	-	ND	-	11.00
MW-43	Shallow	31.39	4/14/2023	20.27	-	ND	-	11.12
MW-44	Shallow	30.98	4/14/2023	19.75	-	ND	-	11.23
MW-45	Shallow	31.70	4/14/2023	20.91	-	ND	-	10.79

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = non-detect

ft = feet

ft-NAVD88 = feet above North America Vertical Datum 1988

btc = below top of casing

gal = gallons

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 Q2-3
Groundwater Elevations - May 2023
Premier Edible Oils, 10400 N Burgard Way
Portland, OR

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater ft-btc	Depth to Product ft-btc	Product Thickness ft	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	5/12/2023	17.91	-	ND	-	13.27
MW-03	Shallow	31.67	5/12/2023	16.31	-	ND	-	15.36
MW-06	Shallow	31.23	5/12/2023	16.34	-	ND	-	14.89
MW-08	Shallow	30.93	5/12/2023	16.83	-	ND	-	14.10
MW-11	Shallow	31.06	5/12/2023	17.17	-	ND	-	13.89
MW-18	Shallow	30.87	5/12/2023	15.76	-	ND	-	15.11
MW-19	Shallow	31.70	5/12/2023	16.92	-	ND	-	14.78
MW-21	Shallow	31.36	5/12/2023	12.64	-	ND	-	18.72
MW-24A	Shallow	32.35	5/12/2023	16.66	-	ND	-	15.69
MW-25	Shallow	31.78	5/12/2023	16.03	-	ND	-	15.75
MW-26	Deep	31.89	5/12/2023	18.05	-	ND	-	13.84
MW-27	Deep	31.46	5/12/2023	17.00	-	ND	-	14.46
MW-28A	Shallow	31.81	5/12/2023	16.21	-	ND	-	15.60
MW-29	Shallow	31.90	5/12/2023	16.66	-	ND	-	15.24
MW-30	Shallow	31.05	5/12/2023	16.72	-	ND	-	14.33
MW-31	Shallow	30.77	5/12/2023	15.83	-	ND	-	14.94
MW-32	Deep	31.08	5/12/2023	16.22	-	ND	-	14.86
MW-33	Deep	30.88	5/12/2023	16.46	-	ND	-	14.42
MW-34	Shallow	30.72	5/12/2023	17.15	-	ND	-	13.57
MW-35	Deep	30.83	5/12/2023	16.66	-	ND	-	14.17
MW-36	Shallow	30.16	5/12/2023	15.10	-	ND	-	15.06
MW-37	Deep	31.27	5/12/2023	17.23	-	ND	-	14.04
MW-38	Shallow	31.54	5/12/2023	16.86	-	ND	-	14.68
MW-39	Shallow	31.08	5/12/2023	16.01	15.94	0.07	0.01	15.13
MW-40	Deep	31.71	5/12/2023	16.91	-	ND	-	14.80
MW-41	Shallow	31.32	5/12/2023	15.38	-	ND	-	15.94
MW-42	Deep	31.94	5/12/2023	17.25	-	ND	-	14.69
MW-43	Shallow	31.39	5/12/2023	16.23	-	ND	-	15.16
MW-44	Shallow	30.98	5/12/2023	16.18	-	ND	-	14.80
MW-45	Shallow	31.70	5/12/2023	16.15	-	ND	-	15.55

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = non-detect

ft = feet

ft-NAVD88 = feet above North America Vertical Datum 1988

btc = below top of casing

gal = gallons

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 Q2-4
Groundwater Elevations - June 2023
Premier Edible Oils, 10400 N Burgard Way
Portland, OR

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater ft-btc	Depth to Product ft-btc	Product Thickness ft	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-08	Shallow	30.93	6/21/2023	20.67	-	ND	-	10.26
MW-11	Shallow	31.06	6/21/2023	19.30	-	ND	-	11.76
MW-18	Shallow	30.87	6/21/2023	20.36	-	ND	-	10.51
MW-21	Shallow	31.36	6/21/2023	13.22	-	ND	-	18.14
MW-27	Deep	31.46	6/21/2023	22.65	-	ND	-	8.81
MW-28A ¹	Shallow	31.81	6/21/2023	16.59	-	ND	-	15.22
MW-30	Shallow	31.05	6/21/2023	19.98	-	ND	-	11.07
MW-32	Deep	31.08	6/21/2023	21.66	-	ND	-	9.42
MW-33	Deep	30.88	6/21/2023	21.90	-	ND	-	8.98
MW-34	Shallow	30.72	6/21/2023	17.78	-	ND	-	12.94
MW-35	Deep	30.83	6/21/2023	22.37	-	ND	-	8.46
MW-36	Shallow	30.16	6/21/2023	21.07	-	ND	-	9.09
MW-40 ¹	Deep	33.96	6/21/2023	25.04	-	ND	-	8.92
MW-41 ¹	Shallow	33.80	6/21/2023	18.54	-	ND	-	15.26
MW-42	Deep	31.94	6/21/2023	22.86	-	ND	-	9.08
MW-45 ¹	Shallow	34.15	6/21/2023	25.41	-	ND	-	8.74

Notes:
 - = not applicable
 NAVD88 = North America Vertical Datum 1988
 ND = non-detect
 ft = feet
 ft-NAVD88 = feet above North America Vertical Datum 1988
 btc = below top of casing
 gal = gallons
 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
 1 = Elevation was adjusted on May 22-23, 2023 to prevent ponding of surface water over top of monitoring well due to change in site grade.

Table Q2-5
Transducer Calibration Offsets
Premier Edible Oils, 10400 N Burgard Way
Portland, OR

Calibration Event	Measurement	MW-08	MW-11	MW-18	MW-21	MW-27	MW-28 ²	MW-30	MW-32	MW-33	MW-34	MW-35	MW-36 ⁴	MW-40 ³	MW-41 ³	MW-42	MW-45 ³
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	27.00	20.15	39.87	--	19.49	38.14	39.31	27.90	39.83	29.92	39.84	27.35	39.04	27.00
01/20/2023	DTW measured (ft BTOC)	20.19	18.90	19.95	13.00	22.10	--	20.02	21.00	21.36	19.18	21.55	--	22.30	14.12	22.61	22.44
	DTW calculated (ft BTOC)	20.10	19.58	19.95	12.91	22.14	--	20.28	21.29	21.46	19.43	22.26	--	22.69	16.14	22.87	22.28
	Calibration Offset	-0.09	0.68	0.00	-0.09	0.04	--	0.26	0.29	0.10	0.25	0.71	--	0.39	2.02	0.26	-0.16
02/13/2023	DTW measured (ft BTOC)	21.42	18.60	20.96	13.31	22.00	--	21.11	22.62	21.59	18.78	21.98	--	22.30	14.41	22.46	21.00
	DTW calculated (ft BTOC)	21.28	20.70	20.99	13.24	22.19	--	21.30	22.83	21.77	18.87	22.67	--	22.51	16.47	22.52	22.75
	Calibration Offset	-0.14	2.10	0.03	-0.07	0.19	--	0.19	0.21	0.18	0.09	0.69	--	0.21	2.06	0.06	1.75
03/14/2023	DTW measured (ft BTOC)	--	19.49	20.91	13.17	21.83	--	21.20	21.70	21.45	19.15	21.62	--	21.86	14.23	21.93	21.08
	DTW calculated (ft BTOC)	--	20.50	20.98	13.13	21.90	--	21.51	22.01	21.58	19.52	22.49	--	22.08	16.62	22.07	22.76
	Calibration Offset	--	1.01	0.07	-0.04	0.07	--	0.31	0.31	0.13	0.37	0.87	--	0.22	2.39	0.14	1.68
04/14/2023	DTW measured (ft BTOC)	20.53	18.54	19.49	12.77	20.94	--	20.24	19.41	20.22	18.01	20.57	--	20.71	14.00	20.94	20.91
	DTW calculated (ft BTOC)	20.47	19.93	19.59	12.71	20.97	--	20.53	19.72	20.35	18.31	21.46	--	21.25	16.12	21.36	21.56
	Calibration Offset	-0.06	1.39	0.10	-0.06	0.03	--	0.29	0.31	0.13	0.30	0.89	--	0.54	2.12	0.42	0.65
05/12/2023	DTW measured (ft BTOC)	16.83	16.42	15.76	12.64	17.00	--	16.72	16.22	16.46	17.15	16.66	--	16.91	13.38	17.25	16.15
	DTW calculated (ft BTOC)	16.80	17.60	15.85	12.64	17.16	--	16.95	16.57	16.70	17.20	17.50	--	17.41	15.42	17.49	17.47
	Calibration Offset	-0.03	1.18	0.09	0.00	0.16	--	0.23	0.35	0.24	0.05	0.84	--	0.50	2.04	0.24	1.32
06/21/2023	DTW measured (ft BTOC)	20.67	19.30	20.36	13.22	22.65	--	19.98	21.66	21.90	17.78	22.37	--	25.04	16.54	22.86	25.41
	DTW calculated (ft BTOC)	20.60	19.29	20.44	13.18	22.68	--	20.31	22.02	21.92	18.03	22.97	--	27.37	21.12	23.04	27.76
	Calibration Offset	-0.07	-0.01	0.08	-0.04	0.03	--	0.33	0.36	0.02	0.25	0.60	--	2.33	4.58	0.18	2.35

Notes:

NAVD88 = North America Vertical Datum 1988

ft = feet

DTW = Depth to Water

BTOC = Below Top of Casing

Adj. = Adjusted

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

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

2 = Monitoring well damaged on 3/21/2022

3 = Elevation was adjusted on May 22-23, 2023 to prevent ponding of surface water over top of monitoring well due to change in site grade.

4 = Review of data between 26 December 2022 and 12 May 2023 indicated evidence of pressure transducer failure; data is considered

Table Q2-6
Horizontal and Vertical Gradients - Barrier Wall
Premier Edible Oils, 10400 N Burgard Way
Portland, OR

Well Identification	Measuring Point (Top of Casing) ft-NAVD88	Screen Interval (ft bgs)		Groundwater Elevation ft-NAVD88			Gradient ^{1,2} ft/ft		
		Top	Bottom	4/14/2023	5/12/2023	6/21/2023	4/14/2023	5/12/2023	6/21/2023
Shallow Horizontal Gradient									
MW-30	31.05	13.00	28.00	10.81	14.33	11.07	-0.0131	-0.0181	NC
MW-31	30.77	13.00	28.00	11.25	14.94	NM			
MW-30	31.05	13.00	28.00	10.81	14.33	11.07	-0.0131	-0.0179	0.0128
MW-18	30.87	12.00	27.00	11.38	15.11	10.51			
MW-34	30.72	13.00	28.00	12.71	13.57	12.94	0.0341	-0.0534	0.1381
MW-36	30.16	15.00	30.00	11.76	15.06	9.09			
MW-38	31.54	13.00	27.00	13.42	14.68	NM	0.1107	-0.0186	NC
MW-39	31.08	15.00	30.00	10.77	15.13	NM			
MW-29	31.90	13.00	28.00	14.04	15.24	NM	0.0561	0.0015	NC
MW-43	31.39	15.00	30.00	11.12	15.16	NM			
MW-41	31.32	13.00	27.00	15.32	15.94	15.26	0.0230	0.0089	NC
MW-24A	32.35	12.00	27.00	14.67	15.69	NM			
Average Shallow Horizontal Gradient							0.0330	-0.0163	0.0755
Deep Horizontal Gradient									
MW-32	31.08	35.00	40.00	11.67	14.86	9.42	0.0115	0.0050	0.0050
MW-33	30.88	35.00	40.00	10.66	14.42	8.98			
MW-35	30.83	35.00	40.00	10.26	14.17	8.46	-0.0065	-0.0072	-0.0087
MW-27	31.46	35.00	40.00	10.52	14.46	8.81			
MW-37	31.27	35.00	40.00	10.12	14.04	NM	-0.0062	-0.0065	NC
MW-27	31.46	35.00	40.00	10.52	14.46	8.81			
MW-37	31.27	35.00	40.00	10.12	14.04	NM	-0.0007	0.0029	NC
MW-26	31.89	34.00	39.00	10.17	13.84	NM			
MW-40	31.71	35.00	40.00	11.00	14.80	8.92	0.0000	0.0034	-0.0050
MW-42	31.94	35.00	40.00	11.00	14.69	9.08			
Average Deep Horizontal Gradient							-0.0004	-0.0005	-0.0029
Vertical Gradients³									
MW-32	31.08	35.00	40.00	11.67	14.86	9.42	0.1229	0.0757	-0.2357
MW-30	31.05	13.00	28.00	10.81	14.33	11.07			
MW-35	30.83	35.00	40.00	10.26	14.17	8.46	-0.3500	0.0857	-0.6400
MW-34	30.72	13.00	28.00	12.71	13.57	12.94			
MW-37	31.27	35.00	40.00	10.12	14.04	NM	-0.4125	-0.0800	NC
MW-38	31.54	13.00	27.00	13.42	14.68	NM			
MW-40	31.71	35.00	40.00	11.00	14.80	8.92	-0.5400	-0.1425	-0.9057
MW-41	31.32	13.00	27.00	15.32	15.94	15.26			
Average Vertical Gradient							-0.2949	-0.0153	-0.5938

Notes:

NAVD88 = North America Vertical Datum 1988

ft = feet

ft-NAVD88 = feet above North America Vertical Datum 1988

bgs = below ground surface

ft/ft = feet per foot

NM = Not measured; manual water level collection reduced from monthly to quarterly per email correspondence dated 26 May 2023.

NC = Not Calculated

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 calculated using distance between bottom of upper casing screen and top of lower casing screen.

Table Q2-7

**Groundwater Elevations and LNAPL Observations during Groundwater Sampling Event
Premier Edible Oils, 10400 N Burgard Way
Portland, OR**

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Depth to Groundwater ft-btc	Depth to Product ft-btc	Product Thickness ft	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	5/18/2023	15.41	-	ND	-	15.77
MW-03	Shallow	31.67	5/19/2023	15.55	-	ND	-	16.12
MW-06	Shallow	31.23	5/19/2023	15.36	-	ND	-	15.87
MW-08	Shallow	30.93	5/15/2023	16.30	-	ND	-	14.63
MW-08	Shallow	30.93	5/18/2023	15.34	-	ND	-	15.59
MW-11	Shallow	31.06	5/19/2023	15.45	-	ND	-	15.61
MW-18	Shallow	30.87	5/16/2023	15.57	-	ND	-	15.30
MW-19	Shallow	31.70	5/18/2023	16.17	-	ND	-	15.53
MW-21	Shallow	31.36	5/20/2023	12.61	-	ND	-	18.75
MW-24A	Shallow	32.35	5/16/2023	16.69	-	ND	-	15.66
MW-25	Shallow	31.78	5/18/2023	15.26	-	ND	-	16.52
MW-26	Deep	31.89	5/17/2023	14.95	-	ND	-	16.94
MW-27	Deep	31.46	5/17/2023	14.48	-	ND	-	16.98
MW-28A	Shallow	31.81	5/16/2023	16.04	-	ND	-	15.77
MW-29	Shallow	31.90	5/16/2023	16.37	16.35	0.02	0.003	15.55
MW-30	Shallow	31.05	5/15/2023	16.49	-	ND	-	14.56
MW-31	Shallow	30.77	5/16/2023	15.81	-	ND	-	14.96
MW-32	Deep	31.08	5/15/2023	16.87	-	ND	-	14.21
MW-33	Deep	30.88	5/15/2023	16.19	-	ND	-	14.69
MW-34	Shallow	30.72	5/19/2023	15.42	-	ND	-	15.30
MW-35	Deep	30.83	5/19/2023	12.95	-	ND	-	17.88
MW-36	Shallow	30.16	5/17/2023	13.83	-	ND	-	16.33
MW-37	Deep	31.27	5/18/2023	13.64	-	ND	-	17.63
MW-38	Shallow	31.54	5/18/2023	16.27	-	ND	-	15.27
MW-39	Shallow	31.08	5/16/2023	15.57	15.55	0.02	0.003	15.53
MW-40	Deep	31.71	5/16/2023	16.17	-	ND	-	15.54
MW-41	Shallow	31.32	5/17/2023	15.23	-	ND	-	16.09
MW-42	Deep	31.94	5/15/2023	17.60	-	ND	-	14.34
MW-43	Shallow	31.39	5/18/2023	13.83	-	ND	-	17.56
MW-44	Shallow	30.98	5/16/2023	16.17	-	ND	-	14.81
MW-45	Shallow	31.70	5/16/2023	16.16	-	ND	-	15.54

Notes:

- = not applicable

btc = below top of casing

ft = feet

ft-NAVD88 = feet above North America Vertical Datum 1988

gal = gallons

LNAPL = Light Nonaqueous Phase Liquids

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, 10400 N Burgard Way
Portland, OR

Quarter	Date	MW-02	MW-11	MW-29	MW-34	MW-38	MW-39	MW-43	Total
		gal	gal	gal	gal	gal	gal	gal	gal
Q1 2023	2/27/2023	-	-	0.26	-	0.26	-	-	0.52
Q2 2023	5/19/2023	-	-	0.26	-	-	0.34		0.60
Q3 2023	--	-	-	-	-	-	-	-	-
Q4 2023	--	-	-	-	-	-	-	-	-
Total Recovered		0.00	0.00	0.52	0.00	0.26	0.34	0.00	1.12

Notes:

-- = not applicable

gal = gallons

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

Monitoring Well	Screen Zone	Date	pH	Specific Conductance $\mu\text{S}/\text{cm}$	Temperature $^{\circ}\text{C}$	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU		
MW-02	Shallow	5/18/2023	6.45	340	28.37	-8.1	0.54	15.8		
MW-03	Shallow	5/19/2023	6.82	123	14.65	55.1	2.06	2.07		
MW-06	Shallow	5/19/2023	6.84	162	16.54	4	0.23	22.8		
MW-08	Shallow	5/15/2023	5.49	228	22.48	-10.9	1.12	8.13		
MW-08	Shallow	5/18/2023	6.29	192	20.83	87.3	0.77	2.25		
MW-11	Shallow	5/19/2023	7.14	588	25.96	-137.9	0.17	25.5		
MW-18	Shallow	5/16/2023	6.61	256	17.01	-18.7	8.4	10.8		
MW-19	Shallow	5/18/2023	6.06	182	17.26	18.4	7.1	12.1		
MW-21	Shallow	5/20/2023	6.67	108	15.08	153.4	4.2	9.21		
MW-24A	Shallow	5/16/2023	6.03	195	16.68	-99.9	2.82	2.3		
MW-25	Shallow	5/18/2023	6.89	135	16.42	92.2	9.2	8.69		
MW-26	Deep	5/17/2023	6.04	113	24.89	2.7	3.82	2.7		
MW-27	Deep	5/17/2023	6.20	262	22.56	-149.6	0.67	8.39		
MW-28A	Shallow	5/16/2023	6.78	152	17.30	134.8	6.76	10.9		
MW-29	Shallow	5/16/2023	LNAPL							
MW-30	Shallow	5/15/2023	6.01	195	24.47	-41.2	2.85	27.1		
MW-31	Shallow	5/16/2023	5.88	193	17.19	-4	3.54	0.59		
MW-32	Deep	5/15/2023	11.00	279	27.88	-5.9	2.09	5.68		
MW-33	Deep	5/15/2023	9.60	247	27.93	83	1.23	3.49		
MW-34	Shallow	5/19/2023	6.37	313	30.62	-92.9	1.2	22.3		
MW-35	Deep	5/19/2023	6.64	143	28.12	-68.4	0.45	5.95		
MW-36	Shallow	5/17/2023	6.60	295	19.92	-55.4	3.8	27.5		
MW-37	Deep	5/18/2023	6.96	179	24.20	72	1.95	3.66		
MW-38	Shallow	5/18/2023	6.34	456	25.25	-100.3	0.84	24.2		
MW-39	Shallow	5/16/2023	LNAPL							
MW-40	Deep	5/16/2023	6.19	241	19.14	-94.4	1.48	29.1		
MW-41	Shallow	5/17/2023	5.61	160	16.32	51.7	0.83	30.8		
MW-42	Deep	5/15/2023	9.72	87	18.11	117	4.17	3.48		
MW-43	Shallow	5/18/2023	6.76	473	21.34	-96.5	0.33	21		
MW-44	Shallow	5/16/2023	6.78	263	16.15	137.5	4.23	6.17		
MW-45	Shallow	5/16/2023	4.77	157	20.03	50.8	4.55	2.27		

Notes:

-- = not analyzed

LNAPL = Light non-aqueous phase liquid

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

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

Well	Sample Date	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
Selected GW SCM Performance Evaluation Criteria:		Units: µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Groundwater Cleanup Levels ¹ :		1.4	210	13	13	1,500	NS	1000	1000	2.6	
		0.44	7.3	13	13	9.8	NS	NS	NS	2.6	
MW-02	5/18/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	260 j	4,000	35.6 j	--	21
MW-03	5/19/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 120	< 22.6	--	1.8 J+
MW-06	5/19/2023	< 0.10	< 0.11	< 0.20	< 0.18	0.23 j	< 200	930	1,210	--	500
MW-08	5/15/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	--	--	< 22.6	--	11
MW-08	5/18/2023	--	--	--	--	--	< 210 UJ	< 130 UJ	--	--	--
MW-11	5/19/2023	0.34 j	< 0.11	< 0.20	< 0.18	1.1	260 j	7,400	103	1.1	94
MW-18	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	350 j	< 22.6	--	4.6
MW-19	5/18/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 210	< 130	< 22.6	--	< 2.1 U
MW-21	5/20/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 130	< 22.6	--	1.5 J+
MW-24A	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	< 1.2 U
MW-25	5/18/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 210	< 130	< 22.6	--	< 1.6 U
MW-26	5/17/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 210 UJ	< 130 UJ	< 22.6	--	< 1.2 U
MW-26 Dup	5/17/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190 UJ	< 120 UJ	< 22.6	--	2.2 J+
MW-27	5/17/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 220	610	43.9 j	--	17
MW-28A	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	1.5 J+
MW-30	5/15/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	2.3
MW-31	5/16/2023	< 0.10	1.3	3.9	1.7	5.5	< 190	< 120	< 22.6	--	2.8
MW-32	5/15/2023	0.53 j	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	17
MW-33	5/15/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	17
MW-34	5/19/2023	< 0.10	< 0.11	< 0.20	< 0.18	0.13 j	< 200	1,900	< 22.6	--	17
MW-35	5/19/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 120	< 22.6	--	4.8 J+
MW-36	5/17/2023	0.57 j	0.12 j	1.4 j	0.56 j	1.1	< 220	150 j	210	--	57
MW-37	5/18/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 130	< 22.6	--	< 1.8 U
MW-38	5/18/2023	0.56 j	0.51 j	3.5	1.7	2.1	310 j	13,300	931	--	540
MW-40	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	< 1.3 U
MW-41	5/17/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 200	< 120	< 22.6	--	< 2.1 U
MW-42	5/15/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	1.8
MW-43	5/18/2023	0.37 j	0.23 j	1.2 j	0.51 j	< 1.0 U	< 200	7,300	541	--	440
MW-44	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	2.4 J+
MW-44 Dup	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	1.8 J+
MW-45	5/16/2023	< 0.10	< 0.11	< 0.20	< 0.18	< 0.10	< 190	< 120	< 22.6	--	< 1.3 U

Notes:

- Groundwater Cleanup Levels as defined in Table 17 of the Errata #2 for Portland Harbor Superfund Site Record of Decision.
- Solubility of Fresh 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.
- Solubility of Fresh 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.
- Solubility of Fresh 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

QC = Quality Control

SGT = Silica Gel Treatment

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

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

U = Analyte was analyzed for, but not detected.

NWTPH-Dx, SGT analyses performed by Pace Analytical Laboratories in Minneapolis, MN.

NWTPH-Gx analyses performed by Pace Analytical Laboratories in Minneapolis, MN.

NWVPH analyses performed by ALS Environmental Laboratory in Everett, WA

Table Q2-11
Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils
Portland, Oregon

Well	Method: Analyte: Unit: Selected GW SCM Performance Evaluation Criteria: Groundwater Cleanup Levels ¹ :	EPA 6020B		EPA 8270 by SIM						
		Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
		µg/L 2.1 0.018	µg/L 1.925 430	µg/L NS NS	µg/L NS NS	µg/L 99 23	µg/L NS NS	µg/L 4,000 0.73	µg/L 0.0018 0.0012	µg/L 0.0018 0.00012
MW-02	5/18/2023	13.0	1,680	0.082	0.027 j	< 0.0065	0.037 j	< 0.0049	< 0.0076	< 0.0080
MW-03	5/19/2023	0.23 j	1.8	< 0.0061	< 0.0074	< 0.0064	< 0.0055	< 0.0048	< 0.0075	< 0.0079
MW-06	5/19/2023	2.2	841	2.7	2.3	0.76	0.35	0.10	< 0.0075	< 0.0079
MW-08	5/18/2023	0.75	224	< 0.0060	< 0.0074	< 0.0063	< 0.0055	0.018 j	< 0.0074	< 0.0078
MW-11	5/19/2023	90.8	3,020	< 0.0063	< 0.0077	< 0.0066	< 0.0057	< 0.0050	< 0.0077	< 0.0081
MW-18	5/18/2023	1.9	650	< 0.0060	< 0.0073	0.024 j	< 0.0054	< 0.0047	< 0.0074	< 0.0077
MW-19	5/18/2023	0.16 j	787	< 0.0061	< 0.0074	< 0.0064	< 0.0055	< 0.0048	< 0.0075	< 0.0078
MW-21	5/20/2023	0.23 j	20.7	< 0.0062	< 0.0075	< 0.0065	< 0.0056	< 0.0049	< 0.0076	< 0.0079
MW-24A	5/16/2023	1.5	470	< 0.0059	< 0.0072	< 0.0062	< 0.0054	< 0.0047	< 0.0073	< 0.0076
MW-25	5/18/2023	0.18 j	0.35 j	< 0.0060	< 0.0074	< 0.0063	< 0.0055	< 0.0048	< 0.0074	< 0.0078
MW-26	5/17/2023	1.8	3.0 J	< 0.0065	< 0.0079	< 0.0068	< 0.0059	< 0.0051	< 0.0080	< 0.0083
MW-26 Dup	5/17/2023	1.9	1.9 J	< 0.0059	< 0.0072	< 0.0062	< 0.0054	< 0.0047	< 0.0073	< 0.0076
MW-27	5/17/2023	23.9	1,440	0.039	0.023 j	0.22	0.018 j	< 0.0047	< 0.0073	< 0.0076
MW-28A	5/16/2023	0.18 j	0.86	< 0.0062	< 0.0075	< 0.0065	< 0.0056	< 0.0049	< 0.0076	< 0.0079
MW-30	5/15/2023	0.66	49.7	< 0.0060	< 0.0073	< 0.0063	< 0.0054	< 0.0047	< 0.0074	< 0.0077
MW-31	5/16/2023	0.22 j	1.7	< 0.0059	< 0.0072	< 0.0062	< 0.0053	< 0.0046	< 0.0072	< 0.0076
MW-32	5/15/2023	6.6	3.6	< 0.0063	< 0.0077	< 0.0067	< 0.0057	< 0.0050	< 0.0078	< 0.0082
MW-33	5/15/2023	7.9	68.8	< 0.0060	< 0.0073	0.014 j	< 0.0054	< 0.0047	< 0.0074	< 0.0077
MW-34	5/19/2023	11.2	1,170	< 0.0060 UJ	< 0.0074 UJ	< 0.0063 UJ	< 0.0055 UJ	< 0.0048 UJ	< 0.0074 UJ	< 0.0078 UJ
MW-35	5/19/2023	6.7	502	0.0079 j	< 0.0075	< 0.0065	< 0.0056	< 0.0049	< 0.0076	< 0.0079
MW-36	5/17/2023	13.3	1,080	0.29	0.032 j	0.46	0.051	< 0.0047	< 0.0073	< 0.0076
MW-37	5/18/2023	2.0	0.90	< 0.0061	< 0.0074	< 0.0064	< 0.0055	< 0.0048	< 0.0075	< 0.0078
MW-38	5/18/2023	49.6	1,670	< 0.0061	< 0.0074	< 0.0064	6.3	< 0.0048	< 0.0075	< 0.0079
MW-40	5/16/2023	2.3	1,490	< 0.0061	< 0.0075	< 0.0064	< 0.0055	< 0.0048	< 0.0075	< 0.0079
MW-41	5/17/2023	0.36 j	654	< 0.0060	< 0.0074	< 0.0063	< 0.0055	< 0.0048	< 0.0074	< 0.0078
MW-42	5/15/2023	2.4	3.0	< 0.0060	< 0.0073	< 0.0063	< 0.0054	< 0.0047	< 0.0074	< 0.0077
MW-43	5/18/2023	46.8	2,650	0.64	2.0	< 0.0063	< 0.0055	< 0.0048	< 0.0074	0.011 j
MW-44	5/16/2023	0.65	21.7	< 0.0063	< 0.0077	< 0.0066	< 0.0057	< 0.0050	< 0.0077	< 0.0081
MW-44 Dup	5/16/2023	0.65	17.9	< 0.0065	< 0.0080	< 0.0069	< 0.0059	< 0.0052	< 0.0081	< 0.0084
MW-45	5/16/2023	0.12 j	54.1	< 0.0060	< 0.0073	< 0.0063	< 0.0054	< 0.0047	< 0.0074	< 0.0077

Notes:
1. Groundwater Cleanup Levels as defined in Table 17 of the Errata #2 for 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
QC = Quality Control
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 result is an estimated concentration.
J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
U = Analyte was analyzed for, but not detected.
EPA 6020B analyses performed by Pace Analytical Laboratories in Minneapolis, MN.
EPA 8270 BY SIM analyses performed by Pace Analytical Laboratories in Minneapolis, MN.

Table Q2-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils
Portland, Oregon

Method:		EPA 8270 by SIM							
Analyte:	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	
Unit:	µg/L	µg/L	µg/L	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	14	530	0.0018	
Groundwater Cleanup Levels ¹ :	0.0012	NS	0.0013	0.0013	0.0012	NS	NS	0.0012	
Well	Sample Date								
MW-02	5/18/2023	< 0.0083	< 0.0088	< 0.0085	< 0.0087	< 0.0079	< 0.013	< 0.0062	< 0.010
MW-03	5/19/2023	< 0.0081	< 0.0086	< 0.0084	< 0.0085	< 0.0078	< 0.012	< 0.0061	< 0.010
MW-06	5/19/2023	< 0.0081	< 0.0086	< 0.0084	< 0.0085	< 0.0078	0.030 j	2.3	< 0.010
MW-08	5/18/2023	< 0.0081	< 0.0085	< 0.0083	< 0.0084	< 0.0077	< 0.012	< 0.0060	< 0.0099
MW-11	5/19/2023	< 0.0084	< 0.0089	< 0.0086	< 0.0088	< 0.0080	< 0.013	< 0.0063	< 0.010
MW-18	5/18/2023	< 0.0080	< 0.0085	< 0.0082	< 0.0084	< 0.0077	< 0.012	< 0.0060	< 0.0099
MW-19	5/18/2023	< 0.0081	< 0.0086	< 0.0083	< 0.0085	< 0.0077	< 0.012	< 0.0061	< 0.010
MW-21	5/20/2023	< 0.0082	< 0.0087	< 0.0084	< 0.0086	< 0.0079	< 0.012	< 0.0061	< 0.010
MW-24A	5/16/2023	< 0.0079	< 0.0084	< 0.0081	< 0.0083	< 0.0076	< 0.012	< 0.0059	< 0.0097
MW-25	5/18/2023	< 0.0081	< 0.0085	< 0.0083	< 0.0084	< 0.0077	< 0.012	< 0.0060	< 0.0099
MW-26	5/17/2023	< 0.0087	< 0.0091	< 0.0089	< 0.0091	< 0.0083	< 0.013	< 0.0065	< 0.011
MW-26 Dup	5/17/2023	< 0.0079	< 0.0084	< 0.0081	< 0.0083	< 0.0076	< 0.012	< 0.0059	< 0.0097
MW-27	5/17/2023	< 0.0079	< 0.0084	< 0.0081	< 0.0083	< 0.0076	0.019 j	0.13	< 0.0097
MW-28A	5/16/2023	< 0.0082	< 0.0087	< 0.0084	< 0.0086	< 0.0079	< 0.012	< 0.0061	< 0.010
MW-30	5/15/2023	< 0.0080	< 0.0084	< 0.0082	< 0.0084	< 0.0076	< 0.012	< 0.0060	< 0.0098
MW-31	5/16/2023	< 0.0078	< 0.0083	< 0.0080	< 0.0082	< 0.0075	< 0.012	< 0.0059	< 0.0096
MW-32	5/15/2023	< 0.0085	< 0.0089	< 0.0087	< 0.0089	< 0.0081	< 0.013	< 0.0063	< 0.010
MW-33	5/15/2023	< 0.0080	< 0.0084	< 0.0082	< 0.0084	< 0.0076	< 0.012	< 0.0060	< 0.0098
MW-34	5/19/2023	< 0.0081 UJ	< 0.0085 UJ	< 0.0083 UJ	< 0.0084 UJ	< 0.0077 UJ	< 0.012 UJ	< 0.0060 UJ	< 0.0099 UJ
MW-35	5/19/2023	< 0.0082	< 0.0087	< 0.0084	< 0.0086	< 0.0079	0.020 j	< 0.0061	< 0.010
MW-36	5/17/2023	< 0.0079	< 0.0084	< 0.0081	< 0.0083	< 0.0076	0.016 j	0.26	< 0.0097
MW-37	5/18/2023	< 0.0081	< 0.0086	< 0.0083	< 0.0085	< 0.0077	< 0.012	< 0.0061	< 0.010
MW-38	5/18/2023	< 0.0081	< 0.0086	< 0.0084	< 0.0085	< 0.0078	< 0.012	< 0.0061	< 0.010
MW-40	5/16/2023	< 0.0082	< 0.0086	< 0.0084	< 0.0086	< 0.0078	< 0.012	< 0.0061	< 0.010
MW-41	5/17/2023	< 0.0081	< 0.0085	< 0.0083	< 0.0084	< 0.0077	< 0.012	< 0.0060	< 0.0099
MW-42	5/15/2023	< 0.0080	< 0.0084	< 0.0082	< 0.0084	< 0.0076	< 0.012	< 0.0060	< 0.0098
MW-43	5/18/2023	< 0.0081	< 0.0085	< 0.0083	< 0.0084	< 0.0077	< 0.012	1.9	< 0.0099
MW-44	5/16/2023	< 0.0084	< 0.0089	< 0.0086	< 0.0088	< 0.0080	< 0.013	< 0.0063	< 0.010
MW-44 Dup	5/16/2023	< 0.0087	< 0.0092	< 0.0090	< 0.0092	< 0.0083	< 0.013	< 0.0065	< 0.011
MW-45	5/16/2023	< 0.0080	< 0.0084	< 0.0082	< 0.0084	< 0.0076	< 0.012	< 0.0060	< 0.0098

Notes:
1. Groundwater Cleanup Levels as defined in Table 17 of the E
< = 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
QC = Quality Control
Bolded values indicate concentrations above the Reportable D
Shaded values indicate concentrations above the GW SCM Pe
Qualifiers - Organics
j = The result is an estimated concentration, detected between
J = The result is an estimated concentration.
J+ = The concentration of the sample is considered to be bias
UJ = Analyte was analyzed for, but not detected. The detection
U = Analyte was analyzed for, but not detected.
EPA 6020B analyses performed by Pace Analytical Laboratories
EPA 8270 BY SIM analyses performed by Pace Analytical Labc

Table Q2-11
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils
Portland, Oregon

Well	Method: Analyte: Unit: Groundwater Cleanup Levels ¹ : Sample Date	EPA 8270 by SIM			Calculated
		Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ
		µg/L 12 NS	µg/L NS NS	µg/L 400 NS	µg/L 0.0018 0.00012
MW-02	5/18/2023	0.018 j	< 0.014	< 0.0091	< 0.01
MW-03	5/19/2023	< 0.014	< 0.014	< 0.0089	< 0.01
MW-06	5/19/2023	< 0.014	1.0	0.035 j	< 0.01
MW-08	5/18/2023	< 0.014	0.047 J+	< 0.0088	< 0.0099
MW-11	5/19/2023	< 0.015	< 0.014	< 0.0092	< 0.01
MW-18	5/18/2023	0.016 j	< 0.014	< 0.0088	< 0.0099
MW-19	5/18/2023	< 0.014	< 0.014	< 0.0089	< 0.01
MW-21	5/20/2023	< 0.014	< 0.014	< 0.0090	< 0.01
MW-24A	5/16/2023	< 0.014	< 0.013	< 0.0087	< 0.0097
MW-25	5/18/2023	< 0.014	< 0.014	< 0.0088	< 0.0099
MW-26	5/17/2023	< 0.015	< 0.015	< 0.0095	< 0.011
MW-26 Dup	5/17/2023	< 0.014	< 0.013	0.010 j	< 0.0097
MW-27	5/17/2023	0.071	0.020 j	< 0.0087	< 0.0097
MW-28A	5/16/2023	< 0.014	< 0.014	< 0.0090	< 0.01
MW-30	5/15/2023	< 0.014	< 0.013	< 0.0088	< 0.0098
MW-31	5/16/2023	< 0.014	0.017 j	< 0.0086	< 0.0096
MW-32	5/15/2023	< 0.015	< 0.014	< 0.0093	< 0.01
MW-33	5/15/2023	0.014 j	< 0.013	< 0.0088	< 0.0098
MW-34	5/19/2023	< 0.014 UJ	< 0.014 UJ	< 0.0088 UJ	< 0.0099
MW-35	5/19/2023	< 0.014	< 0.014	< 0.0090	< 0.01
MW-36	5/17/2023	0.12	0.018 j	< 0.0087	< 0.0097
MW-37	5/18/2023	< 0.014	< 0.039 U	< 0.0089	< 0.01
MW-38	5/18/2023	< 0.014	< 0.014	< 0.0089	< 0.01
MW-40	5/16/2023	< 0.014	< 0.014	< 0.0090	< 0.01
MW-41	5/17/2023	< 0.014	< 0.014	< 0.0088	< 0.0099
MW-42	5/15/2023	< 0.014	< 0.013	< 0.0088	< 0.0098
MW-43	5/18/2023	< 0.014	< 0.014	< 0.0088	0.011
MW-44	5/16/2023	< 0.015	< 0.014	< 0.0092	< 0.01
MW-44 Dup	5/16/2023	< 0.015	< 0.015	< 0.0096	< 0.011
MW-45	5/16/2023	< 0.014	< 0.013	< 0.0088	< 0.0098

Notes:

1. Groundwater Cleanup Levels as defined in Table 17 of the E
 < = 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
 QC = Quality Control

Bolded values indicate concentrations above the Reportable Detection Limit
 Shaded values indicate concentrations above the GW SCM Performance Level

Qualifiers - Organics

j = The result is an estimated concentration, detected between:
 J = The result is an estimated concentration.
 J+ = The concentration of the sample is considered to be biased
 UJ = Analyte was analyzed for, but not detected. The detection limit was not reached.
 U = Analyte was analyzed for, but not detected.
 EPA 6020B analyses performed by Pace Analytical Laboratories
 EPA 8270 BY SIM analyses performed by Pace Analytical Labs

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

Selected GW SCM Performance Evaluation Criteria:		Method: Analyte: Unit:	EPA 300.0 Sulfate µg/L NS	SM2320B Alkalinity, Total as CaCO ₃ µg/L 20,000	SM2340B Hardness as CaCO ₃ µg/L NS
Well	Sample Date				
MW-02	5/18/2023		64,300	60,900	91,900
MW-03	5/19/2023		5,300	69,200	57,600
MW-06	5/19/2023		2,800	72,700	61,700
MW-08	5/18/2023		51,600	30,800	48,300
MW-11	5/19/2023		2,600	250,000	181,000
MW-18	5/16/2023		29,000	98,500	89,200
MW-19	5/18/2023		10,100	94,300	69,000
MW-21	5/20/2023		3,600	41,700	40,400
MW-24A	5/16/2023		21,200	44,200	50,500
MW-25	5/18/2023		11,700	59,400	57,300
MW-26	5/17/2023		23,000	23,400	33,500
MW-26 Dup	5/17/2023		23,600	24,100	34,000
MW-27	5/17/2023		3,200	95,900	73,200
MW-28A	5/16/2023		16,300	50,000	61,300
MW-30	5/15/2023		32,100	49,500	56,900
MW-31	5/16/2023		15,400	77,300	74,000
MW-32	5/15/2023		27,400	94,500	82,100
MW-33	5/15/2023		48,700	84,700	107,000
MW-34	5/19/2023		53,500	53,200	67,400
MW-35	5/19/2023		13,800	30,800	19,800
MW-36	5/17/2023		7,100	129,000	102,000
MW-37	5/18/2023		25,800	44,500	54,900
MW-38	5/18/2023		13,900	133,000	105,000
MW-40	5/16/2023		46,200	57,900	79,400
MW-41	5/17/2023		24,700	41,300	58,000
MW-42	5/15/2023		16,400	73,500	109,000
MW-43	5/18/2023		730 j	161,000	118,000
MW-44	5/16/2023		65,000	88,800	119,000
MW-44 Dup	5/16/2023		65,700	88,800	117,000
MW-45	5/16/2023		55,100	2,500 j	47,200

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

QC = Quality Control

Bolded values indicate concentrations above the Reportable Detection Limit.

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

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

Laboratory analyses performed by Pace Analytical Laboratories in Minneapolis, MN.

ATTACHMENT B MONITORING WELL SURVEY DATA

BURGARD - Monitor Well Data - JUNE 2023						
POINT NO.	NORTHING SP (North Zone)	EASTING SP (North Zone)	LATITUDE (North)	LONGITUDE (West)	ELEVATION (FEET)	DESC
48001	717547.78	7618216.99	N45°36'43.96757"	W122°46'55.31504"	31.81	28A CAP
48002	717547.91	7618217.10	N45°36'43.96889"	W122°46'55.31353"	32.01	28A LID
48020	717548.73	7618216.91	N45°36'43.97691"	W122°46'55.31651"	31.81	28A GROUND
48003	717450.20	7618230.99	N45°36'43.00845"	W122°46'55.07940"	34.15	45 CAP
48004	717450.19	7618230.92	N45°36'43.00839"	W122°46'55.08038"	34.44	45 LID
48018	717449.95	7618230.19	N45°36'43.00581"	W122°46'55.09055"	31.83	45 GROUND
48005	717438.96	7618271.72	N45°36'42.90893"	W122°46'54.50222"	33.96	40 CAP
48006	717438.95	7618271.64	N45°36'42.90879"	W122°46'54.50339"	34.24	40 LID
48016	717439.13	7618270.81	N45°36'42.91036"	W122°46'54.51501"	31.57	40 GROUND
48007	717434.52	7618287.24	N45°36'42.86944"	W122°46'54.28217"	33.80	41 CAP
48008	717434.65	7618287.26	N45°36'42.87072"	W122°46'54.28199"	34.06	41 LID
48014	717434.65	7618286.36	N45°36'42.87048"	W122°46'54.29463"	32.02	41 GROUND
48009	717413.90	7618306.09	N45°36'42.67115"	W122°46'54.00900"	34.36	24A CAP
48010	717413.90	7618306.11	N45°36'42.67123"	W122°46'54.00861"	34.67	24A LID
48012	717413.52	7618305.30	N45°36'42.66718"	W122°46'54.01987"	32.48	24A GROUND

EXPLANATION OF COORDINATE LOCATION: MONITORING WELLS

NORTHINGS, EASTINGS, AND ELEVATIONS FOR CAPS ARE BASED ON OBSERVATIONS TAKEN ATOP THE NORTH EDGE OF THE PLASTIC CAP WITHIN THE WELL. NORTHINGS, EASTINGS, AND ELEVATIONS FOR GROUND ARE BASED ON OBSERVATIONS TAKEN ON THE GROUND ADJACENT TO THE WELL. TOP OF LID NORTHINGS, EASTINGS, AND ELEVATIONS ARE BASED ON OBSERVATIONS TAKEN ATOP THE METAL WELL LID.

VERTICAL DATUM

ELEVATIONS ARE BASED ON NGS BENCHMARK RD0616 WITH A PUBLISHED ELEVATION OF 51.84 FEET (NAVD88)

BASIS OF BEARING

STATE PLANE GRID BEARING

HORIZONTAL DATUM

THE HORIZONTAL DATUM IS BASED ON (OREGON NORTH ZONE) STATE PLANE COORDINATES (INTERNATIONAL FEET). A COMBINED SCALE FACTOR OF 1.0000729790 WAS APPLIED AT NORTHING:718623.07 EASTING:7618361.61 IN ORDER TO CONVERT FROM GRID COORDINATES TO GROUND COORDINATES. LATITUDES AND LONGITUDES ARE DERIVED FROM NAD83(2011) EPOCH:2010.0000 OBSERVATIONS WERE TAKEN USING THE TRIMBLE VRS NETWORK

ATTACHMENT C ANALYTICAL REPORTS

June 02, 2023

Erica Whitting
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0680180.003
Pace Project No.: 10653430

Dear Erica Whitting:

Enclosed are the analytical results for sample(s) received by the laboratory on May 17, 2023. 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: Jo Casey, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Andrea George, ERM
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: 0680180.003

Pace Project No.: 10653430

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

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

GMP+ Certification #: GMP050884

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

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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 0680180.003

Pace Project No.: 10653430

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10653430001	TRIP BLANK-20230516	Water	05/16/23 08:00	05/17/23 08:50
10653430002	PEO-MW-42-202305	Water	05/15/23 11:30	05/17/23 08:50
10653430003	PEO-MW-30-202305	Water	05/15/23 13:55	05/17/23 08:50
10653430004	PEO-MW-32-202305	Water	05/15/23 14:00	05/17/23 08:50
10653430005	PEO-MW-33-202305	Water	05/15/23 15:30	05/17/23 08:50
10653430006	PEO-MW-08-202305	Water	05/15/23 15:45	05/17/23 08:50
10653430007	PEO-MW-18-202305	Water	05/16/23 08:30	05/17/23 08:50
10653430008	PEO-MW-31-202305	Water	05/16/23 08:30	05/17/23 08:50

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10653430

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10653430001	TRIP BLANK-20230516	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	TKL	8	PASI-M
10653430002	PEO-MW-42-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653430003	PEO-MW-30-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653430004	PEO-MW-32-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653430005	PEO-MW-33-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653430006	PEO-MW-08-202305	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	TKL	8	PASI-M
10653430007	PEO-MW-18-202305	NWTPH-Dx	EB3	4	PASI-M

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10653430

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653430008	PEO-MW-31-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	LPM	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: TRIP BLANK-20230516 **Lab ID: 10653430001** Collected: 05/16/23 08:00 Received: 05/17/23 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	22.6	1		05/17/23 17:22		
Surrogates									
a,a,a-Trifluorotoluene (S)	106	%	50-150		1		05/17/23 17:22	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/18/23 20:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/18/23 20:22	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/18/23 20:22	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/18/23 20:22	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/18/23 20:22	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/18/23 20:22	2199-69-1	
4-Bromofluorobenzene (S)	97	%	75-125		1		05/18/23 20:22	460-00-4	
Toluene-d8 (S)	108	%	75-125		1		05/18/23 20:22	2037-26-5	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-42-202305 **Lab ID: 10653430002** Collected: 05/15/23 11:30 Received: 05/17/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/17/23 12:43	05/19/23 13:19	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/17/23 12:43	05/19/23 13:19		
Surrogates									
n-Triacontane (S)	62	%	50-150		1	05/17/23 12:43	05/19/23 13:19		
o-Terphenyl (S)	87	%	50-150		1	05/17/23 12:43	05/19/23 13:19	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/17/23 15:44		
Surrogates									
a,a,a-Trifluorotoluene (S)	104	%	50-150		1		05/17/23 15:44	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	361	1	05/30/23 05:30	06/01/23 14:05		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.4	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:20	7440-38-2	
Manganese, Dissolved	3.0	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:20	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0063	1	05/19/23 12:16	05/22/23 18:03	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0054	1	05/19/23 12:16	05/22/23 18:03	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/19/23 12:16	05/22/23 18:03	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0074	1	05/19/23 12:16	05/22/23 18:03	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0077	1	05/19/23 12:16	05/22/23 18:03	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0080	1	05/19/23 12:16	05/22/23 18:03	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 18:03	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0082	1	05/19/23 12:16	05/22/23 18:03	207-08-9	
Chrysene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 18:03	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 18:03	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 18:03	206-44-0	
Fluorene	ND	ug/L	0.038	0.0060	1	05/19/23 12:16	05/22/23 18:03	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0098	1	05/19/23 12:16	05/22/23 18:03	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0060	1	05/19/23 12:16	05/22/23 18:03	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0073	1	05/19/23 12:16	05/22/23 18:03	91-57-6	
Naphthalene	ND	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 18:03	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 18:03	85-01-8	
Pyrene	ND	ug/L	0.038	0.0088	1	05/19/23 12:16	05/22/23 18:03	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	54	%	49-125		1	05/19/23 12:16	05/22/23 18:03	321-60-8	
p-Terphenyl-d14 (S)	69	%	42-125		1	05/19/23 12:16	05/22/23 18:03	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-42-202305 **Lab ID: 10653430002** Collected: 05/15/23 11:30 Received: 05/17/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/17/23 18:30	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/17/23 18:30	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/17/23 18:30	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/17/23 18:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/17/23 18:30	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/17/23 18:30	2199-69-1	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/17/23 18:30	460-00-4	
Toluene-d8 (S)	107	%	75-125		1		05/17/23 18:30	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	73.5	mg/L	5.0	1.4	1		05/24/23 14:27		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	16.4	mg/L	1.2	0.43	1		05/30/23 21:28	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-30-202305		Lab ID: 10653430003		Collected: 05/15/23 13:55		Received: 05/17/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/17/23 12:43	05/19/23 13:41	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/17/23 12:43	05/19/23 13:41		
Surrogates									
n-Triacontane (S)	79	%	50-150		1	05/17/23 12:43	05/19/23 13:41		
o-Terphenyl (S)	80	%	50-150		1	05/17/23 12:43	05/19/23 13:41	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/17/23 16:01		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/17/23 16:01	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	56900	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:06		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.66	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:23	7440-38-2	
Manganese, Dissolved	49.7	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:23	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0063	1	05/19/23 12:16	05/22/23 18:25	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0054	1	05/19/23 12:16	05/22/23 18:25	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/19/23 12:16	05/22/23 18:25	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0074	1	05/19/23 12:16	05/22/23 18:25	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0077	1	05/19/23 12:16	05/22/23 18:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0080	1	05/19/23 12:16	05/22/23 18:25	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 18:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0082	1	05/19/23 12:16	05/22/23 18:25	207-08-9	
Chrysene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 18:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 18:25	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 18:25	206-44-0	
Fluorene	ND	ug/L	0.038	0.0060	1	05/19/23 12:16	05/22/23 18:25	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0098	1	05/19/23 12:16	05/22/23 18:25	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0060	1	05/19/23 12:16	05/22/23 18:25	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0073	1	05/19/23 12:16	05/22/23 18:25	91-57-6	
Naphthalene	ND	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 18:25	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 18:25	85-01-8	
Pyrene	ND	ug/L	0.038	0.0088	1	05/19/23 12:16	05/22/23 18:25	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	60	%	49-125		1	05/19/23 12:16	05/22/23 18:25	321-60-8	
p-Terphenyl-d14 (S)	70	%	42-125		1	05/19/23 12:16	05/22/23 18:25	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-30-202305 **Lab ID: 10653430003** Collected: 05/15/23 13:55 Received: 05/17/23 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		05/17/23 18:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/17/23 18:47	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/17/23 18:47	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/17/23 18:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/17/23 18:47	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/17/23 18:47	2199-69-1	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/17/23 18:47	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/17/23 18:47	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	49.5	mg/L	5.0	1.4	1		05/24/23 14:38		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	32.1	mg/L	1.2	0.43	1		05/30/23 22:19	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-32-202305 **Lab ID: 10653430004** Collected: 05/15/23 14:00 Received: 05/17/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/17/23 12:43	05/19/23 13:52	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/17/23 12:43	05/19/23 13:52		
Surrogates									
n-Triacontane (S)	78	%	50-150		1	05/17/23 12:43	05/19/23 13:52		
o-Terphenyl (S)	81	%	50-150		1	05/17/23 12:43	05/19/23 13:52	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/17/23 16:33		
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%	50-150		1		05/17/23 16:33	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	82100	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:08		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	6.8	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:26	7440-38-2	
Manganese, Dissolved	3.6	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:26	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.041	0.0067	1	05/19/23 12:16	05/22/23 18:47	83-32-9	
Acenaphthylene	ND	ug/L	0.041	0.0057	1	05/19/23 12:16	05/22/23 18:47	208-96-8	
Anthracene	ND	ug/L	0.041	0.0050	1	05/19/23 12:16	05/22/23 18:47	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.041	0.0078	1	05/19/23 12:16	05/22/23 18:47	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.041	0.0082	1	05/19/23 12:16	05/22/23 18:47	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.041	0.0085	1	05/19/23 12:16	05/22/23 18:47	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.041	0.0089	1	05/19/23 12:16	05/22/23 18:47	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.041	0.0087	1	05/19/23 12:16	05/22/23 18:47	207-08-9	
Chrysene	ND	ug/L	0.041	0.0089	1	05/19/23 12:16	05/22/23 18:47	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	0.0081	1	05/19/23 12:16	05/22/23 18:47	53-70-3	
Fluoranthene	ND	ug/L	0.041	0.013	1	05/19/23 12:16	05/22/23 18:47	206-44-0	
Fluorene	ND	ug/L	0.041	0.0063	1	05/19/23 12:16	05/22/23 18:47	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.041	0.010	1	05/19/23 12:16	05/22/23 18:47	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.041	0.0063	1	05/19/23 12:16	05/22/23 18:47	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	0.0077	1	05/19/23 12:16	05/22/23 18:47	91-57-6	
Naphthalene	ND	ug/L	0.041	0.015	1	05/19/23 12:16	05/22/23 18:47	91-20-3	
Phenanthrene	ND	ug/L	0.041	0.014	1	05/19/23 12:16	05/22/23 18:47	85-01-8	
Pyrene	ND	ug/L	0.041	0.0093	1	05/19/23 12:16	05/22/23 18:47	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	66	%	49-125		1	05/19/23 12:16	05/22/23 18:47	321-60-8	
p-Terphenyl-d14 (S)	67	%	42-125		1	05/19/23 12:16	05/22/23 18:47	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-32-202305 **Lab ID: 10653430004** Collected: 05/15/23 14:00 Received: 05/17/23 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	0.53J	ug/L	1.0	0.10	1		05/18/23 22:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/18/23 22:00	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/18/23 22:00	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/18/23 22:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/18/23 22:00	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/18/23 22:00	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/18/23 22:00	460-00-4	
Toluene-d8 (S)	107	%	75-125		1		05/18/23 22:00	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	94.5	mg/L	5.0	1.4	1		05/24/23 14:43		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	27.4	mg/L	1.2	0.43	1		05/30/23 22:33	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-33-202305 **Lab ID: 10653430005** Collected: 05/15/23 15:30 Received: 05/17/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/17/23 12:43	05/19/23 14:03	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/17/23 12:43	05/19/23 14:03		
Surrogates									
n-Triacontane (S)	78	%	50-150		1	05/17/23 12:43	05/19/23 14:03		
o-Terphenyl (S)	74	%	50-150		1	05/17/23 12:43	05/19/23 14:03	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/17/23 16:49		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/17/23 16:49	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	107000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:10		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	7.9	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:29	7440-38-2	
Manganese, Dissolved	68.8	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:29	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	0.014J	ug/L	0.038	0.0063	1	05/19/23 12:16	05/22/23 19:09	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0054	1	05/19/23 12:16	05/22/23 19:09	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/19/23 12:16	05/22/23 19:09	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0074	1	05/19/23 12:16	05/22/23 19:09	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0077	1	05/19/23 12:16	05/22/23 19:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0080	1	05/19/23 12:16	05/22/23 19:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 19:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0082	1	05/19/23 12:16	05/22/23 19:09	207-08-9	
Chrysene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 19:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 19:09	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 19:09	206-44-0	
Fluorene	ND	ug/L	0.038	0.0060	1	05/19/23 12:16	05/22/23 19:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0098	1	05/19/23 12:16	05/22/23 19:09	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0060	1	05/19/23 12:16	05/22/23 19:09	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0073	1	05/19/23 12:16	05/22/23 19:09	91-57-6	
Naphthalene	0.014J	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 19:09	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 19:09	85-01-8	
Pyrene	ND	ug/L	0.038	0.0088	1	05/19/23 12:16	05/22/23 19:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	66	%	49-125		1	05/19/23 12:16	05/22/23 19:09	321-60-8	
p-Terphenyl-d14 (S)	76	%	42-125		1	05/19/23 12:16	05/22/23 19:09	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-33-202305 **Lab ID: 10653430005** Collected: 05/15/23 15:30 Received: 05/17/23 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		05/18/23 22:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/18/23 22:16	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/18/23 22:16	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/18/23 22:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/18/23 22:16	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/18/23 22:16	2199-69-1	
4-Bromofluorobenzene (S)	95	%	75-125		1		05/18/23 22:16	460-00-4	
Toluene-d8 (S)	105	%	75-125		1		05/18/23 22:16	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	84.7	mg/L	5.0	1.4	1		05/24/23 14:47		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	48.7	mg/L	1.2	0.43	1		05/30/23 22:48	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-08-202305 **Lab ID: 10653430006** Collected: 05/15/23 15:45 Received: 05/17/23 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	22.6	1		05/17/23 17:05		
Surrogates									
a,a,a-Trifluorotoluene (S)	107	%	50-150		1		05/17/23 17:05	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/18/23 22:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/18/23 22:32	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/18/23 22:32	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/18/23 22:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/18/23 22:32	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/18/23 22:32	2199-69-1	
4-Bromofluorobenzene (S)	97	%	75-125		1		05/18/23 22:32	460-00-4	
Toluene-d8 (S)	108	%	75-125		1		05/18/23 22:32	2037-26-5	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-18-202305		Lab ID: 10653430007		Collected: 05/16/23 08:30		Received: 05/17/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	0.35J	mg/L	0.40	0.12	1	05/17/23 12:43	05/19/23 14:14	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/17/23 12:43	05/19/23 14:14		
Surrogates									
n-Triacontane (S)	82	%	50-150		1	05/17/23 12:43	05/19/23 14:14		
o-Terphenyl (S)	95	%	50-150		1	05/17/23 12:43	05/19/23 14:14	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/17/23 17:38		
Surrogates									
a,a,a-Trifluorotoluene (S)	106	%	50-150		1		05/17/23 17:38	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	89200	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:11		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.9	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:32	7440-38-2	
Manganese, Dissolved	650	ug/L	10.0	3.3	20	05/30/23 05:40	05/31/23 16:32	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	0.024J	ug/L	0.039	0.0063	1	05/19/23 12:16	05/22/23 19:31	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0054	1	05/19/23 12:16	05/22/23 19:31	208-96-8	
Anthracene	ND	ug/L	0.039	0.0047	1	05/19/23 12:16	05/22/23 19:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0074	1	05/19/23 12:16	05/22/23 19:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0077	1	05/19/23 12:16	05/22/23 19:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0080	1	05/19/23 12:16	05/22/23 19:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0085	1	05/19/23 12:16	05/22/23 19:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0082	1	05/19/23 12:16	05/22/23 19:31	207-08-9	
Chrysene	ND	ug/L	0.039	0.0084	1	05/19/23 12:16	05/22/23 19:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/19/23 12:16	05/22/23 19:31	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/19/23 12:16	05/22/23 19:31	206-44-0	
Fluorene	ND	ug/L	0.039	0.0060	1	05/19/23 12:16	05/22/23 19:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.0099	1	05/19/23 12:16	05/22/23 19:31	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/19/23 12:16	05/22/23 19:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0073	1	05/19/23 12:16	05/22/23 19:31	91-57-6	
Naphthalene	0.016J	ug/L	0.039	0.014	1	05/19/23 12:16	05/22/23 19:31	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/19/23 12:16	05/22/23 19:31	85-01-8	
Pyrene	ND	ug/L	0.039	0.0088	1	05/19/23 12:16	05/22/23 19:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%	49-125		1	05/19/23 12:16	05/22/23 19:31	321-60-8	
p-Terphenyl-d14 (S)	76	%	42-125		1	05/19/23 12:16	05/22/23 19:31	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-18-202305 **Lab ID: 10653430007** Collected: 05/16/23 08:30 Received: 05/17/23 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		05/18/23 22:48	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/18/23 22:48	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/18/23 22:48	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/18/23 22:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/18/23 22:48	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/18/23 22:48	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/18/23 22:48	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/18/23 22:48	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	98.5	mg/L	5.0	1.4	1		05/25/23 10:38		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	29.0	mg/L	1.2	0.43	1		05/30/23 23:02	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-31-202305 **Lab ID: 10653430008** Collected: 05/16/23 08:30 Received: 05/17/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/17/23 12:43	05/19/23 14:25	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/17/23 12:43	05/19/23 14:25		
Surrogates									
n-Triacontane (S)	72	%	50-150		1	05/17/23 12:43	05/19/23 14:25		
o-Terphenyl (S)	73	%	50-150		1	05/17/23 12:43	05/19/23 14:25	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/17/23 17:54		
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%	50-150		1		05/17/23 17:54	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	74000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:13		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.22J	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:35	7440-38-2	
Manganese, Dissolved	1.7	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:36	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0062	1	05/19/23 12:16	05/22/23 19:53	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0053	1	05/19/23 12:16	05/22/23 19:53	208-96-8	
Anthracene	ND	ug/L	0.038	0.0046	1	05/19/23 12:16	05/22/23 19:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0072	1	05/19/23 12:16	05/22/23 19:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 19:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0078	1	05/19/23 12:16	05/22/23 19:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0083	1	05/19/23 12:16	05/22/23 19:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0080	1	05/19/23 12:16	05/22/23 19:53	207-08-9	
Chrysene	ND	ug/L	0.038	0.0082	1	05/19/23 12:16	05/22/23 19:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0075	1	05/19/23 12:16	05/22/23 19:53	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 19:53	206-44-0	
Fluorene	ND	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 19:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0096	1	05/19/23 12:16	05/22/23 19:53	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 19:53	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0072	1	05/19/23 12:16	05/22/23 19:53	91-57-6	
Naphthalene	ND	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 19:53	91-20-3	
Phenanthrene	0.017J	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 19:53	85-01-8	
Pyrene	ND	ug/L	0.038	0.0086	1	05/19/23 12:16	05/22/23 19:53	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	51	%	49-125		1	05/19/23 12:16	05/22/23 19:53	321-60-8	
p-Terphenyl-d14 (S)	72	%	42-125		1	05/19/23 12:16	05/22/23 19:53	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653430

Sample: PEO-MW-31-202305 **Lab ID: 10653430008** Collected: 05/16/23 08:30 Received: 05/17/23 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		05/20/23 02:44	71-43-2	
Ethylbenzene	1.3	ug/L	1.0	0.11	1		05/20/23 02:44	100-41-4	
Toluene	5.5	ug/L	1.0	0.10	1		05/20/23 02:44	108-88-3	
m&p-Xylene	3.9	ug/L	2.0	0.20	1		05/20/23 02:44	179601-23-1	
o-Xylene	1.7	ug/L	1.0	0.18	1		05/20/23 02:44	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/20/23 02:44	2199-69-1	
4-Bromofluorobenzene (S)	96	%	75-125		1		05/20/23 02:44	460-00-4	
Toluene-d8 (S)	106	%	75-125		1		05/20/23 02:44	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	77.3	mg/L	5.0	1.4	1		05/25/23 10:43		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	15.4	mg/L	1.2	0.43	1		05/30/23 23:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653430

QC Batch: 881867

Analysis Method: NWTPH-Gx

QC Batch Method: NWTPH-Gx

Analysis Description: NWTPH-Gx Water

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430001, 10653430002, 10653430003, 10653430004, 10653430005, 10653430006, 10653430007, 10653430008

METHOD BLANK: 4647062

Matrix: Water

Associated Lab Samples: 10653430001, 10653430002, 10653430003, 10653430004, 10653430005, 10653430006, 10653430007, 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/17/23 15:28	
a,a,a-Trifluorotoluene (S)	%.	105	50-150		05/17/23 15:28	

LABORATORY CONTROL SAMPLE & LCSD: 4647064

4647065

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1000	967	100	97	68-125	4	20	
a,a,a-Trifluorotoluene (S)	%.				115	104	50-150			

SAMPLE DUPLICATE: 4647066

Parameter	Units	10653430003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	100	99			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 882705	Analysis Method: EPA 6020B
QC Batch Method: EPA 3020A	Analysis Description: 6020B Water Dissolved UPD5
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

METHOD BLANK: 4651250 Matrix: Water
Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.092	05/30/23 18:14	
Manganese, Dissolved	ug/L	ND	0.50	0.16	05/31/23 16:14	

LABORATORY CONTROL SAMPLE: 4651251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	100	100	80-120	
Manganese, Dissolved	ug/L	100	108	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4651252 4651253

Parameter	Units	10653844003		4651252		4651253		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Arsenic, Dissolved	ug/L	13.3	100	100	117	111	103	98	75-125	5	20
Manganese, Dissolved	ug/L	1080	100	100	1240	1160	159	81	75-125	6	20 P6

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 881814	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV UST-WATER
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430002, 10653430003

METHOD BLANK: 4646865 Matrix: Water

Associated Lab Samples: 10653430002, 10653430003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/17/23 13:54	
Ethylbenzene	ug/L	ND	1.0	0.11	05/17/23 13:54	
m&p-Xylene	ug/L	ND	2.0	0.20	05/17/23 13:54	
o-Xylene	ug/L	ND	1.0	0.18	05/17/23 13:54	
Toluene	ug/L	ND	1.0	0.10	05/17/23 13:54	
1,2-Dichlorobenzene-d4 (S)	%	101	75-125		05/17/23 13:54	
4-Bromofluorobenzene (S)	%	99	75-125		05/17/23 13:54	
Toluene-d8 (S)	%	105	75-125		05/17/23 13:54	

LABORATORY CONTROL SAMPLE & LCSD: 4646866 4646867

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.3	18.5	96	93	75-125	4	20	
Ethylbenzene	ug/L	20	19.5	18.2	98	91	75-125	7	20	
m&p-Xylene	ug/L	40	39.9	38.0	100	95	75-125	5	20	
o-Xylene	ug/L	20	20.0	19.4	100	97	75-125	3	20	
Toluene	ug/L	20	20.8	19.4	104	97	74-125	7	20	
1,2-Dichlorobenzene-d4 (S)	%				98	97	75-125			
4-Bromofluorobenzene (S)	%				99	100	75-125			
Toluene-d8 (S)	%				104	107	75-125			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 882139 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV UST-WATER
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430001, 10653430004, 10653430005, 10653430006, 10653430007

METHOD BLANK: 4648175 Matrix: Water
Associated Lab Samples: 10653430001, 10653430004, 10653430005, 10653430006, 10653430007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/18/23 19:49	
Ethylbenzene	ug/L	ND	1.0	0.11	05/18/23 19:49	
m&p-Xylene	ug/L	ND	2.0	0.20	05/18/23 19:49	
o-Xylene	ug/L	ND	1.0	0.18	05/18/23 19:49	
Toluene	ug/L	ND	1.0	0.10	05/18/23 19:49	
1,2-Dichlorobenzene-d4 (S)	%	102	75-125		05/18/23 19:49	
4-Bromofluorobenzene (S)	%	98	75-125		05/18/23 19:49	
Toluene-d8 (S)	%	108	75-125		05/18/23 19:49	

LABORATORY CONTROL SAMPLE & LCSD: 4648176

4648177

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	17.7	18.5	88	92	75-125	4	20	
Ethylbenzene	ug/L	20	17.6	18.0	88	90	75-125	2	20	
m&p-Xylene	ug/L	40	37.5	37.3	94	93	75-125	1	20	
o-Xylene	ug/L	20	18.5	18.9	92	95	75-125	2	20	
Toluene	ug/L	20	18.7	19.3	94	97	74-125	3	20	
1,2-Dichlorobenzene-d4 (S)	%				99	98	75-125			
4-Bromofluorobenzene (S)	%				99	98	75-125			
Toluene-d8 (S)	%				105	105	75-125			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 882393	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV UST-WATER
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430008

METHOD BLANK: 4649645 Matrix: Water

Associated Lab Samples: 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/20/23 01:54	
Ethylbenzene	ug/L	ND	1.0	0.11	05/20/23 01:54	
m&p-Xylene	ug/L	ND	2.0	0.20	05/20/23 01:54	
o-Xylene	ug/L	ND	1.0	0.18	05/20/23 01:54	
Toluene	ug/L	ND	1.0	0.10	05/20/23 01:54	
1,2-Dichlorobenzene-d4 (S)	%	102	75-125		05/20/23 01:54	
4-Bromofluorobenzene (S)	%	99	75-125		05/20/23 01:54	
Toluene-d8 (S)	%	105	75-125		05/20/23 01:54	

LABORATORY CONTROL SAMPLE & LCSD: 4649646 4649647

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.2	18.6	96	93	75-125	4	20	
Ethylbenzene	ug/L	20	19.0	17.9	95	89	75-125	6	20	
m&p-Xylene	ug/L	40	40.2	37.3	100	93	75-125	7	20	
o-Xylene	ug/L	20	19.8	18.8	99	94	75-125	5	20	
Toluene	ug/L	20	20.2	19.6	101	98	74-125	3	20	
1,2-Dichlorobenzene-d4 (S)	%				100	101	75-125			
4-Bromofluorobenzene (S)	%				99	98	75-125			
Toluene-d8 (S)	%				104	104	75-125			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 882313 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

METHOD BLANK: 4648962 Matrix: Water
Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0062	05/22/23 17:18	
2-Methylnaphthalene	ug/L	ND	0.040	0.0076	05/22/23 17:18	
Acenaphthene	ug/L	ND	0.040	0.0065	05/22/23 17:18	
Acenaphthylene	ug/L	ND	0.040	0.0056	05/22/23 17:18	
Anthracene	ug/L	ND	0.040	0.0049	05/22/23 17:18	
Benzo(a)anthracene	ug/L	ND	0.040	0.0076	05/22/23 17:18	
Benzo(a)pyrene	ug/L	ND	0.040	0.0080	05/22/23 17:18	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0083	05/22/23 17:18	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0088	05/22/23 17:18	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/22/23 17:18	
Chrysene	ug/L	ND	0.040	0.0087	05/22/23 17:18	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0079	05/22/23 17:18	
Fluoranthene	ug/L	ND	0.040	0.013	05/22/23 17:18	
Fluorene	ug/L	ND	0.040	0.0062	05/22/23 17:18	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.010	05/22/23 17:18	
Naphthalene	ug/L	ND	0.040	0.015	05/22/23 17:18	
Phenanthrene	ug/L	ND	0.040	0.014	05/22/23 17:18	
Pyrene	ug/L	ND	0.040	0.0091	05/22/23 17:18	
2-Fluorobiphenyl (S)	%	65	49-125		05/22/23 17:18	
p-Terphenyl-d14 (S)	%	88	42-125		05/22/23 17:18	

LABORATORY CONTROL SAMPLE: 4648963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.75	75	46-125	
2-Methylnaphthalene	ug/L	1	0.69	69	52-125	
Acenaphthene	ug/L	1	0.70	70	51-125	
Acenaphthylene	ug/L	1	0.70	70	50-125	
Anthracene	ug/L	1	0.89	89	50-125	
Benzo(a)anthracene	ug/L	1	0.87	87	59-125	
Benzo(a)pyrene	ug/L	1	0.89	89	62-125	
Benzo(b)fluoranthene	ug/L	1	0.88	88	56-125	
Benzo(g,h,i)perylene	ug/L	1	0.86	86	35-125	
Benzo(k)fluoranthene	ug/L	1	0.90	90	59-125	
Chrysene	ug/L	1	0.91	91	60-125	
Dibenz(a,h)anthracene	ug/L	1	0.85	85	30-125	
Fluoranthene	ug/L	1	0.76	76	62-125	
Fluorene	ug/L	1	0.70	70	53-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.86	86	50-125	

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

LABORATORY CONTROL SAMPLE: 4648963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.64	64	49-125	
Phenanthrene	ug/L	1	0.81	81	56-125	
Pyrene	ug/L	1	0.98	98	60-125	
2-Fluorobiphenyl (S)	%			66	49-125	
p-Terphenyl-d14 (S)	%			87	42-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4648964 4648965

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10653844003 Result	Spike Conc.	Spike Conc.	MS Result						
1-Methylnaphthalene	ug/L	0.29	0.97	0.95	0.87	0.83	60	57	30-125	5	30
2-Methylnaphthalene	ug/L	0.032J	0.97	0.95	0.67	0.63	66	63	30-125	6	30
Acenaphthene	ug/L	0.46	0.97	0.95	1.1	1.1	61	65	30-125	2	30
Acenaphthylene	ug/L	0.051	0.97	0.95	0.76	0.75	73	73	30-125	2	30
Anthracene	ug/L	ND	0.97	0.95	0.78	0.77	80	81	33-128	2	30
Benzo(a)anthracene	ug/L	ND	0.97	0.95	0.67	0.65	69	69	33-125	2	30
Benzo(a)pyrene	ug/L	ND	0.97	0.95	0.64	0.66	66	69	32-125	3	30
Benzo(b)fluoranthene	ug/L	ND	0.97	0.95	0.64	0.64	66	67	31-125	0	30
Benzo(g,h,i)perylene	ug/L	ND	0.97	0.95	0.62	0.64	64	67	31-125	3	30
Benzo(k)fluoranthene	ug/L	ND	0.97	0.95	0.63	0.67	65	70	35-127	5	30
Chrysene	ug/L	ND	0.97	0.95	0.70	0.70	72	73	39-125	0	30
Dibenz(a,h)anthracene	ug/L	ND	0.97	0.95	0.56	0.58	58	61	30-125	3	30
Fluoranthene	ug/L	0.016J	0.97	0.95	0.69	0.67	69	69	43-125	2	30
Fluorene	ug/L	0.26	0.97	0.95	0.90	0.90	65	66	30-125	0	30
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.97	0.95	0.60	0.61	62	64	30-125	1	30
Naphthalene	ug/L	0.12	0.97	0.95	0.88	0.88	79	80	31-125	0	30
Phenanthrene	ug/L	0.018J	0.97	0.95	0.76	0.74	77	76	33-125	3	30
Pyrene	ug/L	ND	0.97	0.95	0.74	0.73	77	77	41-125	2	30
2-Fluorobiphenyl (S)	%						66	61	49-125		
p-Terphenyl-d14 (S)	%						62	62	42-125		

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch:	881735	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

METHOD BLANK: 4646446 Matrix: Water
Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	0.12	05/19/23 12:46	
Motor Oil Range	mg/L	ND	0.40	0.19	05/19/23 12:46	
n-Triacontane (S)	%	77	50-150		05/19/23 12:46	
o-Terphenyl (S)	%	95	50-150		05/19/23 12:46	

LABORATORY CONTROL SAMPLE & LCSD: 4646447 4646448

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.2	1.8	58	90	50-150	43	20	R1
Motor Oil Range	mg/L	2	1.3	1.8	66	90	50-150	32	20	R1
n-Triacontane (S)	%				67	92	50-150			
o-Terphenyl (S)	%				82	95	50-150			

SAMPLE DUPLICATE: 4646449

Parameter	Units	10653430002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	ND		30	
Motor Oil Range	mg/L	ND	ND		30	
n-Triacontane (S)	%	62	86			
o-Terphenyl (S)	%	87	96			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 882960 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005

METHOD BLANK: 4652477 Matrix: Water
Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	05/24/23 11:37	

LABORATORY CONTROL SAMPLE & LCSD: 4652478 4652479

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.1	41.4	105	104	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652480 4652481

Parameter	Units	10653430002 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	73.5	40	40	114	117	101	109	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652482 4652483

Parameter	Units	10653617001 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	258	40	40	304	302	114	108	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653430

QC Batch: 883100

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653430007, 10653430008

METHOD BLANK: 4652892

Matrix: Water

Associated Lab Samples: 10653430007, 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	05/25/23 09:01	

LABORATORY CONTROL SAMPLE & LCSD: 4652893

4652894

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.6	41.5	104	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652895

4652896

Parameter	Units	10654438001 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	27.4	40	40	68.5	68.4	103	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652897

4652898

Parameter	Units	10653509001 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	72.9	40	40	114	112	102	99	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653430

QC Batch: 884060	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: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

METHOD BLANK: 4657893 Matrix: Water
Associated Lab Samples: 10653430002, 10653430003, 10653430004, 10653430005, 10653430007, 10653430008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	1.2J	1.2	0.43	05/30/23 18:02	

LABORATORY CONTROL SAMPLE: 4657894

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	51.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4657895 4657896

Parameter	Units	10653430002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Sulfate	mg/L	16.4	50	50	50	68.3	68.3	104	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4657897 4657898

Parameter	Units	1065337001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Sulfate	mg/L	2.7	50	50	50	56.5	56.5	108	108	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 0680180.003

Pace Project No.: 10653430

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: 881814

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

Batch: 881867

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

Batch: 882139

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

[1] The continuing calibration verification was above the method acceptance limit for methyl-tert-butyl ether. Any detection for the analyte in the associated samples may have a high bias.

Batch: 882337

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

Batch: 882393

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

[1] The continuing calibration verification was above the method acceptance limit for methyl-tert-butyl ether. Any detection for the analyte in the associated samples may have a high bias.

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: 0680180.003

Pace Project No.: 10653430

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10653430002	PEO-MW-42-202305	EPA 3510C	881735	NWTPH-Dx	882337
10653430003	PEO-MW-30-202305	EPA 3510C	881735	NWTPH-Dx	882337
10653430004	PEO-MW-32-202305	EPA 3510C	881735	NWTPH-Dx	882337
10653430005	PEO-MW-33-202305	EPA 3510C	881735	NWTPH-Dx	882337
10653430007	PEO-MW-18-202305	EPA 3510C	881735	NWTPH-Dx	882337
10653430008	PEO-MW-31-202305	EPA 3510C	881735	NWTPH-Dx	882337
10653430001	TRIP BLANK-20230516	NWTPH-Gx	881867		
10653430002	PEO-MW-42-202305	NWTPH-Gx	881867		
10653430003	PEO-MW-30-202305	NWTPH-Gx	881867		
10653430004	PEO-MW-32-202305	NWTPH-Gx	881867		
10653430005	PEO-MW-33-202305	NWTPH-Gx	881867		
10653430006	PEO-MW-08-202305	NWTPH-Gx	881867		
10653430007	PEO-MW-18-202305	NWTPH-Gx	881867		
10653430008	PEO-MW-31-202305	NWTPH-Gx	881867		
10653430002	PEO-MW-42-202305	EPA 3010A	882704	EPA 6010D	883991
10653430003	PEO-MW-30-202305	EPA 3010A	882704	EPA 6010D	883991
10653430004	PEO-MW-32-202305	EPA 3010A	882704	EPA 6010D	883991
10653430005	PEO-MW-33-202305	EPA 3010A	882704	EPA 6010D	883991
10653430007	PEO-MW-18-202305	EPA 3010A	882704	EPA 6010D	883991
10653430008	PEO-MW-31-202305	EPA 3010A	882704	EPA 6010D	883991
10653430002	PEO-MW-42-202305	EPA 3020A	882705	EPA 6020B	883988
10653430003	PEO-MW-30-202305	EPA 3020A	882705	EPA 6020B	883988
10653430004	PEO-MW-32-202305	EPA 3020A	882705	EPA 6020B	883988
10653430005	PEO-MW-33-202305	EPA 3020A	882705	EPA 6020B	883988
10653430007	PEO-MW-18-202305	EPA 3020A	882705	EPA 6020B	883988
10653430008	PEO-MW-31-202305	EPA 3020A	882705	EPA 6020B	883988
10653430002	PEO-MW-42-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653430003	PEO-MW-30-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653430004	PEO-MW-32-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653430005	PEO-MW-33-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653430007	PEO-MW-18-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653430008	PEO-MW-31-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653430001	TRIP BLANK-20230516	EPA 8260D	882139		
10653430002	PEO-MW-42-202305	EPA 8260D	881814		
10653430003	PEO-MW-30-202305	EPA 8260D	881814		
10653430004	PEO-MW-32-202305	EPA 8260D	882139		
10653430005	PEO-MW-33-202305	EPA 8260D	882139		
10653430006	PEO-MW-08-202305	EPA 8260D	882139		
10653430007	PEO-MW-18-202305	EPA 8260D	882139		
10653430008	PEO-MW-31-202305	EPA 8260D	882393		
10653430002	PEO-MW-42-202305	SM 2320B	882960		
10653430003	PEO-MW-30-202305	SM 2320B	882960		
10653430004	PEO-MW-32-202305	SM 2320B	882960		
10653430005	PEO-MW-33-202305	SM 2320B	882960		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0680180.003

Pace Project No.: 10653430

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10653430007	PEO-MW-18-202305	SM 2320B	883100		
10653430008	PEO-MW-31-202305	SM 2320B	883100		
10653430002	PEO-MW-42-202305	EPA 300.0	884060		
10653430003	PEO-MW-30-202305	EPA 300.0	884060		
10653430004	PEO-MW-32-202305	EPA 300.0	884060		
10653430005	PEO-MW-33-202305	EPA 300.0	884060		
10653430007	PEO-MW-18-202305	EPA 300.0	884060		
10653430008	PEO-MW-31-202305	EPA 300.0	884060		

REPORT OF LABORATORY ANALYSIS

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WO#: 10653430



10653430

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: erica.whiting@erm.com
 Phone: 303-903-3505 Fax: _____
 Requested Due Date/TAT: Standard

Required Project Information:
 Report To: Erica Whiting
 Copy To: Andrea George
 Purchase Order No.: _____
 Project Name: _____
 Project Number: 0680180.003

Section C
 Invoice Information:
 Attention: _____
 Company Name: _____
 Address: _____
 Pace Quote Reference: _____
 Pace Project Manager: Julie Bowser
 Pace Profile #: _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
 Site Location: _____ OR _____
 STATE: _____

Page: _____ of _____

ITEM #	Section D Required Client Information	Valid Matrix Codes CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Requested Analysis Filtered (Y/N)										Pace Project No./ Lab I.D.												
			COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME		DATE	TIME										
1	TRIP BLANK-20230516				G	GW	5/16/23	8:00	6	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ O ₃	Methanol	Other	GRO (NWTPH-Gx)	BTEX (SM260C/SM260C SIM)	VPH (NWTPH-VPH)	DRO (NWTPH-Dx) SG	Dissolved Metals (As, Mn) (6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NWTPH-EPH)	Nitrate (EPA 353.2)	Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)	Residual Chlorine (Y/N)	1001	
2	PEO-MW-42-202305				G	GW	5/15/23	11:30	15	X	X	X	X	X	X	X	X	X	2	2	2	1	1	1	1	1	1	1	1	1	292
3	PEO-MW-30-202305				G	GW	5/15/23	13:55	15	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	2	2	2	2	2	003
4	PEO-MW-32-202305				G	GW	5/15/23	14:00	15	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	2	2	2	2	2	004
5	PEO-MW-33-202305				G	GW	5/15/23	15:30	15	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	2	2	2	2	2	005
6	PEO-MW-08-202305				G	GW	5/15/23	15:45	15	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	2	2	2	2	2	006
7	PEO-MW-18-202305				G	GW	5/16/23	8:30	15	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	2	2	2	2	2	007
8	PEO-MW-31-202305				G	GW	5/16/23	8:30	15	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	2	2	2	2	2	008
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION: _____ DATE: 5/16/23 TIME: 16:00
 ACCEPTED BY / AFFILIATION: *BOWSER* DATE: 5/17/23 TIME: 08:50
 Greta Stahle / ERM

SAMPLE CONDITIONS: Received on Ice (Y/N) _____ Custody Sealed Cooler (Y/N) _____ Samples Intact (Y/N) _____

SAMPLER NAME AND SIGNATURE: _____
 PRINT Name of SAMPLER: Madison Rosen, Kevin Kuester
 SIGNATURE of SAMPLER: _____
 DATE Signed (MM/DD/YYYY): 5/16/23

Effective Date: 4/14/2023

Sample Condition Upon Receipt **Client Name:** ERM

Project #: **WO# : 10653430**
PM: JMT Due Date: 06/01/23
CLIENT: ERM-Oregon

Courier: FedEx UPS USPS Client
 Pace Speedee Commercial

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 (0436) T3 (0459) T4 (0402) T5 (0178) Type of Ice: Wet Blue Dry None
 T6 (0235) T7 (0042) T8 (0775) T9 (0727) 01339252/1710 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: -0.1 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: JD 5/17/23

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

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

Location (Check one):	Duluth	<input checked="" type="checkbox"/> Minneapolis	Virginia	COMMENTS
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other _____
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		6.
Sufficient Sample Volume?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Containers Intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		11. If no, write ID/Date/Time of container below: Missing containers for PED-MW-08-2023 <input type="checkbox"/> See Exceptions AG14, AG34, BP34, BP3N ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	12. Sample # 002-005, 007-008: 1/1 <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Exceptions (VOA) Coliform, TOC/DOC Oil and Grease, (DRO)/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 pH Paper Lot # Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip 208422
Headspace in Methyl Mercury Container?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	13.
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	
3 Trip Blanks Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>406093 (6)</u>

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: notified missing containers for MW-08
 Project Manager Review: Julie Barber Date: 5/17/23

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: JMT Line: 3



DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? Yes No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? Yes No

If anything is OVER 6.0° C, you **MUST** document containers in this section **HERE**



Tracking Number	Temperature
5923 7146 1086	2.4
5923 7146 1145	1.1
5923 7146 1097	1.2
5923 7146 1123	1.4
5923 7146 1134	1.1
5923 7146 1101	1.8

Out of Temp Sample ID	Container Type	# of Containers

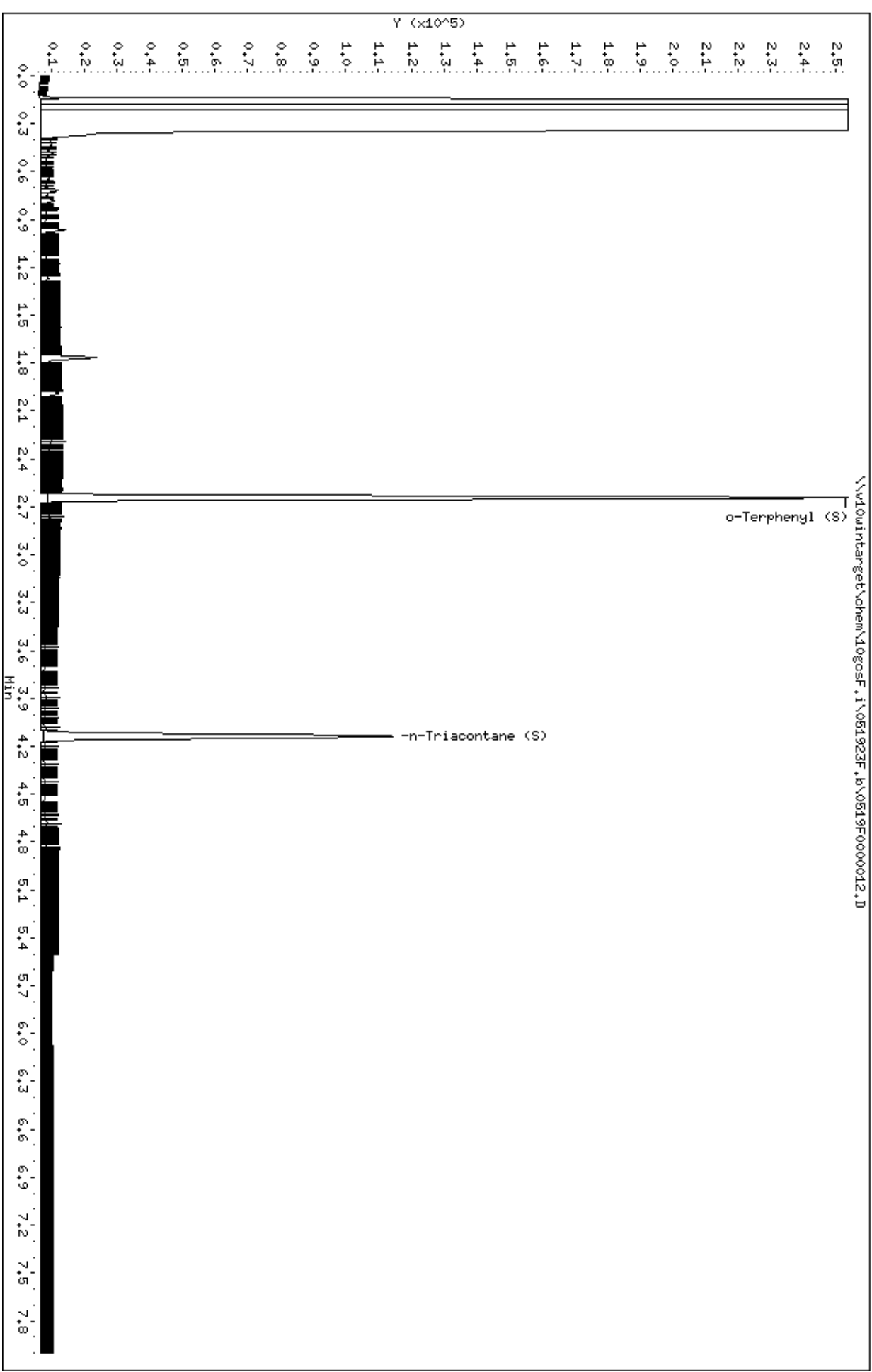
pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

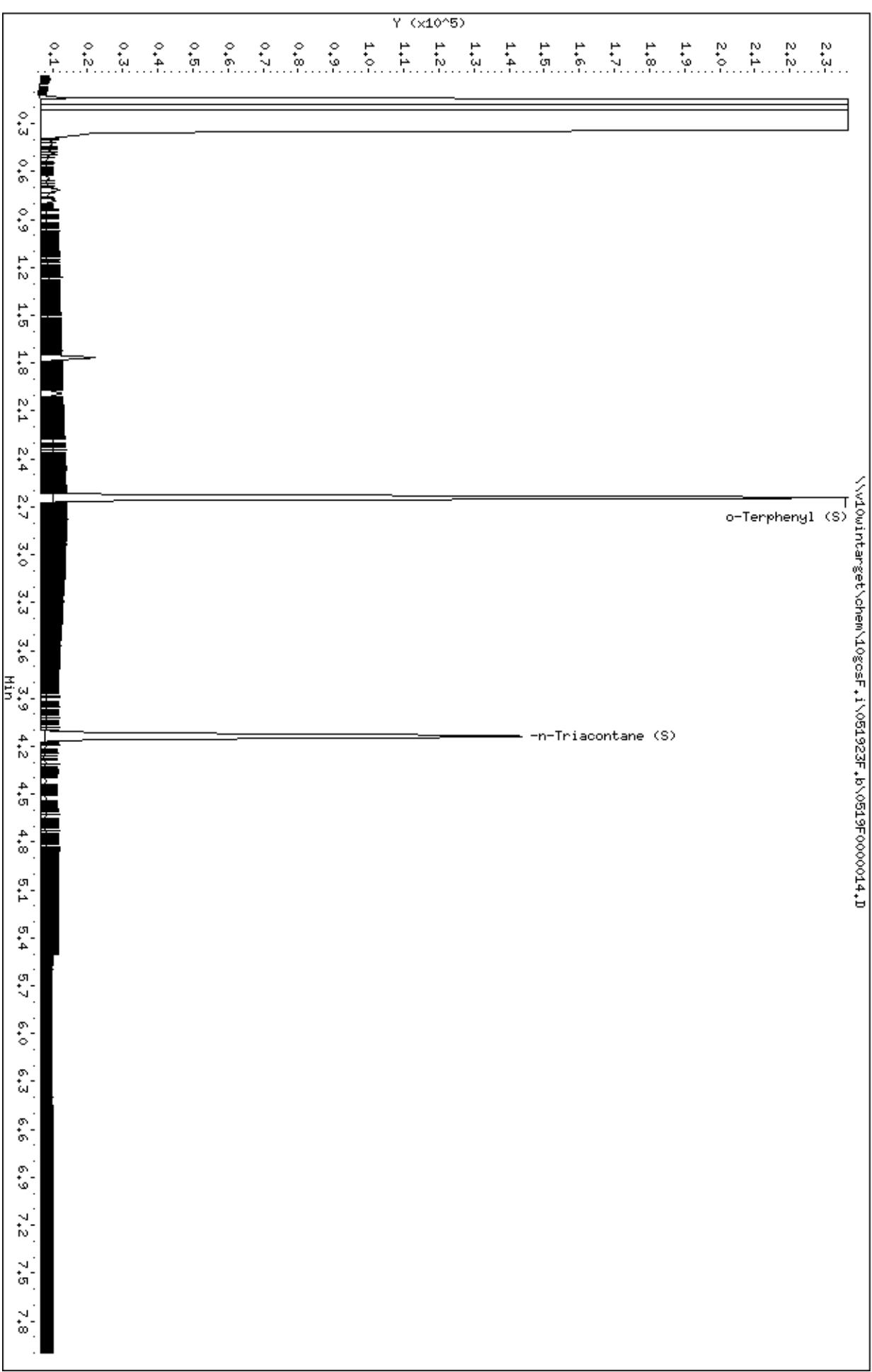
Data File: \\10win\target\chem\10gocsf.1\051923F.1\0519F0000012.D
Date: 19-MAY-2023 13:19
Client ID: PED-HM-42-202305
Sample Info: 10653430002
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



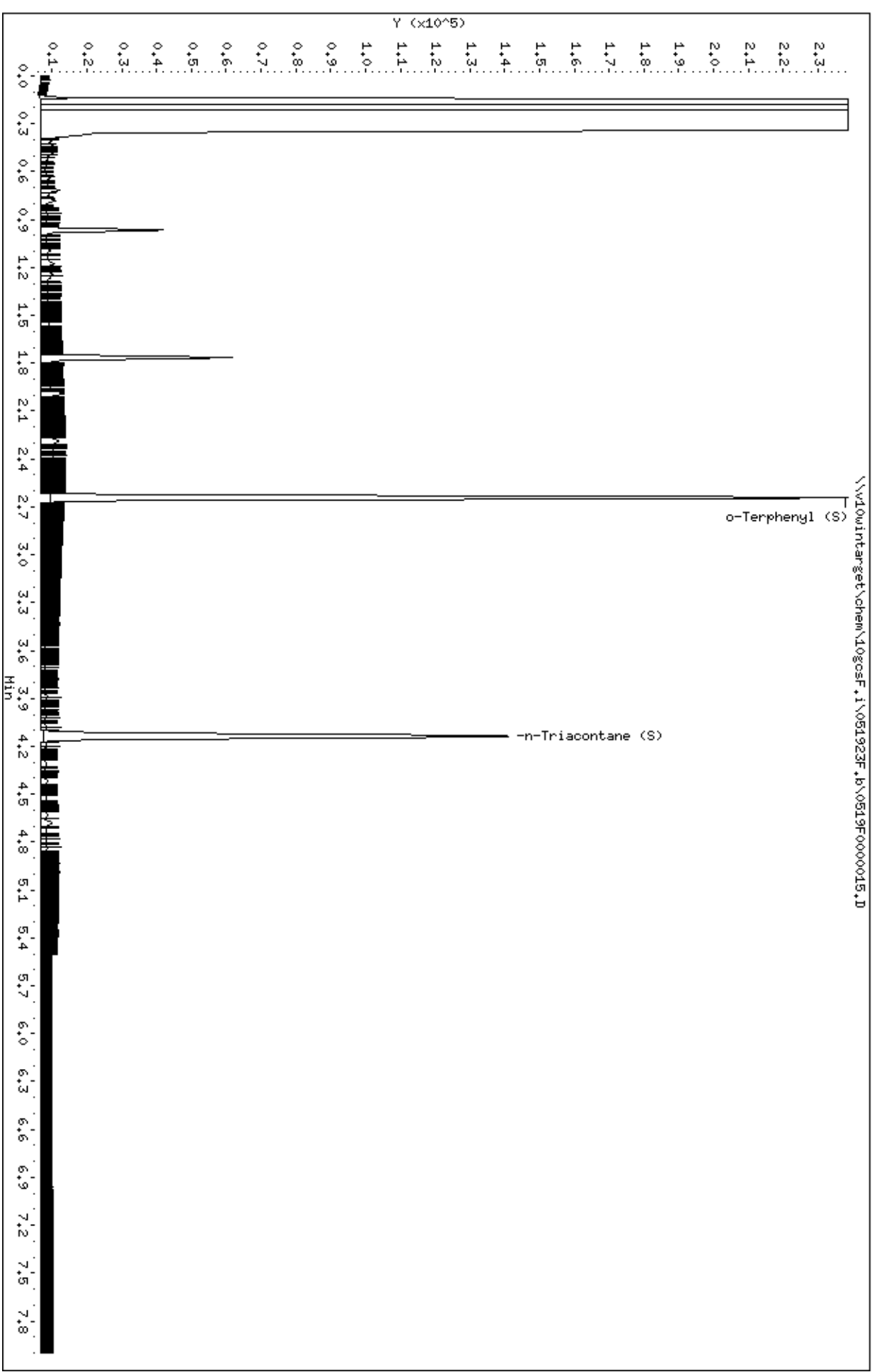
Data File: \\LOWINTARGET\chem\logosf.i\051923F.b\0519F0000014.D
Date: 19-MAY-2023 13:41
Client ID: PED-HM-30-202305
Sample Info: 10653430003
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.i
Operator: EB3
Column diameter: 0.32



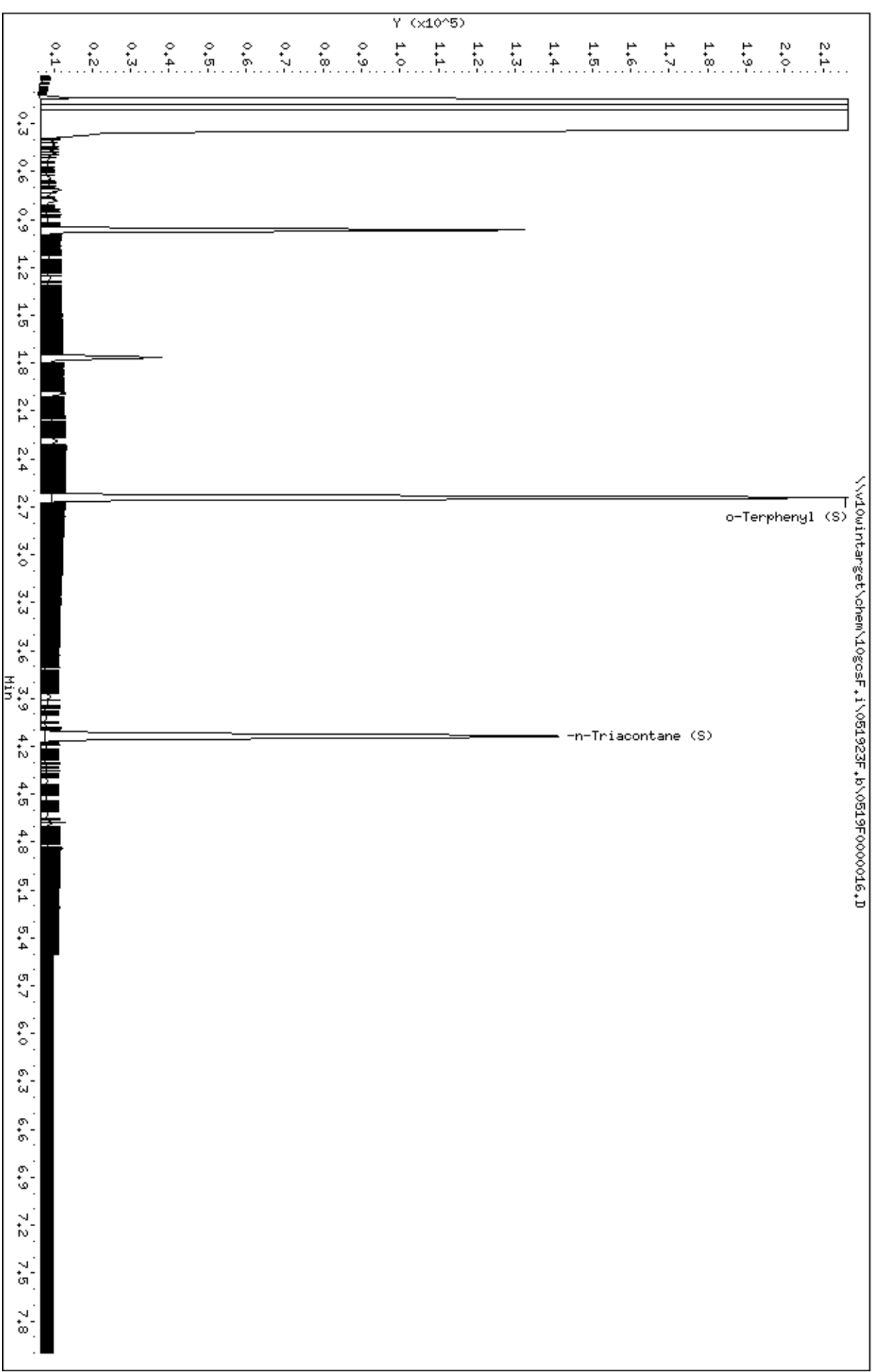
Data File: \\dowintarget\chem\logosf.1\051923F.1\0519F0000015.D
Date: 19-MAY-2023 13:52
Client ID: PE0-HM-32-202305
Sample Info: 10653430004
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10goscF.1
Operator: EB3
Column diameter: 0.32



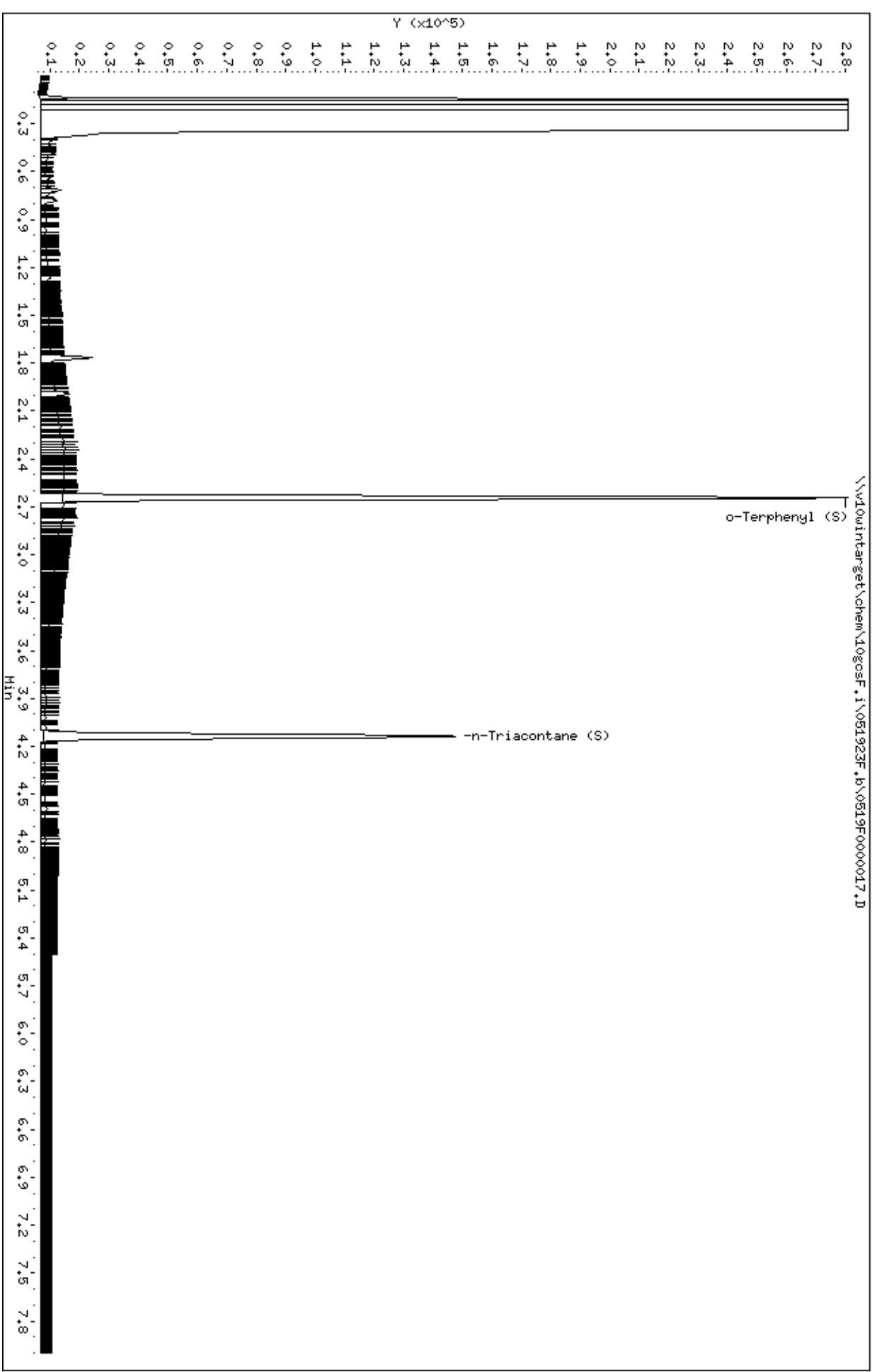
Data File: \\10win\target\chem\10goscF.1\051923F.1\0519F0000016.D
Date: 19-MAY-2023 14:03
Client ID: PE0-HM-33-202305
Sample Info: 10653430005
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10goscF.1
Operator: EB3
Column diameter: 0.32



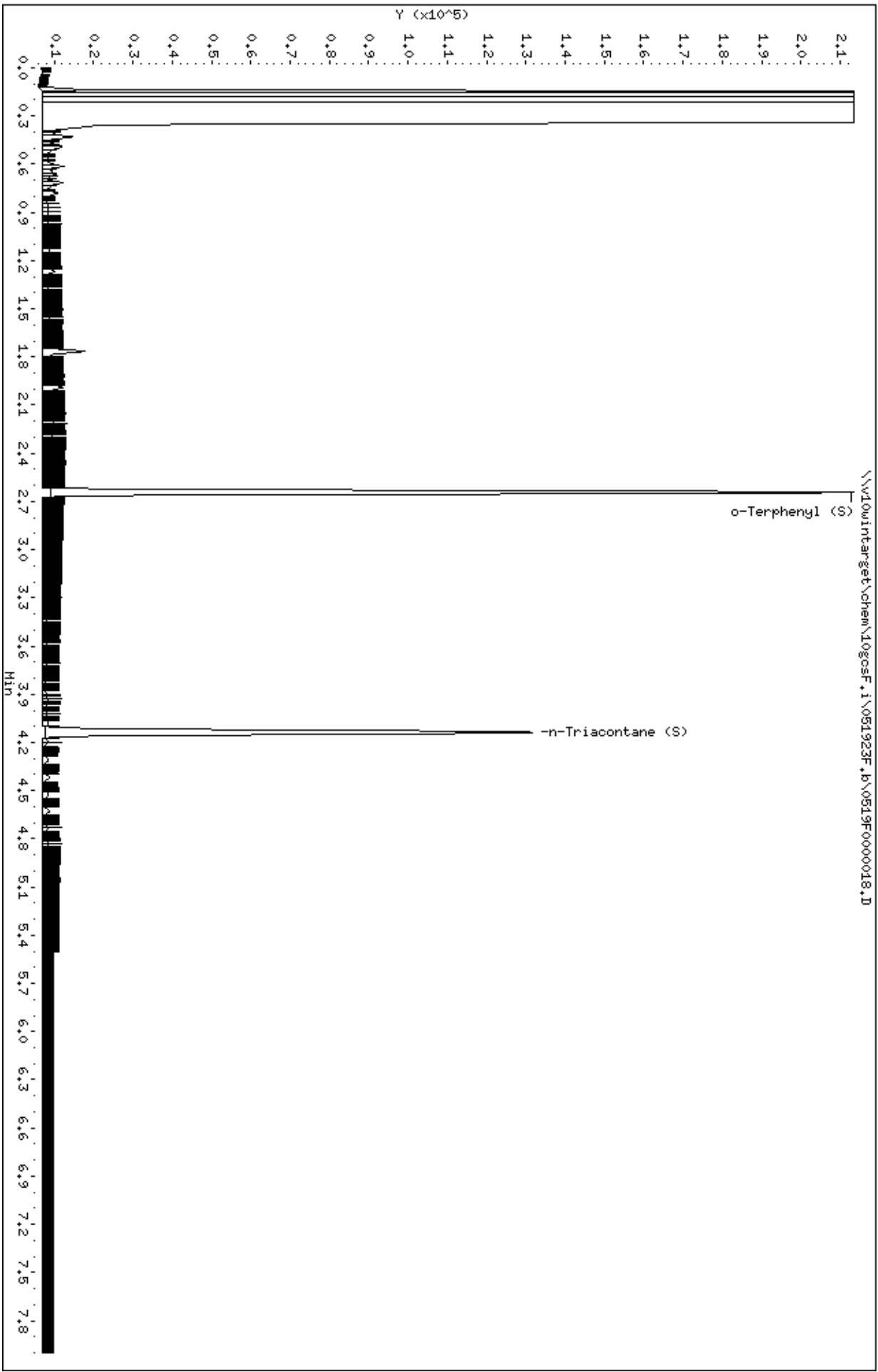
Data File: \\wlowintarget\chem\logosf.1\051923F.1\0519F0000017.D
Date: 19-MAY-2023 14:14
Client ID: PED-HM-18-202305
Sample Info: 10653430007
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



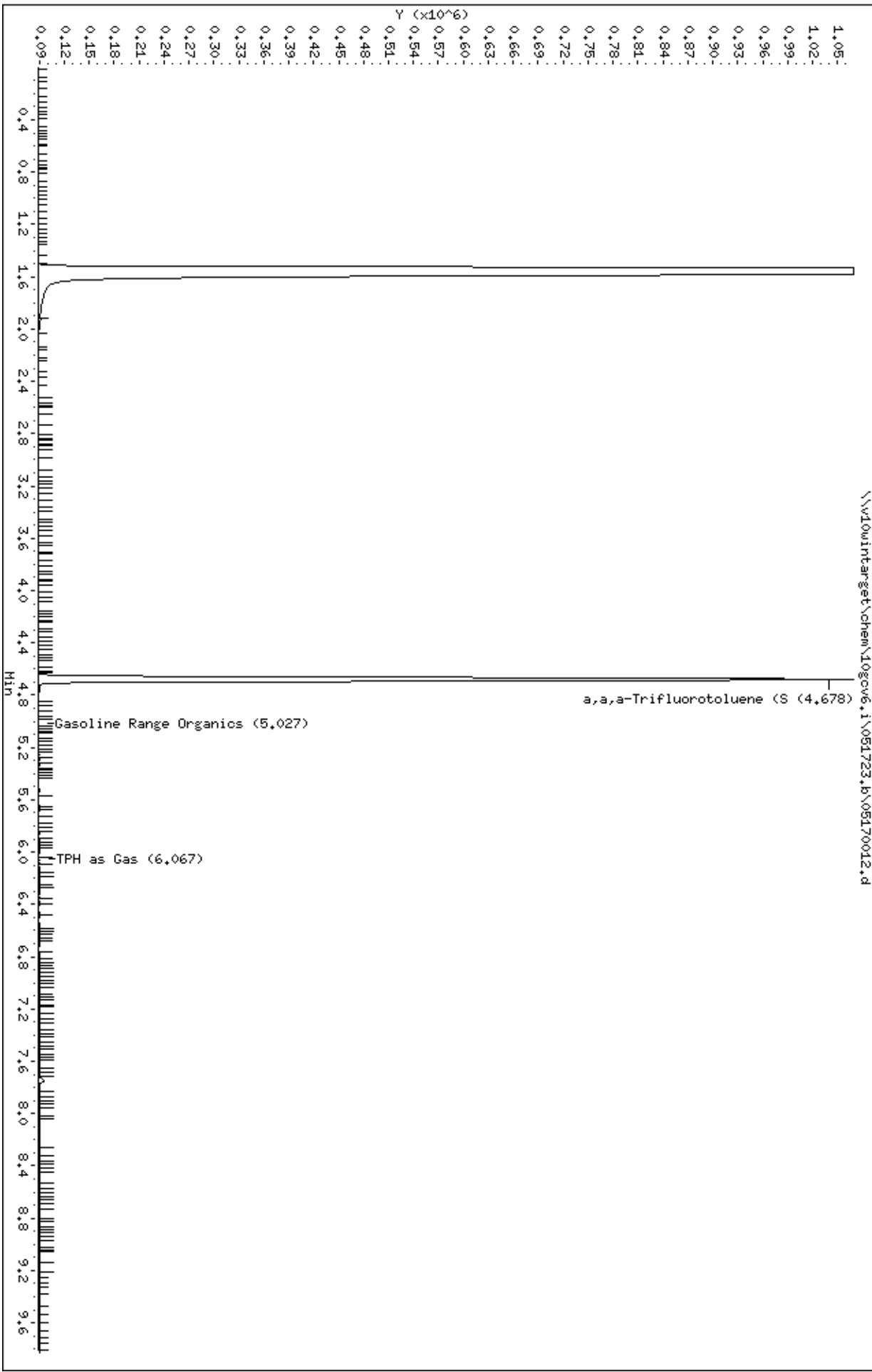
Data File: \\Lowintarget\chem\logosf.1\051923F.1\0519F0000018.D
Date: 19-MAY-2023 14:25
Client ID: PED-HM-31-202305
Sample Info: 10653430008
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



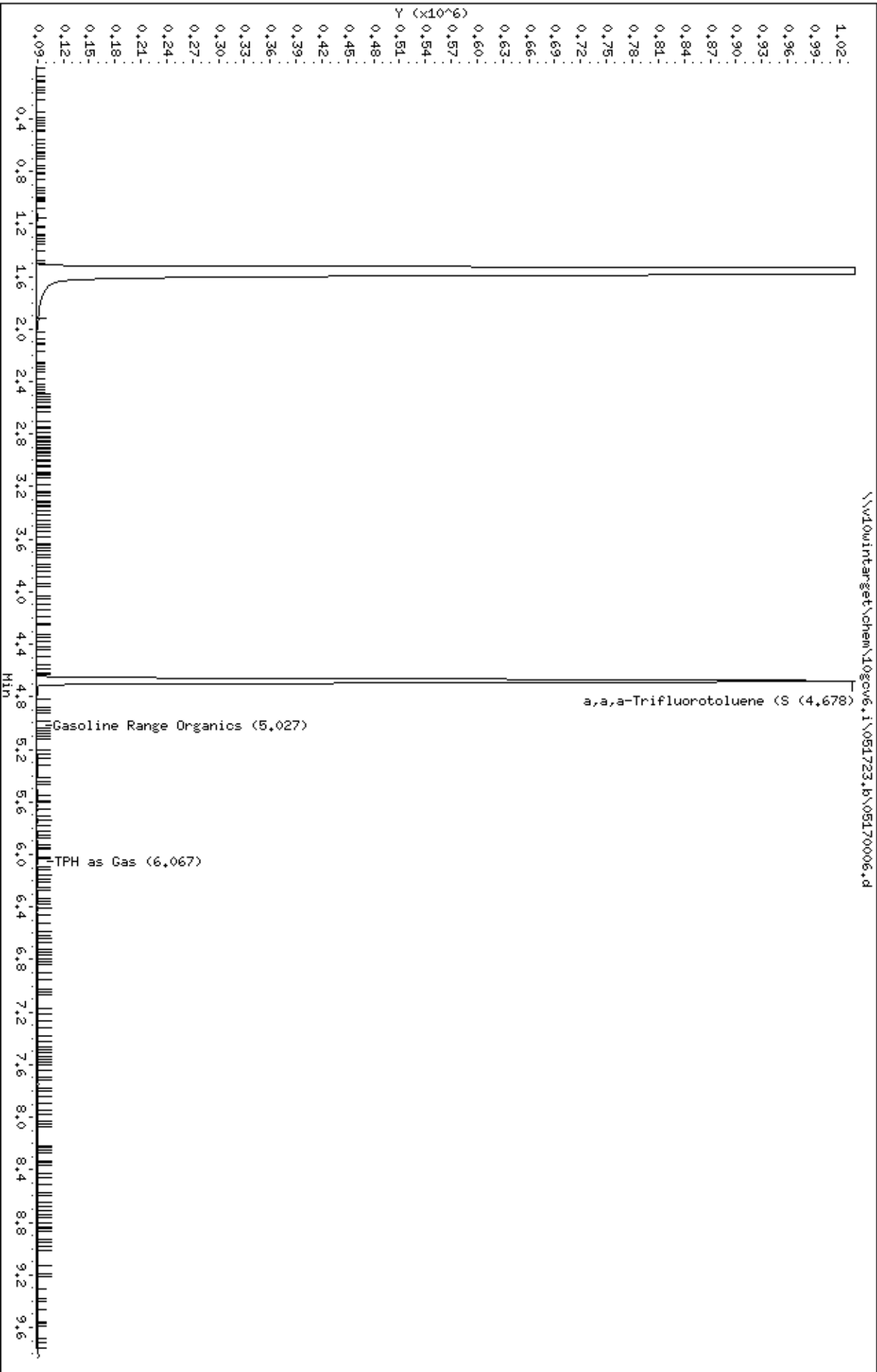
Data File: \\vl0wintarget\chem\logcv6.i\051723.b\05170012.d
 Date: 17-MAY-2023 17:22
 Client ID: TRIP BLANK-20230516
 Sample Info: 10653430001,
 Purge Volume: 5.0
 Column phase: DB-624US1772861H

Instrument: 10gcw6.i
 Operator: TH2
 Column diameter: 0.18



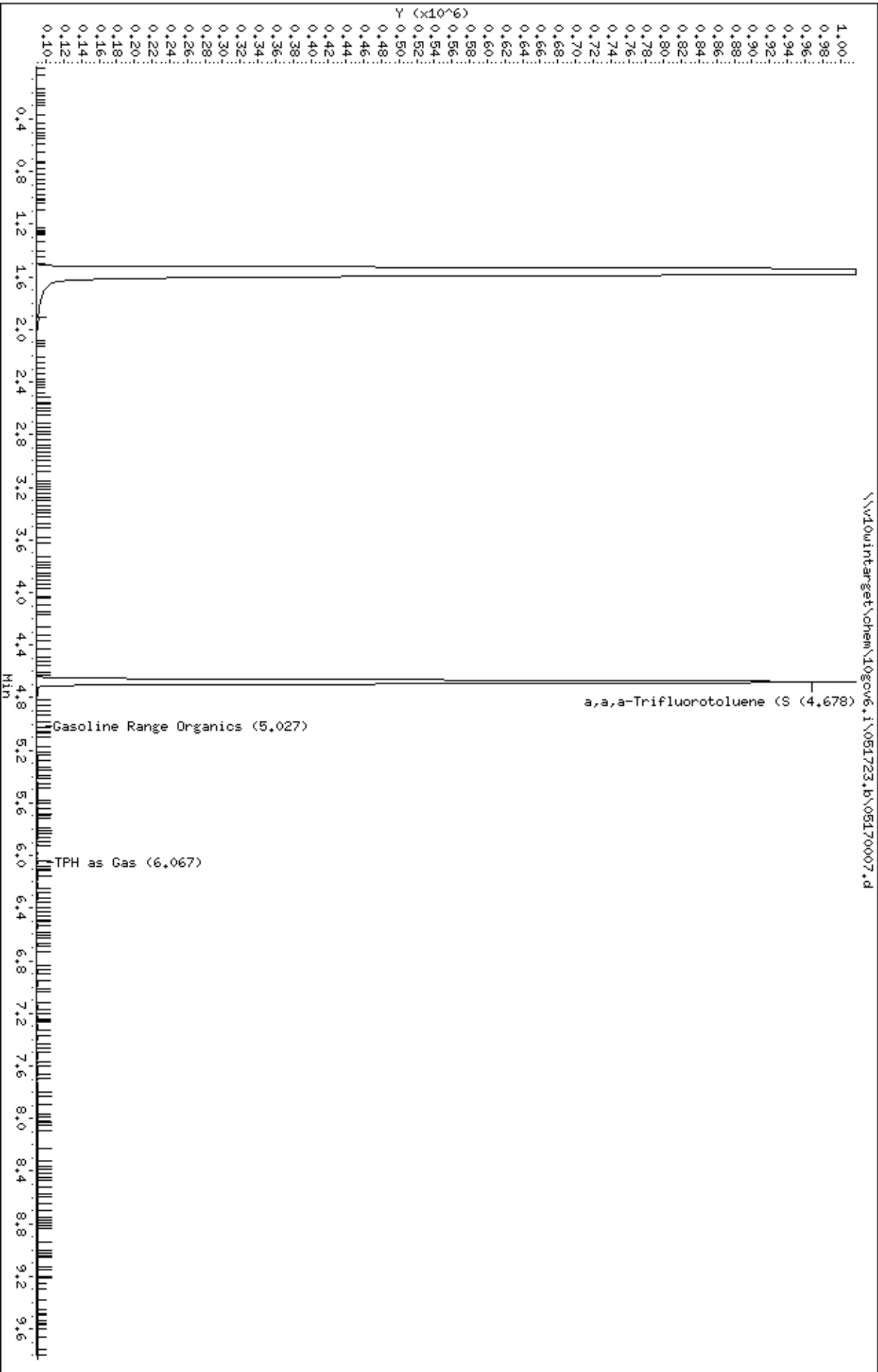
Data File: \\vl0wintarget\chem\logcv6.i\051723.b\05170006.d
Date: 17-MAY-2023 15:44
Client ID: PED-HM-42-202305
Sample Info: 10653430002,
Purge Volume: 5.0
Column phase: DB-624US1772861H

Instrument: logcv6.i
Operator: TH2
Column diameter: 0.18



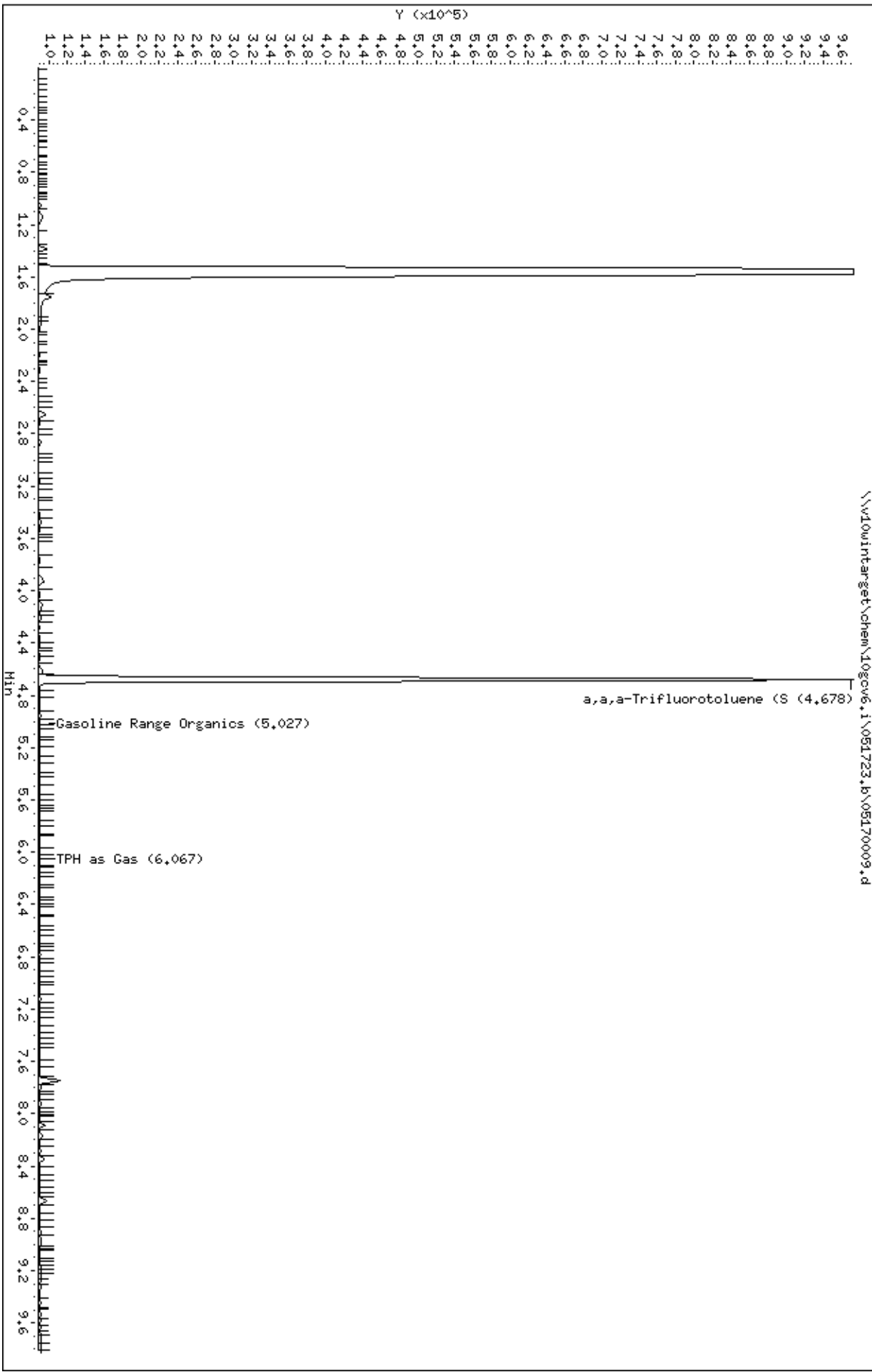
Data File: \\vl0wintarget\chem\logcv6.i\051723.b\05170007.d
Date: 17-MAY-2023 16:01
Client ID: PED-HM-30-202305
Sample Info: 10653430003,
Purge Volume: 5.0
Column phase: DB-624US1772861H

Instrument: 10gcw6.i
Operator: TH2
Column diameter: 0.18



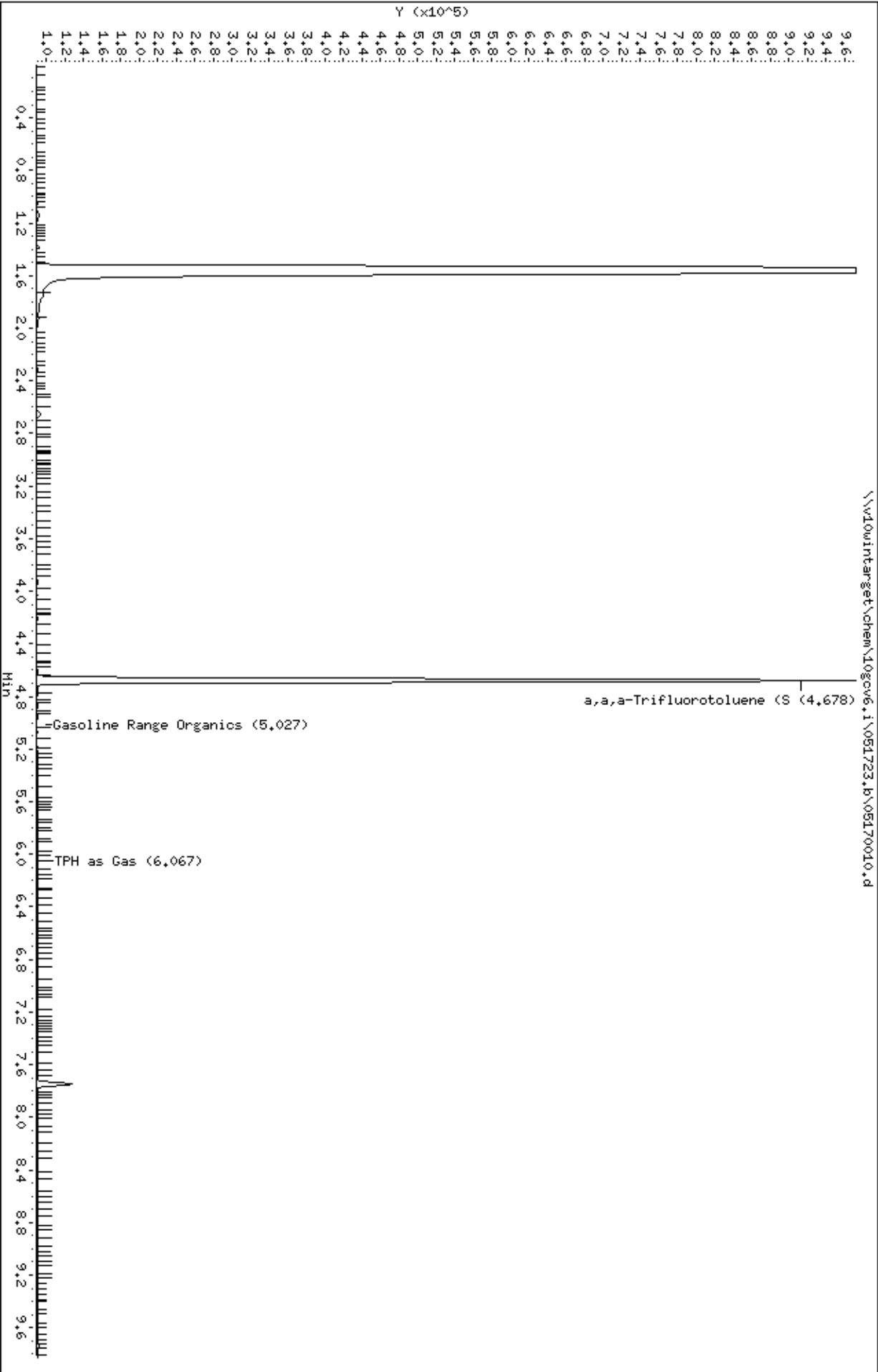
Data File: \\Vl0wIntarget\chem\logcv6.i\051723.b\05170009.d
Date: 17-MAY-2023 16:33
Client ID: PE0-HM-32-202305
Sample Info: 10653430004,
Purge Volume: 5.0
Column phase: DB-624USL772861H

Instrument: 10gcw6.i
Operator: TH2
Column diameter: 0.18



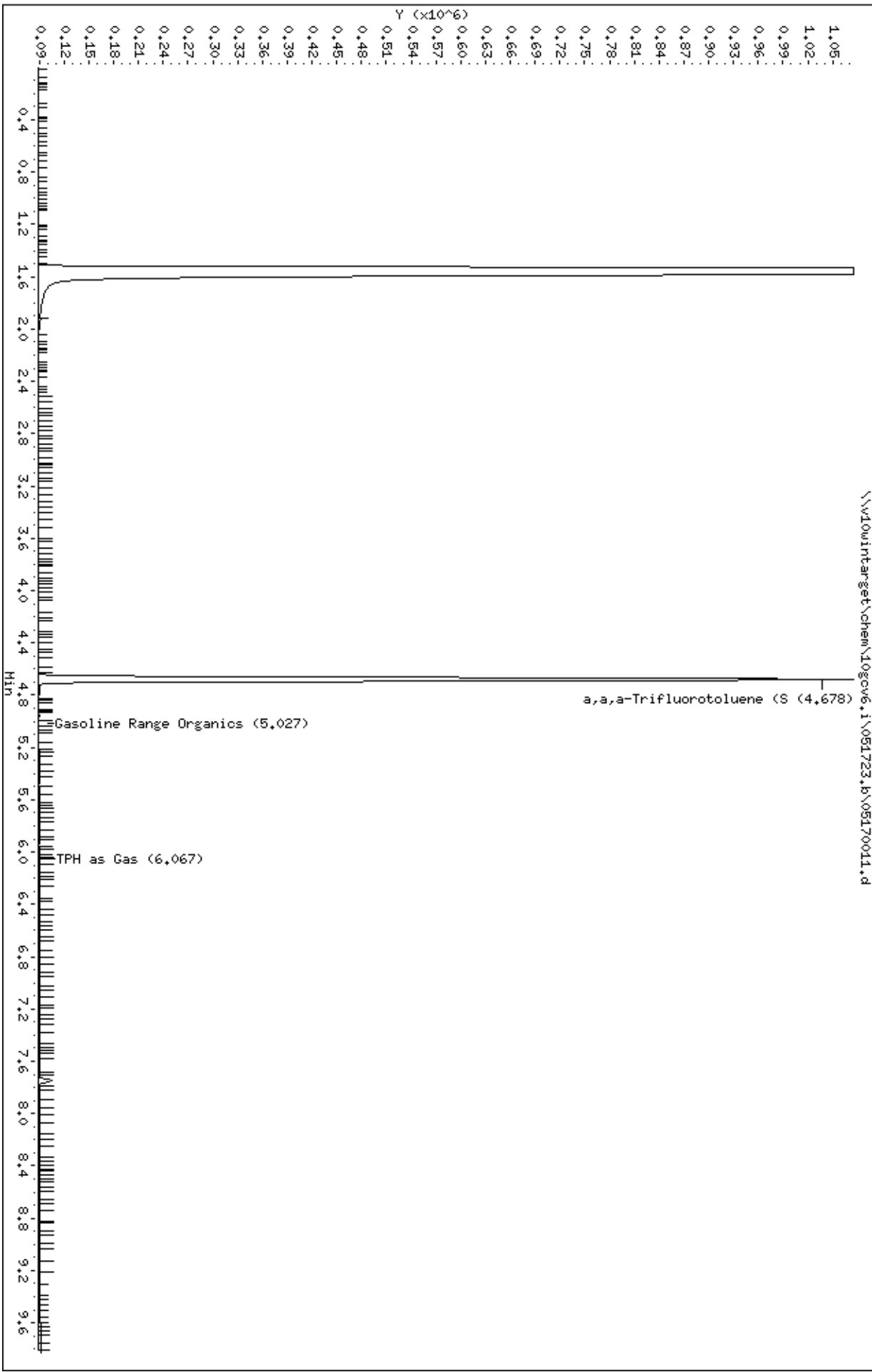
Data File: \\Vl0wIntarget\chem\logcv6.i\051723.b\05170010.d
Date: 17-MAY-2023 16:49
Client ID: PE0-HM-33-202305
Sample Info: 10653430005,
Purge Volume: 5.0
Column phase: DB-624USL772861H

Instrument: 10gcw6.i
Operator: TH2
Column diameter: 0.18



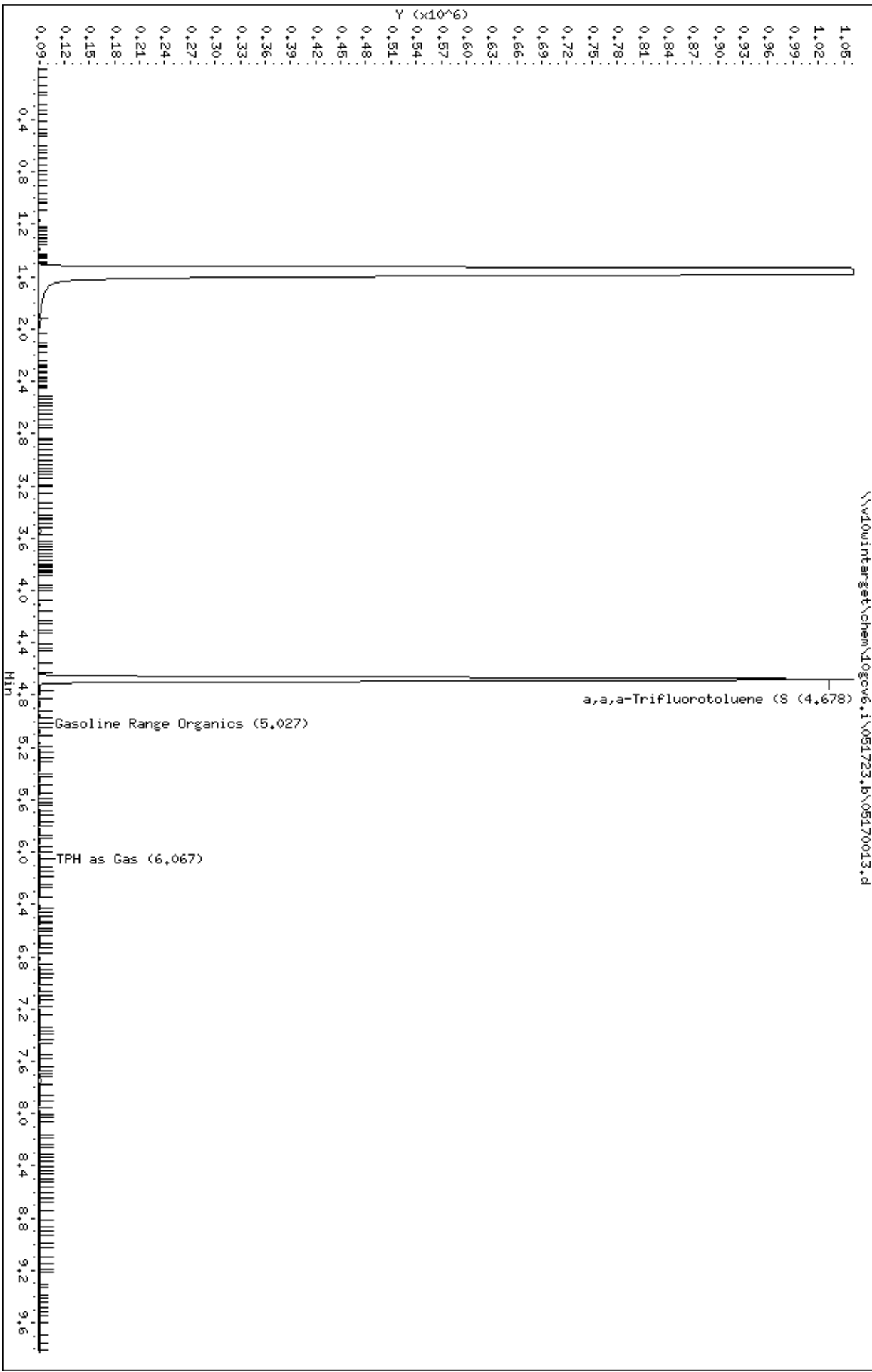
Data File: \\vl0win\target\chem\logcv6.i\051723.b\05170011.d
Date: 17-MAY-2023 17:05
Client ID: PED-MH-08-202305
Sample Info: 10653430006,
Purge Volume: 5.0
Column phase: DB-624US1772861H

Instrument: logcv6.i
Operator: TH2
Column diameter: 0.18



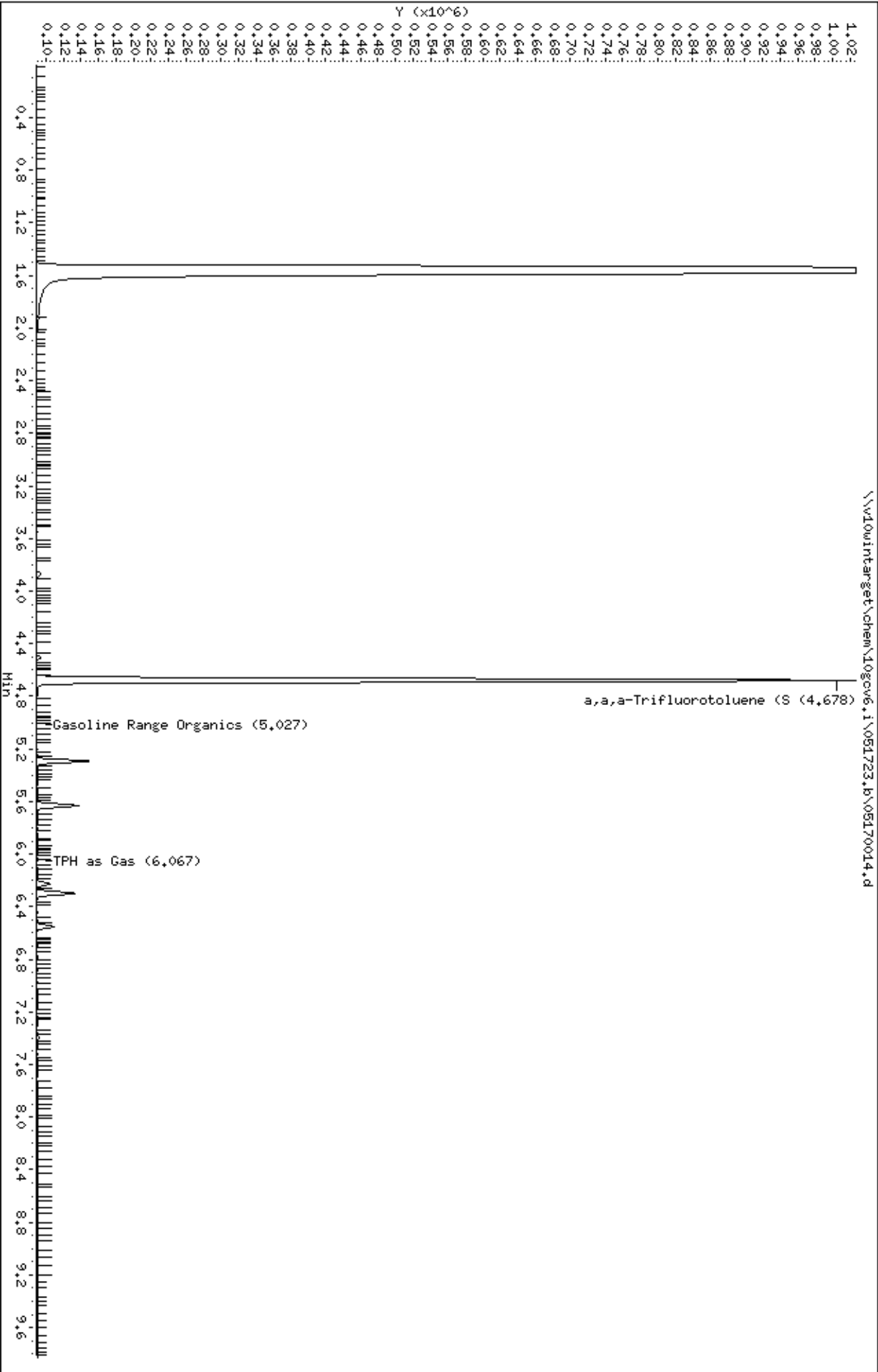
Data File: \\Vl0wintarget\chem\logcv6.1\051723.b\05170013.d
 Date: 17-MAY-2023 17:38
 Client ID: PED-HM-18-202305
 Sample Info: 10653430007,
 Purge Volume: 5.0
 Column phase: DB-624US1772861H

Instrument: 10gcw6.1
 Operator: TH2
 Column diameter: 0.18



Data File: \\vl0win\target\chem\logcv6.i\051723.b\05170014.d
 Date: 17-MAY-2023 17:54
 Client ID: PED-HM-31-202305
 Sample Info: 10653430008,
 Purge Volume: 5.0
 Column phase: DB-624US1772861H

Instrument: 10gcw6.i
 Operator: TH2
 Column diameter: 0.18





May 24, 2023

Ms. Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414

Dear Ms. Bowser,

On May 18th, 8 samples were received by our laboratory and assigned our laboratory project number EV23050140. The project was identified as your Workorder 10653430 / Workorder Name 0680180.003. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-01
CLIENT SAMPLE ID	TRIP BLANK-20230516	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/16/2023 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.1		UG/L	1	1.1	0.38	05/23/2023	DLC

SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	95.8%		10.0	9.58	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-02
CLIENT SAMPLE ID	PEO-MW-42-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/15/2023 11:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.8		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	107%		10.0	10.7	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-03
CLIENT SAMPLE ID	PEO-MW-30-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/15/2023 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.3		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	111%		10.0	11.1	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-04
CLIENT SAMPLE ID	PEO-MW-32-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/15/2023 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	17		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	113%		10.0	11.3	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-05
CLIENT SAMPLE ID	PEO-MW-33-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/15/2023 3:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	17		UG/L	1	1.1	0.38		05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	111%		10.0	11.1	60	140		05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-06
CLIENT SAMPLE ID	PEO-MW-08-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/15/2023 3:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	11		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	109%		10.0	10.9	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-07
CLIENT SAMPLE ID	PEO-MW-18-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/16/2023 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	4.6		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	107%		10.0	10.7	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050140-08
CLIENT SAMPLE ID	PEO-MW-31-202305	DATE RECEIVED:	05/18/2023
		COLLECTION DATE:	5/16/2023 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.8		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	109%		10.0	10.9	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
		ALS SDG#:	EV23050140
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Julie Bowser		
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003		

LABORATORY BLANK RESULTS

MBLK-R436154 - Batch R436154 - Water by NWVPH Prepared 05/23/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	1.4		UG/L	1.1	0.38	1.1		05/23/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	98.1		10.0	9.81	60	140	05/23/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050140
CLIENT PROJECT:	Workorder 10653430 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R436154 - Water by NWVPH Prepared 05/23/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
							MIN	MAX	RPD		
>C10-C12 Aliphatics - BS	NWVPH	107			20.0	21.4	70	130		05/23/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	103	3		20.0	20.7	70	130	25	05/23/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
							MIN	MAX	RPD		
TFT - Aliphatic - BS	NWVPH	79.2			10.0	7.92	60	140		05/23/2023	DLC
TFT - Aliphatic - BSD	NWVPH	84.1			10.0	8.41	60	140		05/23/2023	DLC

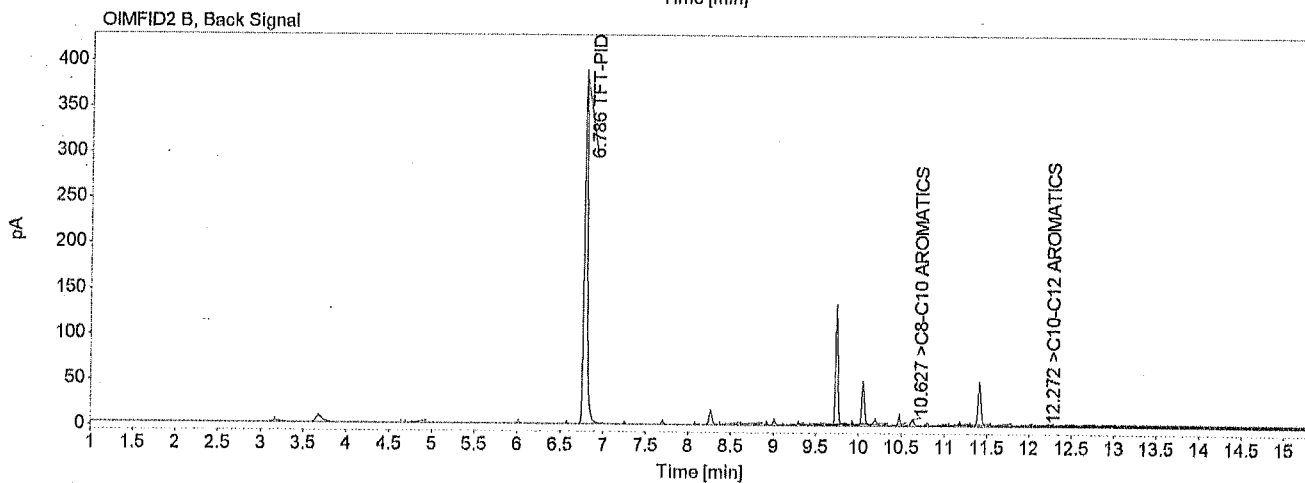
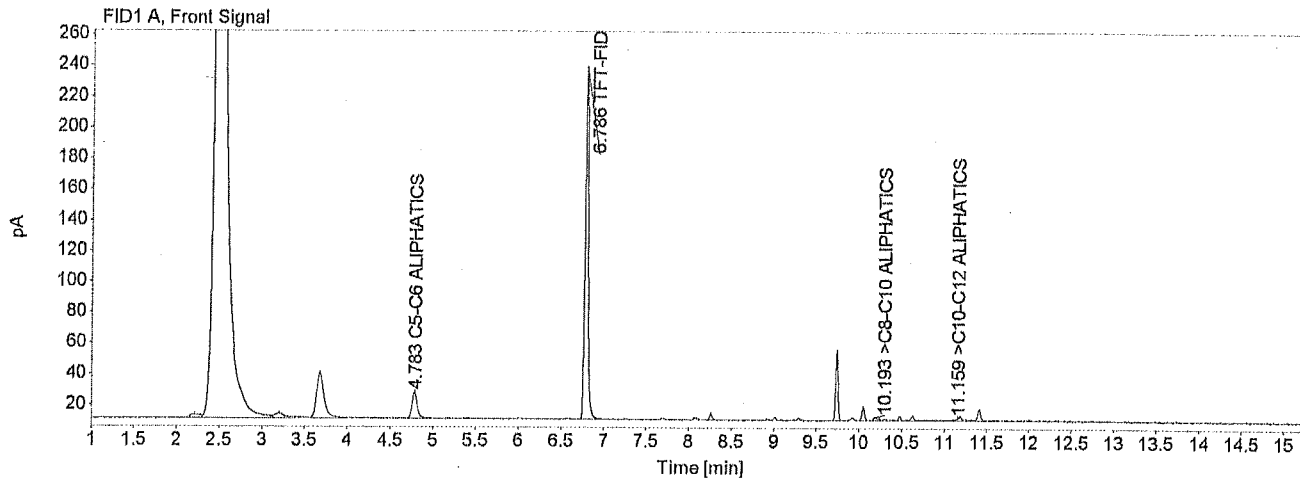
APPROVED BY



Rob Greer
Laboratory Director

Data file: D:\DATA\1192305232\1192305232\001F0601.D
 Sample name: MB-052323W VPH
 Dilution: 0.000
 Injection date: 5/23/2023 8:59:10 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	74.992	4.783	0.831
TFT-FID	593.095	6.786	9.813 <i>48%</i>
>C8-C10 ALIPHATICS	8.165	10.193	0.095
>C10-C12 ALIPHATICS	68.359	11.159	1.426

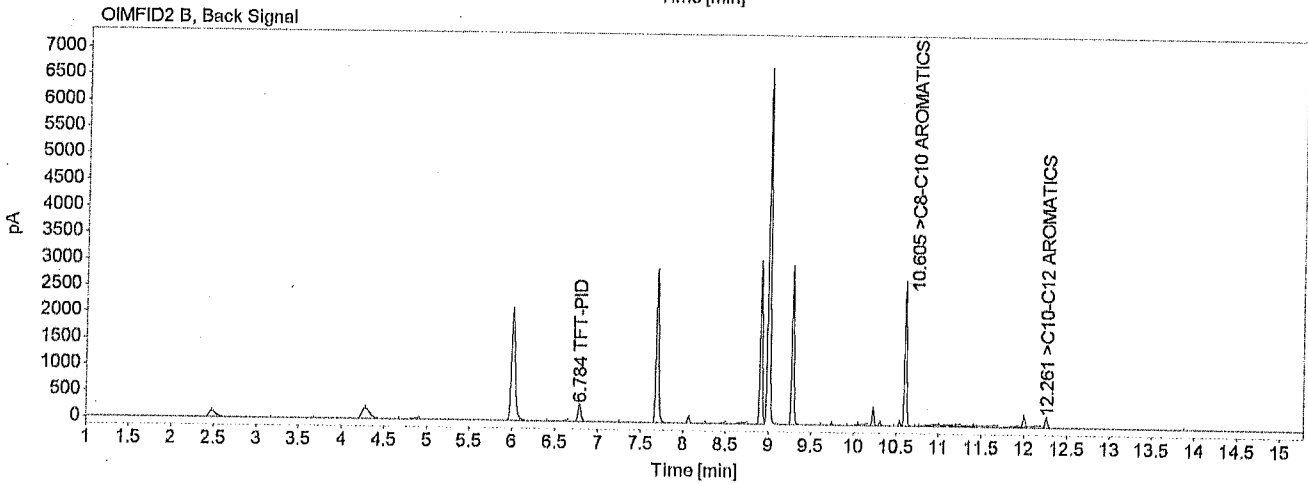
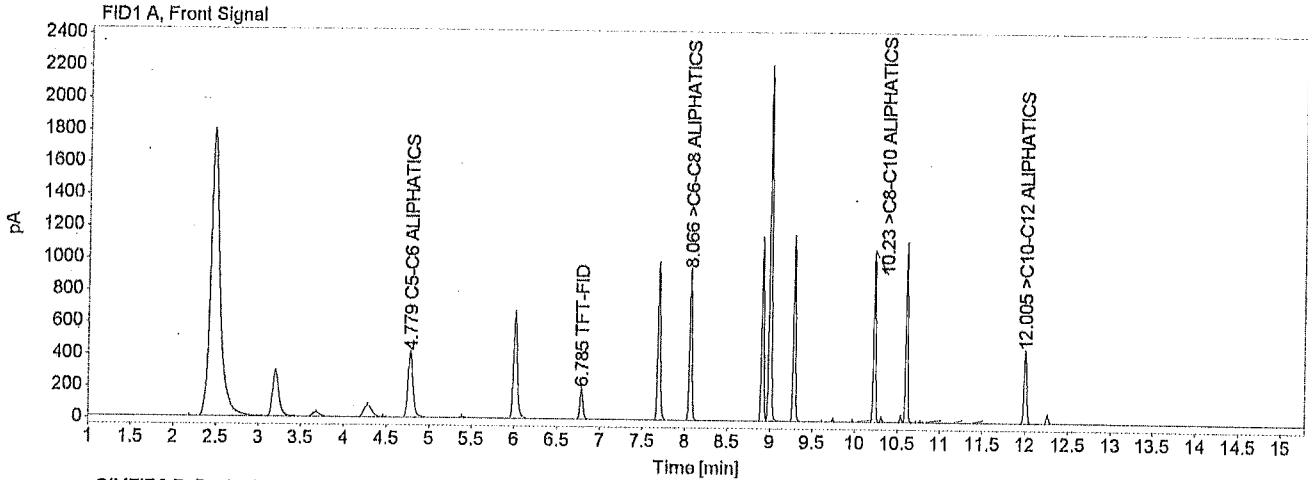
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1026.321	6.786	9.547
>C8-C10 AROMATICS	27.275	10.627	0.111
>C10-C12 AROMATICS	10.527	12.272	0.000
>C12-C13 AROMATICS	6.258	13.132	4.226

ALK

>C₁₀ - C₁₂ < 50 µg/L

Data file: D:\DATA\1192305232\1192305232\001F0701.D
 Sample name: BS-052323W VPH
 Dilution: 0.000
 Injection date: 5/23/2023 9:22:53 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

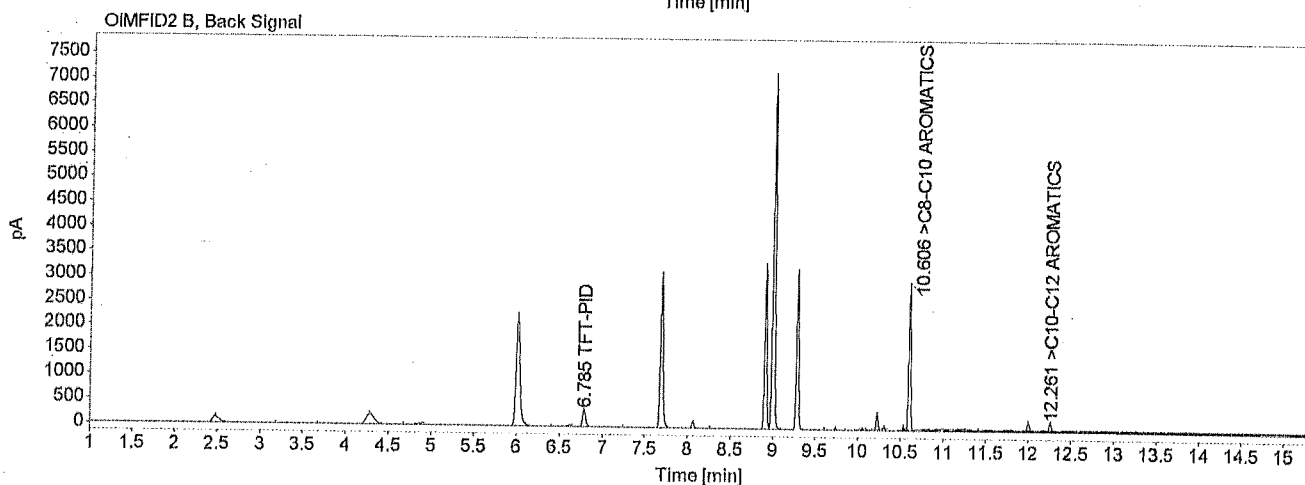
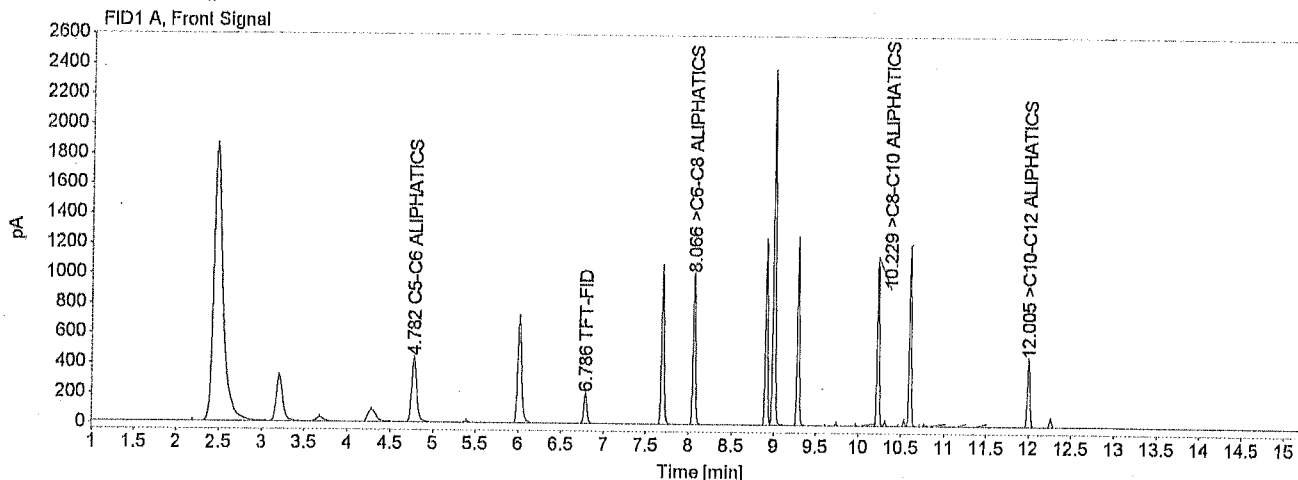
Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1682.685	4.779	18.637
TFT-FID	478.765	6.785	7.921 <i>79%</i>
>C6-C8 ALIPHATICS	1853.194	8.066	19.932
>C8-C10 ALIPHATICS	1806.321	10.230	20.930
>C10-C12 ALIPHATICS	961.940	12.005	21.420 <i>107%</i>
Name	Peak Area	RT [min]	Amount [ug/L]
>C12-C13 AROMATICS			0.000
TFT-PID	839.408	6.784	7.808
>C8-C10 AROMATICS	4512.856	10.605	18.408
>C10-C12 AROMATICS	388.794	12.261	12.109

Data file: D:\DATA\1192305232\1192305232\001F0801.D
 Sample name: BSD-052323W VPH
 Dilution: 0.000
 Injection date: 5/23/2023 9:46:37 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119

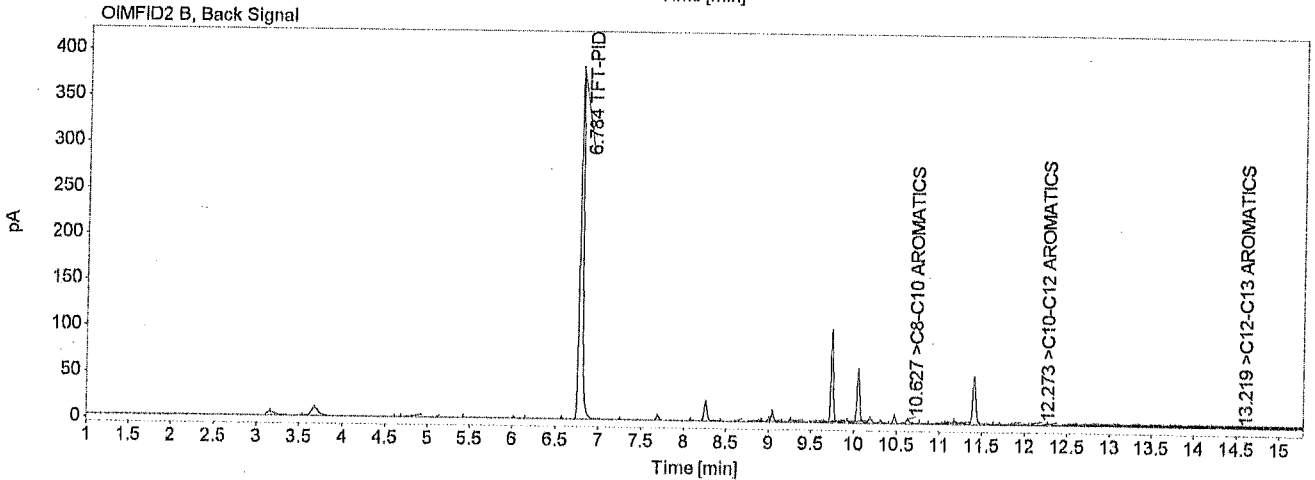
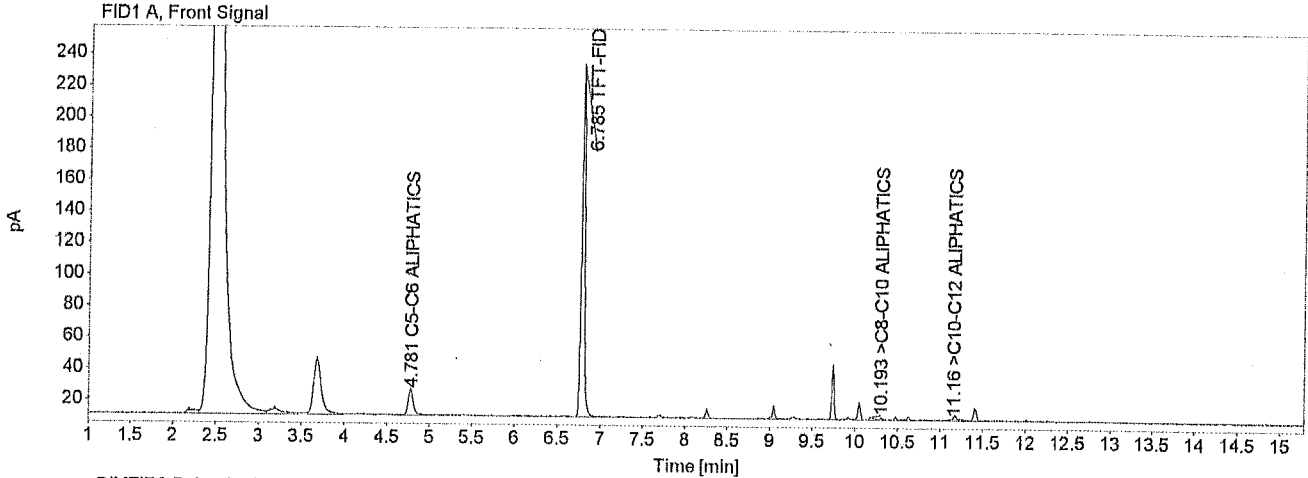


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1798.873	4.782	19.924
TFT-FID	508.304	6.786	8.410 <i>84%</i>
>C6-C8 ALIPHATICS	1984.047	8.066	21.340
>C8-C10 ALIPHATICS	1912.228	10.229	22.158
>C10-C12 ALIPHATICS	934.438	12.005	20.696 <i>103%</i>

Name	Peak Area	RT [min]	Amount [ug/L]
>C12-C13 AROMATICS			0.000
TFT-PID	889.938	6.785	8.278
>C8-C10 AROMATICS	4864.882	10.606	19.844
>C10-C12 AROMATICS	419.761	12.261	13.384

Data file: D:\DATA\1192305232\1192305232\001F1001.D
 Sample name: EV23050140-01 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 10:34:02 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	71.882	4.781	0.796
TFT-FID	578.692	6.785	9.575 <i>96%</i>
>C8-C10 ALIPHATICS	5.483	10.193	0.064
>C10-C12 ALIPHATICS	51.142	11.160	1.093

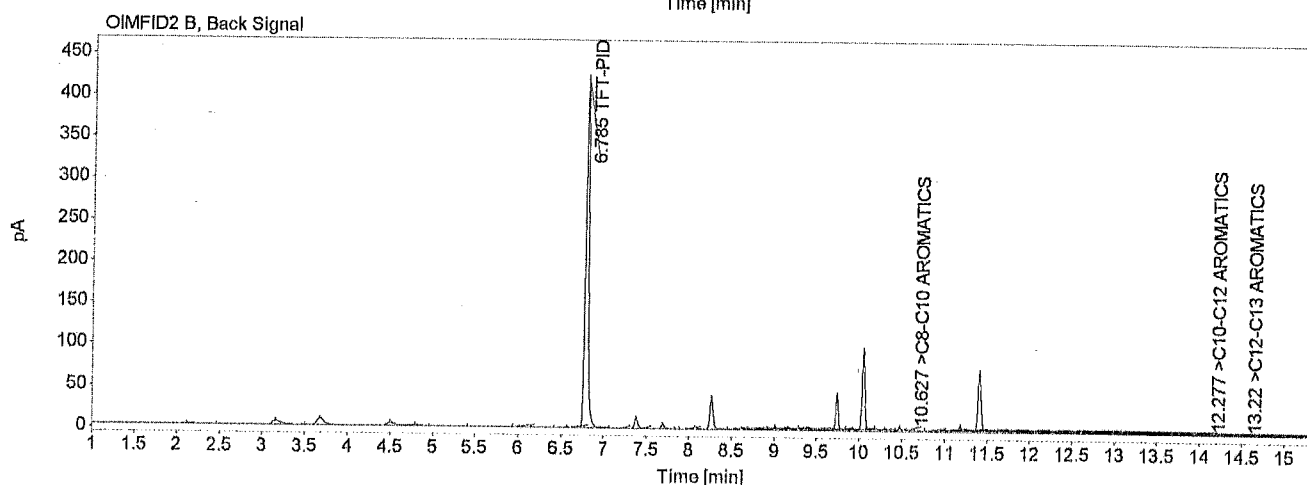
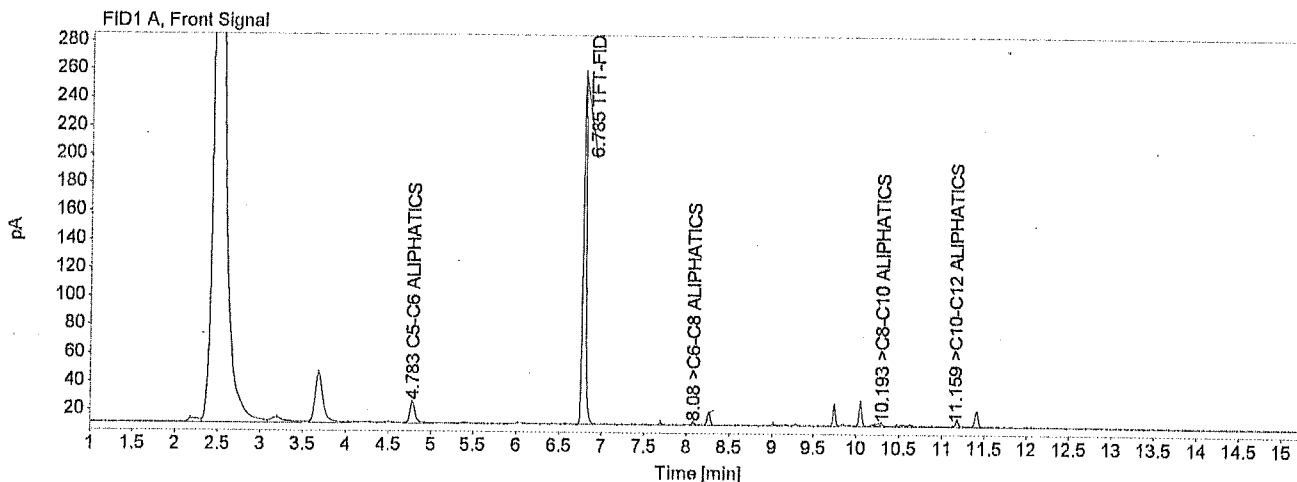
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1006.225	6.784	9.360
>C8-C10 AROMATICS	25.320	10.627	0.103
>C10-C12 AROMATICS	14.138	12.273	0.000
>C12-C13 AROMATICS	10.435	13.219	7.047

AUK
>C10 - C12 < 50 ug/l

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F1101.D
 Sample name: EV23050140-02 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 10:57:45 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



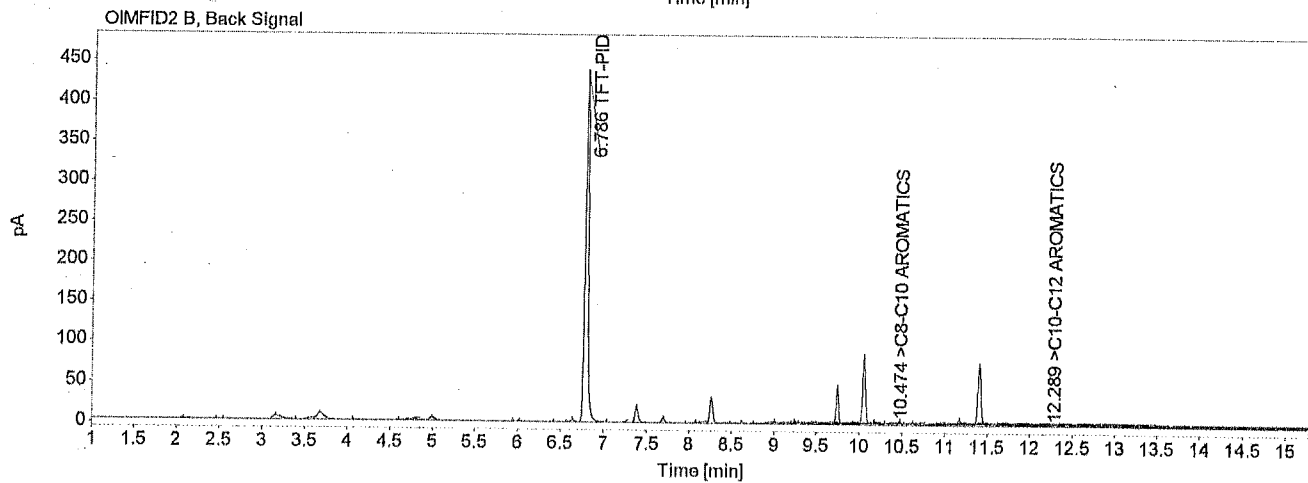
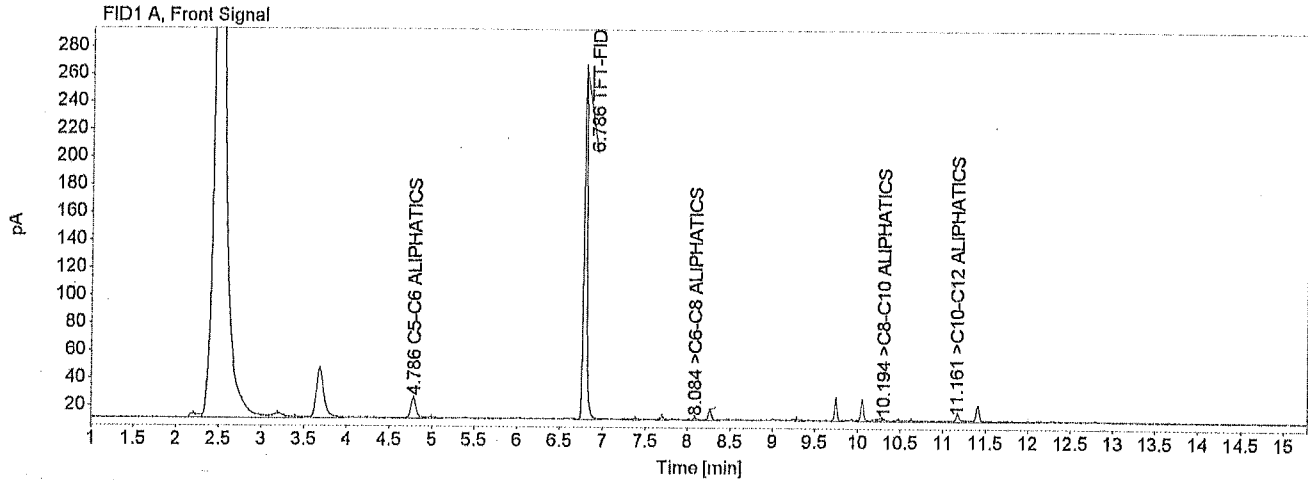
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	66.581	4.783	0.737
TFT-FID	645.232	6.785	10.676 <i>107%</i>
>C6-C8 ALIPHATICS	5.688	8.080	0.061
>C8-C10 ALIPHATICS	5.652	10.193	0.065
>C10-C12 ALIPHATICS	87.258	11.159	1.792
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1118.013	6.785	10.400
>C8-C10 AROMATICS	18.108	10.627	0.074
>C10-C12 AROMATICS	19.796	12.277	0.000
>C12-C13 AROMATICS	7.668	13.220	5.178

ALK
> C10 - C12 < 50 ug/l

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F1201.D
 Sample name: EV23050140-03 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 11:21:30 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	68.244	4.786	0.756
TFT-FID	672.142	6.786	11.121 ml
>C6-C8 ALIPHATICS	8.819	8.084	0.095
>C8-C10 ALIPHATICS	6.029	10.194	0.070
>C10-C12 ALIPHATICS	111.410	11.161	2.263

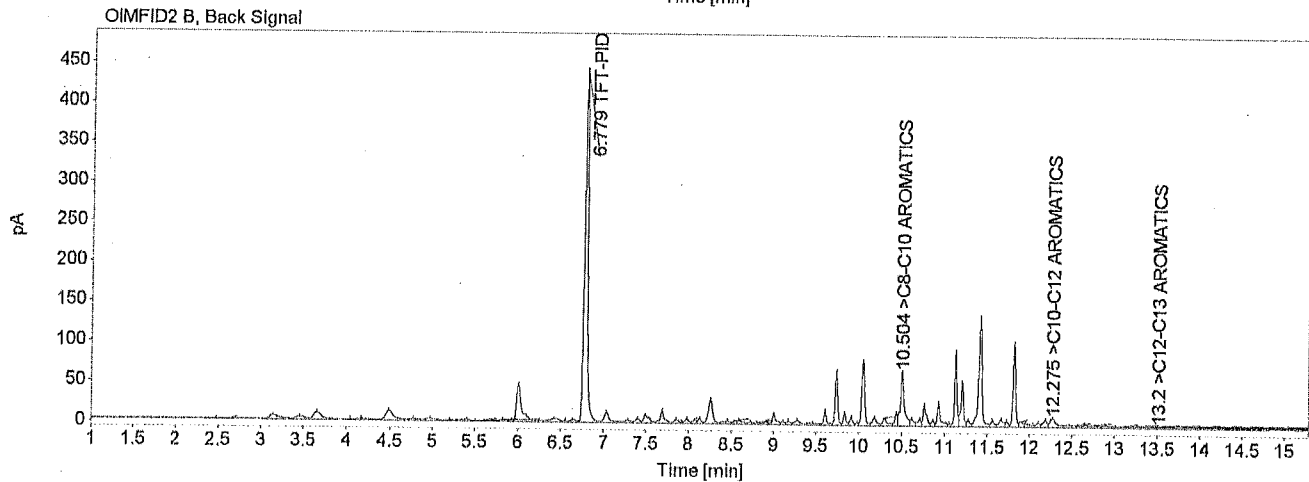
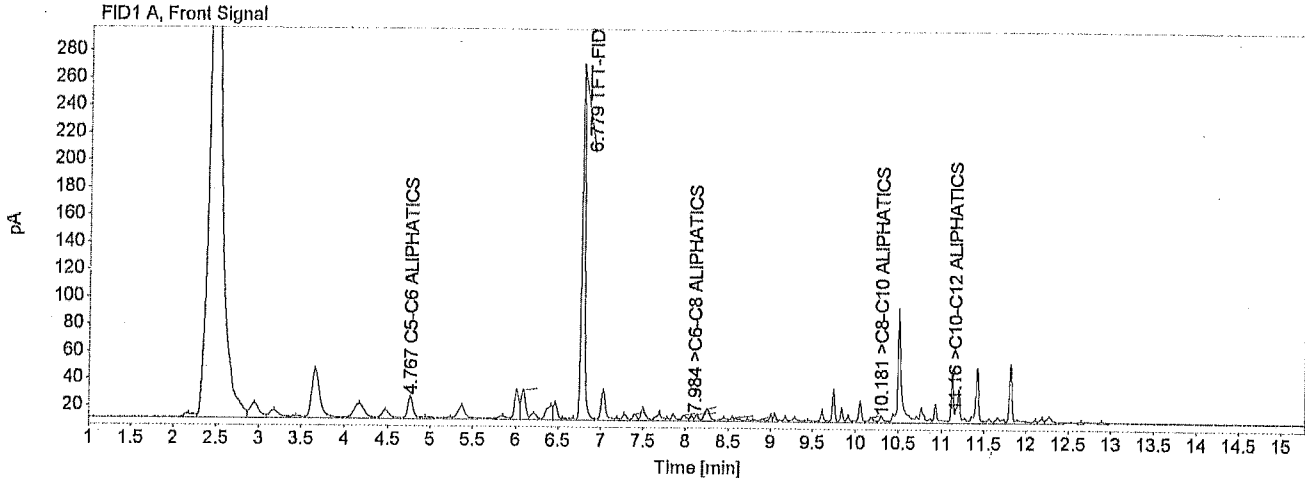
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1145.252	6.786	10.653
>C8-C10 AROMATICS	15.245	10.474	0.062
>C10-C12 AROMATICS	13.347	12.289	0.000
>C12-C13 AROMATICS	8.037	13.239	5.427

ALK

>C10 - C12 < 50 µg/l

Data file: D:\DATA\1192305232\1192305232\001F1301.D
 Sample name: EV23050140-04 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 11:45:16 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	71.308	4.767	0.790
TFT-FID	681.552	6.779	11.277 <i>113%</i>
>C6-C8 ALIPHATICS	15.377	7.984	0.165
>C8-C10 ALIPHATICS	16.267	10.181	0.188
>C10-C12 ALIPHATICS	770.350	11.160	16.557
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1164.423	6.779	10.831
>C8-C10 AROMATICS	203.794	10.504	0.831
>C10-C12 AROMATICS	54.533	12.275	0.000
>C12-C13 AROMATICS	10.174	13.200	6.871

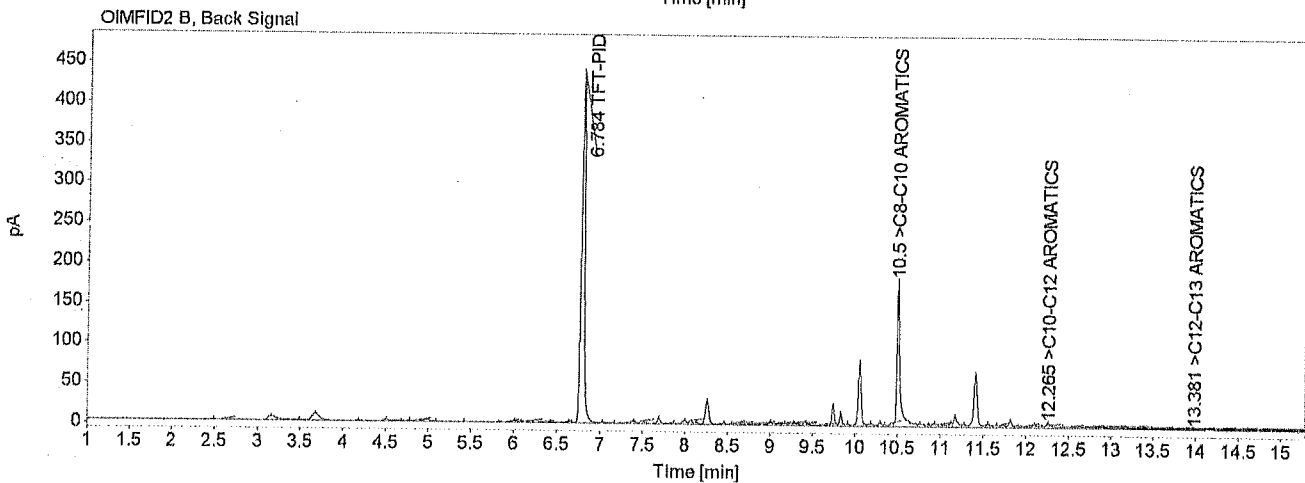
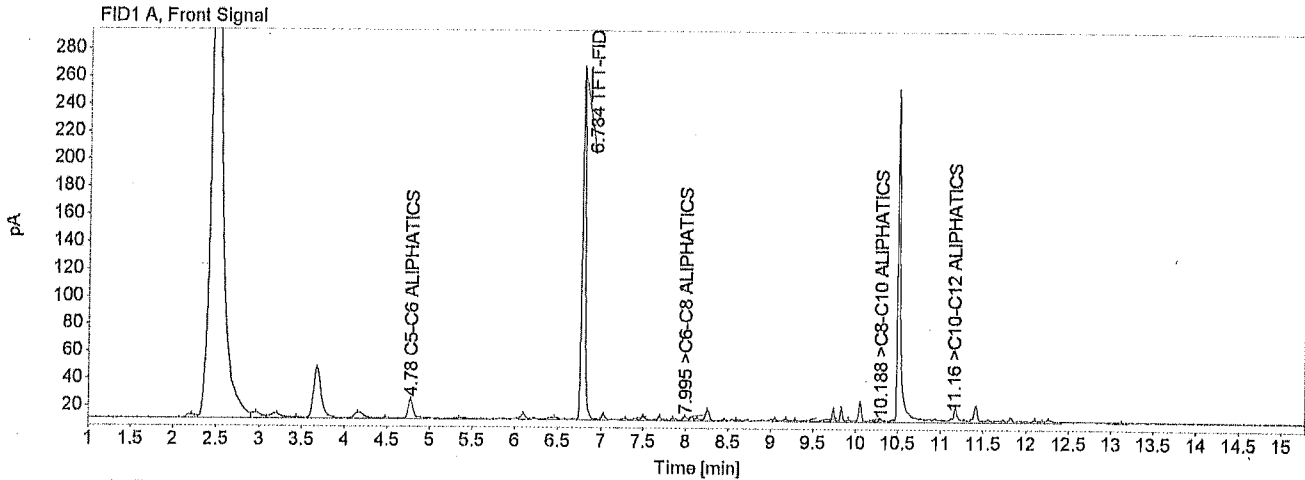
ALK

> C₁₀ - C₁₂ < 50 µg/L

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F1401.D
 Sample name: EV23050140-05 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 12:08:59 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	68.100	4.780	0.754
TFT-FID	672.731	6.784	11.131 III'
>C6-C8 ALIPHATICS	11.608	7.995	0.125
>C8-C10 ALIPHATICS	7.245	10.188	0.084
>C10-C12 ALIPHATICS	768.597	11.160	16.514

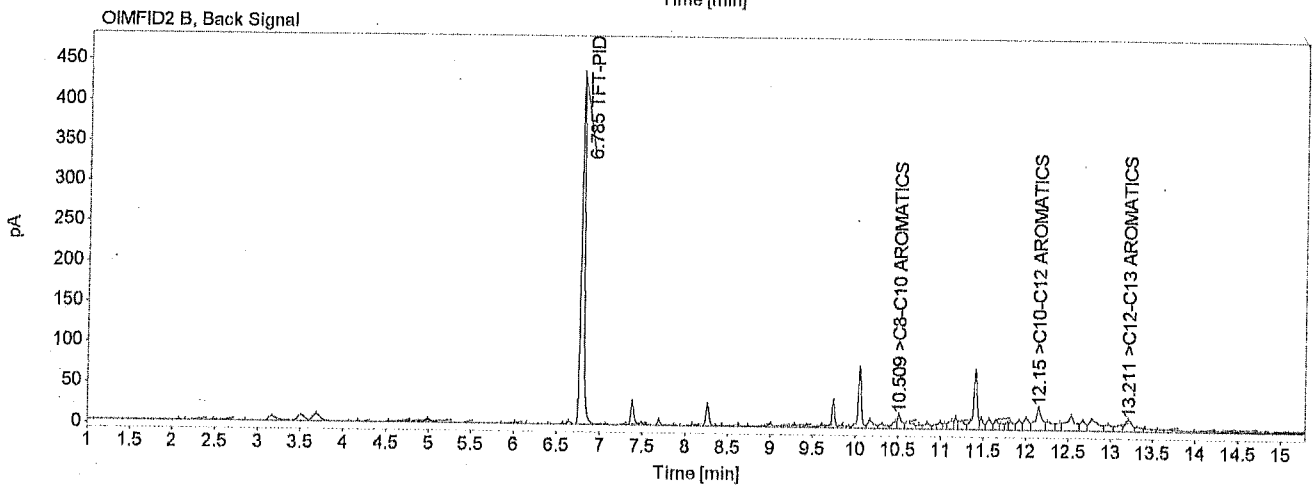
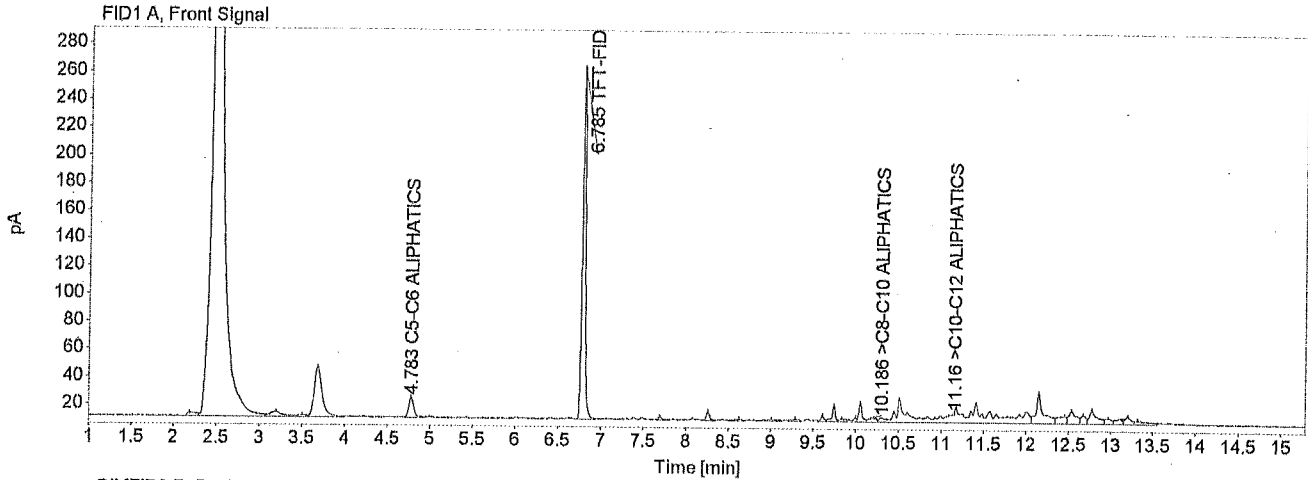
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1159.148	6.784	10.782
>C8-C10 AROMATICS	468.447	10.500	1.911
>C10-C12 AROMATICS	33.718	12.265	0.000
>C12-C13 AROMATICS	10.739	13.381	7.252

AUK
 >C₁₀-C₁₂ < 50 µg/l

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F1501.D
 Sample name: EV23050140-06 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 12:32:42 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	60.166	4.783	0.666
TFT-FID	657.693	6.785	10.882 109%
>C8-C10 ALIPHATICS	17.164	10.186	0.199
>C10-C12 ALIPHATICS	530.080	11.160	10.976
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1147.199	6.785	10.671
>C8-C10 AROMATICS	60.609	10.509	0.247
>C10-C12 AROMATICS	157.157	12.150	2.567
>C12-C13 AROMATICS	85.601	13.211	57.807

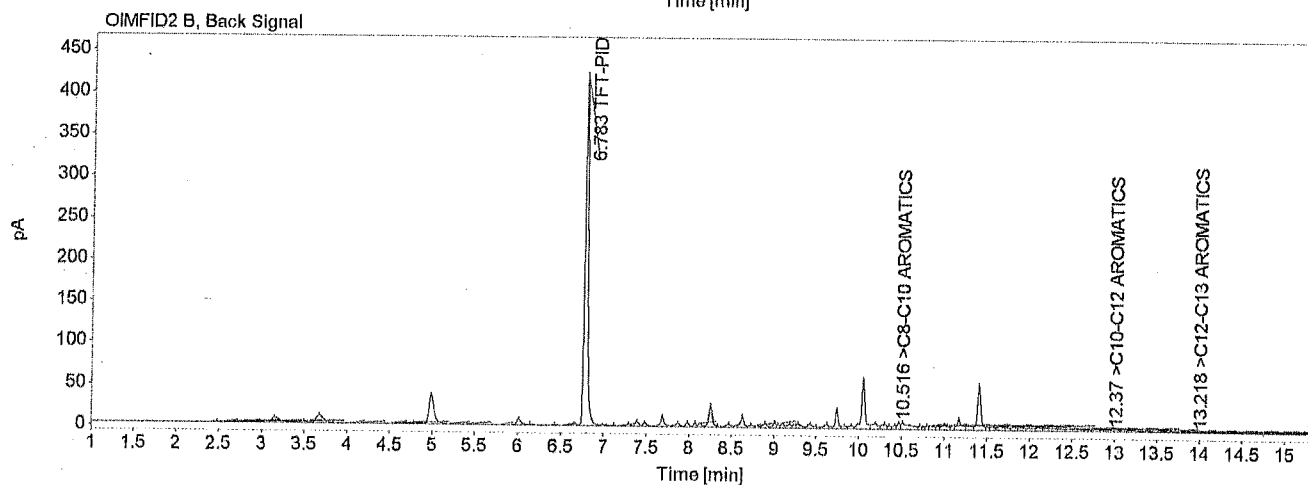
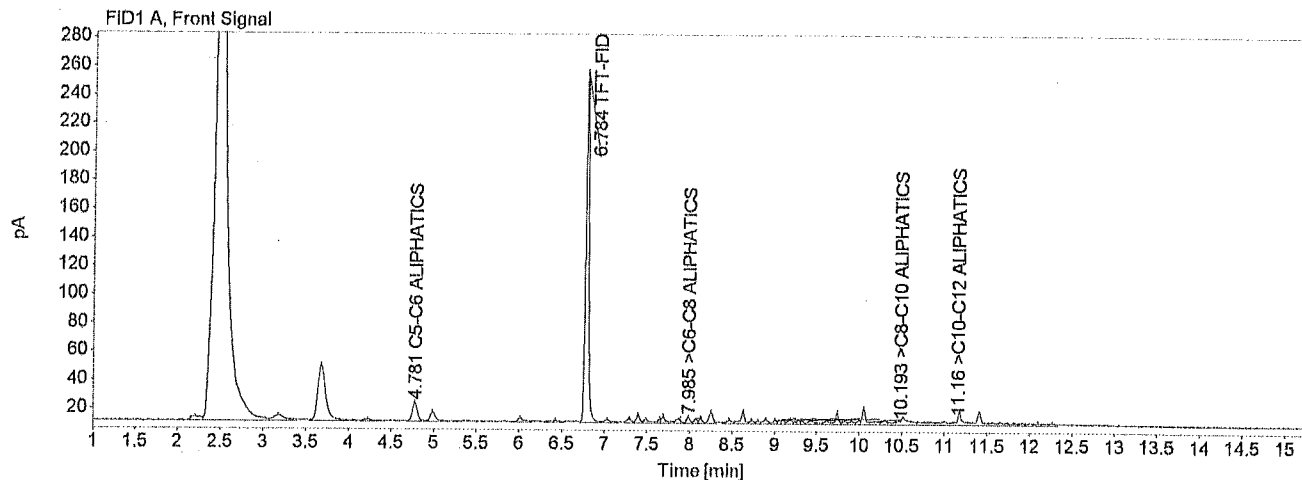
ALK

> C₁₀ - C₁₂ < 50 µg/l

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F1601.D
 Sample name: EV23050140-07 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 12:56:29 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	56.298	4.781	0.624
TFT-FID	644.107	6.784	10.657 ¹⁰⁷¹
>C6-C8 ALIPHATICS	12.483	7.985	0.134
>C8-C10 ALIPHATICS	14.767	10.193	0.171
>C10-C12 ALIPHATICS	228.456	11.160	4.591

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1106.709	6.783	10.295
>C8-C10 AROMATICS	63.090	10.516	0.257
>C10-C12 AROMATICS	26.787	12.370	0.000
>C12-C13 AROMATICS	14.908	13.218	10.067

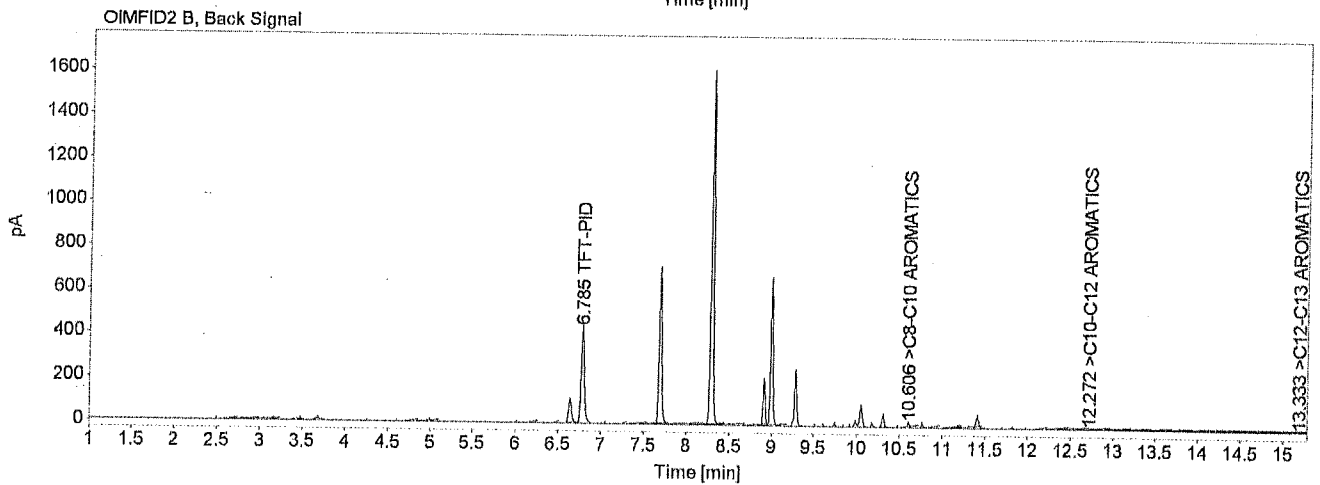
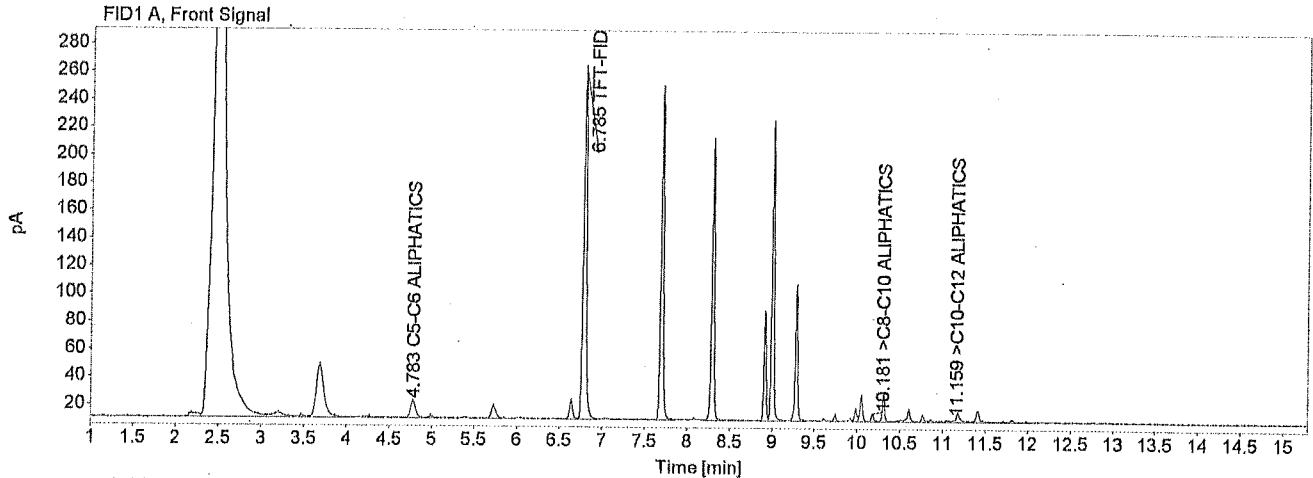
ALK

>C10-C12 < 50 µg/l

524-23 DC

Data file: D:\DATA\1192305232\1192305232\001F1701.D
 Sample name: EV23050140-08 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 1:20:14 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	57.089	4.783	0.632
TFT-FID	659.903	6.785	10.918 <i>109%</i>
>C8-C10 ALIPHATICS	10.794	10.181	0.125
>C10-C12 ALIPHATICS	141.275	11.159	2.850

Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1152.453	6.785	10.720
>C8-C10 AROMATICS	52.914	10.606	0.216
>C10-C12 AROMATICS	16.243	12.272	0.000
>C12-C13 AROMATICS	6.284	13.333	4.244

AK

>C10-C12 < 50 µg/l

EV23050140

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10653430

Workorder Name: 0680180.003

Results Requested By: 6/1/2023

Report / Invoice To

Subcontract To

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

ALS
 8620 Holly Drive
 Everett, WA 98208

P.O. 10653430

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers			Requested Analysis	LAB USE ONLY
					HCL				
1	TRIP BLANK-20230516	5/16/2023 08:00	10653430001	Water	2				
2	PEO-MW-42-202305	5/15/2023 11:30	10653430002	Water	3				
3	PEO-MW-30-202305	5/15/2023 13:55	10653430003	Water	3				
4	PEO-MW-32-202305	5/15/2023 14:00	10653430004	Water	3				
5	PEO-MW-33-202305	5/15/2023 15:30	10653430005	Water	3				
6	PEO-MW-08-202305	5/15/2023 15:45	10653430006	Water	3				
7	PEO-MW-18-202305	5/16/2023 08:30	10653430007	Water	3				
8	PEO-MW-31-202305	5/16/2023 08:30	10653430008	Water	3				
9									
10									
11									
12									

NWTPH-VPH (Aliphatics C10-C12)

Comments

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Custody Seal	Y or N	Samples Intact	Y or N
1	BLS / PACE	5/17/23 16:20	[Signature]	5/16/23 12:30						
2										
3										

Chroms needed
 J flag to MDL
 Aliphatics C10-C12 only
 provide ERM EQUIS EDD

Cooler Temperature on Receipt °C

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Pace Analytical Minnesota

ALS Job #: EU23050140

Project: 10653430

Received Date: 5/18/23

Received Time: 1230

By: RG/CC

Type of shipping container: Cooler

Box

Other

Shipped via: FedEx Ground

UPS

Mail

Courier

Hand Delivered

FedEx Express

STANDARD CREAM

Were custody seals on outside of shipping container?

Yes

No

N/A

If yes, how many? 1

Where? Front Cooler

Custody seal date: 5/17/23

Seal name: Cathy Soren

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

Sample Number

Reagent

Analyte

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: —

Temperature of cooler upon receipt: 36°C

on ice

Cold

Cool

Ambient

N/A

Explain any discrepancies: _____

Was client contacted? _____

Who was called? _____

By whom? _____

Date: _____

Outcome of call: _____

June 05, 2023

Erica Whitting
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0680180.003
Pace Project No.: 10653648

Dear Erica Whitting:

Enclosed are the analytical results for sample(s) received by the laboratory on May 18, 2023. 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: Jo Casey, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Andrea George, ERM
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: 0680180.003

Pace Project No.: 10653648

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

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

GMP+ Certification #: GMP050884

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0680180.003

Pace Project No.: 10653648

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10653648001	TRIP BLANK-20230517	Water	05/17/23 08:00	05/18/23 08:50
10653648002	PEO-MW-44-202305	Water	05/16/23 10:15	05/18/23 08:50
10653648003	PEO-MW-Z1-202305	Water	05/16/23 10:20	05/18/23 08:50
10653648004	PEO-MW-24A-202305	Water	05/16/23 10:45	05/18/23 08:50
10653648005	PEO-MW-28A-202305	Water	05/16/23 13:10	05/18/23 08:50
10653648006	PEO-MW-45-202305	Water	05/16/23 13:20	05/18/23 08:50
10653648007	PEO-MW-40-202305	Water	05/16/23 15:15	05/18/23 08:50

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10653648

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10653648001	TRIP BLANK-20230517	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	TKL	8	PASI-M
10653648002	PEO-MW-44-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653648003	PEO-MW-Z1-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653648004	PEO-MW-24A-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653648005	PEO-MW-28A-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653648006	PEO-MW-45-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10653648

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653648007	PEO-MW-40-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: TRIP BLANK-20230517 Lab ID: 10653648001 Collected: 05/17/23 08:00 Received: 05/18/23 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	22.6	1		05/19/23 23:05		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/19/23 23:05	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/23/23 03:35	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 03:35	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 03:35	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 03:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 03:35	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/23/23 03:35	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/23/23 03:35	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/23/23 03:35	2037-26-5	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-44-202305		Lab ID: 10653648002		Collected: 05/16/23 10:15		Received: 05/18/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/18/23 16:11	05/19/23 15:21	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/18/23 16:11	05/19/23 15:21		
Surrogates									
n-Triacontane (S)	57	%	50-150		1	05/18/23 16:11	05/19/23 15:21		
o-Terphenyl (S)	67	%	50-150		1	05/18/23 16:11	05/19/23 15:21	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 19:04		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/19/23 19:04	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	119000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:18		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.65	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:39	7440-38-2	
Manganese, Dissolved	21.7	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:39	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0066	1	05/23/23 16:44	05/24/23 17:21	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0057	1	05/23/23 16:44	05/24/23 17:21	208-96-8	
Anthracene	ND	ug/L	0.040	0.0050	1	05/23/23 16:44	05/24/23 17:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0077	1	05/23/23 16:44	05/24/23 17:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0081	1	05/23/23 16:44	05/24/23 17:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0084	1	05/23/23 16:44	05/24/23 17:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0089	1	05/23/23 16:44	05/24/23 17:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0086	1	05/23/23 16:44	05/24/23 17:21	207-08-9	
Chrysene	ND	ug/L	0.040	0.0088	1	05/23/23 16:44	05/24/23 17:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/23/23 16:44	05/24/23 17:21	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.013	1	05/23/23 16:44	05/24/23 17:21	206-44-0	
Fluorene	ND	ug/L	0.040	0.0063	1	05/23/23 16:44	05/24/23 17:21	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.010	1	05/23/23 16:44	05/24/23 17:21	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0063	1	05/23/23 16:44	05/24/23 17:21	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0077	1	05/23/23 16:44	05/24/23 17:21	91-57-6	
Naphthalene	ND	ug/L	0.040	0.015	1	05/23/23 16:44	05/24/23 17:21	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.014	1	05/23/23 16:44	05/24/23 17:21	85-01-8	
Pyrene	ND	ug/L	0.040	0.0092	1	05/23/23 16:44	05/24/23 17:21	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	75	%	49-125		1	05/23/23 16:44	05/24/23 17:21	321-60-8	
p-Terphenyl-d14 (S)	78	%	42-125		1	05/23/23 16:44	05/24/23 17:21	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-44-202305 Lab ID: 10653648002 Collected: 05/16/23 10:15 Received: 05/18/23 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		05/23/23 04:24	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 04:24	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 04:24	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 04:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 04:24	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/23/23 04:24	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/23/23 04:24	460-00-4	
Toluene-d8 (S)	106	%	75-125		1		05/23/23 04:24	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	88.8	mg/L	5.0	1.4	1		05/30/23 10:52		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	65.0	mg/L	1.2	0.43	1		05/31/23 09:21	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-Z1-202305		Lab ID: 10653648003		Collected: 05/16/23 10:20		Received: 05/18/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/18/23 16:11	05/19/23 15:43	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/18/23 16:11	05/19/23 15:43		
Surrogates									
n-Triacontane (S)	54	%	50-150		1	05/18/23 16:11	05/19/23 15:43		
o-Terphenyl (S)	59	%	50-150		1	05/18/23 16:11	05/19/23 15:43	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 19:41		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/19/23 19:41	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	117000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:20		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.65	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:42	7440-38-2	
Manganese, Dissolved	17.9	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:42	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.042	0.0069	1	05/23/23 16:44	05/24/23 17:43	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0059	1	05/23/23 16:44	05/24/23 17:43	208-96-8	
Anthracene	ND	ug/L	0.042	0.0052	1	05/23/23 16:44	05/24/23 17:43	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0081	1	05/23/23 16:44	05/24/23 17:43	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0084	1	05/23/23 16:44	05/24/23 17:43	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0087	1	05/23/23 16:44	05/24/23 17:43	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0092	1	05/23/23 16:44	05/24/23 17:43	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0090	1	05/23/23 16:44	05/24/23 17:43	207-08-9	
Chrysene	ND	ug/L	0.042	0.0092	1	05/23/23 16:44	05/24/23 17:43	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	05/23/23 16:44	05/24/23 17:43	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.013	1	05/23/23 16:44	05/24/23 17:43	206-44-0	
Fluorene	ND	ug/L	0.042	0.0065	1	05/23/23 16:44	05/24/23 17:43	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.011	1	05/23/23 16:44	05/24/23 17:43	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.042	0.0065	1	05/23/23 16:44	05/24/23 17:43	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0080	1	05/23/23 16:44	05/24/23 17:43	91-57-6	
Naphthalene	ND	ug/L	0.042	0.015	1	05/23/23 16:44	05/24/23 17:43	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.015	1	05/23/23 16:44	05/24/23 17:43	85-01-8	
Pyrene	ND	ug/L	0.042	0.0096	1	05/23/23 16:44	05/24/23 17:43	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%	49-125		1	05/23/23 16:44	05/24/23 17:43	321-60-8	
p-Terphenyl-d14 (S)	81	%	42-125		1	05/23/23 16:44	05/24/23 17:43	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-Z1-202305 Lab ID: 10653648003 Collected: 05/16/23 10:20 Received: 05/18/23 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		05/23/23 04:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 04:57	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 04:57	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 04:57	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 04:57	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%	75-125		1		05/23/23 04:57	2199-69-1	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/23/23 04:57	460-00-4	
Toluene-d8 (S)	108	%	75-125		1		05/23/23 04:57	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	88.8	mg/L	5.0	1.4	1		05/30/23 11:08		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	65.7	mg/L	1.2	0.43	1		05/31/23 09:35	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-24A-202305 Lab ID: 10653648004 Collected: 05/16/23 10:45 Received: 05/18/23 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 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/18/23 16:11	05/19/23 15:54	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/18/23 16:11	05/19/23 15:54		
Surrogates									
n-Triacontane (S)	70	%	50-150		1	05/18/23 16:11	05/19/23 15:54		
o-Terphenyl (S)	67	%	50-150		1	05/18/23 16:11	05/19/23 15:54	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 20:00		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/19/23 20:00	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	50500	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:21		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.5	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:51	7440-38-2	
Manganese, Dissolved	470	ug/L	10.0	3.3	20	05/30/23 05:40	05/31/23 16:51	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0062	1	05/23/23 16:44	05/24/23 18:05	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0054	1	05/23/23 16:44	05/24/23 18:05	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/23/23 16:44	05/24/23 18:05	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0073	1	05/23/23 16:44	05/24/23 18:05	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0076	1	05/23/23 16:44	05/24/23 18:05	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0079	1	05/23/23 16:44	05/24/23 18:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/23/23 16:44	05/24/23 18:05	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/23/23 16:44	05/24/23 18:05	207-08-9	
Chrysene	ND	ug/L	0.038	0.0083	1	05/23/23 16:44	05/24/23 18:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/23/23 16:44	05/24/23 18:05	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/23/23 16:44	05/24/23 18:05	206-44-0	
Fluorene	ND	ug/L	0.038	0.0059	1	05/23/23 16:44	05/24/23 18:05	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0097	1	05/23/23 16:44	05/24/23 18:05	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/23/23 16:44	05/24/23 18:05	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0072	1	05/23/23 16:44	05/24/23 18:05	91-57-6	
Naphthalene	ND	ug/L	0.038	0.014	1	05/23/23 16:44	05/24/23 18:05	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.013	1	05/23/23 16:44	05/24/23 18:05	85-01-8	
Pyrene	ND	ug/L	0.038	0.0087	1	05/23/23 16:44	05/24/23 18:05	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%	49-125		1	05/23/23 16:44	05/24/23 18:05	321-60-8	
p-Terphenyl-d14 (S)	80	%	42-125		1	05/23/23 16:44	05/24/23 18:05	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-24A-202305 **Lab ID: 10653648004** Collected: 05/16/23 10:45 Received: 05/18/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/23/23 05:14	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 05:14	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 05:14	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 05:14	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 05:14	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/23/23 05:14	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/23/23 05:14	460-00-4	
Toluene-d8 (S)	108	%	75-125		1		05/23/23 05:14	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	44.2	mg/L	5.0	1.4	1		05/30/23 11:14		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	21.2	mg/L	1.2	0.43	1		05/31/23 09:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-28A-202305 **Lab ID: 10653648005** Collected: 05/16/23 13:10 Received: 05/18/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/18/23 16:11	05/19/23 16:05	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/18/23 16:11	05/19/23 16:05		
Surrogates									
n-Triacontane (S)	61	%	50-150		1	05/18/23 16:11	05/19/23 16:05		
o-Terphenyl (S)	66	%	50-150		1	05/18/23 16:11	05/19/23 16:05	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 20:18		
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	50-150		1		05/19/23 20:18	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	61300	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:23		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.18J	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:54	7440-38-2	
Manganese, Dissolved	0.86	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:54	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0065	1	05/23/23 16:44	05/24/23 18:27	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0056	1	05/23/23 16:44	05/24/23 18:27	208-96-8	
Anthracene	ND	ug/L	0.040	0.0049	1	05/23/23 16:44	05/24/23 18:27	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0076	1	05/23/23 16:44	05/24/23 18:27	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0079	1	05/23/23 16:44	05/24/23 18:27	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0082	1	05/23/23 16:44	05/24/23 18:27	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0087	1	05/23/23 16:44	05/24/23 18:27	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/23/23 16:44	05/24/23 18:27	207-08-9	
Chrysene	ND	ug/L	0.040	0.0086	1	05/23/23 16:44	05/24/23 18:27	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/23/23 16:44	05/24/23 18:27	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.012	1	05/23/23 16:44	05/24/23 18:27	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/23/23 16:44	05/24/23 18:27	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.010	1	05/23/23 16:44	05/24/23 18:27	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0062	1	05/23/23 16:44	05/24/23 18:27	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0075	1	05/23/23 16:44	05/24/23 18:27	91-57-6	
Naphthalene	ND	ug/L	0.040	0.014	1	05/23/23 16:44	05/24/23 18:27	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.014	1	05/23/23 16:44	05/24/23 18:27	85-01-8	
Pyrene	ND	ug/L	0.040	0.0090	1	05/23/23 16:44	05/24/23 18:27	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	85	%	49-125		1	05/23/23 16:44	05/24/23 18:27	321-60-8	
p-Terphenyl-d14 (S)	78	%	42-125		1	05/23/23 16:44	05/24/23 18:27	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-28A-202305 **Lab ID: 10653648005** Collected: 05/16/23 13:10 Received: 05/18/23 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		05/23/23 05:30	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 05:30	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 05:30	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 05:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 05:30	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/23/23 05:30	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/23/23 05:30	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/23/23 05:30	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	50.0	mg/L	5.0	1.4	1		05/30/23 11:18		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	16.3	mg/L	1.2	0.43	1		05/31/23 10:03	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-45-202305 **Lab ID: 10653648006** Collected: 05/16/23 13:20 Received: 05/18/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/18/23 16:11	05/19/23 16:16	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/18/23 16:11	05/19/23 16:16		
Surrogates									
n-Triacontane (S)	57	%	50-150		1	05/18/23 16:11	05/19/23 16:16		
o-Terphenyl (S)	66	%	50-150		1	05/18/23 16:11	05/19/23 16:16	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 20:37		
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	50-150		1		05/19/23 20:37	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	47200	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:25		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.12J	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 18:57	7440-38-2	
Manganese, Dissolved	54.1	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 16:57	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0063	1	05/23/23 16:44	05/24/23 18:50	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0054	1	05/23/23 16:44	05/24/23 18:50	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/23/23 16:44	05/24/23 18:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0074	1	05/23/23 16:44	05/24/23 18:50	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0077	1	05/23/23 16:44	05/24/23 18:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0080	1	05/23/23 16:44	05/24/23 18:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/23/23 16:44	05/24/23 18:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0082	1	05/23/23 16:44	05/24/23 18:50	207-08-9	
Chrysene	ND	ug/L	0.038	0.0084	1	05/23/23 16:44	05/24/23 18:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/23/23 16:44	05/24/23 18:50	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/23/23 16:44	05/24/23 18:50	206-44-0	
Fluorene	ND	ug/L	0.038	0.0060	1	05/23/23 16:44	05/24/23 18:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0098	1	05/23/23 16:44	05/24/23 18:50	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0060	1	05/23/23 16:44	05/24/23 18:50	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0073	1	05/23/23 16:44	05/24/23 18:50	91-57-6	
Naphthalene	ND	ug/L	0.038	0.014	1	05/23/23 16:44	05/24/23 18:50	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.013	1	05/23/23 16:44	05/24/23 18:50	85-01-8	
Pyrene	ND	ug/L	0.038	0.0088	1	05/23/23 16:44	05/24/23 18:50	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	87	%	49-125		1	05/23/23 16:44	05/24/23 18:50	321-60-8	
p-Terphenyl-d14 (S)	82	%	42-125		1	05/23/23 16:44	05/24/23 18:50	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-45-202305 **Lab ID: 10653648006** Collected: 05/16/23 13:20 Received: 05/18/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/23/23 05:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 05:47	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 05:47	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 05:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 05:47	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/23/23 05:47	2199-69-1	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/23/23 05:47	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/23/23 05:47	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	2.5J	mg/L	5.0	1.4	1		05/30/23 20:41		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	55.1	mg/L	1.2	0.43	1		05/31/23 10:17	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-40-202305 **Lab ID: 10653648007** Collected: 05/16/23 15:15 Received: 05/18/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/18/23 16:11	05/19/23 16:27	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/18/23 16:11	05/19/23 16:27		
Surrogates									
n-Triacontane (S)	68	%	50-150		1	05/18/23 16:11	05/19/23 16:27		
o-Terphenyl (S)	81	%	50-150		1	05/18/23 16:11	05/19/23 16:27	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 22:47		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/19/23 22:47	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	79400	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:26		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.3	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 19:00	7440-38-2	
Manganese, Dissolved	1490	ug/L	10.0	3.3	20	05/30/23 05:40	05/31/23 17:00	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0064	1	05/23/23 16:44	05/24/23 19:12	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/23/23 16:44	05/24/23 19:12	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/23/23 16:44	05/24/23 19:12	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0075	1	05/23/23 16:44	05/24/23 19:12	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0079	1	05/23/23 16:44	05/24/23 19:12	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0082	1	05/23/23 16:44	05/24/23 19:12	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0086	1	05/23/23 16:44	05/24/23 19:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0084	1	05/23/23 16:44	05/24/23 19:12	207-08-9	
Chrysene	ND	ug/L	0.039	0.0086	1	05/23/23 16:44	05/24/23 19:12	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/23/23 16:44	05/24/23 19:12	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/23/23 16:44	05/24/23 19:12	206-44-0	
Fluorene	ND	ug/L	0.039	0.0061	1	05/23/23 16:44	05/24/23 19:12	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.010	1	05/23/23 16:44	05/24/23 19:12	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0061	1	05/23/23 16:44	05/24/23 19:12	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0075	1	05/23/23 16:44	05/24/23 19:12	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/23/23 16:44	05/24/23 19:12	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/23/23 16:44	05/24/23 19:12	85-01-8	
Pyrene	ND	ug/L	0.039	0.0090	1	05/23/23 16:44	05/24/23 19:12	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	65	%	49-125		1	05/23/23 16:44	05/24/23 19:12	321-60-8	
p-Terphenyl-d14 (S)	77	%	42-125		1	05/23/23 16:44	05/24/23 19:12	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653648

Sample: PEO-MW-40-202305 **Lab ID: 10653648007** Collected: 05/16/23 15:15 Received: 05/18/23 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		05/23/23 06:03	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 06:03	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 06:03	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 06:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 06:03	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/23/23 06:03	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/23/23 06:03	460-00-4	
Toluene-d8 (S)	107	%	75-125		1		05/23/23 06:03	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	57.9	mg/L	5.0	1.4	1		05/30/23 11:46		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	46.2	mg/L	1.2	0.43	1		05/31/23 10:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653648

QC Batch: 882374 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653648001, 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4649502 Matrix: Water
Associated Lab Samples: 10653648001, 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/19/23 18:45	
a,a,a-Trifluorotoluene (S)	%	102	50-150		05/19/23 18:45	

METHOD BLANK: 4649503 Matrix: Water
Associated Lab Samples: 10653648001, 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/19/23 22:28	
a,a,a-Trifluorotoluene (S)	%	96	50-150		05/19/23 22:28	

LABORATORY CONTROL SAMPLE & LCSD: 4649504 4649505

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	925	901	92	90	68-125	3	20	
a,a,a-Trifluorotoluene (S)	%				102	100	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4649508 4649509

Parameter	Units	10653844003 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	210	1000	1000	1120	1150	91	94	57-132	3	30	
a,a,a-Trifluorotoluene (S)	%						96	97	50-150			

SAMPLE DUPLICATE: 4649506

Parameter	Units	10653648002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%	100	100			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653648

SAMPLE DUPLICATE: 4649507

Parameter	Units	10653844003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	210	210	0	30	
a,a,a-Trifluorotoluene (S)	%.	95	95			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653648

QC Batch: 882705 Analysis Method: EPA 6020B
QC Batch Method: EPA 3020A Analysis Description: 6020B Water Dissolved UPD5
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4651250 Matrix: Water
Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.092	05/30/23 18:14	
Manganese, Dissolved	ug/L	ND	0.50	0.16	05/31/23 16:14	

LABORATORY CONTROL SAMPLE: 4651251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	100	100	80-120	
Manganese, Dissolved	ug/L	100	108	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4651252 4651253

Parameter	Units	10653844003 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	13.3	100	100	117	111	103	98	75-125	5	20	
Manganese, Dissolved	ug/L	1080	100	100	1240	1160	159	81	75-125	6	20	P6

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QUALITY CONTROL DATA

Project: 0680180.003

Project No.: 10653648

QC Batch: 882644

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV UST-WATER

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653648001, 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4650892

Matrix: Water

Associated Lab Samples: 10653648001, 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/23/23 03:19	
Ethylbenzene	ug/L	ND	1.0	0.11	05/23/23 03:19	
m&p-Xylene	ug/L	ND	2.0	0.20	05/23/23 03:19	
o-Xylene	ug/L	ND	1.0	0.18	05/23/23 03:19	
Toluene	ug/L	ND	1.0	0.10	05/23/23 03:19	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		05/23/23 03:19	
4-Bromofluorobenzene (S)	%	101	75-125		05/23/23 03:19	
Toluene-d8 (S)	%	109	75-125		05/23/23 03:19	

LABORATORY CONTROL SAMPLE: 4650893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.8	94	75-125	
Ethylbenzene	ug/L	20	17.8	89	75-125	
m&p-Xylene	ug/L	40	37.2	93	75-125	
o-Xylene	ug/L	20	18.5	93	75-125	
Toluene	ug/L	20	19.9	99	74-125	
1,2-Dichlorobenzene-d4 (S)	%			98	75-125	
4-Bromofluorobenzene (S)	%			96	75-125	
Toluene-d8 (S)	%			104	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4650894 4650895

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10653844003 Result	Spike Conc.	Spike Conc.	MS Result						
Benzene	ug/L	0.57J	20	20	18.5	17.9	90	87	66-127	3	30
Ethylbenzene	ug/L	0.12J	20	20	17.0	17.0	84	84	74-128	0	30
m&p-Xylene	ug/L	1.4J	40	40	36.6	35.9	88	86	70-131	2	30
o-Xylene	ug/L	0.56J	20	20	18.4	18.3	89	89	75-127	1	30
Toluene	ug/L	1.1	20	20	20.3	19.4	96	91	66-125	5	30
1,2-Dichlorobenzene-d4 (S)	%						100	100	75-125		
4-Bromofluorobenzene (S)	%						98	100	75-125		
Toluene-d8 (S)	%						106	103	75-125		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653648

QC Batch: 882901 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4652076

Matrix: Water

Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0062	05/24/23 16:15	
2-Methylnaphthalene	ug/L	ND	0.040	0.0076	05/24/23 16:15	
Acenaphthene	ug/L	ND	0.040	0.0065	05/24/23 16:15	
Acenaphthylene	ug/L	ND	0.040	0.0056	05/24/23 16:15	
Anthracene	ug/L	ND	0.040	0.0049	05/24/23 16:15	
Benzo(a)anthracene	ug/L	ND	0.040	0.0076	05/24/23 16:15	
Benzo(a)pyrene	ug/L	ND	0.040	0.0080	05/24/23 16:15	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0083	05/24/23 16:15	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0088	05/24/23 16:15	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/24/23 16:15	
Chrysene	ug/L	ND	0.040	0.0087	05/24/23 16:15	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0079	05/24/23 16:15	
Fluoranthene	ug/L	ND	0.040	0.013	05/24/23 16:15	
Fluorene	ug/L	ND	0.040	0.0062	05/24/23 16:15	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.010	05/24/23 16:15	
Naphthalene	ug/L	ND	0.040	0.015	05/24/23 16:15	
Phenanthrene	ug/L	ND	0.040	0.014	05/24/23 16:15	
Pyrene	ug/L	ND	0.040	0.0091	05/24/23 16:15	
2-Fluorobiphenyl (S)	%	83	49-125		05/24/23 16:15	
p-Terphenyl-d14 (S)	%	89	42-125		05/24/23 16:15	

LABORATORY CONTROL SAMPLE & LCSD: 4652077

4652078

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.78	0.76	78	76	46-125	2	20	
2-Methylnaphthalene	ug/L	1	0.78	0.73	78	73	52-125	7	20	
Acenaphthene	ug/L	1	0.83	0.78	83	78	51-125	6	20	
Acenaphthylene	ug/L	1	0.85	0.80	85	80	50-125	7	20	
Anthracene	ug/L	1	0.97	0.87	97	87	50-125	11	20	
Benzo(a)anthracene	ug/L	1	0.92	0.92	92	92	59-125	0	20	
Benzo(a)pyrene	ug/L	1	0.99	1.0	99	101	62-125	2	20	
Benzo(b)fluoranthene	ug/L	1	1.0	1.0	101	102	56-125	1	20	
Benzo(g,h,i)perylene	ug/L	1	0.75	0.75	75	75	35-125	1	20	
Benzo(k)fluoranthene	ug/L	1	0.94	0.98	94	98	59-125	3	20	
Chrysene	ug/L	1	0.98	1.0	98	103	60-125	5	20	
Dibenz(a,h)anthracene	ug/L	1	0.65	0.62	65	62	30-125	4	20	
Fluoranthene	ug/L	1	1.0	0.96	100	96	62-125	4	20	
Fluorene	ug/L	1	0.88	0.82	88	82	53-125	7	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.96	0.96	96	96	50-125	1	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653648

LABORATORY CONTROL SAMPLE & LCSD: 4652077			4652078								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.77	0.74	77	74	49-125	5	20		
Phenanthrene	ug/L	1	0.93	0.87	93	87	56-125	7	20		
Pyrene	ug/L	1	1.0	1.0	103	101	60-125	2	20		
2-Fluorobiphenyl (S)	%				81	76	49-125				
p-Terphenyl-d14 (S)	%				94	90	42-125				

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653648

QC Batch: 882079	Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4647913 Matrix: Water
Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	0.12	05/19/23 14:48	
Motor Oil Range	mg/L	ND	0.40	0.19	05/19/23 14:48	
n-Triacontane (S)	%	65	50-150		05/19/23 14:48	
o-Terphenyl (S)	%	70	50-150		05/19/23 14:48	

LABORATORY CONTROL SAMPLE & LCSD: 4647914 4647915

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.3	1.3	64	65	50-150	1	20	
Motor Oil Range	mg/L	2	1.3	1.4	67	71	50-150	5	20	
n-Triacontane (S)	%				125	66	50-150			
o-Terphenyl (S)	%				79	80	50-150			

SAMPLE DUPLICATE: 4648355

Parameter	Units	10653648002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	ND		30	
Motor Oil Range	mg/L	ND	ND		30	
n-Triacontane (S)	%	57	68			
o-Terphenyl (S)	%	67	82			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653648

QC Batch:	883839	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4656862 Matrix: Water
Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	05/30/23 08:12	

LABORATORY CONTROL SAMPLE & LCSD: 4656863 4656864

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.4	41.6	106	104	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4656865 4656866

Parameter	Units	10653497001 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	20.5	40	40	62.2	62.2	104	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4656867 4656868

Parameter	Units	10653648002 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	88.8	40	40	129	130	99	102	80-120	1	20	

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653648

QC Batch: 884069 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: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

METHOD BLANK: 4657927 Matrix: Water
Associated Lab Samples: 10653648002, 10653648003, 10653648004, 10653648005, 10653648006, 10653648007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	05/31/23 05:34	

LABORATORY CONTROL SAMPLE: 4657928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	51.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4657929 4657930

Parameter	Units	10654117001		10654117002		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Spike Conc.	MSD Spike Conc.								
Sulfate	mg/L	255	250	250	250	501	503	98	99	80-120	1	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4657931 4657932

Parameter	Units	10654117002		10654117003		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Spike Conc.	MSD Spike Conc.								
Sulfate	mg/L	123	250	250	250	381	380	103	103	80-120	0	20	

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QUALIFIERS

Project: 0680180.003

Pace Project No.: 10653648

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: 882338

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

Batch: 883034

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

ANALYTE QUALIFIERS

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

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: 0680180.003
Pace Project No.: 10653648

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10653648002	PEO-MW-44-202305	EPA 3510C	882079	NWTPH-Dx	882338
10653648003	PEO-MW-Z1-202305	EPA 3510C	882079	NWTPH-Dx	882338
10653648004	PEO-MW-24A-202305	EPA 3510C	882079	NWTPH-Dx	882338
10653648005	PEO-MW-28A-202305	EPA 3510C	882079	NWTPH-Dx	882338
10653648006	PEO-MW-45-202305	EPA 3510C	882079	NWTPH-Dx	882338
10653648007	PEO-MW-40-202305	EPA 3510C	882079	NWTPH-Dx	882338
10653648001	TRIP BLANK-20230517	NWTPH-Gx	882374		
10653648002	PEO-MW-44-202305	NWTPH-Gx	882374		
10653648003	PEO-MW-Z1-202305	NWTPH-Gx	882374		
10653648004	PEO-MW-24A-202305	NWTPH-Gx	882374		
10653648005	PEO-MW-28A-202305	NWTPH-Gx	882374		
10653648006	PEO-MW-45-202305	NWTPH-Gx	882374		
10653648007	PEO-MW-40-202305	NWTPH-Gx	882374		
10653648002	PEO-MW-44-202305	EPA 3010A	882704	EPA 6010D	883991
10653648003	PEO-MW-Z1-202305	EPA 3010A	882704	EPA 6010D	883991
10653648004	PEO-MW-24A-202305	EPA 3010A	882704	EPA 6010D	883991
10653648005	PEO-MW-28A-202305	EPA 3010A	882704	EPA 6010D	883991
10653648006	PEO-MW-45-202305	EPA 3010A	882704	EPA 6010D	883991
10653648007	PEO-MW-40-202305	EPA 3010A	882704	EPA 6010D	883991
10653648002	PEO-MW-44-202305	EPA 3020A	882705	EPA 6020B	883988
10653648003	PEO-MW-Z1-202305	EPA 3020A	882705	EPA 6020B	883988
10653648004	PEO-MW-24A-202305	EPA 3020A	882705	EPA 6020B	883988
10653648005	PEO-MW-28A-202305	EPA 3020A	882705	EPA 6020B	883988
10653648006	PEO-MW-45-202305	EPA 3020A	882705	EPA 6020B	883988
10653648007	PEO-MW-40-202305	EPA 3020A	882705	EPA 6020B	883988
10653648002	PEO-MW-44-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10653648003	PEO-MW-Z1-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10653648004	PEO-MW-24A-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10653648005	PEO-MW-28A-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10653648006	PEO-MW-45-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10653648007	PEO-MW-40-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10653648001	TRIP BLANK-20230517	EPA 8260D	882644		
10653648002	PEO-MW-44-202305	EPA 8260D	882644		
10653648003	PEO-MW-Z1-202305	EPA 8260D	882644		
10653648004	PEO-MW-24A-202305	EPA 8260D	882644		
10653648005	PEO-MW-28A-202305	EPA 8260D	882644		
10653648006	PEO-MW-45-202305	EPA 8260D	882644		
10653648007	PEO-MW-40-202305	EPA 8260D	882644		
10653648002	PEO-MW-44-202305	SM 2320B	883839		
10653648003	PEO-MW-Z1-202305	SM 2320B	883839		
10653648004	PEO-MW-24A-202305	SM 2320B	883839		
10653648005	PEO-MW-28A-202305	SM 2320B	883839		
10653648006	PEO-MW-45-202305	SM 2320B	883839		
10653648007	PEO-MW-40-202305	SM 2320B	883839		
10653648002	PEO-MW-44-202305	EPA 300.0	884069		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0680180.003

Pace Project No.: 10653648

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10653648003	PEO-MW-Z1-202305	EPA 300.0	884069		
10653648004	PEO-MW-24A-202305	EPA 300.0	884069		
10653648005	PEO-MW-28A-202305	EPA 300.0	884069		
10653648006	PEO-MW-45-202305	EPA 300.0	884069		
10653648007	PEO-MW-40-202305	EPA 300.0	884069		

REPORT OF LABORATORY ANALYSIS

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Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: ERM	Report To: Erica Whiting	Attention:
Address: 1050 SW 6th Ave, Suite 1650	Copy To: Andrea George	Company Name:
Portland, OR 97204	Purchase Order No.:	Address:
Email To: erica.whiting@erm.com	Project Name:	Pace Quote
Phone: 303-903-3605	Requested Due Date/TAT: Standard	Reference: Julie Bowser
Requested Due Date/TAT:	Project Number: 0680180.003	Pace Project Manager:
		Pace Profile #:
		REGULATORY AGENCY
		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER
		<input type="checkbox"/> UST <input type="checkbox"/> RCRA
		Site Location STATE: OR

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WIN WASTE WATER WTW PRODUCT SLP SOL/SOLID SLS OIL OIL WIPE WIP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Requested Analysis Filtered (Y/N)															
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	GRO (NWTPH-Gx)	BTEX (SW8260C/SW8260C SIM)	VPH (NWTPH-VPH)	DRO (NWTPH-Dx) SG	Dissolved Metals (As, MN) (6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NWTPH-EPH)	Nitrate (EPA 353.2)	Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)	Residual Chlorine (Y/N)		
			DATE	TIME			DATE	TIME																						
1	TRIP BLANK-20230517		GW	5/17/23	8:00	6	-	-	-	X	-	-	-	-	-	-	2	2	2	2	1	X	2	-	-	1	X	0	1	
2	PEO-MW-44-202305		GW	5/16/23	10:15	15	X	X	X	X	X	X	X	X	X	X	3	3	3	2	1	X	2	-	-	1	X	0	1	
3	PEO-MW-Z1-202305		GW	5/16/23	10:20	15	X	X	X	X	X	X	X	X	X	X	3	3	3	2	1	X	2	-	-	1	X	0	3	
4	PEO-MW-24A-202305		GW	5/16/23	10:45	15	X	X	X	X	X	X	X	X	X	X	3	3	3	2	1	X	2	-	-	1	X	0	4	
5	PEO-MW-28A-202305		GW	5/16/23	13:10	15	X	X	X	X	X	X	X	X	X	X	3	3	3	2	1	X	2	-	-	1	X	0	5	
6	PEO-MW-45-202305		GW	5/16/23	13:20	15	X	X	X	X	X	X	X	X	X	X	3	3	3	2	1	X	2	-	-	1	X	0	6	
7	PEO-MW-40-202305		GW	5/16/23	15:15	15	X	X	X	X	X	X	X	X	X	X	3	3	3	2	1	X	2	-	-	1	X	0	7	
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS

RETIROUNISHED BY/ AFFILIATION: Greta Stahl / ERM

DATE: 5/17/23

TIME: 12:00

ACCEPTED BY/AFFILIATION: 15-PACE

DATE: 5/18/23

TIME: 8:50 AM

DATE: 5/17/23

TIME: 1:15 PM

Temp in °C

Received on

MO#: 10653648

SAMPLER NAME AND SIGNATURE
PRINT NAME of SAMPLER: Madison Rosen, Kevin Kuester
SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 5/17/23

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms, and agreeing to lose charges of 1.5% per month for any invoices not paid within 30 days.

T=23,17,1.2,10.1,1.3,1.8,6.6
 VTY

Effective Date: 4/14/2023

Sample Condition Upon Receipt Client Name: ERM

Project #: **WO#: 10653648**
PM: JMT Due Date: 06/02/23
CLIENT: ERM-Oregon

Courier: FedEx 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 (0436) T3 (0459) T4 (0402) T5 (0178)
Type of Ice: Wet Blue Dry None
 T6 (0235) T7 (0042) T8 (0775) T9(0727) 01339252/1710 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: -0.1 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: 5/18/23 JJ
Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

Location (Check one):	Duluth	Minneapolis	Virginia	COMMENTS
Chain of Custody Present and Filled Out?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Relinquished?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2.
Sampler Name and/or Signature on COC?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.
Samples Arrived within Hold Time?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6.
Sufficient Sample Volume?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Correct Containers Used?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
-Pace Containers Used?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Sample # <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Exceptions <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/BO15 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks—verify with PM first.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 pH Paper Lot # Residual Chlorine 0-6 Roll <u>20842</u> 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3 Trip Blanks Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Pace Trip Blank Lot # (if purchased): <u>407804</u>

CLIENT NOTIFICATION/RESOLUTION
Person Contacted: _____ Date/Time: _____
Comments/Resolution: _____
Project Manager Review: Julia Bauer Date: 5/18/23

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: JJ Line: 2



DC#_ Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? Yes No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? Yes No

If anything is OVER 6.0° C, you **MUST** document containers in this section **HERE**



Tracking Number	Temperature
8923 7146 0826	2.4/2.3
// 0859	1.8/1.7
// 0848	1.3/1.2
// 0837	0.2/0.1
// 0815	1.4/1.3
// 0804	1.9/1.8
// 0790	0.7/0.6

Out of Temp Sample ID	Container Type	# of Containers

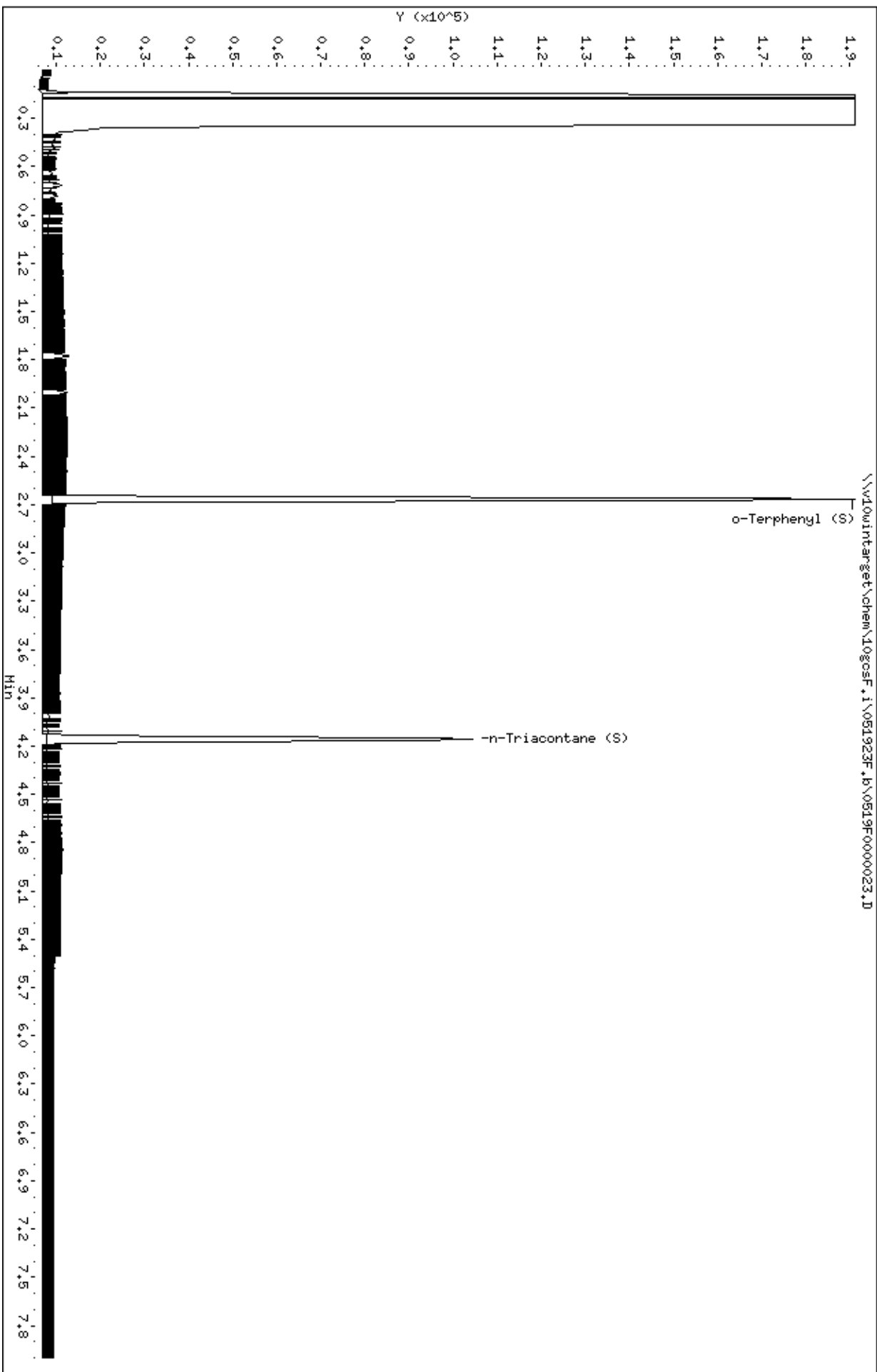
pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

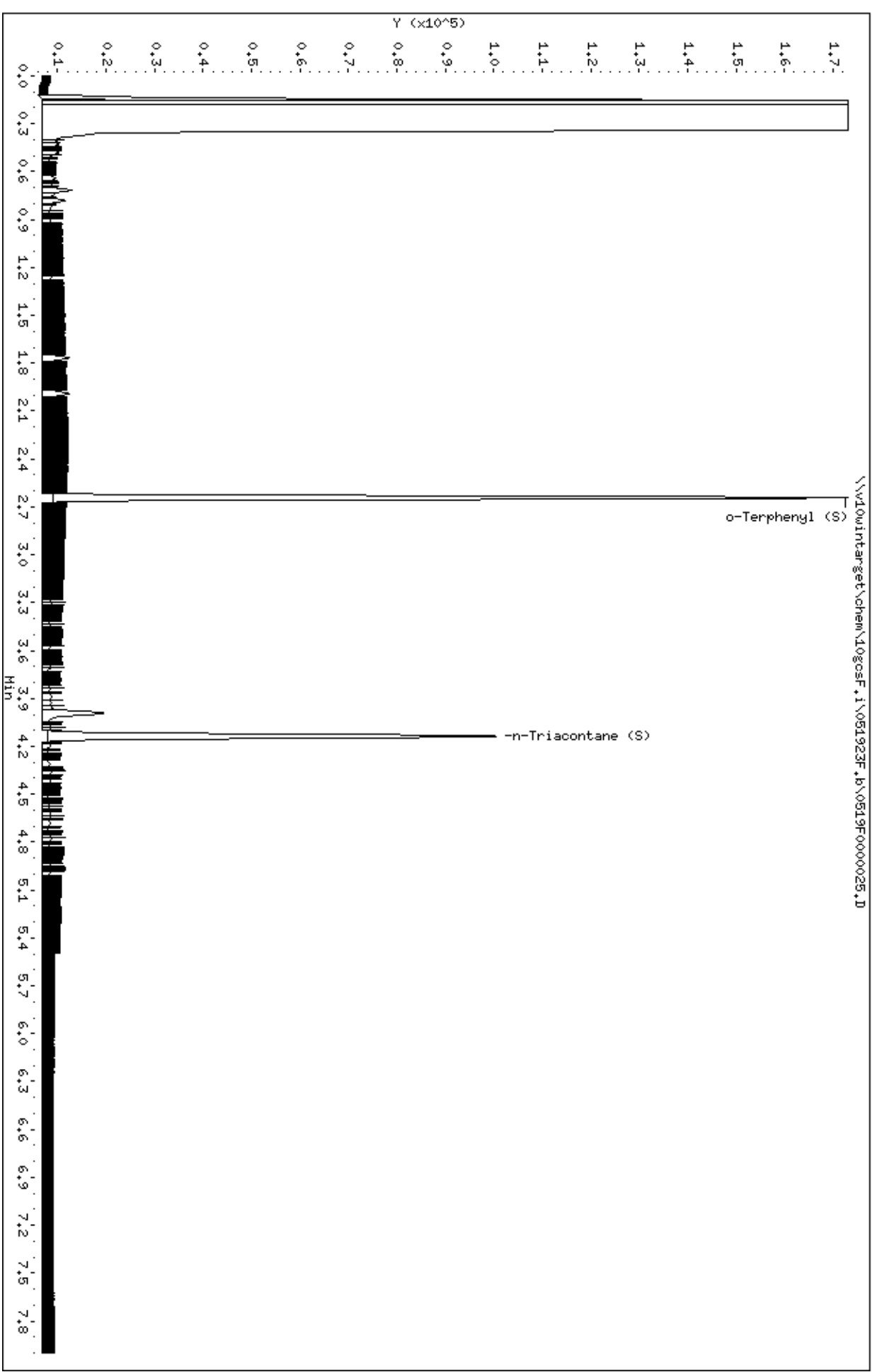
Data File: \\dowintarget\chem\logosf.1\051923F.1\0519F0000023.D
Date: 19-MAY-2023 15:21
Client ID: PED-HM-44-202305
Sample Info: 10653648002
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



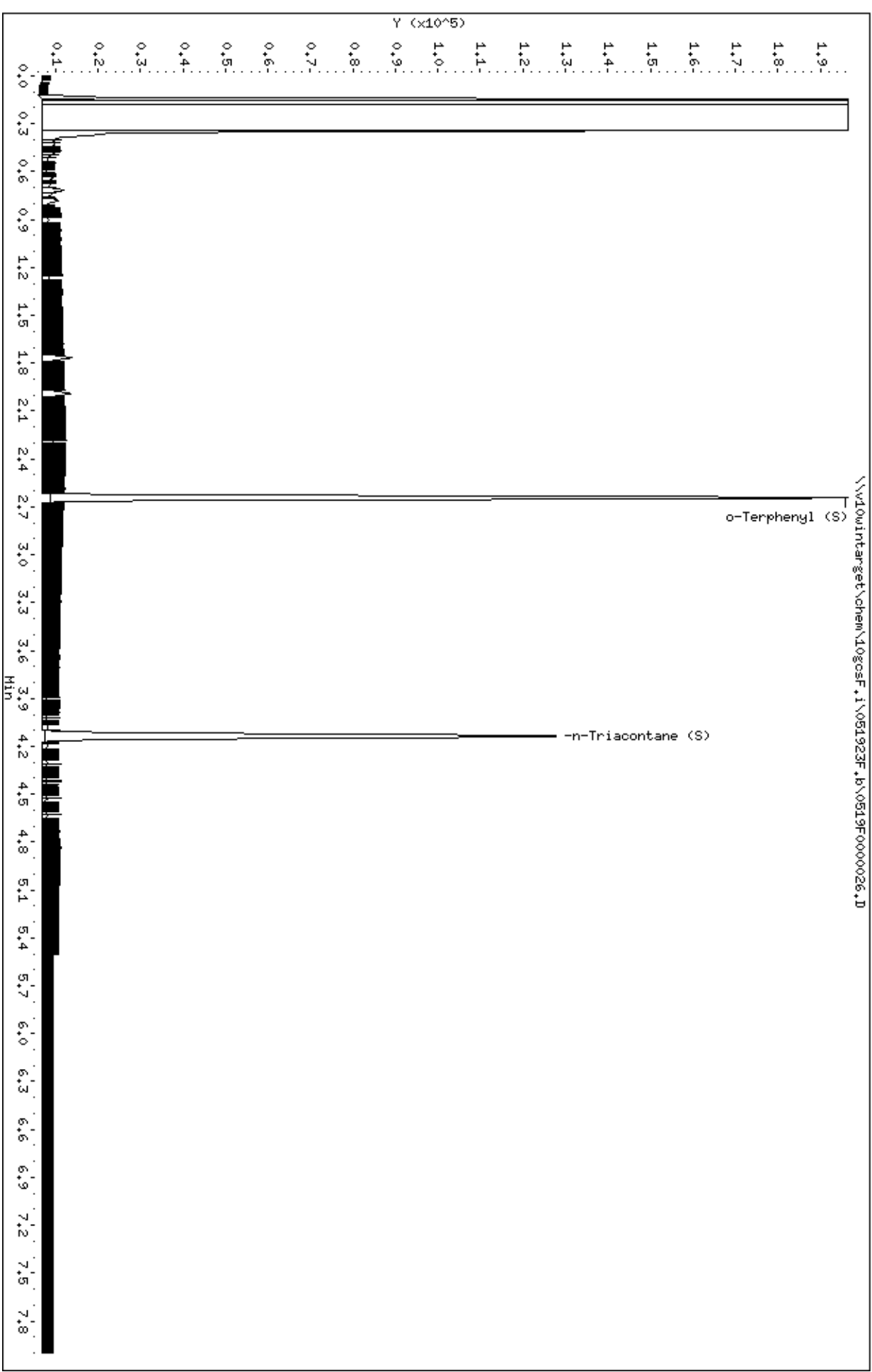
Data File: \\10win\target\chem\10gocsf.1\051923F.1\0519F0000025.D
Date: 19-MAY-2023 15:43
Client ID: PE0-HM-21-202305
Sample Info: 10653648003
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



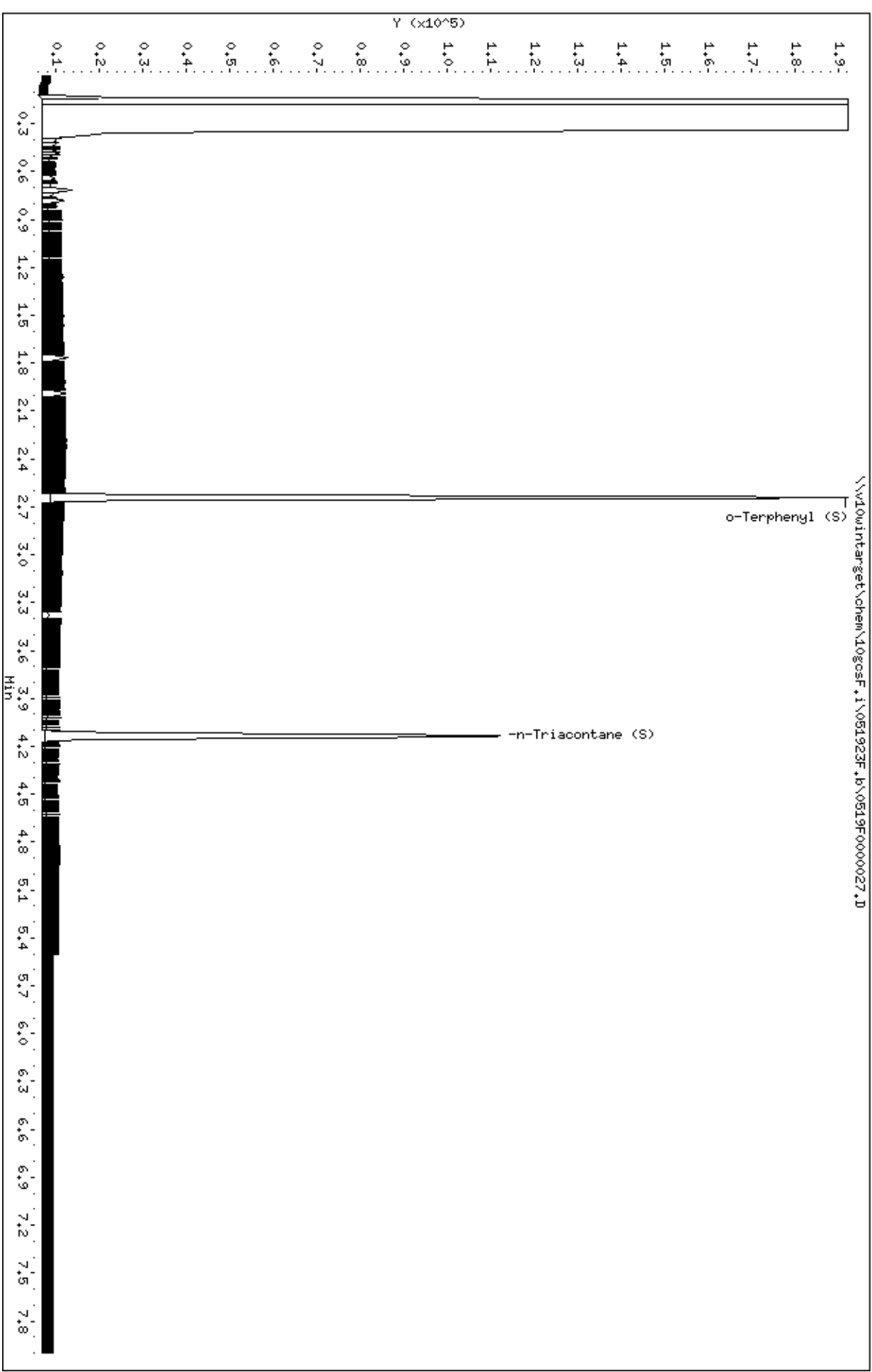
Data File: \\LOWINTARGET\chem\logosf.1\051923F.1\0519F0000026.D
Date: 19-MAY-2023 15:54
Client ID: PED-HM-24A-202305
Sample Info: 10653648004
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



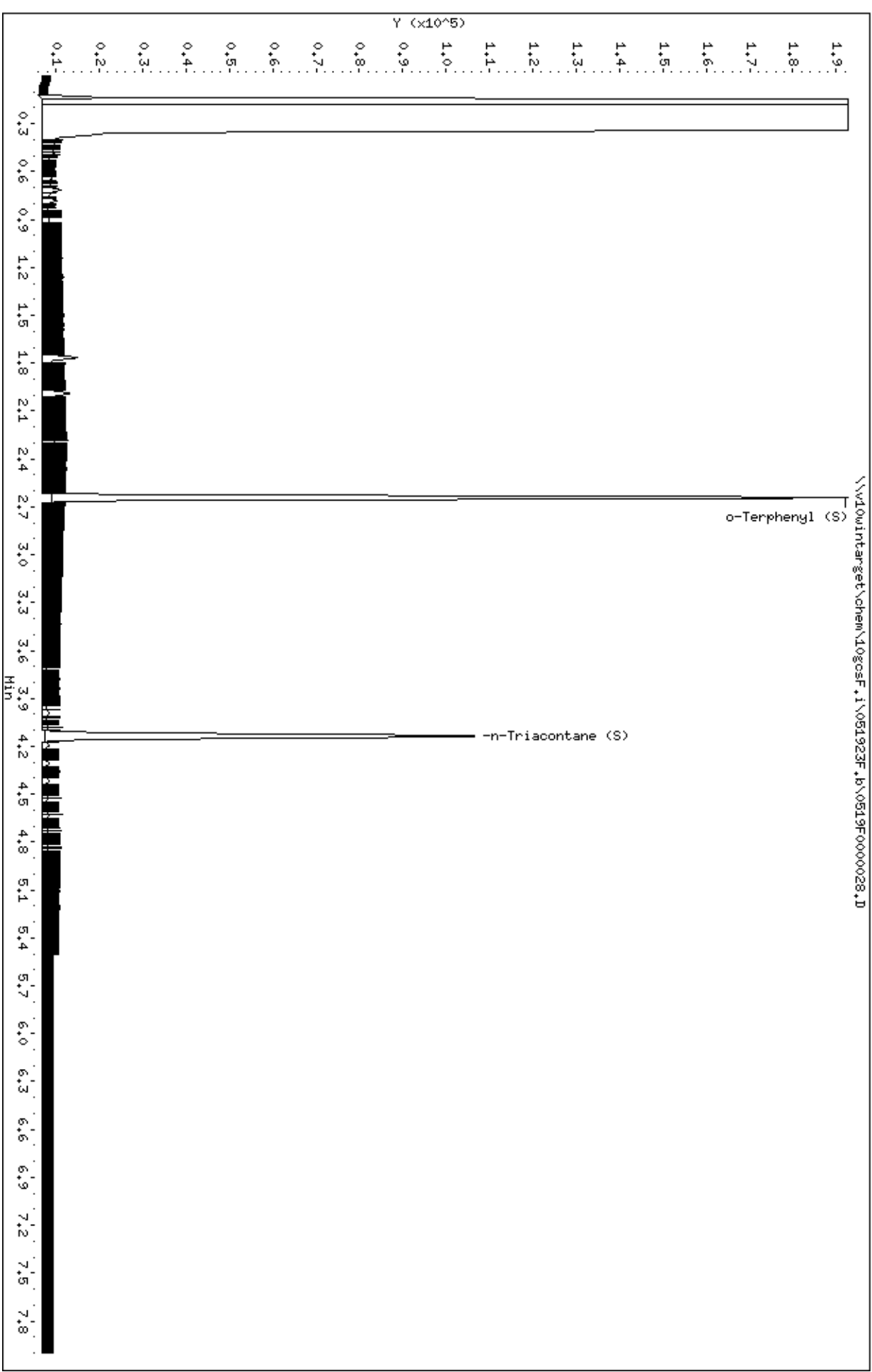
Data File: \\dl0win\target\chem\10gocsf.1\051923F.1\0519F0000027.D
Date: 19-MAY-2023 16:05
Client ID: PED-HM-28A-202305
Sample Info: 10653648005
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



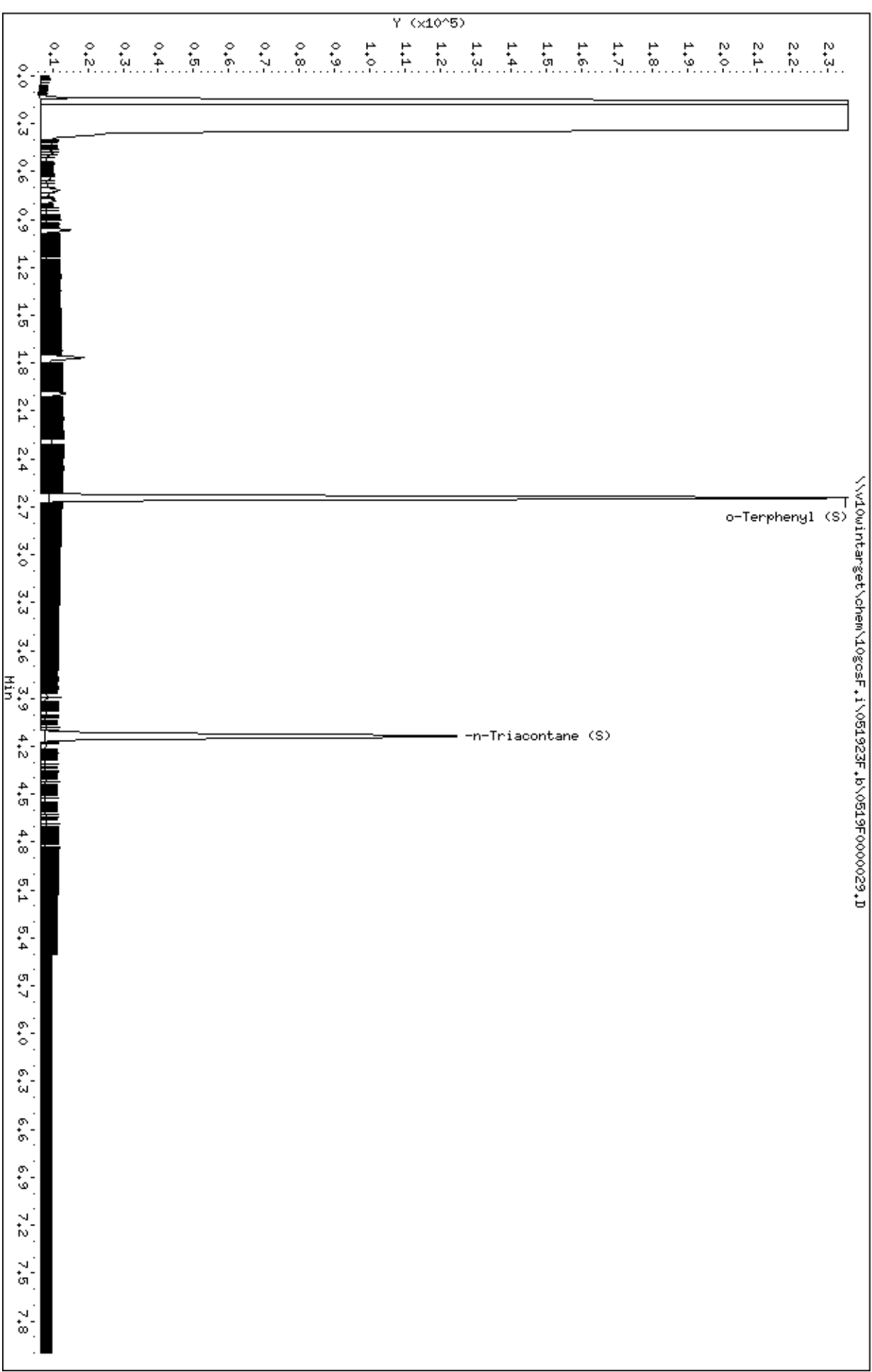
Data File: \\wdownintarget\chem\logosf.1\051923F.1\0519F0000028.D
Date: 19-MAY-2023 16:16
Client ID: PED-HM-45-202305
Sample Info: 10653648006
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



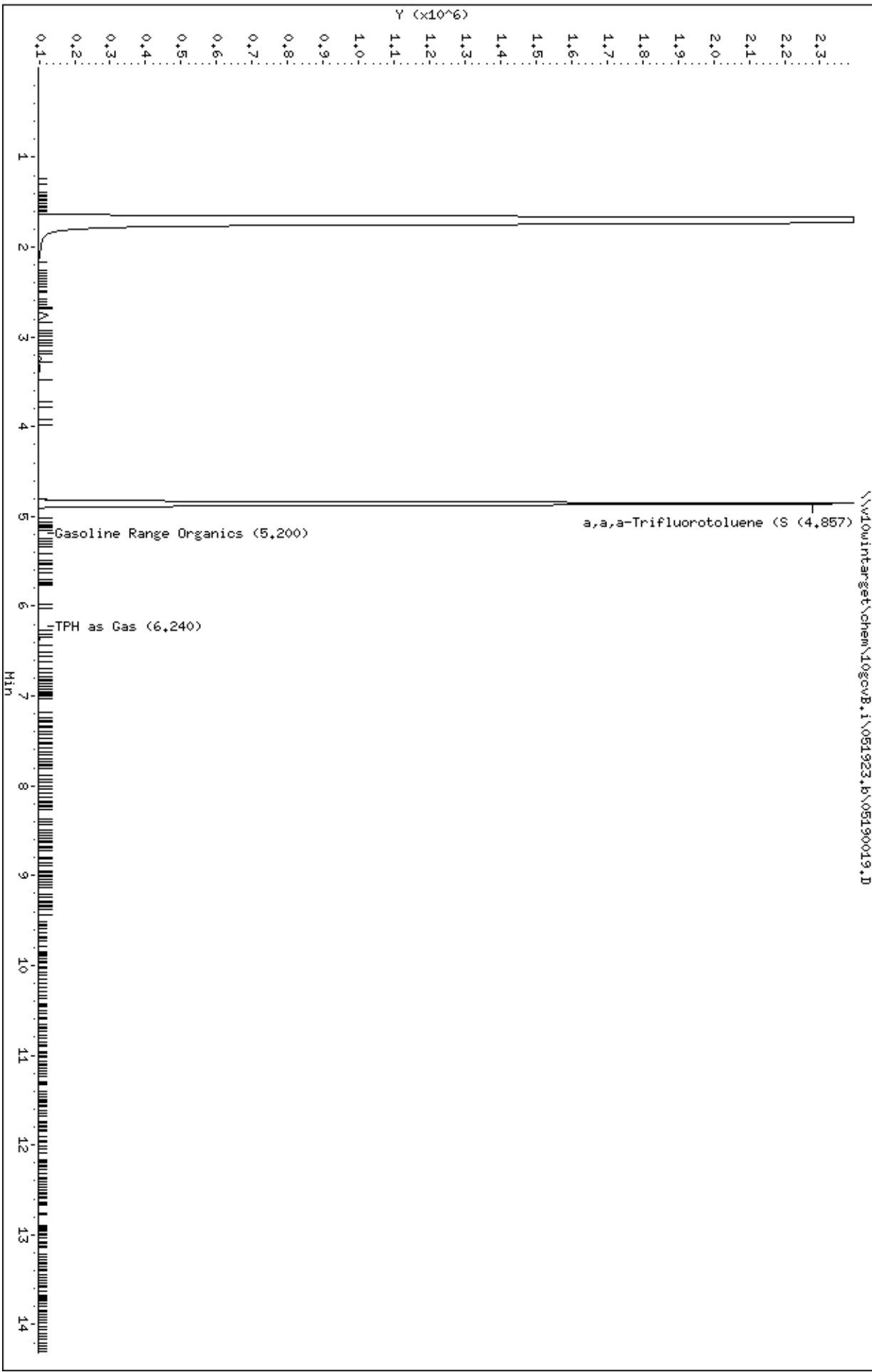
Data File: \\dlowintarget\chem\logosf.1\051923F.1\0519F0000029.D
Date : 19-MAY-2023 16:27
Client ID: PED-HM-40-202305
Sample Info: 10653648007
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



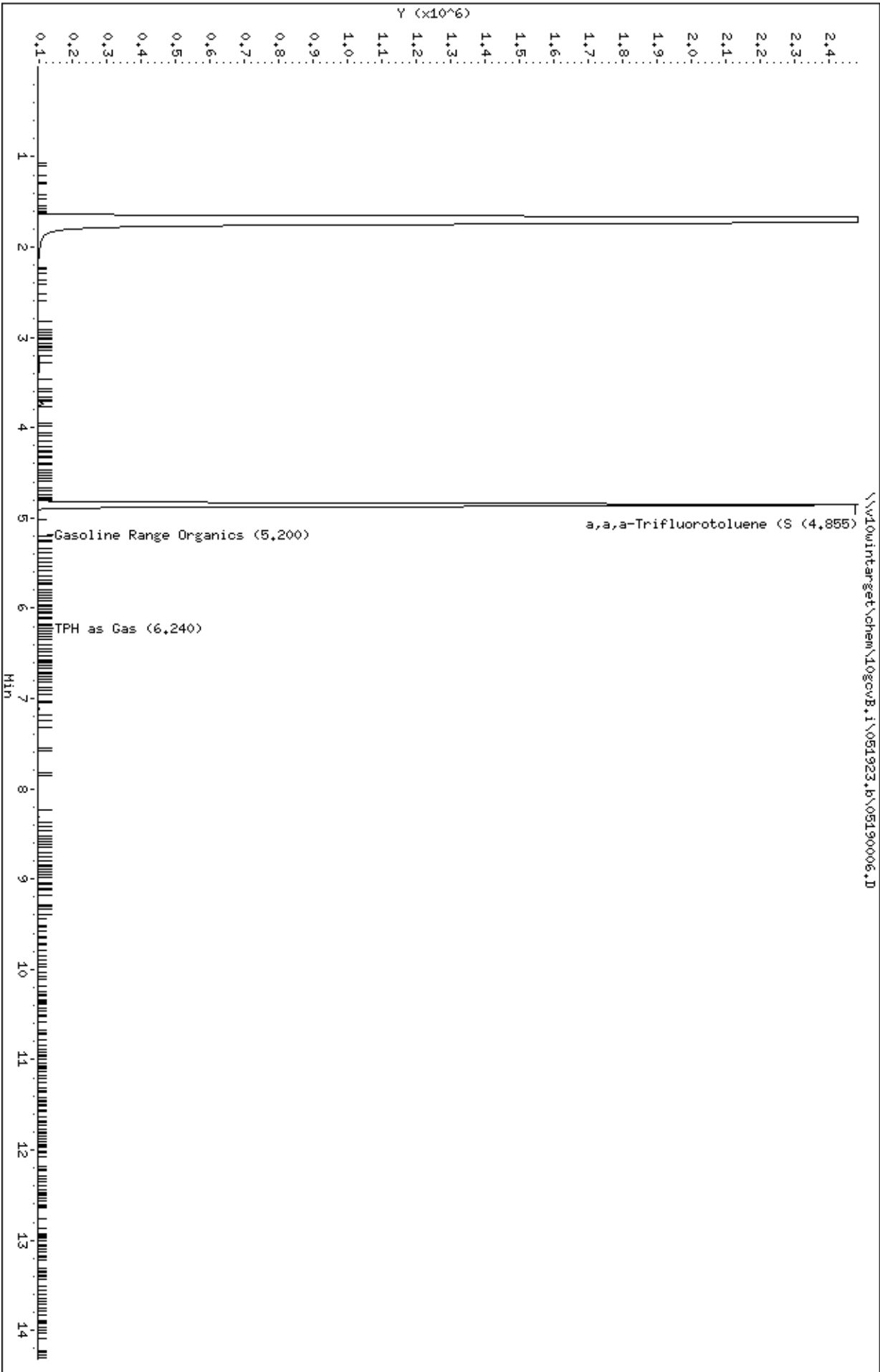
Data File: \\Vlowintarget\chem\logcvb.i\051923.b\05190019.D
Date: 19-MAY-2023 23:05
Client ID: TRIP BLANK-20230517
Sample Info: 10653648001,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



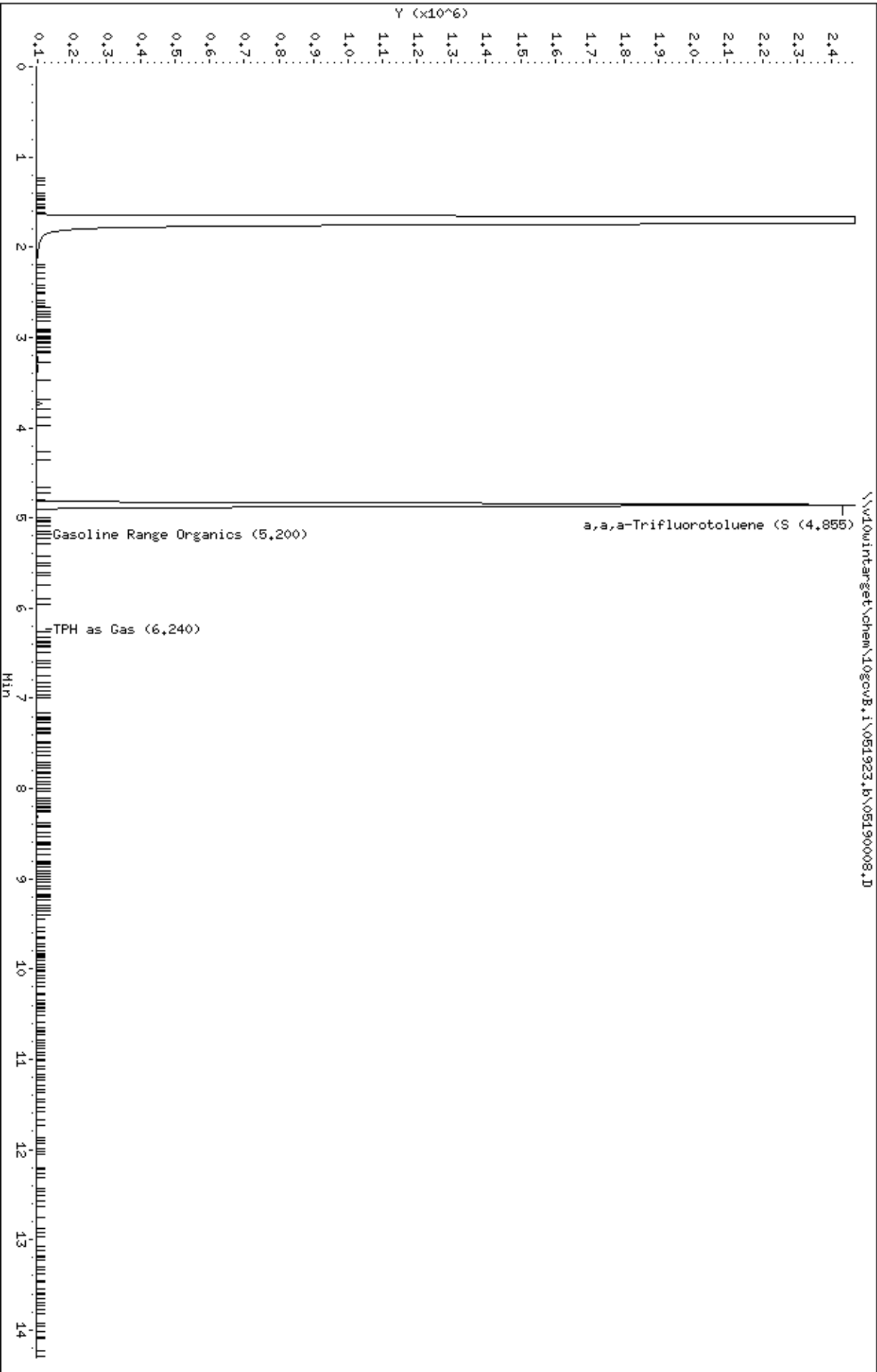
Data File: \\vdowintarget\chem\logvb.i\051923.b\05190006.D
Date: 19-MAY-2023 19:04
Client ID: PED-HM-44-202305
Sample Info: 10653648002,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18



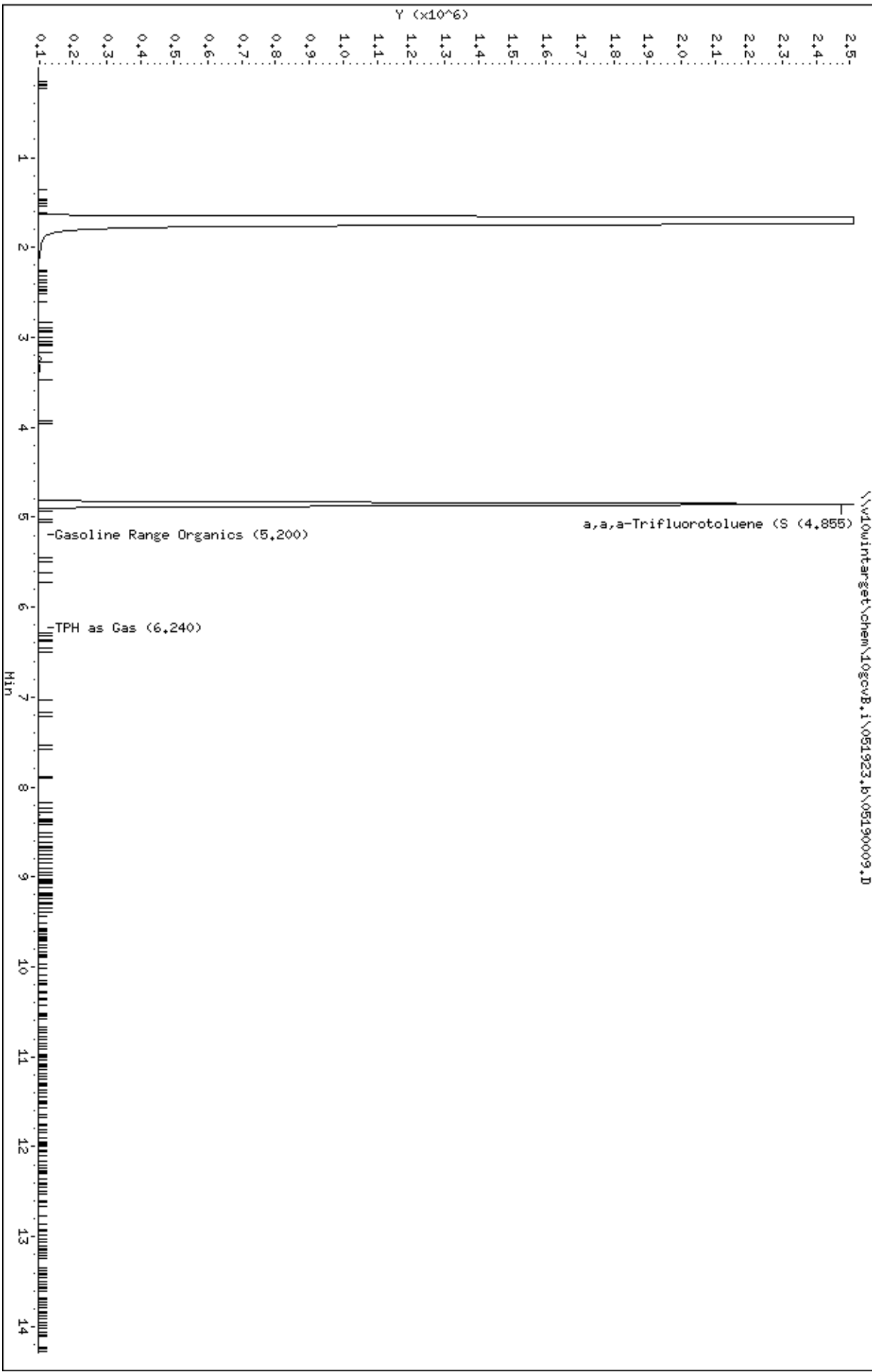
Data File: \\vdowintarget\chem\10gcvb.1\051923.b\05190008.D
Date: 19-MAY-2023 19:41
Client ID: PED-HM-21-202305
Sample Info: 10653648003,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TH2
Column diameter: 0.18



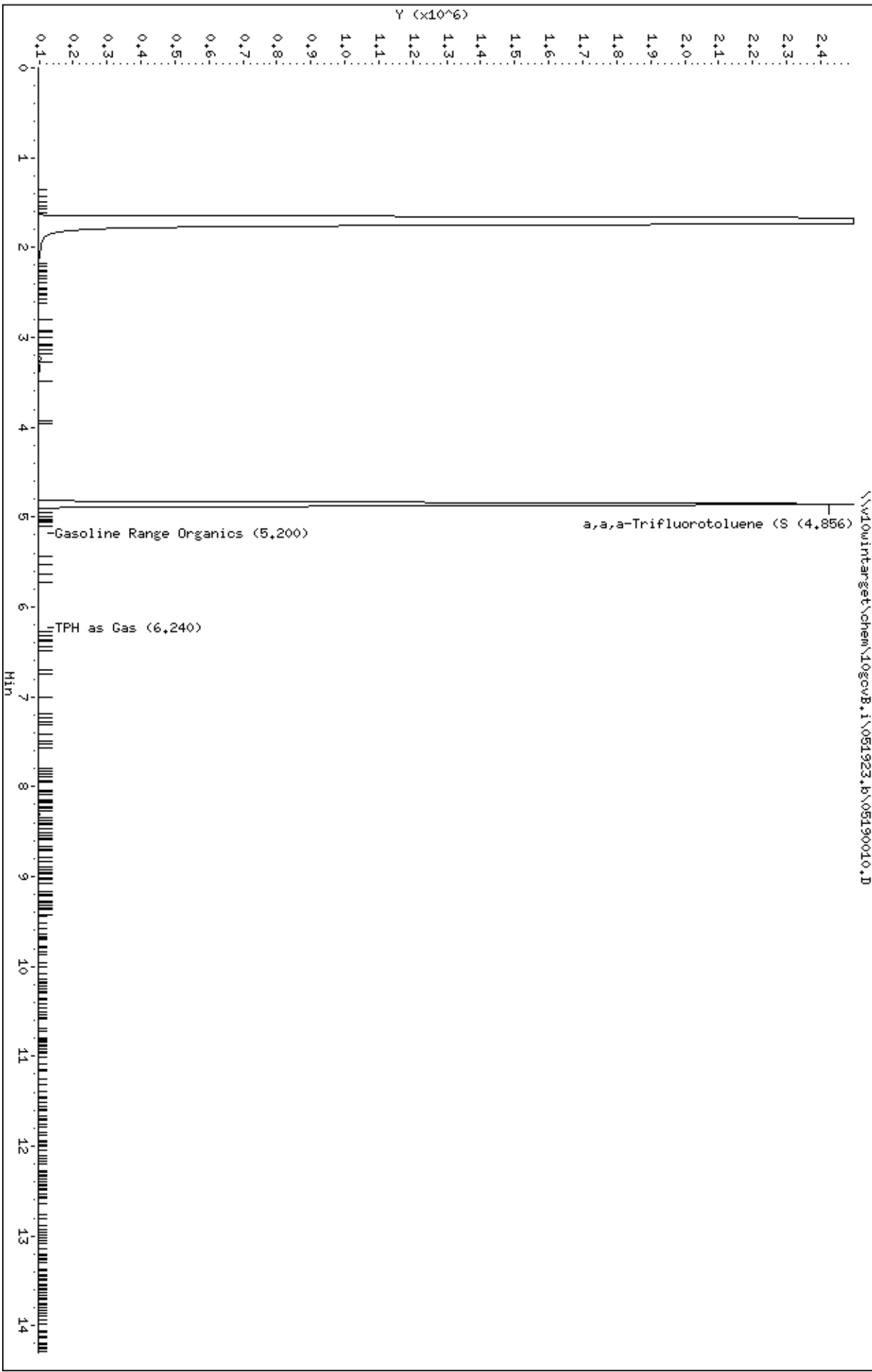
Data File: \\LowIntarget\chem\logcvb.i\051923.b\05190009.D
Date: 19-MAY-2023 20:00
Client ID: PE0-HM-24A-202305
Sample Info: 10653648004,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



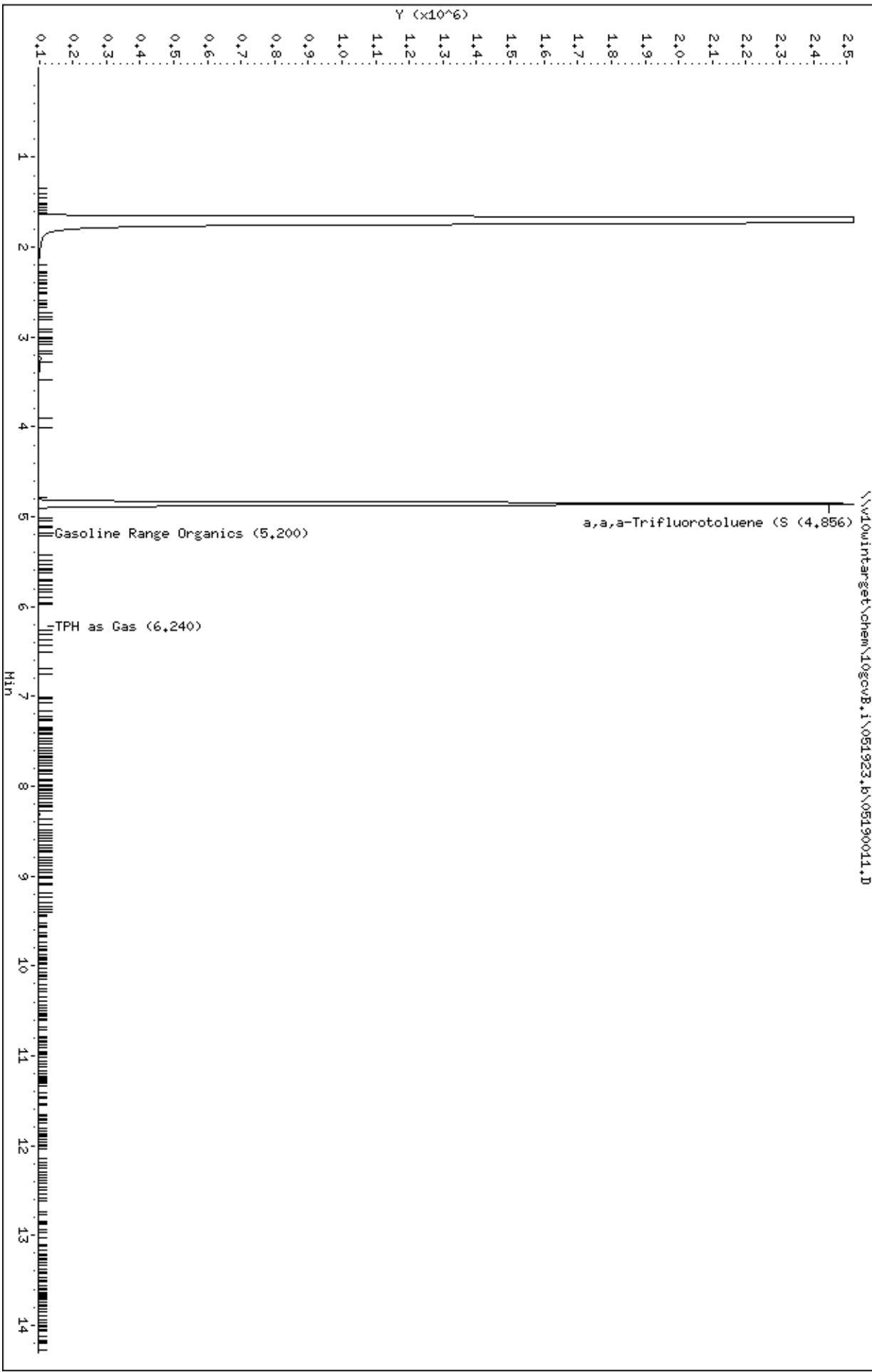
Data File: \\Lowintarget\chem\logvb.i\051923.b\05190010.D
Date: 19-MAY-2023 20:18
Client ID: PEO-HM-28A-202305
Sample Info: 10653648005,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18



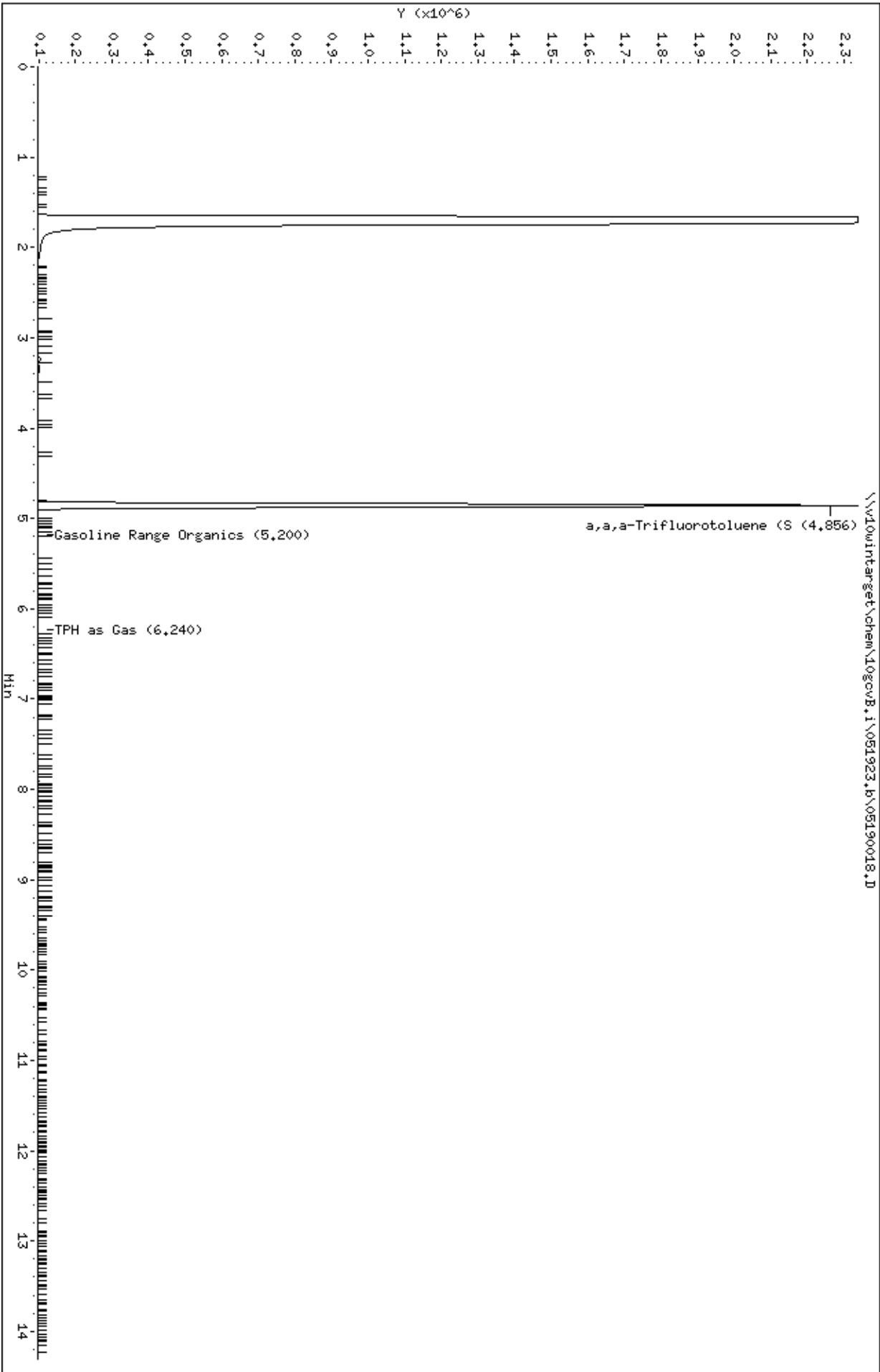
Data File: \\Lowintarget\chem\logvb.i\051923.b\05190011.D
Date: 19-MAY-2023 20:37
Client ID: PEO-HM-45-202305
Sample Info: 10653648006,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18



Data File: \\Lowintarget\chem\logvb.i\051923.b\05190018.D
Date: 19-MAY-2023 22:47
Client ID: PED-HM-40-202305
Sample Info: 10653648007,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18





May 24, 2023

Ms. Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414

Dear Ms. Bowser,

On May 19th, 7 samples were received by our laboratory and assigned our laboratory project number EV23050149. The project was identified as your Workorder 10653648 / Workorder Name 0680180.003. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414
DATE: 5/24/2023
ALS JOB#: EV23050149
ALS SAMPLE#: EV23050149-01
CLIENT CONTACT: Julie Bowser
DATE RECEIVED: 05/19/2023
CLIENT PROJECT: Workorder 10653648 / Workorder Name
0680180.003
COLLECTION DATE: 5/17/2023 8:00:00 AM
CLIENT SAMPLE ID TRIP BLANK-20230517
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	0.89	J	UG/L	1	1.1	0.38	05/23/2023	DLC

SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	92.5%		10.0	9.25	60	140	05/23/2023	DLC

J - Analyte was positively identified. Reported result is an estimate below the associated reporting limit but above the MDL.

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050149-02
CLIENT SAMPLE ID	PEO-MW-44-202305	DATE RECEIVED:	05/19/2023
		COLLECTION DATE:	5/16/2023 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	2.4		UG/L	1	1.1	0.38		05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	105%		10.0	10.5	60	140		05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050149-03
CLIENT SAMPLE ID	PEO-MW-Z1-202305	DATE RECEIVED:	05/19/2023
		COLLECTION DATE:	5/16/2023 10:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.8		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	108%		10.0	10.8	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050149-04
CLIENT SAMPLE ID	PEO-MW-24A-202305	DATE RECEIVED:	05/19/2023
		COLLECTION DATE:	5/16/2023 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	1.2		UG/L	1	1.1	0.38		05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	104%		10.0	10.4	60	140		05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050149-05
CLIENT SAMPLE ID	PEO-MW-28A-202305	DATE RECEIVED:	05/19/2023
		COLLECTION DATE:	5/16/2023 1:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.5		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	112%		10.0	11.2	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050149-06
CLIENT SAMPLE ID	PEO-MW-45-202305	DATE RECEIVED:	05/19/2023
		COLLECTION DATE:	5/16/2023 1:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.3		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	109%		10.0	10.9	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050149-07
CLIENT SAMPLE ID	PEO-MW-40-202305	DATE RECEIVED:	05/19/2023
		COLLECTION DATE:	5/16/2023 3:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.3		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	111%		10.0	11.1	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
		ALS SDG#:	EV23050149
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Julie Bowser		
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003		

LABORATORY BLANK RESULTS

MBLK-R436154 - Batch R436154 - Water by NWVPH Prepared 05/23/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	1.4		UG/L	1.1	0.38	1.1		05/23/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	98.1		10.0	9.81	60	140	05/23/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/24/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050149
CLIENT PROJECT:	Workorder 10653648 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R436154 - Water by NWVPH Prepared 05/23/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
							MIN	MAX	RPD		
>C10-C12 Aliphatics - BS	NWVPH	107			20.0	21.4	70	130		05/23/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	103	3		20.0	20.7	70	130	25	05/23/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
							MIN	MAX	RPD		
TFT - Aliphatic - BS	NWVPH	79.2			10.0	7.92	60	140		05/23/2023	DLC
TFT - Aliphatic - BSD	NWVPH	84.1			10.0	8.41	60	140		05/23/2023	DLC

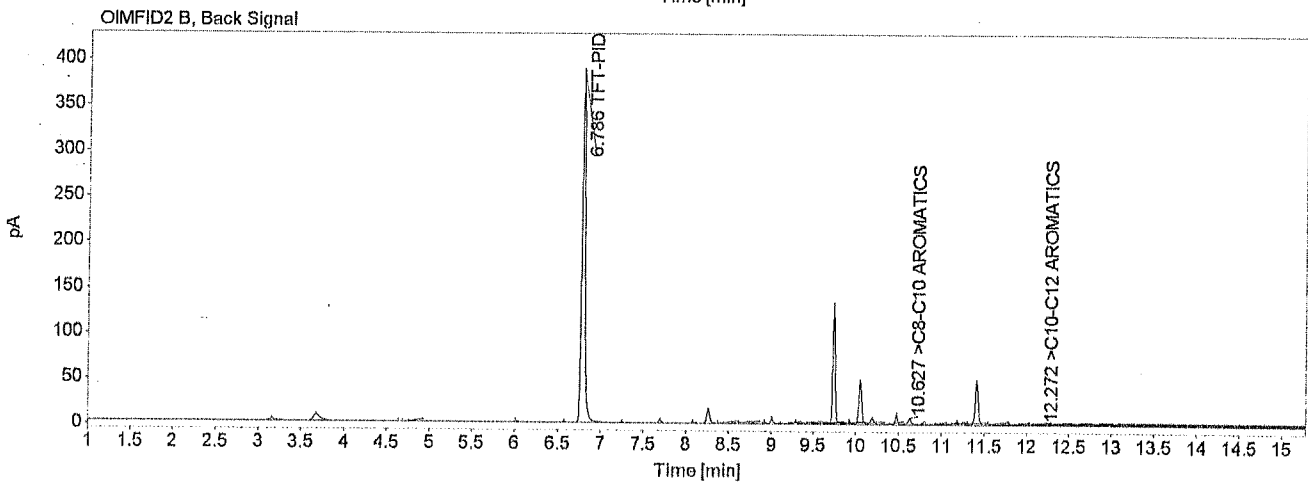
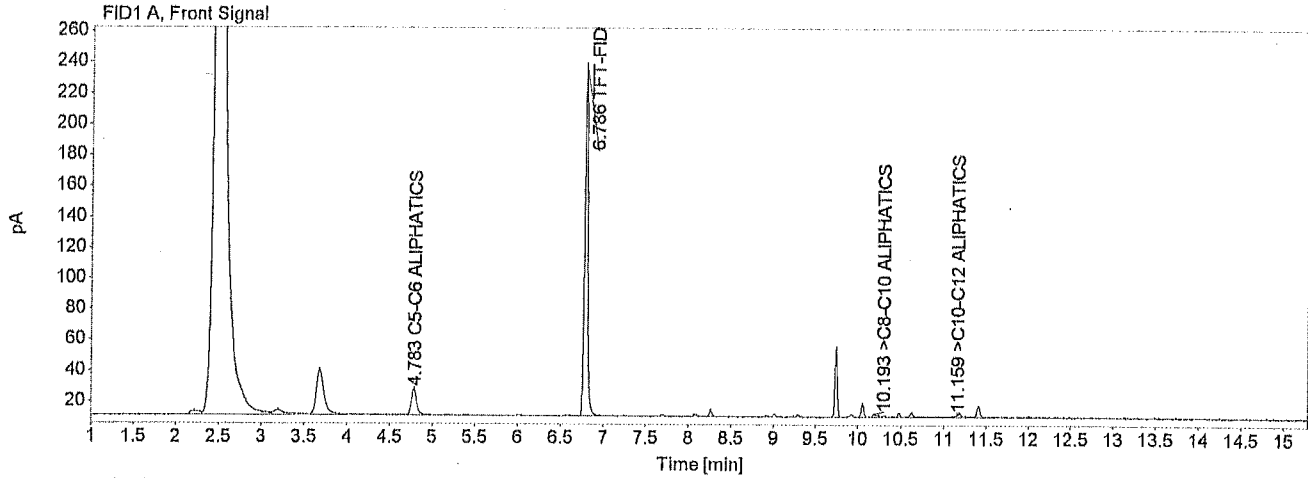
APPROVED BY



Rob Greer
Laboratory Director

Data file: D:\DATA\1192305232\1192305232\001F0601.D
 Sample name: MB-052323W VPH
 Dilution: 0.000
 Injection date: 5/23/2023 8:59:10 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	74.992	4.783	0.831
TFT-FID	593.095	6.786	9.813 <i>48%</i>
>C8-C10 ALIPHATICS	8.165	10.193	0.095
>C10-C12 ALIPHATICS	68.359	11.159	1.426

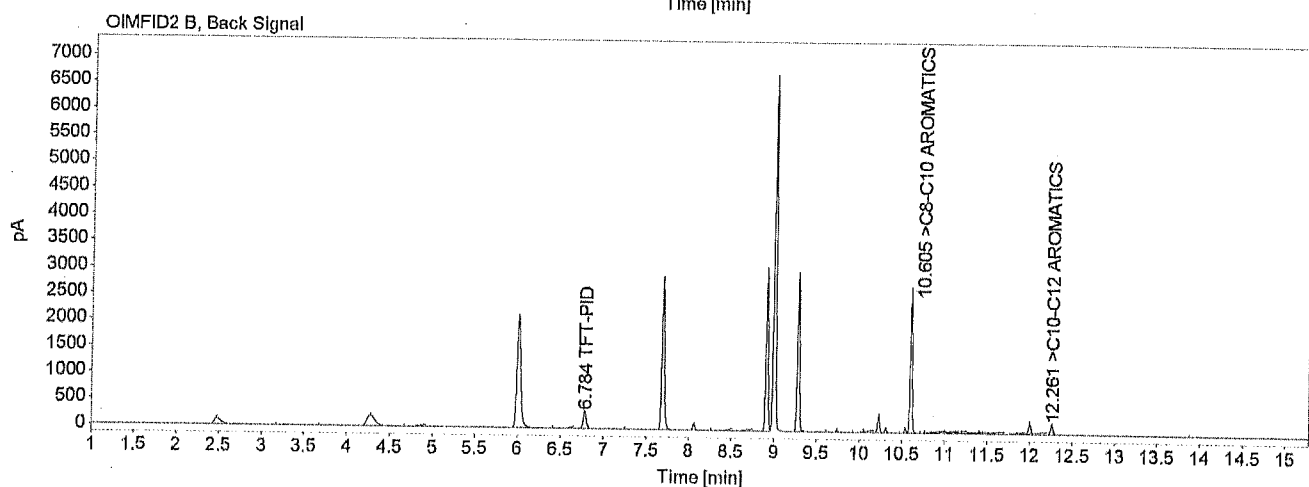
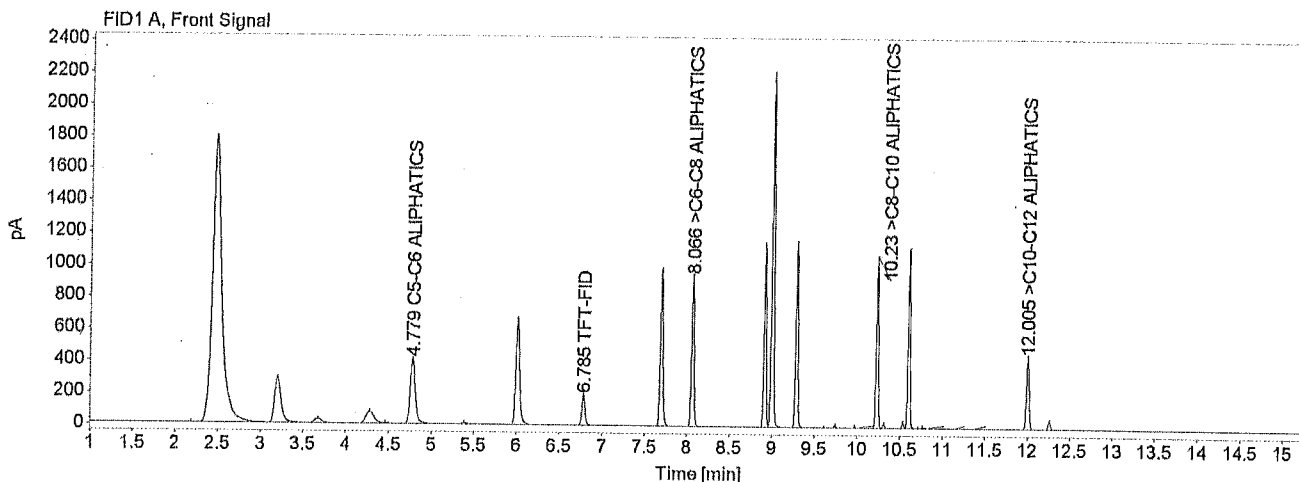
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1026.321	6.786	9.547
>C8-C10 AROMATICS	27.275	10.627	0.111
>C10-C12 AROMATICS	10.527	12.272	0.000
>C12-C13 AROMATICS	6.258	13.132	4.226

ALK

>C₁₀ - C₁₂ < 50 µg/L

Data file: D:\DATA\1192305232\1192305232\001F0701.D
 Sample name: BS-052323W VPH
 Dilution: 0.000
 Injection date: 5/23/2023 9:22:53 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119

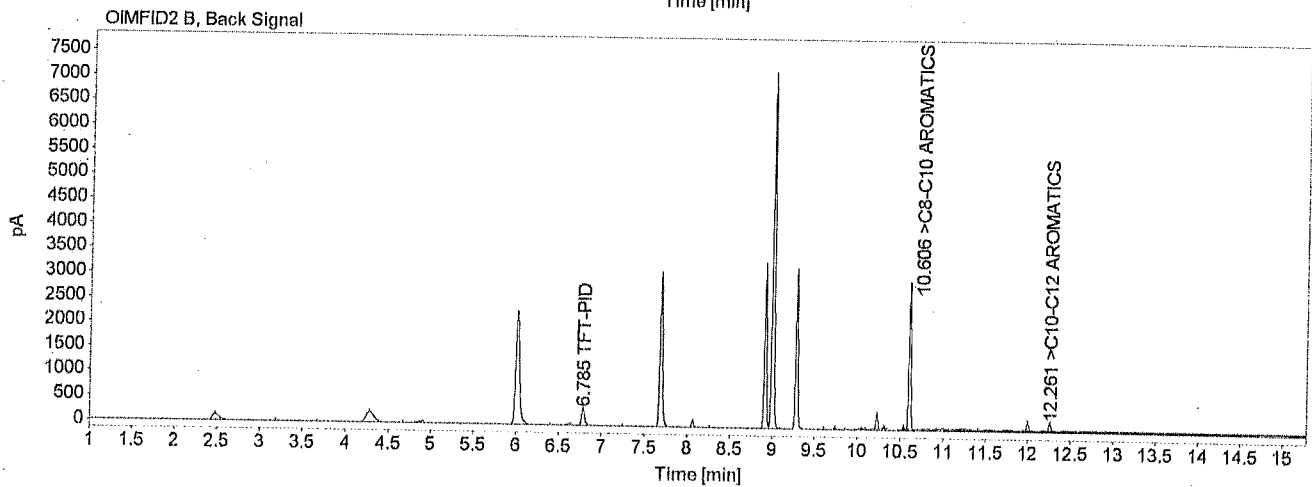
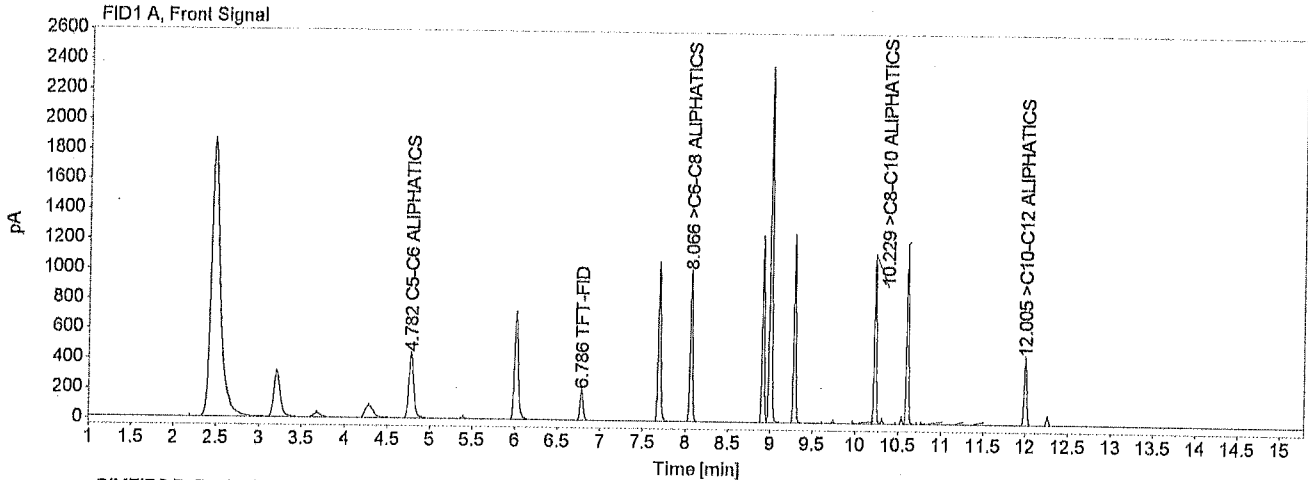


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1682.685	4.779	18.637
TFT-FID	478.765	6.785	7.921 <i>79%</i>
>C6-C8 ALIPHATICS	1853.194	8.066	19.932
>C8-C10 ALIPHATICS	1806.321	10.230	20.930
>C10-C12 ALIPHATICS	961.940	12.005	21.420 <i>107%</i>

Name	Peak Area	RT [min]	Amount [ug/L]
>C12-C13 AROMATICS			0.000
TFT-PID	839.408	6.784	7.808
>C8-C10 AROMATICS	4512.856	10.605	18.408
>C10-C12 AROMATICS	388.794	12.261	12.109

Data file: D:\DATA\1192305232\1192305232\001F0801.D
 Sample name: BSD-052323W VPH
 Dilution: 0.000
 Injection date: 5/23/2023 9:46:37 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

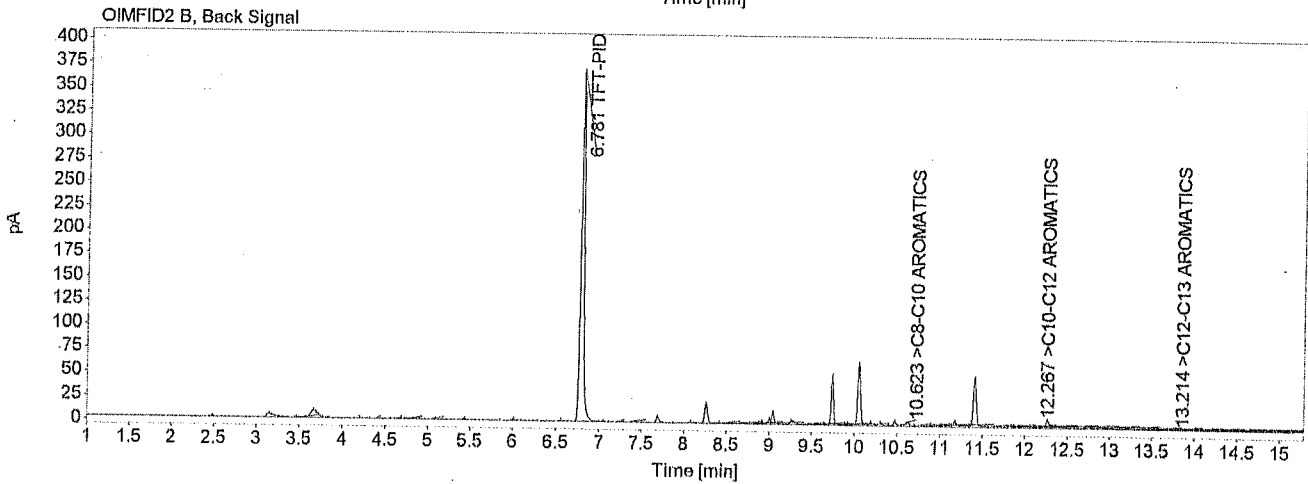
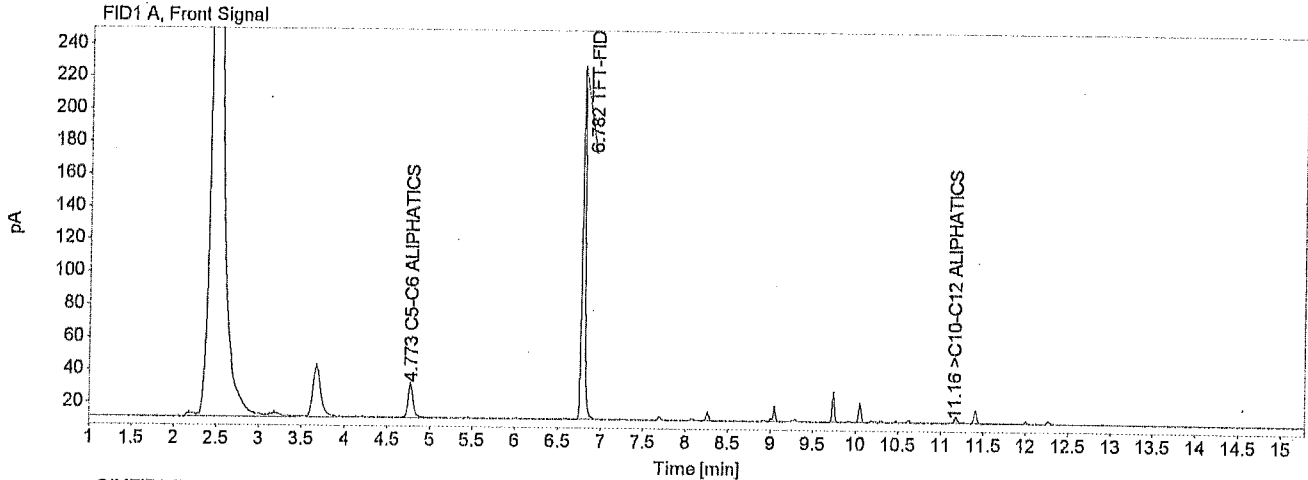
Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1798.873	4.782	19.924
TFT-FID	508.304	6.786	8.410 <i>89%</i>
>C6-C8 ALIPHATICS	1984.047	8.066	21.340
>C8-C10 ALIPHATICS	1912.228	10.229	22.158
>C10-C12 ALIPHATICS	934.438	12.005	20.696 <i>103%</i>
Name	Peak Area	RT [min]	Amount [ug/L]
>C12-C13 AROMATICS			0.000
TFT-PID	889.938	6.785	8.278
>C8-C10 AROMATICS	4864.882	10.606	19.844
>C10-C12 AROMATICS	419.761	12.261	13.384

Data file: D:\DATA\1192305232\1192305232\001F1901.D
 Sample name: EV23050149-01 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 2:11:02 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	89.971	4.773	0.996
TFT-FID	559.137	6.782	9.251 <i>93!</i>
>C10-C12 ALIPHATICS	40.349	11.160	0.886

Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	970.228	6.781	9.025
>C8-C10 AROMATICS	18.600	10.623	0.076
>C10-C12 AROMATICS	42.868	12.267	0.000
>C12-C13 AROMATICS	8.287	13.214	5.596

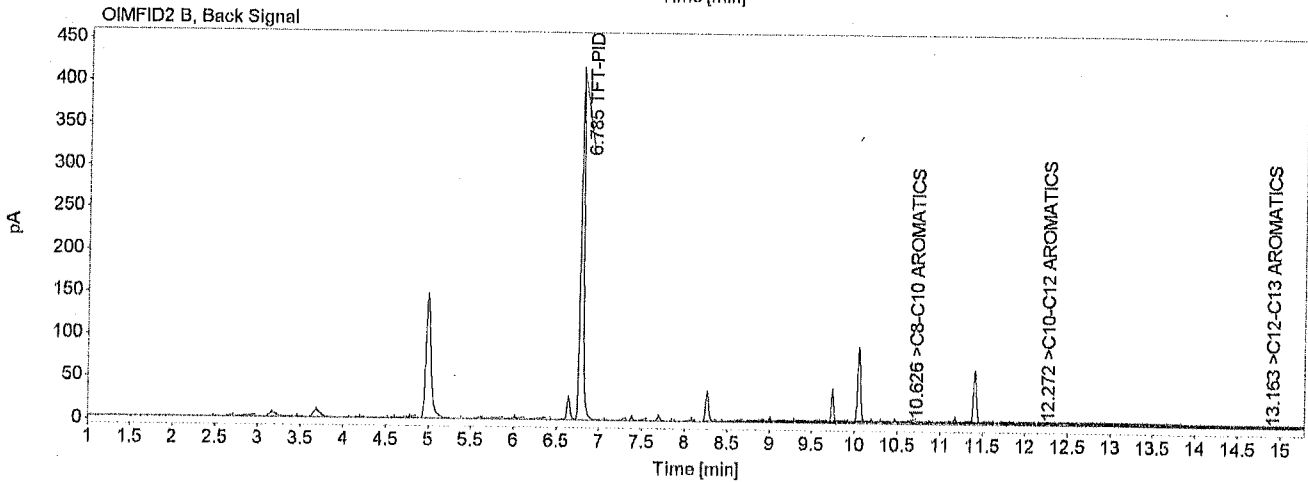
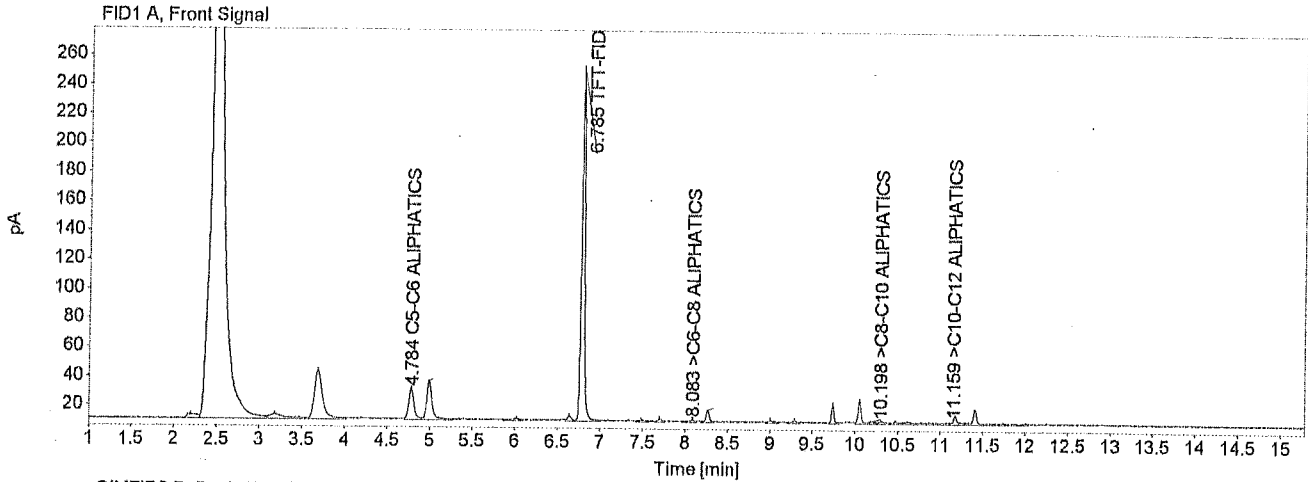
ALK

> C₁₀ - C₁₂ < 50 µg/L

52423DC

Data file: D:\DATA\1192305232\1192305232\001F2001.D
 Sample name: EV23050149-02 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 2:34:47 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	92.543	4.784	1.025
TFT-FID	632.736	6.785	10.469 105%
>C6-C8 ALIPHATICS	9.045	8.083	0.097
>C8-C10 ALIPHATICS	6.510	10.198	0.075
>C10-C12 ALIPHATICS	116.654	11.159	2.366
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1083.240	6.785	10.076
>C8-C10 AROMATICS	17.806	10.626	0.073
>C10-C12 AROMATICS	16.994	12.272	0.000
>C12-C13 AROMATICS	5.609	13.163	3.788

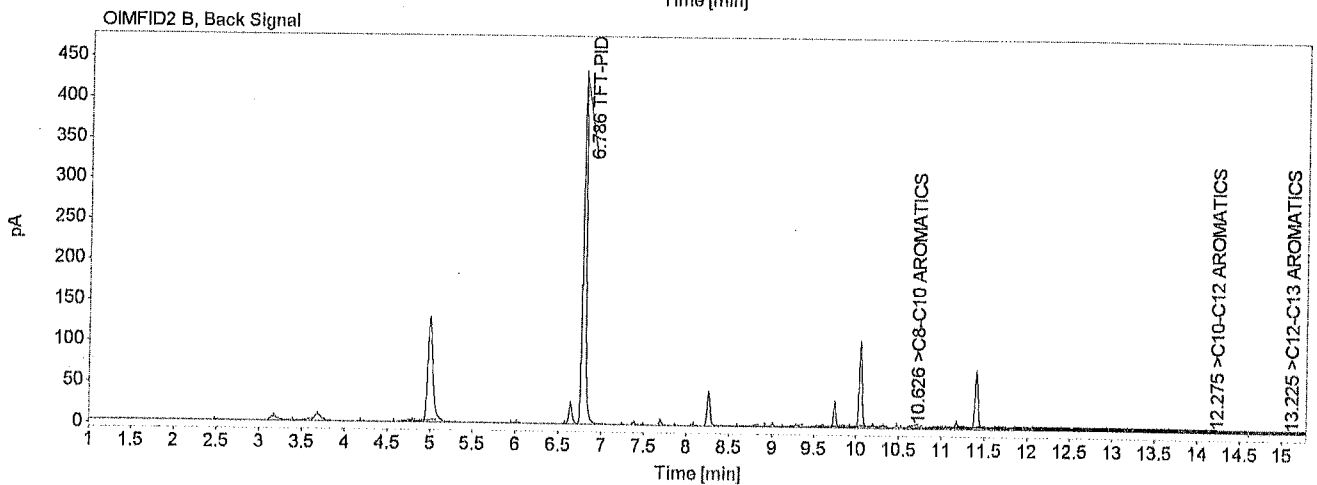
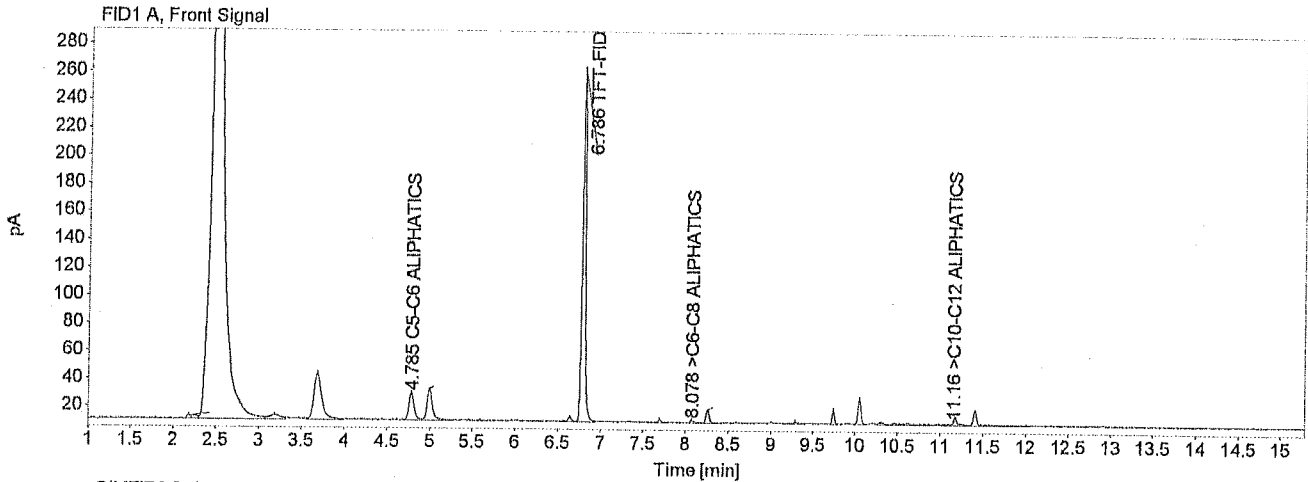
ALK

>C₁₀-C₁₂ < 50 µg/L

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F2101.D
 Sample name: EV23050149-03 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 2:58:33 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



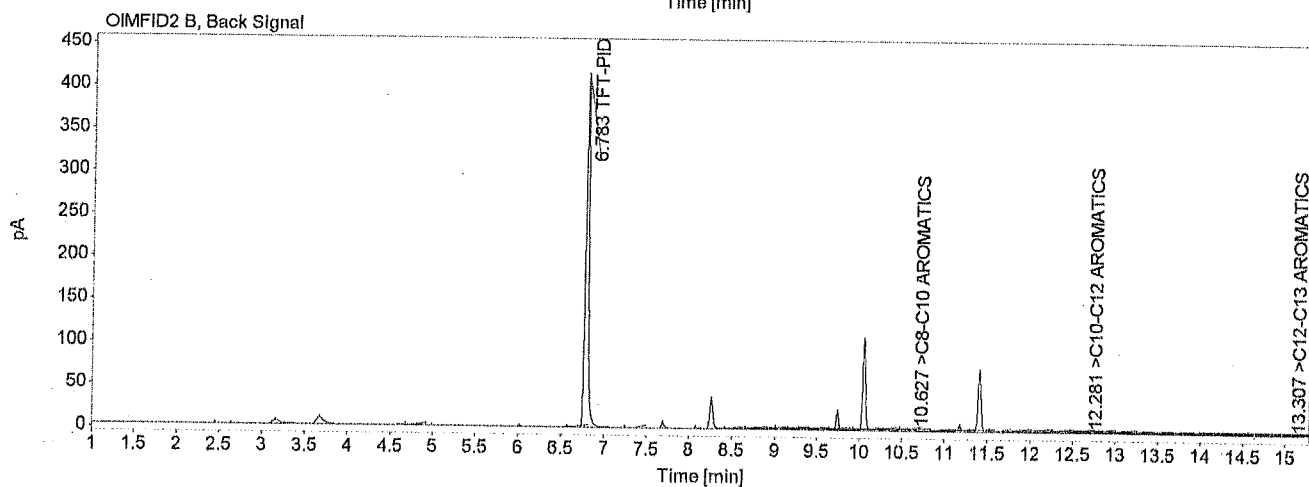
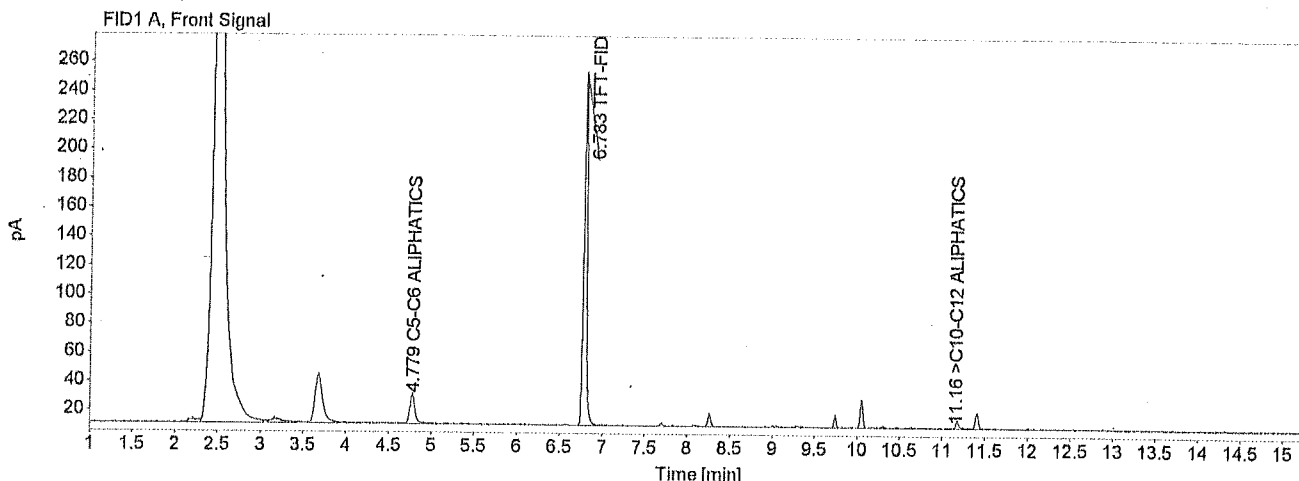
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	82.987	4.785	0.919
TFT-FID	653.781	6.786	10.817 108%
>C6-C8 ALIPHATICS	5.322	8.078	0.057
>C10-C12 ALIPHATICS	88.210	11.160	1.811

Name	Peak Area	RT [min]	Amount [ug/L]
>C8-C10 ALIPHATICS			0.000
TFT-PID	1132.468	6.786	10.534
>C8-C10 AROMATICS	14.468	10.626	0.059
>C10-C12 AROMATICS	10.576	12.275	0.000
>C12-C13 AROMATICS	3.558	13.225	2.403

ALK
 >C₁₀ - C₁₂ < 50 µg/l_l

Data file: D:\DATA\1192305232\1192305232\001F2201.D
 Sample name: EV23050149-04 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 3:22:19 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	86.788	4.779	0.961
TFT-FID	628.565	6.783	10.400 <i>104%</i>
>C10-C12 ALIPHATICS	54.114	11.160	1.151

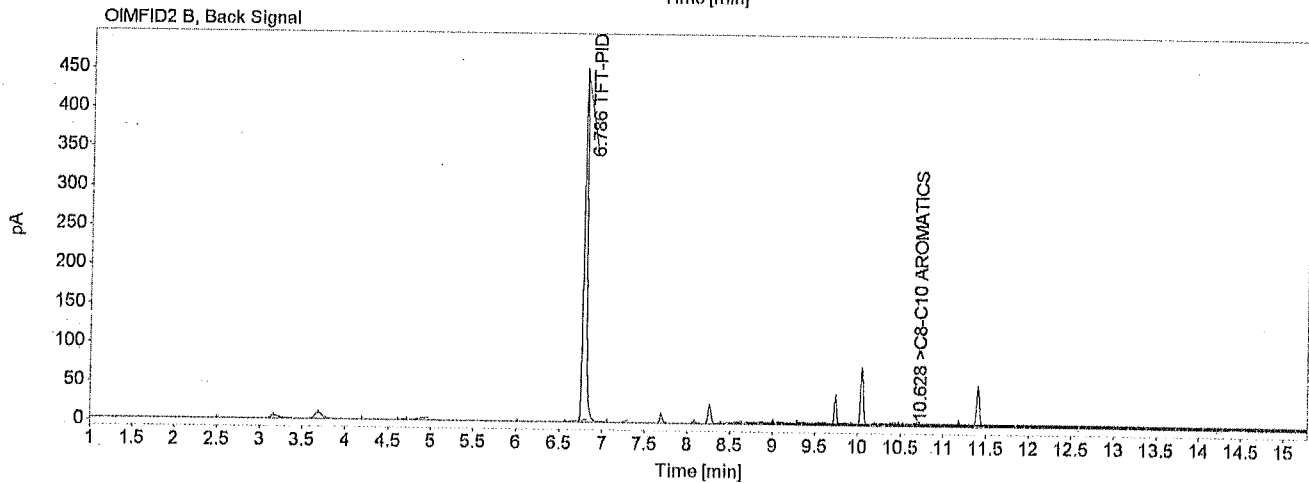
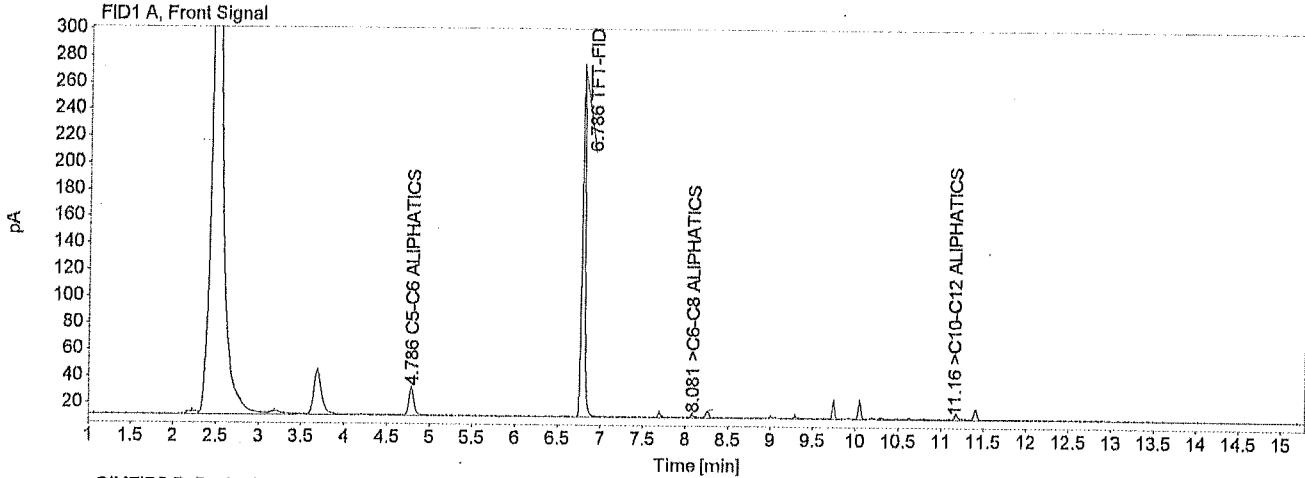
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1090.627	6.783	10.145
>C8-C10 AROMATICS	17.460	10.627	0.071
>C10-C12 AROMATICS	8.447	12.281	0.000
>C12-C13 AROMATICS	10.403	13.307	7.026

ALK

>C₁₀-C₁₂ < 50 µg/l

Data file: D:\DATA\1192305232\1192305232\001F2301.D
 Sample name: EV23050149-05 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 3:46:06 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	88.522	4.786	0.980
TFT-FID	678.085	6.786	11.219 <i>112%</i>
>C6-C8 ALIPHATICS	7.084	8.081	0.076
>C10-C12 ALIPHATICS	72.003	11.160	1.496

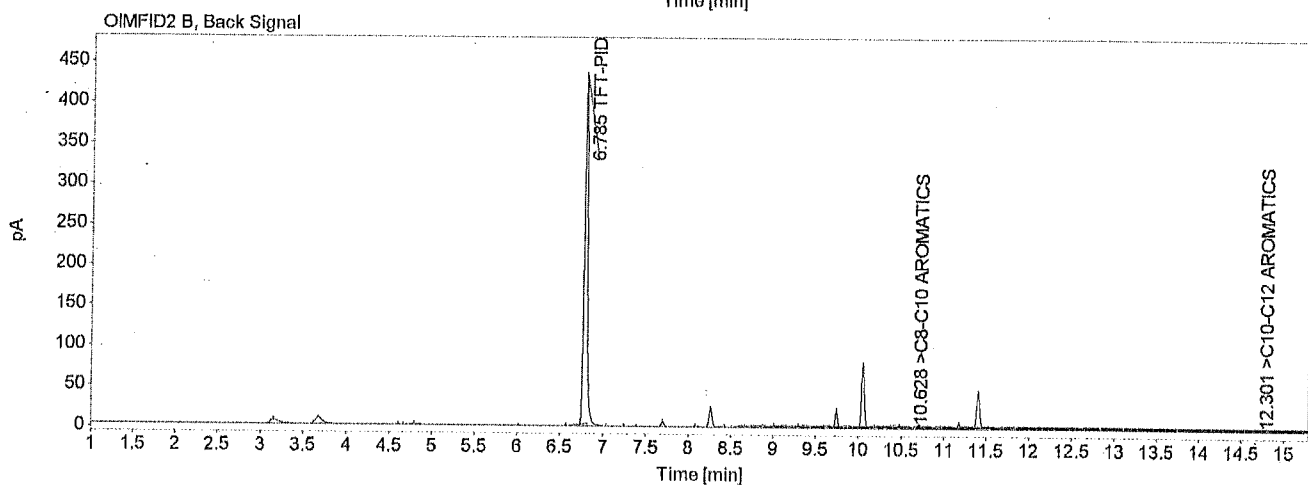
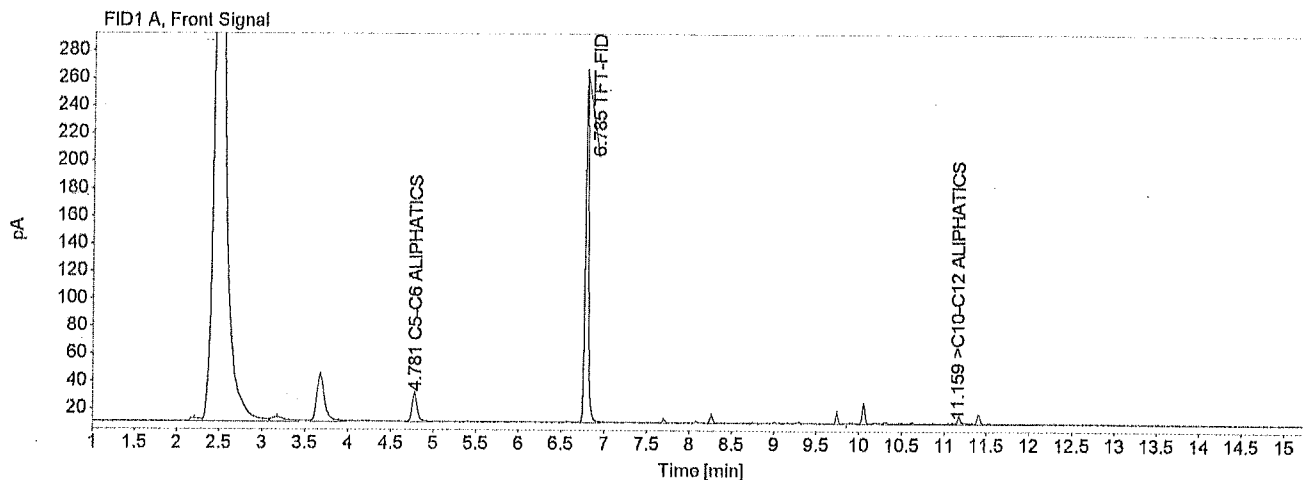
Name	Peak Area	RT [min]	Amount [ug/L]
>C8-C10 ALIPHATICS			0.000
TFT-PID	1166.940	6.786	10.855
>C8-C10 AROMATICS	12.650	10.628	0.052
>C10-C12 AROMATICS	7.404	12.258	0.000
>C12-C13 AROMATICS	8.712	13.241	5.884

ALK
>C₁₀-C₁₂ < 50 µg/L

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F2401.D
 Sample name: EV23050149-06 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 4:09:52 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	89.053	4.781	0.986
TFT-FID	659.844	6.785	10.917 109%
>C10-C12 ALIPHATICS	59.873	11.159	1.262

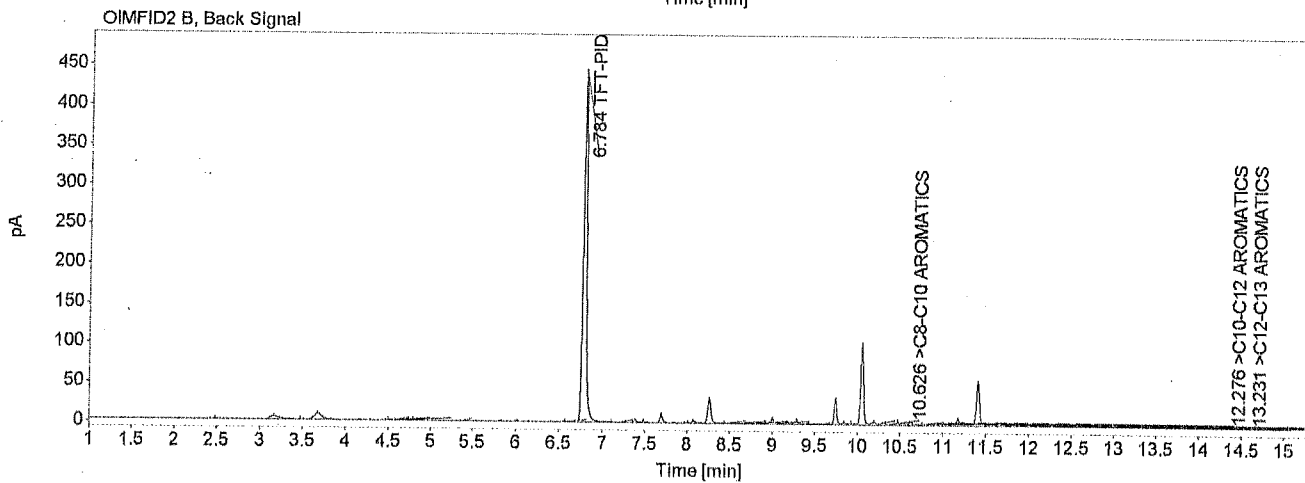
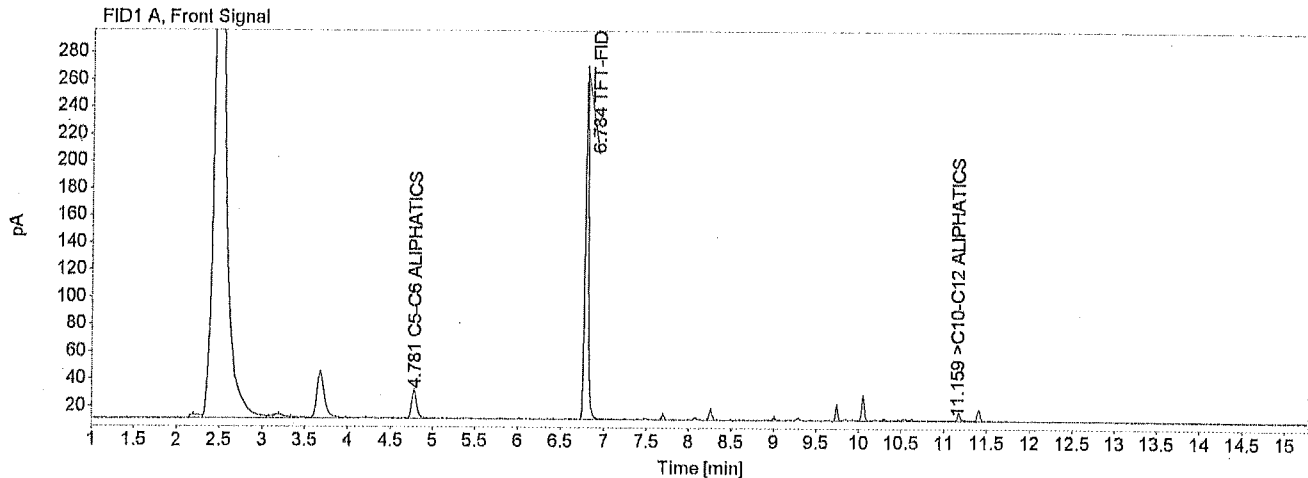
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1136.622	6.785	10.573
>C8-C10 AROMATICS	13.781	10.628	0.056
>C10-C12 AROMATICS	6.735	12.301	0.000
>C12-C13 AROMATICS	5.041	13.175	3.404

ALK
 > C₁₀ - C₁₂ < 50 µg/l

5-24-23 DC

Data file: D:\DATA\1192305232\1192305232\001F2501.D
 Sample name: EV23050149-07 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 4:33:38 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	91.294	4.781	1.011
TFT-FID	669.543	6.784	11.078
>C10-C12 ALIPHATICS	62.828	11.159	1.319

Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1161.568	6.784	10.805
>C8-C10 AROMATICS	16.526	10.626	0.067
>C10-C12 AROMATICS	10.180	12.276	0.000
>C12-C13 AROMATICS	5.331	13.231	3.600

AUK

>C₁₀-C₁₂ < 50 µg/L

EV23050149
 Pace Analytical®
 www.pacelabs.com

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10653648

Workorder Name: 0680180.003

Results Requested By: 6/2/2023

Report / Invoice To: Subcontract To

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

ALS
 8260 Holly Drive
 Everett, WA 98208

P.O. 10653648

State of Sample Origin:		OR		Preserved Containers	
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	HC
1	TRIP BLANK-20230517	5/17/2023 08:00	10653648001	Water	2
2	PEO-MW-44-202305	5/16/2023 10:15	10653648002	Water	3
3	PEO-MW-21-202305	5/16/2023 10:20	10653648003	Water	3
4	PEO-MW-24A-202305	5/16/2023 10:45	10653648004	Water	3
5	PEO-MW-28A-202305	5/16/2023 13:10	10653648005	Water	3
6	PEO-MW-45-202305	5/16/2023 13:20	10653648006	Water	3
7	PEO-MW-40-202305	5/16/2023 15:15	10653648007	Water	3

Transfers	Released By	Date/Time	Received By	Date/Time
1	Julie Bowser	5/16/2023 15:15	Julie Bowser	5/16/2023 09:10
2				
3				

Requested Analysis: NWP/PH-VPH (Aliphatics C10-C12)

Comments: LAB USE ONLY

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

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Pace Analytical Minnesota

ALS Job #: EV230501~~149~~ 149^{cc}

Project: 10653648 / 0680180.003

Received Date: 5/19/23 Received Time: 0910 By: CE

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered

FedEx Express
Priority Overnight

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of shipping container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>TOP</u>			
Custody seal date: <u>5/18/23</u> Seal name: <u>JMF</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?

Bubbles present in sample #: _____

Temperature of cooler upon receipt: 3.7^{°C} Cold Cool Ambient N/A

Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

June 12, 2023

Erica Whitting
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0680180.003
Pace Project No.: 10653844

Dear Erica Whitting:

Enclosed are the analytical results for sample(s) received by the laboratory on May 19, 2023. 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: Jo Casey, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Andrea George, ERM
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0680180.003

Pace Project No.: 10653844

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

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

GMP+ Certification #: GMP050884

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

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

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SAMPLE SUMMARY

Project: 0680180.003

Pace Project No.: 10653844

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10653844001	TRIP BLANK-20230518	Water	05/18/23 08:00	05/19/23 08:50
10653844002	PEO-MW-41-202305	Water	05/17/23 08:45	05/19/23 08:50
10653844003	PEO-MW-36-202305	Water	05/17/23 09:00	05/19/23 08:50
10653844004	PEO-MW-27-202305	Water	05/17/23 10:50	05/19/23 08:50
10653844005	PEO-MW-26-202305	Water	05/17/23 13:00	05/19/23 08:50
10653844006	PEO-MW-Z2-202305	Water	05/17/23 13:05	05/19/23 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10653844

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10653844001	TRIP BLANK-20230518	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	TKL	8	PASI-M
10653844002	PEO-MW-41-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653844003	PEO-MW-36-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653844004	PEO-MW-27-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653844005	PEO-MW-26-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10653844006	PEO-MW-Z2-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	SMB	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10653844

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	NN2	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	TKL	8	PASI-M
		SM 2320B	KEO	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: 0680180.003

Pace Project No.: 10653844

Sample: TRIP BLANK-20230518 **Lab ID: 10653844001** Collected: 05/18/23 08:00 Received: 05/19/23 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	22.6	1		05/20/23 02:10		
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	50-150		1		05/20/23 02:10	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/23/23 04:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 04:08	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 04:08	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 04:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 04:08	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	105	%	75-125		1		05/23/23 04:08	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/23/23 04:08	460-00-4	
Toluene-d8 (S)	106	%	75-125		1		05/23/23 04:08	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-41-202305 **Lab ID: 10653844002** Collected: 05/17/23 08:45 Received: 05/19/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 08:58	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 08:58		
Surrogates									
n-Triacontane (S)	69	%	50-150		1	05/24/23 12:05	05/26/23 08:58		
o-Terphenyl (S)	80	%	50-150		1	05/24/23 12:05	05/26/23 08:58	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/19/23 23:24		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/19/23 23:24	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	58000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:28		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.36J	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 19:03	7440-38-2	
Manganese, Dissolved	654	ug/L	10.0	3.3	20	05/30/23 05:40	05/31/23 17:03	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0063	1	05/19/23 12:16	05/22/23 20:15	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/19/23 12:16	05/22/23 20:15	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/19/23 12:16	05/22/23 20:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0074	1	05/19/23 12:16	05/22/23 20:15	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0078	1	05/19/23 12:16	05/22/23 20:15	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/19/23 12:16	05/22/23 20:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0085	1	05/19/23 12:16	05/22/23 20:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/19/23 12:16	05/22/23 20:15	207-08-9	
Chrysene	ND	ug/L	0.039	0.0084	1	05/19/23 12:16	05/22/23 20:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/19/23 12:16	05/22/23 20:15	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/19/23 12:16	05/22/23 20:15	206-44-0	
Fluorene	ND	ug/L	0.039	0.0060	1	05/19/23 12:16	05/22/23 20:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.0099	1	05/19/23 12:16	05/22/23 20:15	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/19/23 12:16	05/22/23 20:15	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/19/23 12:16	05/22/23 20:15	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/19/23 12:16	05/22/23 20:15	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/19/23 12:16	05/22/23 20:15	85-01-8	
Pyrene	ND	ug/L	0.039	0.0088	1	05/19/23 12:16	05/22/23 20:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	57	%	49-125		1	05/19/23 12:16	05/22/23 20:15	321-60-8	
p-Terphenyl-d14 (S)	77	%	42-125		1	05/19/23 12:16	05/22/23 20:15	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-41-202305 **Lab ID: 10653844002** Collected: 05/17/23 08:45 Received: 05/19/23 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		05/23/23 06:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 06:20	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 06:20	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 06:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 06:20	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	102	%	75-125		1		05/23/23 06:20	2199-69-1	
4-Bromofluorobenzene (S)	102	%	75-125		1		05/23/23 06:20	460-00-4	
Toluene-d8 (S)	108	%	75-125		1		05/23/23 06:20	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	41.3	mg/L	5.0	1.4	1		05/31/23 06:40		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	24.7	mg/L	1.2	0.43	1		06/01/23 18:57	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-36-202305		Lab ID: 10653844003		Collected: 05/17/23 09:00	Received: 05/19/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	0.15J	mg/L	0.45	0.13	1	05/24/23 12:05	05/26/23 09:09	68334-30-5	
Motor Oil Range	ND	mg/L	0.45	0.22	1	05/24/23 12:05	05/26/23 09:09		
Surrogates									
n-Triacontane (S)	53	%	50-150		1	05/24/23 12:05	05/26/23 09:09		
o-Terphenyl (S)	58	%	50-150		1	05/24/23 12:05	05/26/23 09:09	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	210	ug/L	100	22.6	1		05/19/23 23:42		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/19/23 23:42	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	102000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:30		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	13.3	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 19:12	7440-38-2	
Manganese, Dissolved	1080	ug/L	10.0	3.3	20	05/30/23 05:40	05/31/23 17:06	7439-96-5	P6
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	0.46	ug/L	0.038	0.0062	1	05/19/23 12:16	05/22/23 20:38	83-32-9	
Acenaphthylene	0.051	ug/L	0.038	0.0054	1	05/19/23 12:16	05/22/23 20:38	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/19/23 12:16	05/22/23 20:38	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0073	1	05/19/23 12:16	05/22/23 20:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 20:38	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0079	1	05/19/23 12:16	05/22/23 20:38	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 20:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/19/23 12:16	05/22/23 20:38	207-08-9	
Chrysene	ND	ug/L	0.038	0.0083	1	05/19/23 12:16	05/22/23 20:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 20:38	53-70-3	
Fluoranthene	0.016J	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 20:38	206-44-0	
Fluorene	0.26	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 20:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0097	1	05/19/23 12:16	05/22/23 20:38	193-39-5	
1-Methylnaphthalene	0.29	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 20:38	90-12-0	
2-Methylnaphthalene	0.032J	ug/L	0.038	0.0072	1	05/19/23 12:16	05/22/23 20:38	91-57-6	
Naphthalene	0.12	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 20:38	91-20-3	
Phenanthrene	0.018J	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 20:38	85-01-8	
Pyrene	ND	ug/L	0.038	0.0087	1	05/19/23 12:16	05/22/23 20:38	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	65	%	49-125		1	05/19/23 12:16	05/22/23 20:38	321-60-8	
p-Terphenyl-d14 (S)	64	%	42-125		1	05/19/23 12:16	05/22/23 20:38	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-36-202305 **Lab ID: 10653844003** Collected: 05/17/23 09:00 Received: 05/19/23 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	0.57J	ug/L	1.0	0.10	1		05/23/23 04:41	71-43-2	
Ethylbenzene	0.12J	ug/L	1.0	0.11	1		05/23/23 04:41	100-41-4	
Toluene	1.1	ug/L	1.0	0.10	1		05/23/23 04:41	108-88-3	
m&p-Xylene	1.4J	ug/L	2.0	0.20	1		05/23/23 04:41	179601-23-1	
o-Xylene	0.56J	ug/L	1.0	0.18	1		05/23/23 04:41	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/23/23 04:41	2199-69-1	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/23/23 04:41	460-00-4	
Toluene-d8 (S)	107	%	75-125		1		05/23/23 04:41	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	129	mg/L	5.0	1.4	1		05/31/23 06:53		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	7.1	mg/L	1.2	0.43	1		06/01/23 19:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003
Pace Project No.: 10653844

Sample: PEO-MW-27-202305 Lab ID: 10653844004 Collected: 05/17/23 10:50 Received: 05/19/23 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 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	0.61	mg/L	0.45	0.13	1	05/24/23 12:05	05/26/23 09:43	68334-30-5	
Motor Oil Range	ND	mg/L	0.45	0.22	1	05/24/23 12:05	05/26/23 09:43		
Surrogates									
n-Triacontane (S)	77	%	50-150		1	05/24/23 12:05	05/26/23 09:43		
o-Terphenyl (S)	76	%	50-150		1	05/24/23 12:05	05/26/23 09:43	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	43.9J	ug/L	100	22.6	1		05/20/23 01:15		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%	50-150		1		05/20/23 01:15	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	73200	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:41		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	23.9	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 19:27	7440-38-2	
Manganese, Dissolved	1440	ug/L	10.0	3.3	20	05/30/23 05:40	05/31/23 17:27	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.22	ug/L	0.038	0.0062	1	05/19/23 12:16	05/22/23 21:44	83-32-9	
Acenaphthylene	0.018J	ug/L	0.038	0.0054	1	05/19/23 12:16	05/22/23 21:44	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/19/23 12:16	05/22/23 21:44	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0073	1	05/19/23 12:16	05/22/23 21:44	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 21:44	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0079	1	05/19/23 12:16	05/22/23 21:44	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 21:44	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/19/23 12:16	05/22/23 21:44	207-08-9	
Chrysene	ND	ug/L	0.038	0.0083	1	05/19/23 12:16	05/22/23 21:44	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 21:44	53-70-3	
Fluoranthene	0.019J	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 21:44	206-44-0	
Fluorene	0.13	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 21:44	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0097	1	05/19/23 12:16	05/22/23 21:44	193-39-5	
1-Methylnaphthalene	0.039	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 21:44	90-12-0	
2-Methylnaphthalene	0.023J	ug/L	0.038	0.0072	1	05/19/23 12:16	05/22/23 21:44	91-57-6	
Naphthalene	0.071	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 21:44	91-20-3	
Phenanthrene	0.020J	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 21:44	85-01-8	
Pyrene	ND	ug/L	0.038	0.0087	1	05/19/23 12:16	05/22/23 21:44	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	52	%	49-125		1	05/19/23 12:16	05/22/23 21:44	321-60-8	
p-Terphenyl-d14 (S)	53	%	42-125		1	05/19/23 12:16	05/22/23 21:44	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-27-202305 **Lab ID: 10653844004** Collected: 05/17/23 10:50 Received: 05/19/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/23/23 06:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 06:37	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 06:37	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 06:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 06:37	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	103	%	75-125		1		05/23/23 06:37	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/23/23 06:37	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/23/23 06:37	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	95.9	mg/L	5.0	1.4	1		05/31/23 07:10		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	3.2	mg/L	1.2	0.43	1		06/01/23 20:40	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-26-202305 Lab ID: 10653844005 Collected: 05/17/23 13:00 Received: 05/19/23 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 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.43	0.13	1	05/24/23 12:05	05/26/23 09:55	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	0.21	1	05/24/23 12:05	05/26/23 09:55		
Surrogates									
n-Triacontane (S)	47	%	50-150		1	05/24/23 12:05	05/26/23 09:55		P2,S0
o-Terphenyl (S)	45	%	50-150		1	05/24/23 12:05	05/26/23 09:55	84-15-1	S0
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/20/23 01:33		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	50-150		1		05/20/23 01:33	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	33500	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:43		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.8	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 19:30	7440-38-2	
Manganese, Dissolved	3.0	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 17:30	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.042	0.0068	1	05/19/23 12:16	05/22/23 22:06	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0059	1	05/19/23 12:16	05/22/23 22:06	208-96-8	
Anthracene	ND	ug/L	0.042	0.0051	1	05/19/23 12:16	05/22/23 22:06	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.0080	1	05/19/23 12:16	05/22/23 22:06	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0083	1	05/19/23 12:16	05/22/23 22:06	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0087	1	05/19/23 12:16	05/22/23 22:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0091	1	05/19/23 12:16	05/22/23 22:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0089	1	05/19/23 12:16	05/22/23 22:06	207-08-9	
Chrysene	ND	ug/L	0.042	0.0091	1	05/19/23 12:16	05/22/23 22:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.0083	1	05/19/23 12:16	05/22/23 22:06	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.013	1	05/19/23 12:16	05/22/23 22:06	206-44-0	
Fluorene	ND	ug/L	0.042	0.0065	1	05/19/23 12:16	05/22/23 22:06	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.011	1	05/19/23 12:16	05/22/23 22:06	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.042	0.0065	1	05/19/23 12:16	05/22/23 22:06	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.042	0.0079	1	05/19/23 12:16	05/22/23 22:06	91-57-6	
Naphthalene	ND	ug/L	0.042	0.015	1	05/19/23 12:16	05/22/23 22:06	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.015	1	05/19/23 12:16	05/22/23 22:06	85-01-8	
Pyrene	ND	ug/L	0.042	0.0095	1	05/19/23 12:16	05/22/23 22:06	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	64	%	49-125		1	05/19/23 12:16	05/22/23 22:06	321-60-8	
p-Terphenyl-d14 (S)	72	%	42-125		1	05/19/23 12:16	05/22/23 22:06	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-26-202305 Lab ID: 10653844005 Collected: 05/17/23 13:00 Received: 05/19/23 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		05/23/23 06:53	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 06:53	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 06:53	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 06:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 06:53	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/23/23 06:53	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/23/23 06:53	460-00-4	
Toluene-d8 (S)	108	%	75-125		1		05/23/23 06:53	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	23.4	mg/L	5.0	1.4	1		05/31/23 07:30		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	23.0	mg/L	1.2	0.43	1		06/01/23 20:55	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-Z2-202305 Lab ID: 10653844006 Collected: 05/17/23 13:05 Received: 05/19/23 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 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.40	0.12	1	05/22/23 16:54	05/23/23 14:45	68334-30-5	L2,P2
Motor Oil Range	ND	mg/L	0.40	0.19	1	05/22/23 16:54	05/23/23 14:45		L2
Surrogates									
n-Triacontane (S)	29	%	50-150		1	05/22/23 16:54	05/23/23 14:45		S0
o-Terphenyl (S)	37	%	50-150		1	05/22/23 16:54	05/23/23 14:45	84-15-1	S0
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/20/23 01:52		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	50-150		1		05/20/23 01:52	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	34000	ug/L	3300	361	1	05/30/23 05:30	06/01/23 14:45		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	1.9	ug/L	0.50	0.092	1	05/30/23 05:40	05/30/23 19:33	7440-38-2	
Manganese, Dissolved	1.9	ug/L	0.50	0.16	1	05/30/23 05:40	05/31/23 17:33	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0062	1	05/19/23 12:16	05/22/23 22:28	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0054	1	05/19/23 12:16	05/22/23 22:28	208-96-8	
Anthracene	ND	ug/L	0.038	0.0047	1	05/19/23 12:16	05/22/23 22:28	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.0073	1	05/19/23 12:16	05/22/23 22:28	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 22:28	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0079	1	05/19/23 12:16	05/22/23 22:28	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0084	1	05/19/23 12:16	05/22/23 22:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/19/23 12:16	05/22/23 22:28	207-08-9	
Chrysene	ND	ug/L	0.038	0.0083	1	05/19/23 12:16	05/22/23 22:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.0076	1	05/19/23 12:16	05/22/23 22:28	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.012	1	05/19/23 12:16	05/22/23 22:28	206-44-0	
Fluorene	ND	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 22:28	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.0097	1	05/19/23 12:16	05/22/23 22:28	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/19/23 12:16	05/22/23 22:28	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.0072	1	05/19/23 12:16	05/22/23 22:28	91-57-6	
Naphthalene	ND	ug/L	0.038	0.014	1	05/19/23 12:16	05/22/23 22:28	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.013	1	05/19/23 12:16	05/22/23 22:28	85-01-8	
Pyrene	0.010J	ug/L	0.038	0.0087	1	05/19/23 12:16	05/22/23 22:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	60	%	49-125		1	05/19/23 12:16	05/22/23 22:28	321-60-8	
p-Terphenyl-d14 (S)	74	%	42-125		1	05/19/23 12:16	05/22/23 22:28	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10653844

Sample: PEO-MW-Z2-202305 **Lab ID: 10653844006** Collected: 05/17/23 13:05 Received: 05/19/23 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		05/23/23 07:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/23/23 07:09	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/23/23 07:09	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/23/23 07:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/23/23 07:09	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/23/23 07:09	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/23/23 07:09	460-00-4	
Toluene-d8 (S)	109	%	75-125		1		05/23/23 07:09	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	24.1	mg/L	5.0	1.4	1		05/31/23 07:33		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	23.6	mg/L	1.2	0.43	1		06/01/23 21:40	14808-79-8	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653844

QC Batch: 882374 Analysis Method: NWTPH-Gx
 QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
 Laboratory: Pace Analytical Services - Minneapolis
 Associated Lab Samples: 10653844001, 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

METHOD BLANK: 4649502 Matrix: Water
 Associated Lab Samples: 10653844001, 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/19/23 18:45	
a,a,a-Trifluorotoluene (S)	%	102	50-150		05/19/23 18:45	

METHOD BLANK: 4649503 Matrix: Water
 Associated Lab Samples: 10653844001, 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/19/23 22:28	
a,a,a-Trifluorotoluene (S)	%	96	50-150		05/19/23 22:28	

LABORATORY CONTROL SAMPLE & LCSD: 4649504 4649505

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	925	901	92	90	68-125	3	20	
a,a,a-Trifluorotoluene (S)	%				102	100	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4649508 4649509

Parameter	Units	10653844003 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	210	1000	1000	1120	1150	91	94	57-132	3	30	
a,a,a-Trifluorotoluene (S)	%						96	97	50-150			

SAMPLE DUPLICATE: 4649506

Parameter	Units	10653648002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%	100	100			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653844

SAMPLE DUPLICATE: 4649507

Parameter	Units	10653844003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	210	210	0	30	
a,a,a-Trifluorotoluene (S)	%.	95	95			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653844

QC Batch: 882705 Analysis Method: EPA 6020B
QC Batch Method: EPA 3020A Analysis Description: 6020B Water Dissolved UPD5
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

METHOD BLANK: 4651250 Matrix: Water
Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.092	05/30/23 18:14	
Manganese, Dissolved	ug/L	ND	0.50	0.16	05/31/23 16:14	

LABORATORY CONTROL SAMPLE: 4651251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	100	100	80-120	
Manganese, Dissolved	ug/L	100	108	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4651252 4651253

Parameter	Units	10653844003 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	13.3	100	100	117	111	103	98	75-125	5	20	
Manganese, Dissolved	ug/L	1080	100	100	1240	1160	159	81	75-125	6	20	P6

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653844

QC Batch: 882644	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV UST-WATER
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653844001, 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

METHOD BLANK: 4650892 Matrix: Water
Associated Lab Samples: 10653844001, 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/23/23 03:19	
Ethylbenzene	ug/L	ND	1.0	0.11	05/23/23 03:19	
m&p-Xylene	ug/L	ND	2.0	0.20	05/23/23 03:19	
o-Xylene	ug/L	ND	1.0	0.18	05/23/23 03:19	
Toluene	ug/L	ND	1.0	0.10	05/23/23 03:19	
1,2-Dichlorobenzene-d4 (S)	%	99	75-125		05/23/23 03:19	
4-Bromofluorobenzene (S)	%	101	75-125		05/23/23 03:19	
Toluene-d8 (S)	%	109	75-125		05/23/23 03:19	

LABORATORY CONTROL SAMPLE: 4650893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.8	94	75-125	
Ethylbenzene	ug/L	20	17.8	89	75-125	
m&p-Xylene	ug/L	40	37.2	93	75-125	
o-Xylene	ug/L	20	18.5	93	75-125	
Toluene	ug/L	20	19.9	99	74-125	
1,2-Dichlorobenzene-d4 (S)	%			98	75-125	
4-Bromofluorobenzene (S)	%			96	75-125	
Toluene-d8 (S)	%			104	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4650894 4650895

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10653844003 Result	Spike Conc.	Spike Conc.	Result						
Benzene	ug/L	0.57J	20	20	18.5	17.9	90	87	66-127	3	30
Ethylbenzene	ug/L	0.12J	20	20	17.0	17.0	84	84	74-128	0	30
m&p-Xylene	ug/L	1.4J	40	40	36.6	35.9	88	86	70-131	2	30
o-Xylene	ug/L	0.56J	20	20	18.4	18.3	89	89	75-127	1	30
Toluene	ug/L	1.1	20	20	20.3	19.4	96	91	66-125	5	30
1,2-Dichlorobenzene-d4 (S)	%						100	100	75-125		
4-Bromofluorobenzene (S)	%						98	100	75-125		
Toluene-d8 (S)	%						106	103	75-125		

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653844

QC Batch: 882313 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

METHOD BLANK: 4648962 Matrix: Water
Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0062	05/22/23 17:18	
2-Methylnaphthalene	ug/L	ND	0.040	0.0076	05/22/23 17:18	
Acenaphthene	ug/L	ND	0.040	0.0065	05/22/23 17:18	
Acenaphthylene	ug/L	ND	0.040	0.0056	05/22/23 17:18	
Anthracene	ug/L	ND	0.040	0.0049	05/22/23 17:18	
Benzo(a)anthracene	ug/L	ND	0.040	0.0076	05/22/23 17:18	
Benzo(a)pyrene	ug/L	ND	0.040	0.0080	05/22/23 17:18	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0083	05/22/23 17:18	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0088	05/22/23 17:18	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/22/23 17:18	
Chrysene	ug/L	ND	0.040	0.0087	05/22/23 17:18	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0079	05/22/23 17:18	
Fluoranthene	ug/L	ND	0.040	0.013	05/22/23 17:18	
Fluorene	ug/L	ND	0.040	0.0062	05/22/23 17:18	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.010	05/22/23 17:18	
Naphthalene	ug/L	ND	0.040	0.015	05/22/23 17:18	
Phenanthrene	ug/L	ND	0.040	0.014	05/22/23 17:18	
Pyrene	ug/L	ND	0.040	0.0091	05/22/23 17:18	
2-Fluorobiphenyl (S)	%	65	49-125		05/22/23 17:18	
p-Terphenyl-d14 (S)	%	88	42-125		05/22/23 17:18	

LABORATORY CONTROL SAMPLE: 4648963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.75	75	46-125	
2-Methylnaphthalene	ug/L	1	0.69	69	52-125	
Acenaphthene	ug/L	1	0.70	70	51-125	
Acenaphthylene	ug/L	1	0.70	70	50-125	
Anthracene	ug/L	1	0.89	89	50-125	
Benzo(a)anthracene	ug/L	1	0.87	87	59-125	
Benzo(a)pyrene	ug/L	1	0.89	89	62-125	
Benzo(b)fluoranthene	ug/L	1	0.88	88	56-125	
Benzo(g,h,i)perylene	ug/L	1	0.86	86	35-125	
Benzo(k)fluoranthene	ug/L	1	0.90	90	59-125	
Chrysene	ug/L	1	0.91	91	60-125	
Dibenz(a,h)anthracene	ug/L	1	0.85	85	30-125	
Fluoranthene	ug/L	1	0.76	76	62-125	
Fluorene	ug/L	1	0.70	70	53-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.86	86	50-125	

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653844

LABORATORY CONTROL SAMPLE: 4648963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.64	64	49-125	
Phenanthrene	ug/L	1	0.81	81	56-125	
Pyrene	ug/L	1	0.98	98	60-125	
2-Fluorobiphenyl (S)	%			66	49-125	
p-Terphenyl-d14 (S)	%			87	42-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4648964 4648965

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10653844003 Result	Spike Conc.	Spike Conc.	MS Result						
1-Methylnaphthalene	ug/L	0.29	0.97	0.95	0.87	0.83	60	57	30-125	5	30
2-Methylnaphthalene	ug/L	0.032J	0.97	0.95	0.67	0.63	66	63	30-125	6	30
Acenaphthene	ug/L	0.46	0.97	0.95	1.1	1.1	61	65	30-125	2	30
Acenaphthylene	ug/L	0.051	0.97	0.95	0.76	0.75	73	73	30-125	2	30
Anthracene	ug/L	ND	0.97	0.95	0.78	0.77	80	81	33-128	2	30
Benzo(a)anthracene	ug/L	ND	0.97	0.95	0.67	0.65	69	69	33-125	2	30
Benzo(a)pyrene	ug/L	ND	0.97	0.95	0.64	0.66	66	69	32-125	3	30
Benzo(b)fluoranthene	ug/L	ND	0.97	0.95	0.64	0.64	66	67	31-125	0	30
Benzo(g,h,i)perylene	ug/L	ND	0.97	0.95	0.62	0.64	64	67	31-125	3	30
Benzo(k)fluoranthene	ug/L	ND	0.97	0.95	0.63	0.67	65	70	35-127	5	30
Chrysene	ug/L	ND	0.97	0.95	0.70	0.70	72	73	39-125	0	30
Dibenz(a,h)anthracene	ug/L	ND	0.97	0.95	0.56	0.58	58	61	30-125	3	30
Fluoranthene	ug/L	0.016J	0.97	0.95	0.69	0.67	69	69	43-125	2	30
Fluorene	ug/L	0.26	0.97	0.95	0.90	0.90	65	66	30-125	0	30
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.97	0.95	0.60	0.61	62	64	30-125	1	30
Naphthalene	ug/L	0.12	0.97	0.95	0.88	0.88	79	80	31-125	0	30
Phenanthrene	ug/L	0.018J	0.97	0.95	0.76	0.74	77	76	33-125	3	30
Pyrene	ug/L	ND	0.97	0.95	0.74	0.73	77	77	41-125	2	30
2-Fluorobiphenyl (S)	%						66	61	49-125		
p-Terphenyl-d14 (S)	%						62	62	42-125		

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10653844

QC Batch: 882641	Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653844006

METHOD BLANK: 4650883 Matrix: Water

Associated Lab Samples: 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	0.12	05/23/23 13:38	
Motor Oil Range	mg/L	ND	0.40	0.19	05/23/23 13:38	
n-Triacontane (S)	%	72	50-150		05/23/23 13:38	
o-Terphenyl (S)	%	64	50-150		05/23/23 13:38	

LABORATORY CONTROL SAMPLE & LCSD: 4650884 4650885

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	0.81	1.3	41	66	50-150	48	20	L2,R1
Motor Oil Range	mg/L	2	0.94	1.4	47	71	50-150	41	20	L2,R1
n-Triacontane (S)	%				50	71	50-150			
o-Terphenyl (S)	%				46	72	50-150			S0

SAMPLE DUPLICATE: 4650887

Parameter	Units	10653844006 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	ND		30	P2
Motor Oil Range	mg/L	ND	ND		30	
n-Triacontane (S)	%	29	56			
o-Terphenyl (S)	%	37	57			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653844

QC Batch: 883043 Analysis Method: NWTPH-Dx
 QC Batch Method: EPA 3510C Analysis Description: NWTPH-Dx GCS LV SG
 Laboratory: Pace Analytical Services - Minneapolis
 Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005

METHOD BLANK: 4652685 Matrix: Water
 Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	0.12	05/26/23 08:35	
Motor Oil Range	mg/L	ND	0.40	0.19	05/26/23 08:35	
n-Triacontane (S)	%	77	50-150		05/26/23 08:35	
o-Terphenyl (S)	%	95	50-150		05/26/23 08:35	

LABORATORY CONTROL SAMPLE: 4652686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range	mg/L	2	1.0	52	50-150	
Motor Oil Range	mg/L	2	1.0	50	50-150	
n-Triacontane (S)	%			51	50-150	
o-Terphenyl (S)	%			51	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652687 4652688

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10653844003 Result	Spike Conc.	Spike Conc.	Result						
Diesel Fuel Range	mg/L	0.15J	2	2	1.6	1.9	74	87	50-150	15	30
Motor Oil Range	mg/L	ND	2	2	1.4	1.5	70	72	50-150	3	30
n-Triacontane (S)	%						70	72	50-150		
o-Terphenyl (S)	%						80	71	50-150		

SAMPLE DUPLICATE: 4652689

Parameter	Units	10654258002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	7.4	7.2	3	30	
Motor Oil Range	mg/L	0.26J	0.24J		30	
n-Triacontane (S)	%	72	75			
o-Terphenyl (S)	%	74	77			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653844

QC Batch: 883859

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

METHOD BLANK: 4656912

Matrix: Water

Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	05/31/23 06:18	

LABORATORY CONTROL SAMPLE & LCSD: 4656913

4656914

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.0	43.3	103	108	90-110	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4656915

4656916

Parameter	Units	10653844002 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	41.3	40	40	83.1	82.5	104	103	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4656917

4656918

Parameter	Units	10653844003 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	129	40	40	169	175	99	113	80-120	3	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10653844

QC Batch: 884095

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: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

METHOD BLANK: 4658162

Matrix: Water

Associated Lab Samples: 10653844002, 10653844003, 10653844004, 10653844005, 10653844006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	06/01/23 18:28	

LABORATORY CONTROL SAMPLE: 4658163

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: 4658164 4658165

Parameter	Units	10653844002		4658165		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfate	mg/L	24.7	50	50	69.6	69.6	90	90	80-120	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4658166 4658167

Parameter	Units	10653844003		4658167		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfate	mg/L	7.1	50	50	54.2	54.5	94	95	80-120	1	20

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QUALIFIERS

Project: 0680180.003

Pace Project No.: 10653844

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

- | | |
|----|--|
| 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. |
| 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. |
| S0 | Surrogate recovery outside laboratory control limits. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0680180.003

Pace Project No.: 10653844

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10653844002	PEO-MW-41-202305	EPA 3510C	883043	NWTPH-Dx	883550
10653844003	PEO-MW-36-202305	EPA 3510C	883043	NWTPH-Dx	883550
10653844004	PEO-MW-27-202305	EPA 3510C	883043	NWTPH-Dx	883550
10653844005	PEO-MW-26-202305	EPA 3510C	883043	NWTPH-Dx	883550
10653844006	PEO-MW-Z2-202305	EPA 3510C	882641	NWTPH-Dx	882805
10653844001	TRIP BLANK-20230518	NWTPH-Gx	882374		
10653844002	PEO-MW-41-202305	NWTPH-Gx	882374		
10653844003	PEO-MW-36-202305	NWTPH-Gx	882374		
10653844004	PEO-MW-27-202305	NWTPH-Gx	882374		
10653844005	PEO-MW-26-202305	NWTPH-Gx	882374		
10653844006	PEO-MW-Z2-202305	NWTPH-Gx	882374		
10653844002	PEO-MW-41-202305	EPA 3010A	882704	EPA 6010D	883991
10653844003	PEO-MW-36-202305	EPA 3010A	882704	EPA 6010D	883991
10653844004	PEO-MW-27-202305	EPA 3010A	882704	EPA 6010D	883991
10653844005	PEO-MW-26-202305	EPA 3010A	882704	EPA 6010D	883991
10653844006	PEO-MW-Z2-202305	EPA 3010A	882704	EPA 6010D	883991
10653844002	PEO-MW-41-202305	EPA 3020A	882705	EPA 6020B	883988
10653844003	PEO-MW-36-202305	EPA 3020A	882705	EPA 6020B	883988
10653844004	PEO-MW-27-202305	EPA 3020A	882705	EPA 6020B	883988
10653844005	PEO-MW-26-202305	EPA 3020A	882705	EPA 6020B	883988
10653844006	PEO-MW-Z2-202305	EPA 3020A	882705	EPA 6020B	883988
10653844002	PEO-MW-41-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653844003	PEO-MW-36-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653844004	PEO-MW-27-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653844005	PEO-MW-26-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653844006	PEO-MW-Z2-202305	EPA 3510C	882313	EPA 8270E by SIM	882850
10653844001	TRIP BLANK-20230518	EPA 8260D	882644		
10653844002	PEO-MW-41-202305	EPA 8260D	882644		
10653844003	PEO-MW-36-202305	EPA 8260D	882644		
10653844004	PEO-MW-27-202305	EPA 8260D	882644		
10653844005	PEO-MW-26-202305	EPA 8260D	882644		
10653844006	PEO-MW-Z2-202305	EPA 8260D	882644		
10653844002	PEO-MW-41-202305	SM 2320B	883859		
10653844003	PEO-MW-36-202305	SM 2320B	883859		
10653844004	PEO-MW-27-202305	SM 2320B	883859		
10653844005	PEO-MW-26-202305	SM 2320B	883859		
10653844006	PEO-MW-Z2-202305	SM 2320B	883859		
10653844002	PEO-MW-41-202305	EPA 300.0	884095		
10653844003	PEO-MW-36-202305	EPA 300.0	884095		
10653844004	PEO-MW-27-202305	EPA 300.0	884095		
10653844005	PEO-MW-26-202305	EPA 300.0	884095		
10653844006	PEO-MW-Z2-202305	EPA 300.0	884095		

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:
Company: **ERM** Page: _____ of _____
Report To: **Erica Whiting**

Section B
Required Project Information:
Copy To: **Andrea George**
Purchase Order No.: _____
Project Name: **Julie Bowser**
Project Number: **0680180.003**

Section C
Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location: _____ OR _____
 STATE: _____

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB							
1			GW	5/18/23	8:00	G		6				
2			GW	5/17/23	8:45	G		15				
3			GW	5/17/23	9:00	G		45				
4			GW	5/17/23	10:50	G		15				
5			GW	5/17/23	13:00	G		15				
6			GW	5/17/23	13:05	G		15				
7												
8												
9												
10												
11												
12												

WO#: 10653844



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Greta Stahle / ERM	5/18/23	12:00	<i>[Signature]</i>	5-19-23	0850	

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Madison Rosen, Kevin Kuester**
 SIGNATURE of SAMPLER: _____
 DATE Signed (MM/DD/YYYY): **5/18/23**

Effective Date: 4/14/2023

Sample Condition Upon Receipt
 Client Name: ERM

Project #: **WO#: 10653844**
 PM: JMT Due Date: 06/05/23
 CLIENT: ERM-Oregon

Courier: FedEx UPS USPS Client
 Pace Speedee Commercial

Tracking Number: 5973 7143 9599 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 (0436) T3 (0459) T4 (0402) T5 (0178) Type of Ice: Wet Blue Dry None
 T6 (0235) T7 (0042) T8 (0775) T9 (0727) 01339252/1710 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: -0.1 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: Ro 5-19-23

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

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

Location (Check one): <input type="checkbox"/> Duluth <input checked="" type="checkbox"/> Minneapolis <input type="checkbox"/> Virginia	COMMENTS
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Sample Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	pH Paper Lot # Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, <u>DR0</u> /8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Headspace in Methyl Mercury Container? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15. <u>Arrived 01/01/23 for AC</u> Pace Trip Blank Lot # (if purchased): <u>406093 (4)</u>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
3 Trip Blanks Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____
 Project Manager Review: Julie Bauer Date: 5/19/23



DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? Yes No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? Yes No

~~If anything is OVER 6.0° C, you MUST document containers in this section HERE~~

Multi-Cooler PROJECT



Tracking Number	Temperature
59237143 & 599	1.4 → 1.3
9603	1.8 → 1.7
9625	1.5 → 1.4
9614	0.7 → 0.6
9566	1.3 → 1.2
9588	0.5 → 0.4
9577	1.8 → 1.2

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Date : 26-MAY-2023 08:58

Instrument: 10gocsf.1

Client ID: PED-HM-41-202305

Operator: EB3

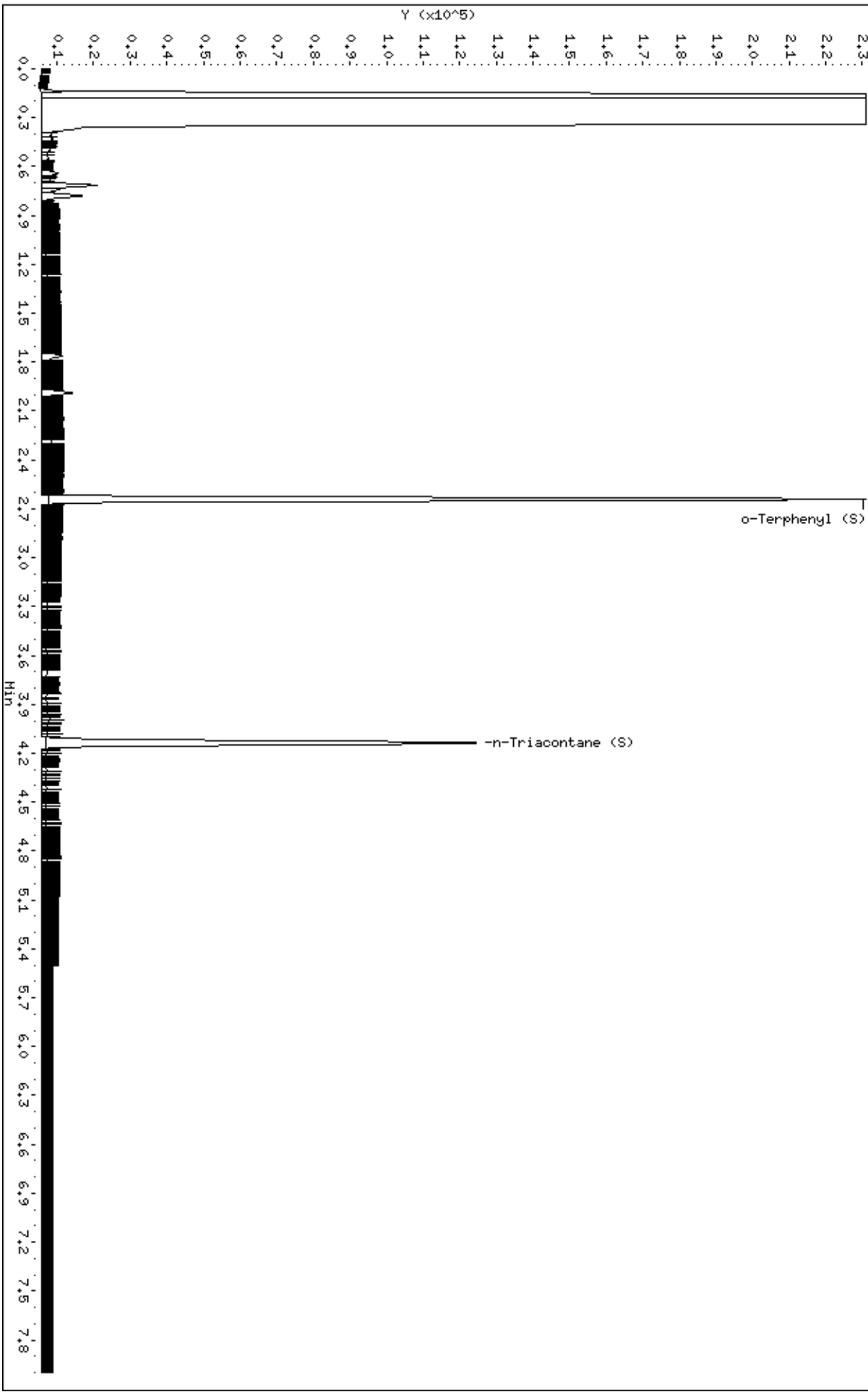
Sample Info: 10653844002

Volume Injected (uL): 1.0

Column diameter: 0.32

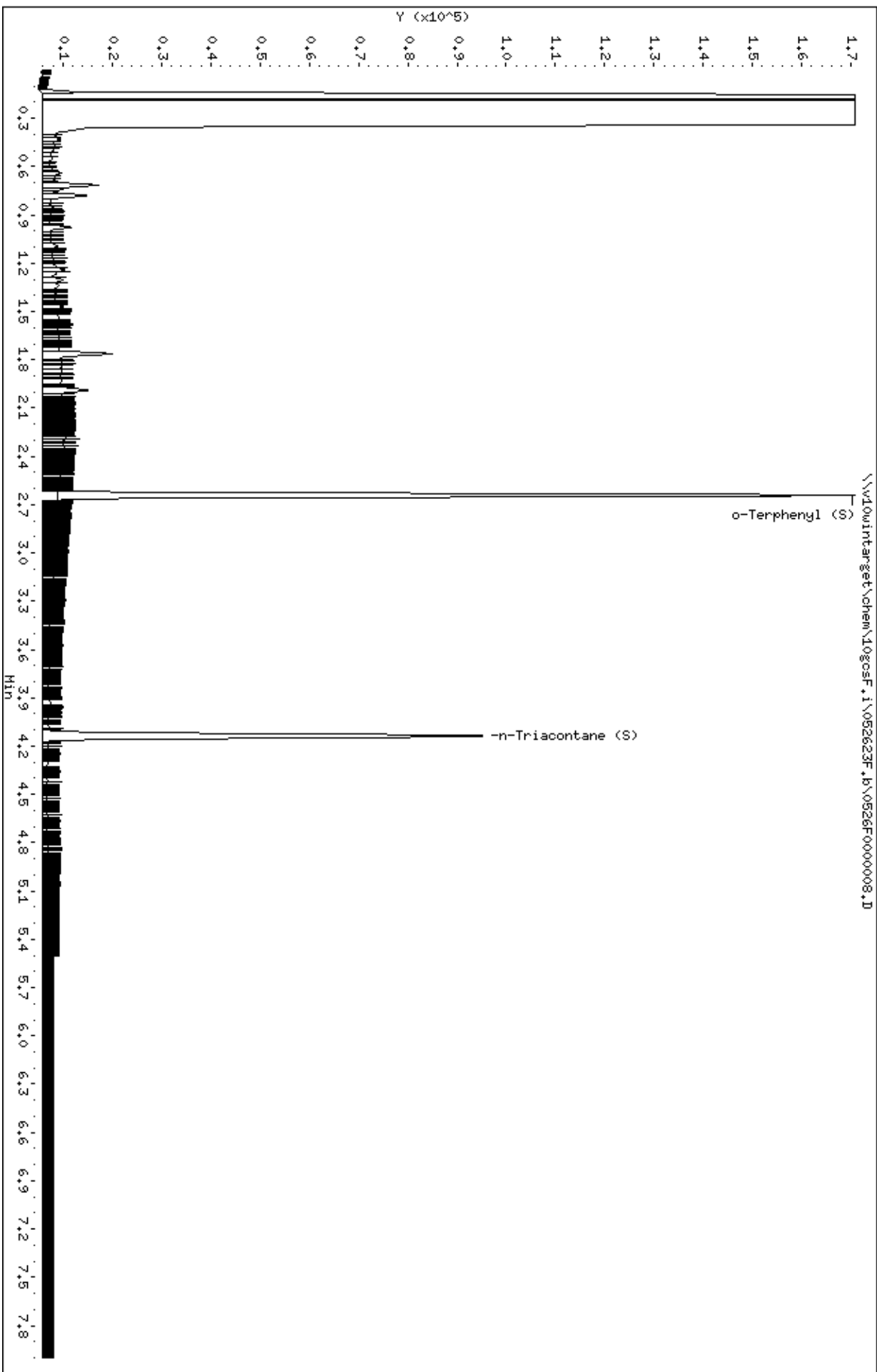
Column phase: DB-5-MS2420048

\\10win\intarget\chem\10gocsf.1\052623F.1\0526F0000007.D



Data File: \\vl0win\target\chem\10gocsf.1\052623F.1\0526F0000008.D
Date: 26-MAY-2023 09:09
Client ID: PE0-HM-36-202305
Sample Info: 10653844003
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



Date : 26-MAY-2023 09:43

Instrument: 10gocsf.1

Client ID: PED-HM-27-202305

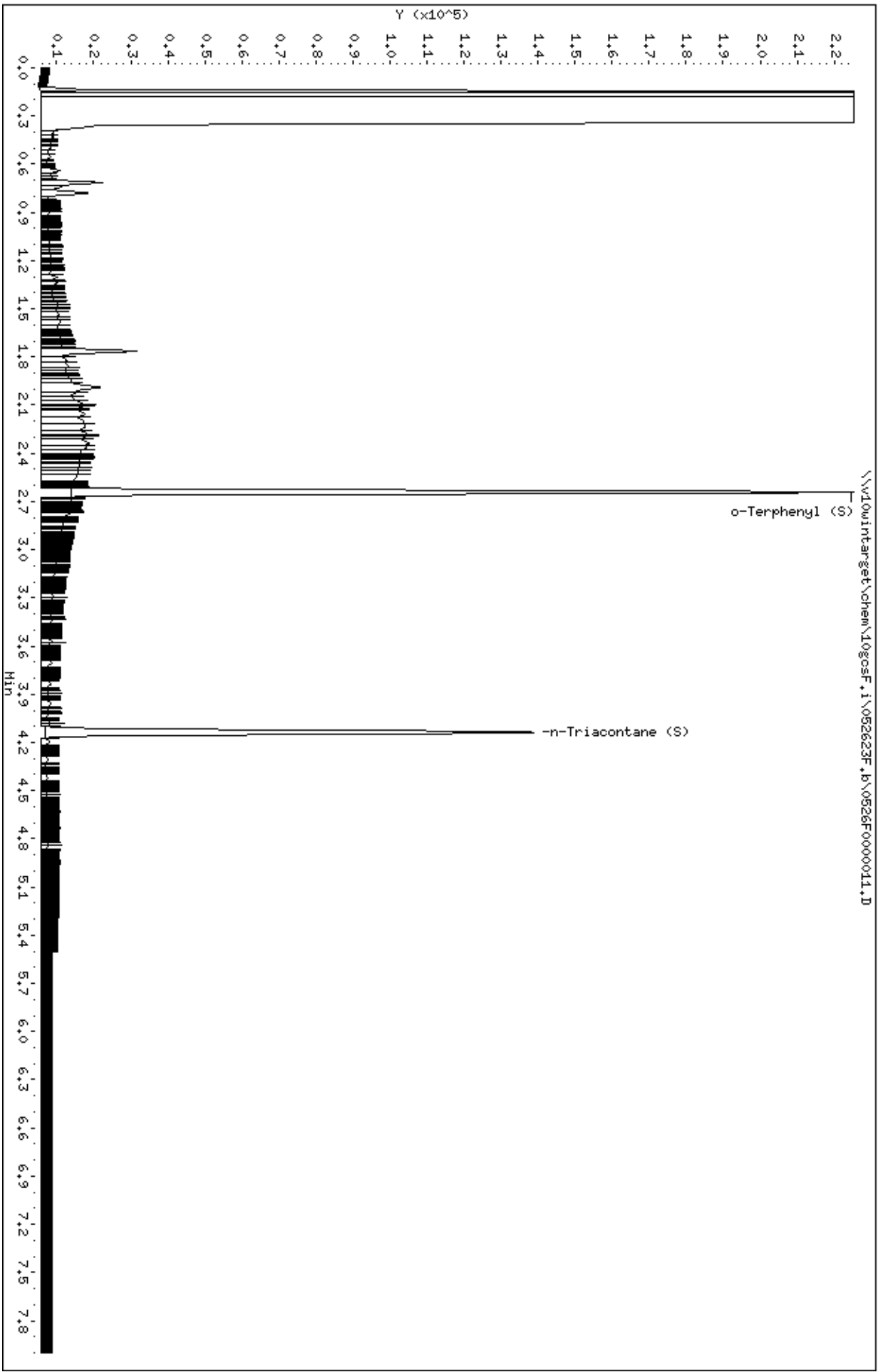
Sample Info: 10653844004

Volume Injected (uL): 1.0

Operator: EB3

Column phase: DB-5-MS2420048

Column diameter: 0.32



Date : 26-MAY-2023 09:55

Instrument: 10gocsf.1

Client ID: PED-HM-26-202305

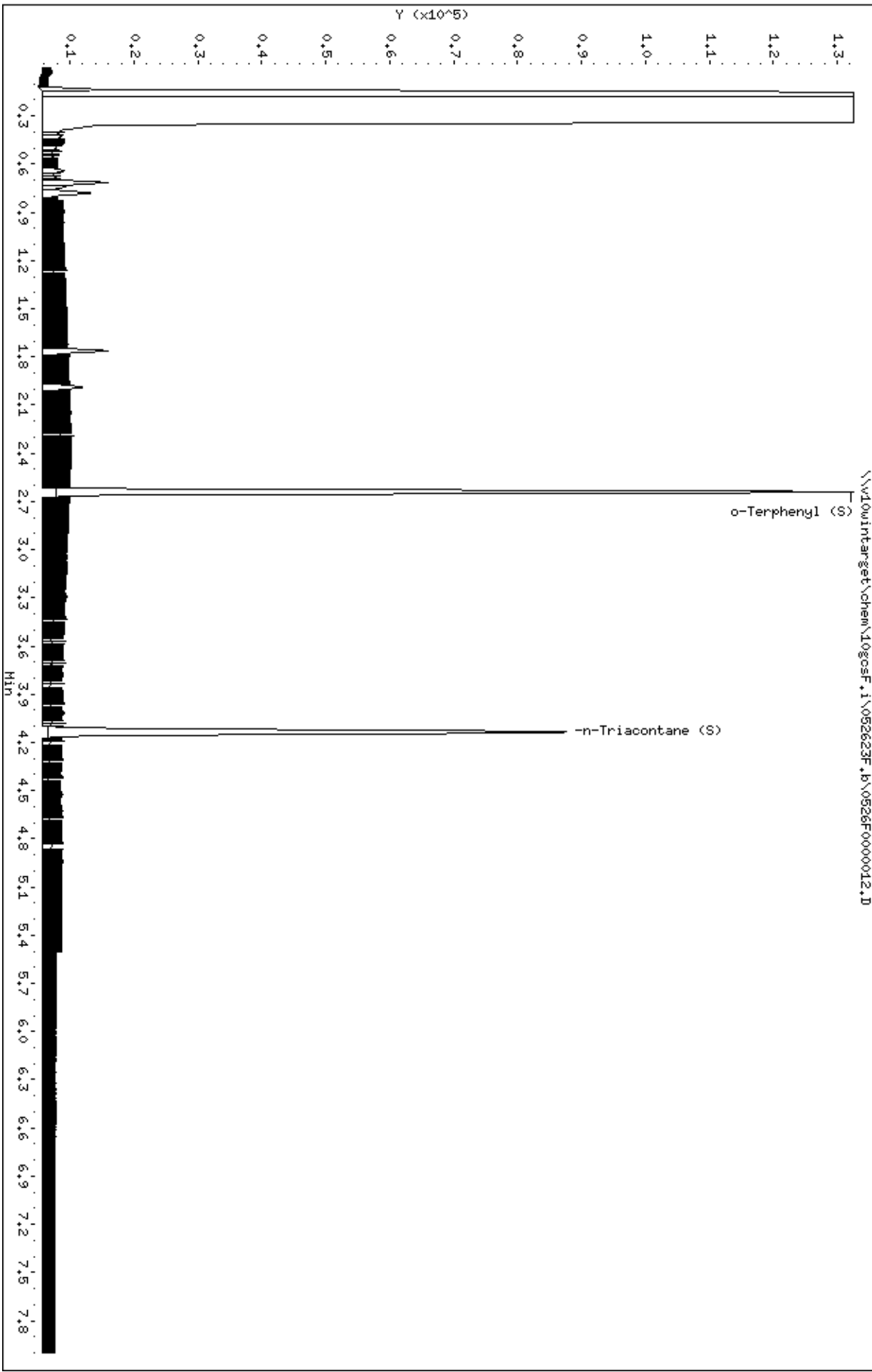
Sample Info: 10653844005

Volume Injected (uL): 1.0

Operator: EB3

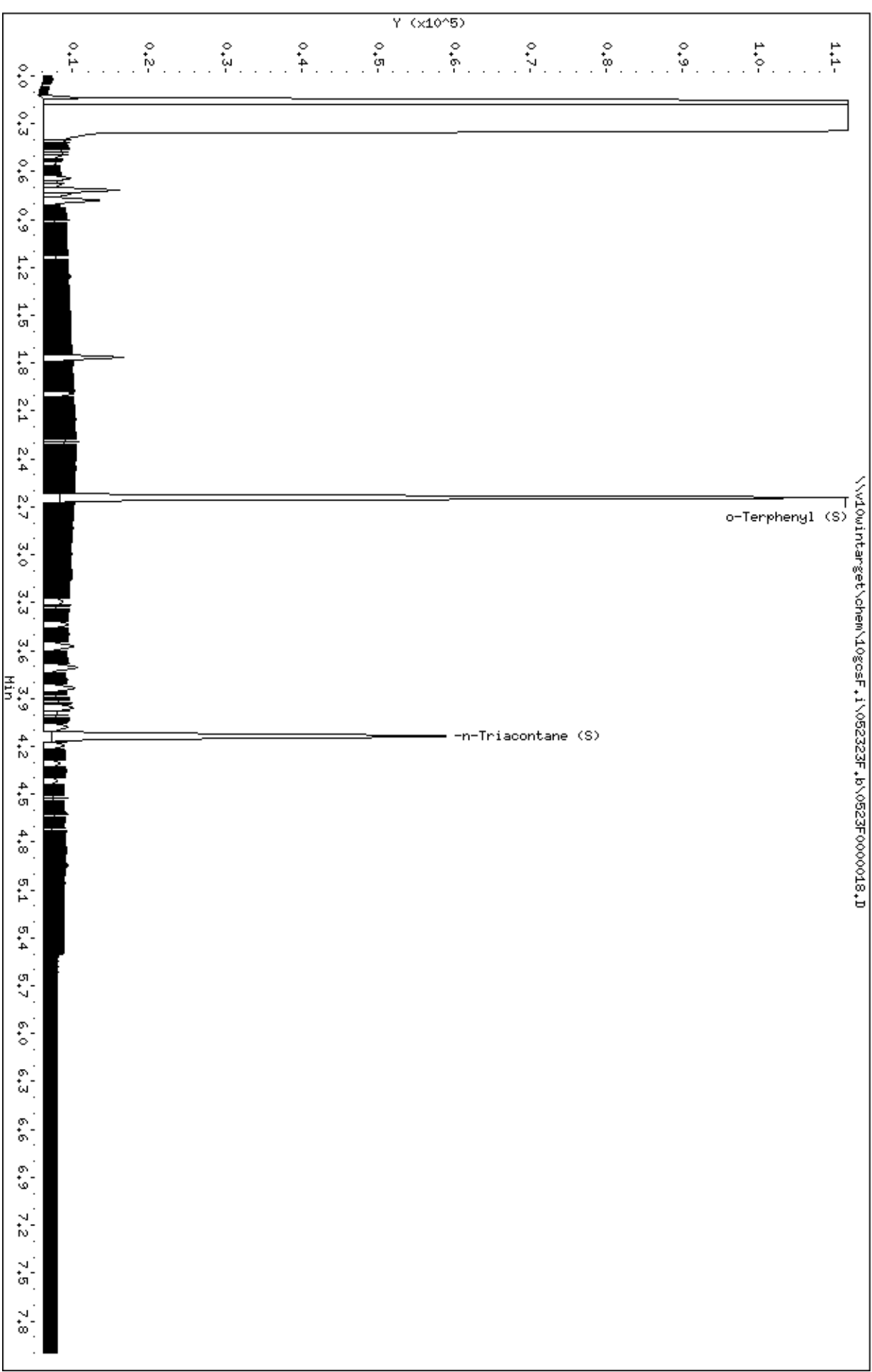
Column phase: DB-5-MS2420048

Column diameter: 0.32



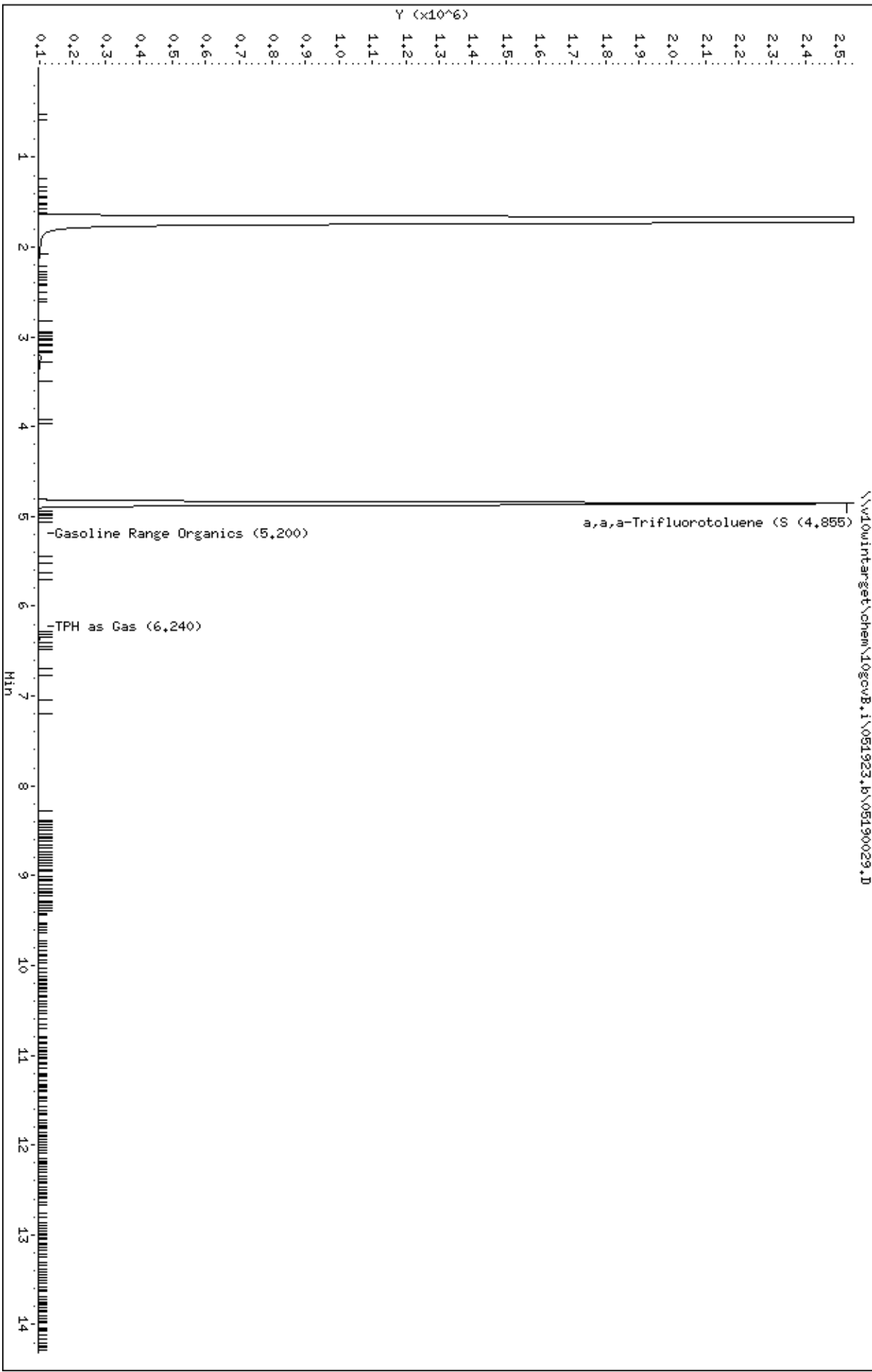
Data File: \\10win\intarget\chem\10gocsf.1\052323F.1\052323F0000018.D
Date: 23-MAY-2023 14:45
Client ID: PE0-HM-22-202305
Sample Info: 10653844006
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



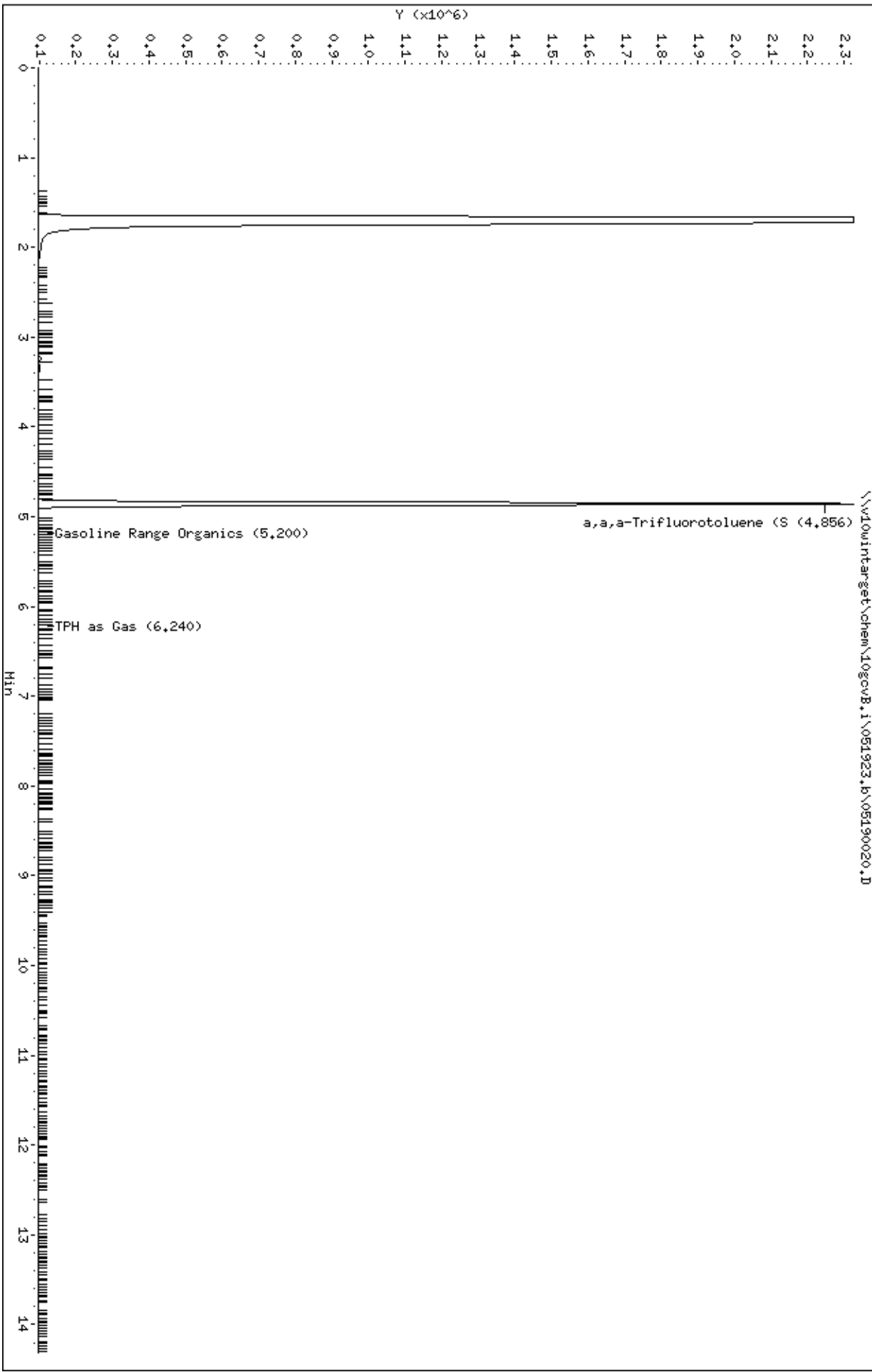
Data File: \\vdowintarget\chem\logcvb.i\051923.b\05190029.D
Date: 20-MAY-2023 02:10
Client ID: TRIP BLANK-20230518
Sample Info: 10653844001,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18



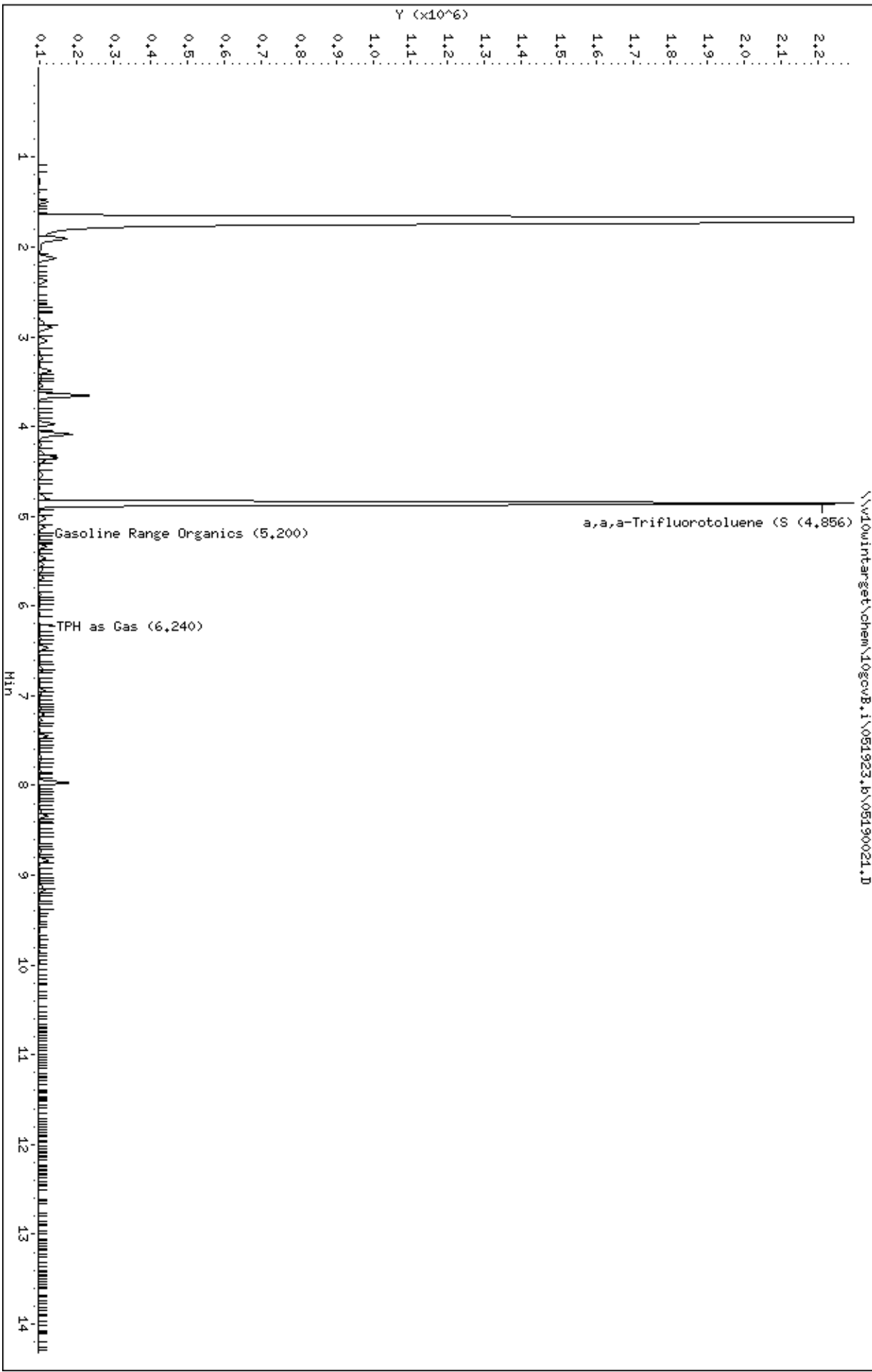
Data File: \\Vl0wintarget\chem\10gcvb.1\051923.b\05190020.D
Date: 19-MAY-2023 23:24
Client ID: PED-HM-41-202305
Sample Info: 10653844002,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TH2
Column diameter: 0.18



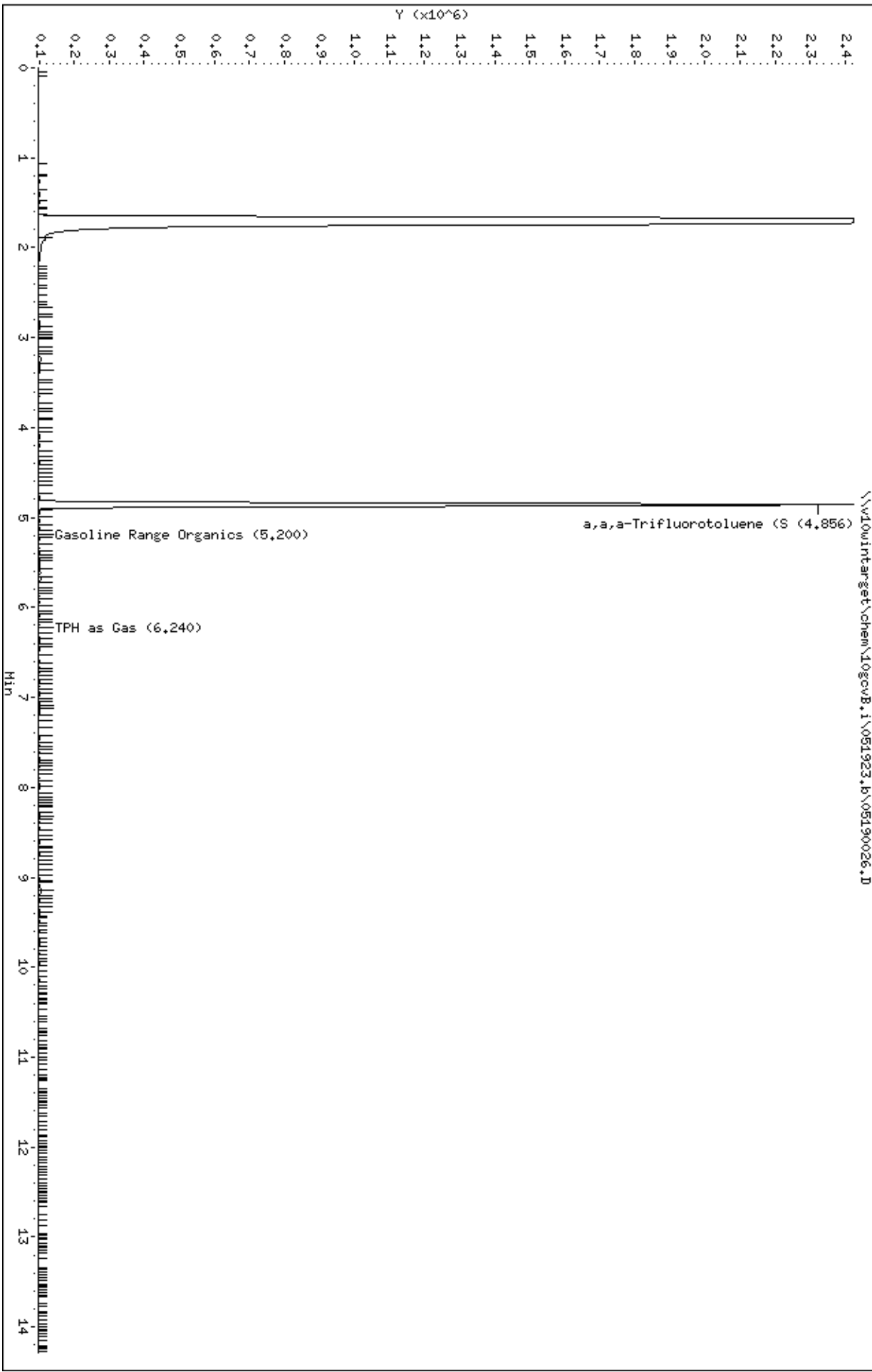
Data File: \\Vlowintarget\chem\logcvb.i\051923.b\05190021.D
Date: 19-MAY-2023 23:42
Client ID: PED-HM-36-202305
Sample Info: 10653844003,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



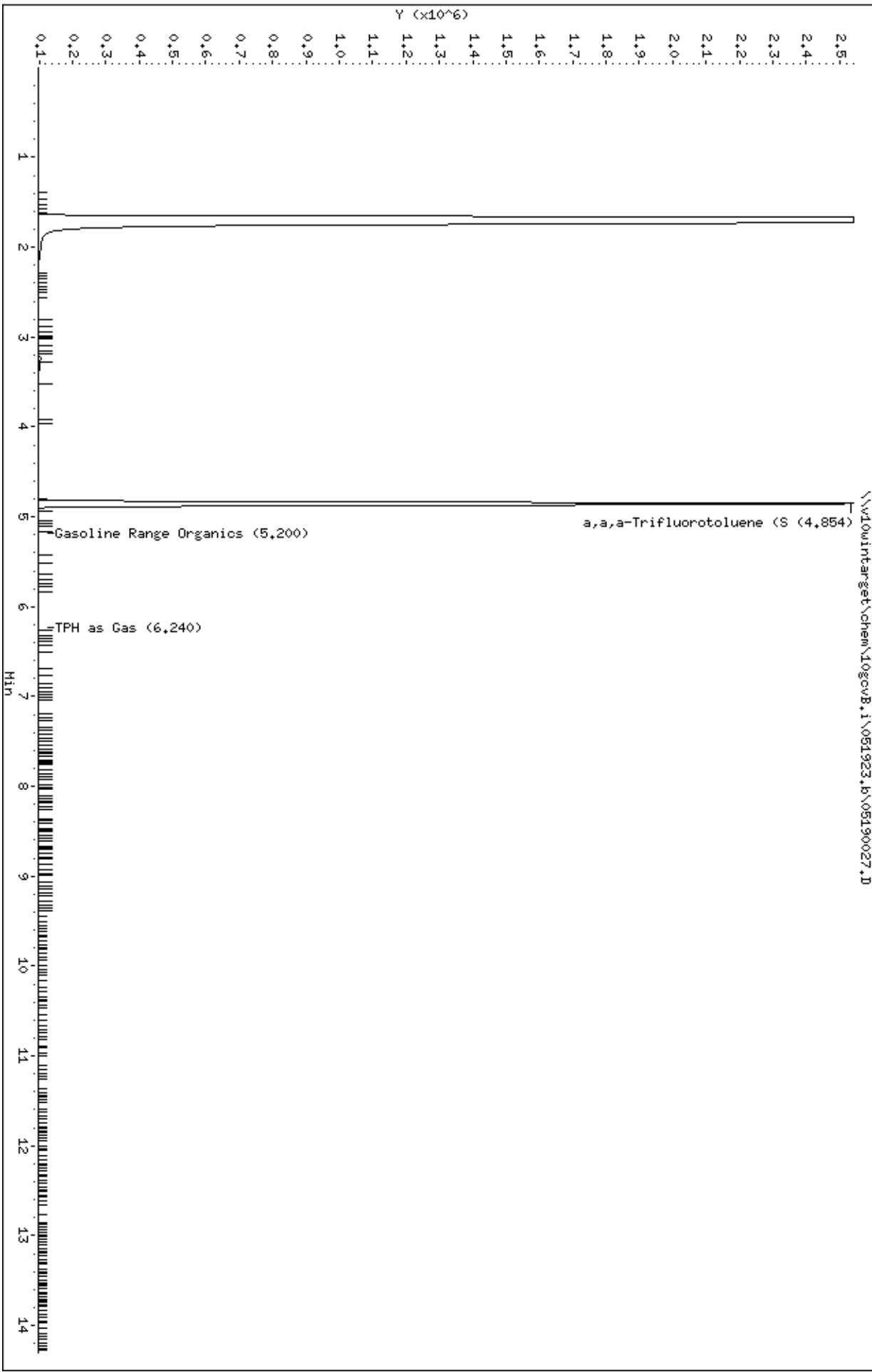
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Date: 20-MAY-2023 01:15
Client ID: PEO-HM-27-202305
Sample Info: 10653844004,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



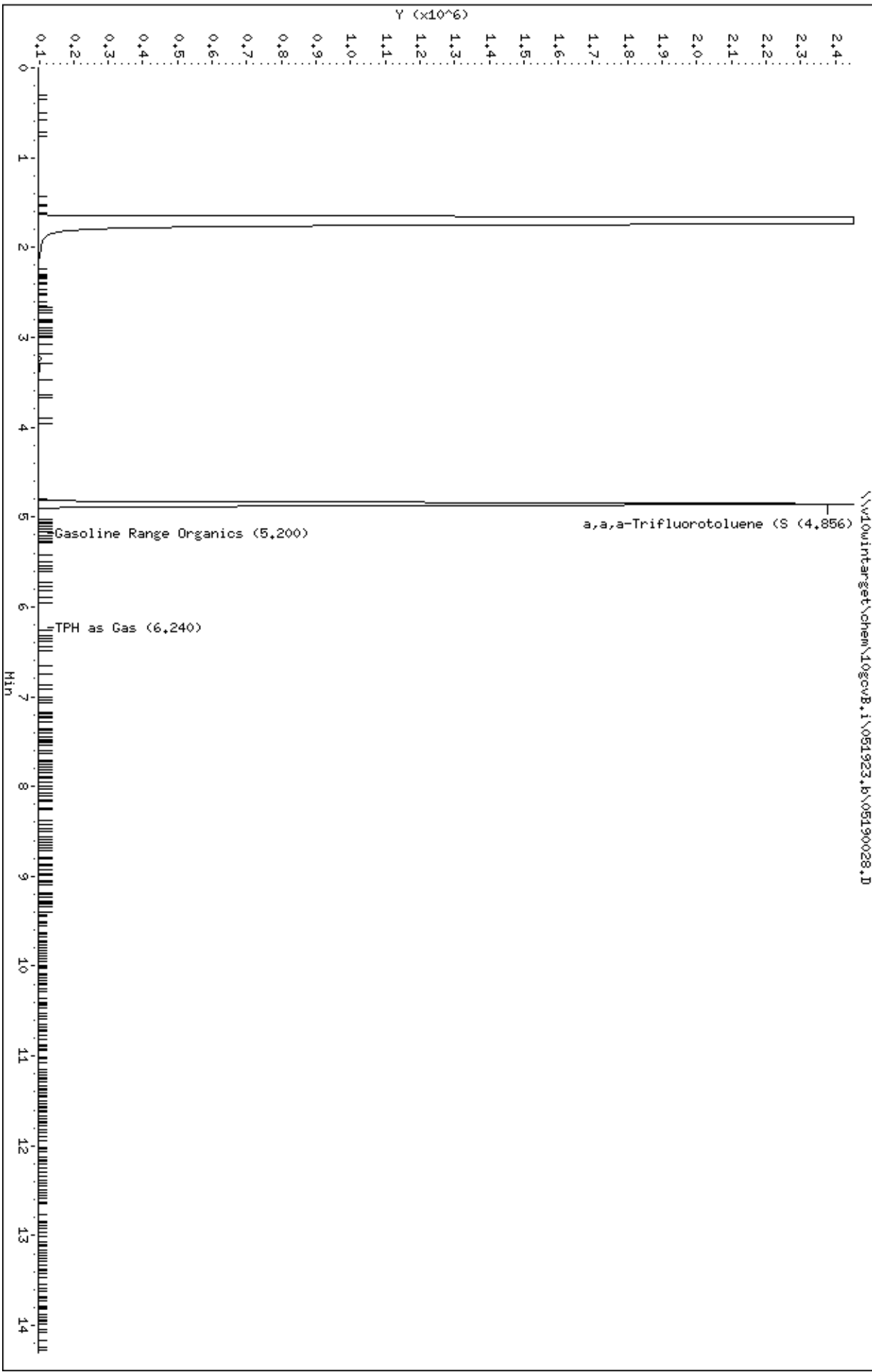
Data File: \\LowIntarget\chem\logvb.i\051923.b\05190027.D
Date: 20-MAY-2023 01:33
Client ID: PE0-HM-26-202305
Sample Info: 10653844005,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18



Data File: \\vlowintarget\chem\logcvb.i\051923.b\05190028.D
Date: 20-MAY-2023 01:52
Client ID: PEO-HM-22-202305
Sample Info: 10653844006,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18





May 31, 2023

Ms. Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414

Dear Ms. Bowser,

On May 23rd, 6 samples were received by our laboratory and assigned our laboratory project number EV23050160. The project was identified as your Workorder 10653844 / Workorder Name 0680180.003. The sample identification and requested analyses are outlined on the attached chain of custody record.

Be advised that the Matrix Spike procedure for VPH analysis involves a single compound within the VPH range being spiked and quantitated against for determining the parent sample amount and the spike recovery. This can (and did for this project) result in a stated parent sample amount that does not match the amount reported for the entire range for the parent sample. Both quantitations of the parent sample have been included in chromatograms attached at the end of this report.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050160-01
CLIENT SAMPLE ID	TRIP BLANK-20230518	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.0		UG/L	1	1.1	0.38	05/23/2023	DLC

SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	87.6%		10.0	8.76	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050160-02
CLIENT SAMPLE ID	PEO-MW-41-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/17/2023 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.1		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	93.9%		10.0	9.39	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050160-03
CLIENT SAMPLE ID	PEO-MW-36-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/17/2023 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	57		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	109%		10.0	10.9	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050160-04
CLIENT SAMPLE ID	PEO-MW-27-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/17/2023 10:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	17		UG/L	1	1.1	0.38		05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	94.5%		10.0	9.45	60	140		05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050160-05
CLIENT SAMPLE ID	PEO-MW-26-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/17/2023 1:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.2		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	105%		10.0	10.5	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050160-06
CLIENT SAMPLE ID	PEO-MW-Z2-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/17/2023 1:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.2		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	104%		10.0	10.4	60	140	05/23/2023	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Pace Analytical Minnesota
 1700 Elm Street
 Minneapolis, MN 55414

DATE: 5/31/2023
 ALS SDG#: EV23050160
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Julie Bowser
 CLIENT PROJECT: Workorder 10653844 / Workorder Name
 0680180.003

LABORATORY BLANK RESULTS

MB-052323W2 - Batch R436703 - Water by NWVPH Prepared 05/23/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	2.1		UG/L	1.1	0.38	1.1		05/23/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	106		10.0	10.6	60	140	05/23/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-053023W - Batch R436704 - Water by NWVPH Prepared 05/30/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	1.3		UG/L	1.1	0.38	1.1		05/30/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	96.6		10.0	9.66	60	140	05/30/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050160
CLIENT PROJECT:	Workorder 10653844 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R436703 - Water by NWVPH Prepared 05/23/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
>C10-C12 Aliphatics - BS	NWVPH	97.4			20.0	19.5	70	130		05/23/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	101	4		20.0	20.2	70	130	25	05/23/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
TFT - Aliphatic - BS	NWVPH	114			10.0	11.4	60	140		05/23/2023	DLC
TFT - Aliphatic - BSD	NWVPH	103			10.0	10.3	60	140		05/23/2023	DLC

ALS Test Batch ID: R436704 - Water by NWVPH Prepared 05/30/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
>C10-C12 Aliphatics - BS	NWVPH	93.6			20.0	18.7	70	130		05/30/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	86.9	7		20.0	17.4	70	130	25	05/30/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
TFT - Aliphatic - BS	NWVPH	90.7			10.0	9.07	60	140		05/30/2023	DLC
TFT - Aliphatic - BSD	NWVPH	99.9			10.0	9.99	60	140		05/30/2023	DLC



CERTIFICATE OF ANALYSIS

CLIENT: Pace Analytical Minnesota
 1700 Elm Street
 Minneapolis, MN 55414

DATE: 5/31/2023
 ALS SDG#: EV23050160
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Julie Bowser
 CLIENT PROJECT: Workorder 10653844 / Workorder Name
 0680180.003

MATRIX SPIKE RESULTS

ALS Test Batch ID: R436704 - Water
 Parent Sample: PEO-MW-36-202305

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
>C10-C12 Aliphatics - MS	NWVPH	74.5			20.0	0	14.9	70	130		05/30/2023	DLC
>C10-C12 Aliphatics - MSD	NWVPH	72.7	2		20.0	0	14.5	70	130	25	05/30/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	PARENT SAMPLE RESULT	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
								MIN	MAX	RPD		
TFT - Aliphatic - MS	NWVPH	108			10.0	0	10.8	60	140		05/30/2023	DLC
TFT - Aliphatic - MSD	NWVPH	113			10.0	0	11.3	60	140		05/30/2023	DLC

APPROVED BY

Rob Greer
 Laboratory Director

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10653844

Workorder Name: 0680180.003

Report / Invoice To

Subcontract To

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

ALS
 8620 Holly Drive
 Suite 100
 Everett, WA 98208

P.O. 10653844

State of Sample Origin: OR

VG9H

Preserved Containers

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	HC
1	TRIP BLANK-20230518	5/18/2023 08:00	10653844001	Water	2
2	PEO-MW-41-202305	5/17/2023 08:45	10653844002	Water	3
3	PEO-MW-36-202305	5/17/2023 09:00	10653844003	Water	9
4	PEO-MW-27-202305	5/17/2023 10:50	10653844004	Water	3
5	PEO-MW-26-202305	5/17/2023 13:00	10653844005	Water	3
6	PEO-MW-22-202305	5/17/2023 13:05	10653844006	Water	3

Results Requested By: 6/5/2023

Requested Analysis

NWTPH VPH (Aliphatics C10-C12)

LAB USE ONLY

MS/MSD

Comments

chroms needed
 J flag to MDL
 Aliphatics C10-C12 only
 ERM Equis EDD needed

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	BIG SPACE	5/22/23 11:30	APRESE, ALS	05-23-23 09:00	Y	N	Y	N
2								
3								

Cooler Temperature on Receipt 1.8 °C

Custody Seal Y or N

Received on Ice Y or N

Samples Intact Y or N

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Pace Analytical

ALS Job #: EV23050160

Project: 106 53844 / 0680180.003

Received Date: 5/23/23 Received Time: 0910 By: CE

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express Std. Overnight

	Yes	No	N/A
Were custody seals on outside of shipping container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>outside</u>			
Custody seal date: <u>5/22/23</u> Seal name: <u>BC</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 1.8 °C (on ice) Cold Cool Ambient N/A

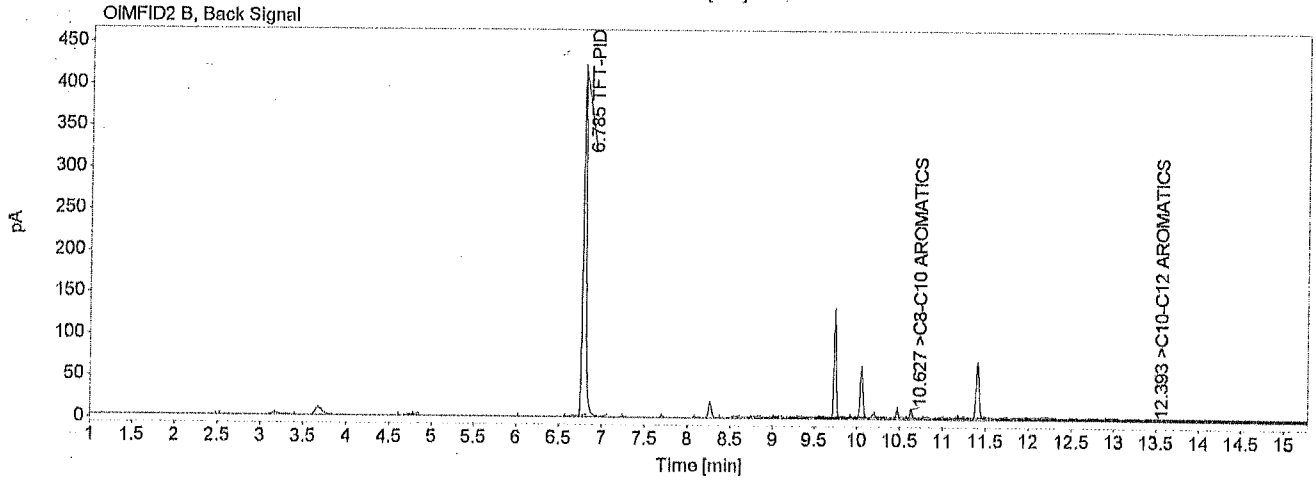
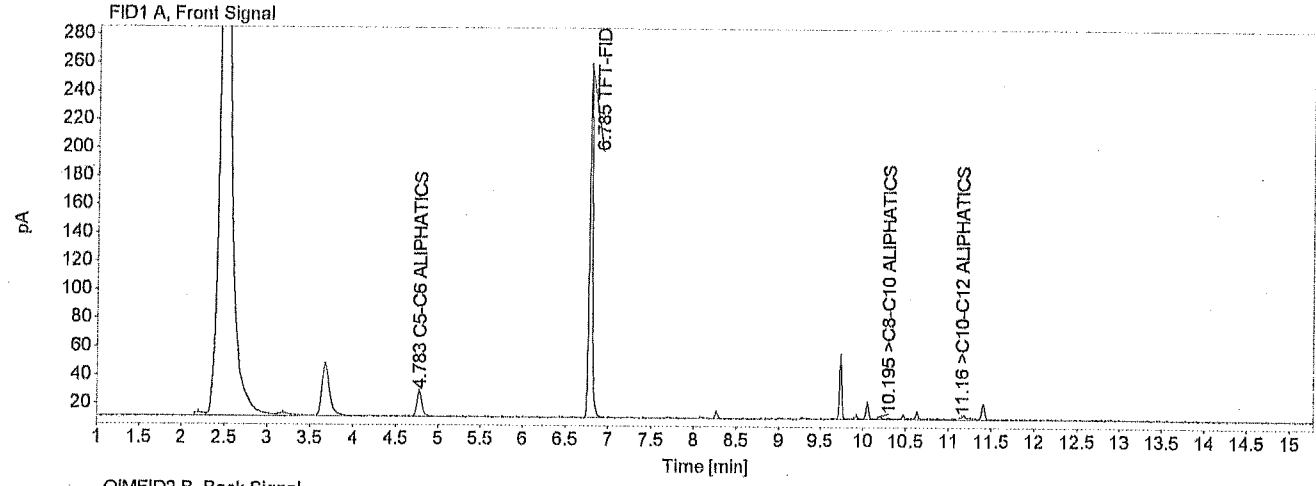
Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Data file: D:\DATA\1192305232\1192305232\001F2601.D
 Sample name: MB-052323W2 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 4:57:20 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



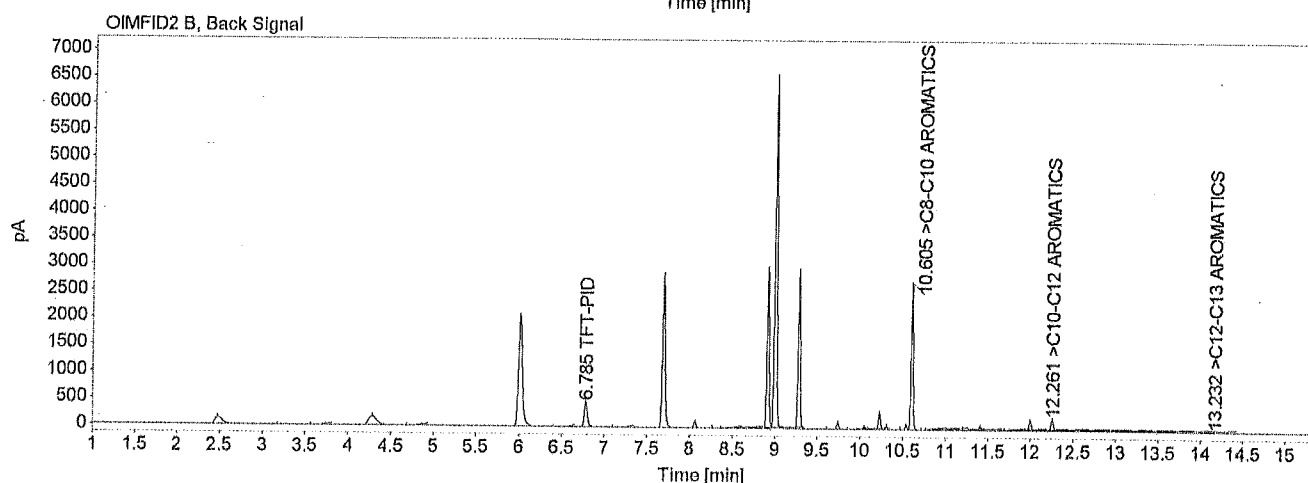
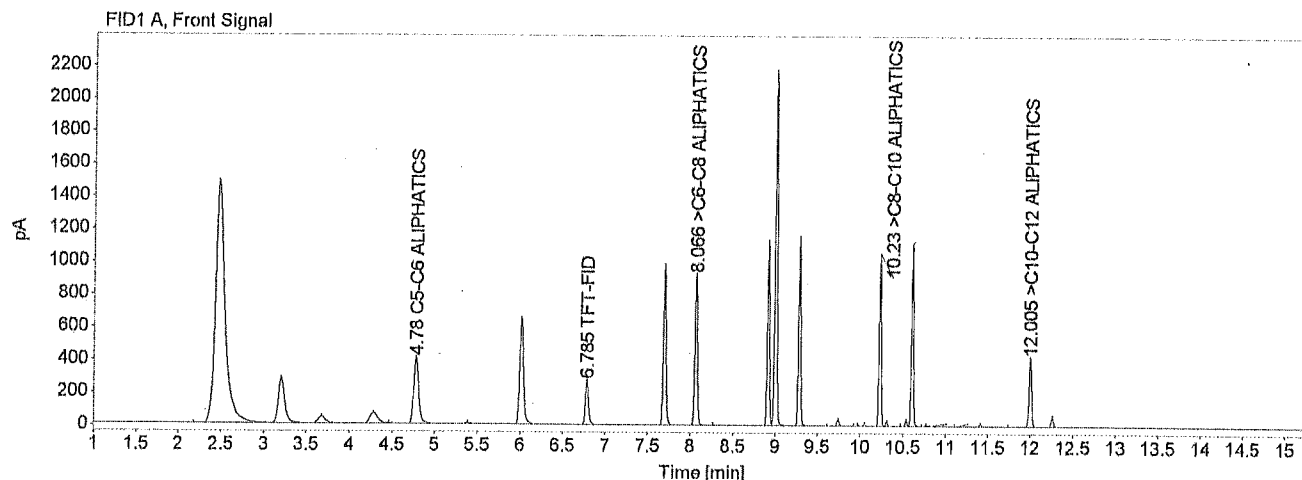
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	79.349	4.783	0.879
TFT-FID	639.311	6.785	10.578 106%
>C8-C10 ALIPHATICS	8.986	10.195	0.104
>C10-C12 ALIPHATICS	104.984	11.160	2.138

Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1098.207	6.785	10.216
>C8-C10 AROMATICS	30.808	10.627	0.126
>C10-C12 AROMATICS	8.231	12.393	0.000
>C12-C13 AROMATICS	7.006	13.330	4.731

AUK
 >C10-C12 < 50 µg/L

Data file: D:\DATA\1192305232\1192305232\001F2701.D
 Sample name: BS-052323W2 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 5:21:02 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

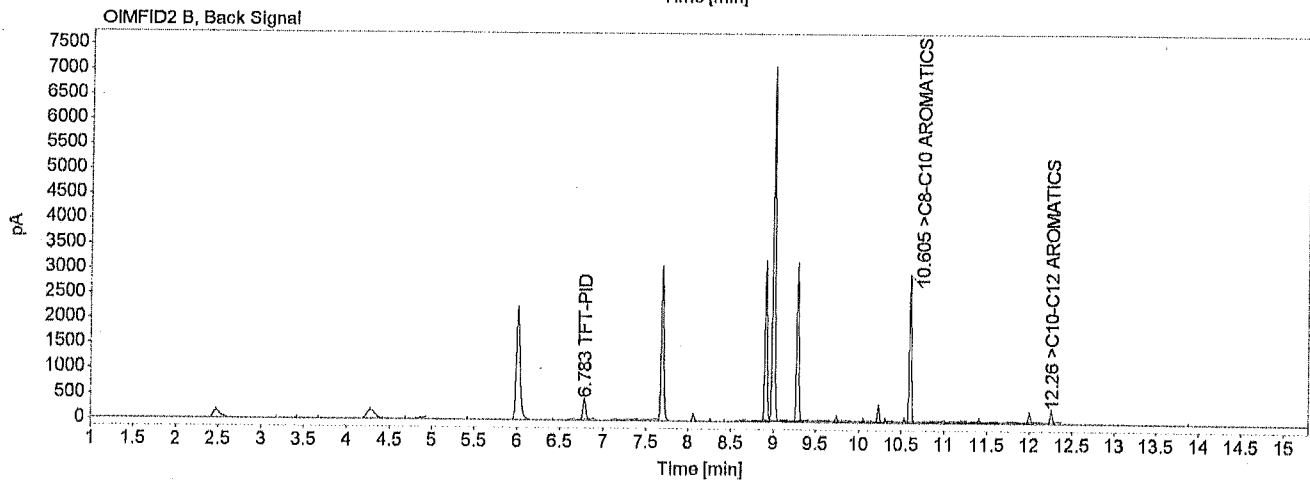
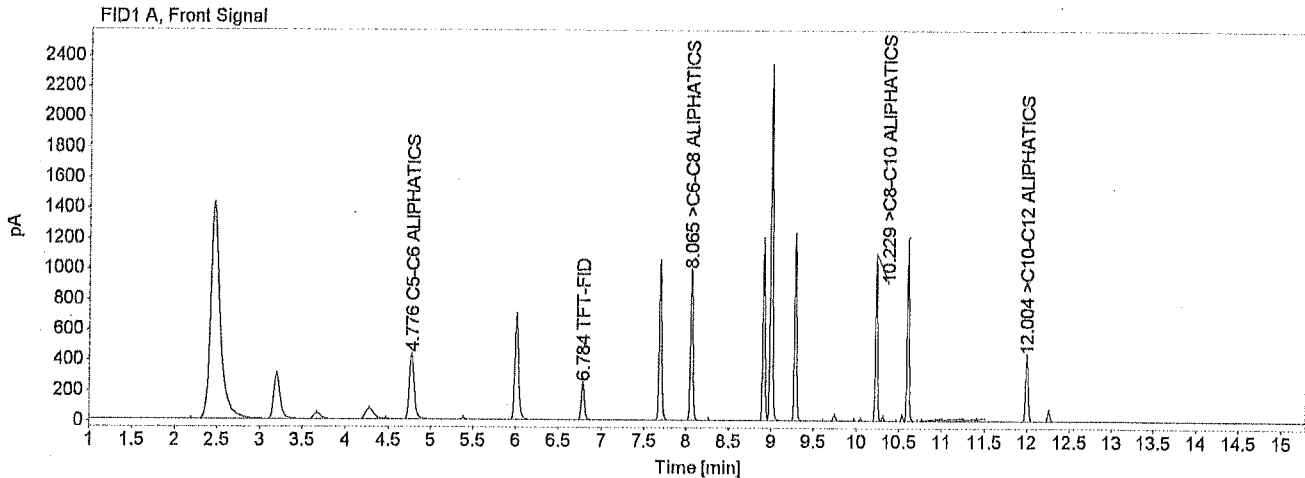
Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1680.684	4.780	18.615
TFT-FID	690.651	6.785	11.427 114'
>C6-C8 ALIPHATICS	1824.557	8.066	19.624
>C8-C10 ALIPHATICS	1773.493	10.230	20.550
>C10-C12 ALIPHATICS	887.100	12.005	19.470 97'
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1186.991	6.785	11.041
>C8-C10 AROMATICS	4487.088	10.605	18.303
>C10-C12 AROMATICS	441.406	12.261	14.276
>C12-C13 AROMATICS	6.681	13.232	4.512

Data file: D:\DATA\1192305232\1192305232\001F2801.D
 Sample name: BSD-052323W2 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 5:44:48 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119

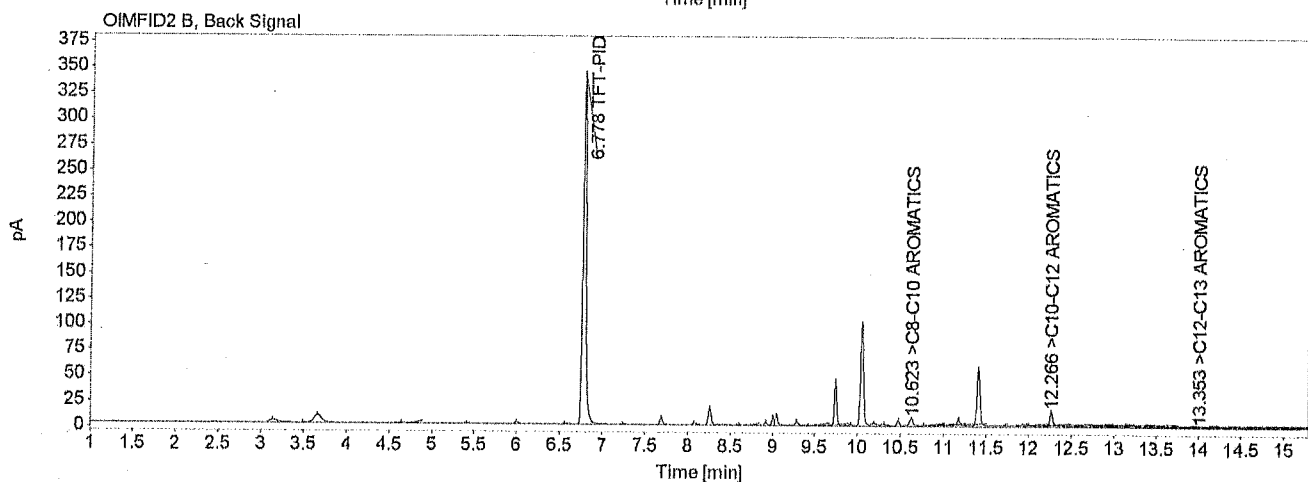
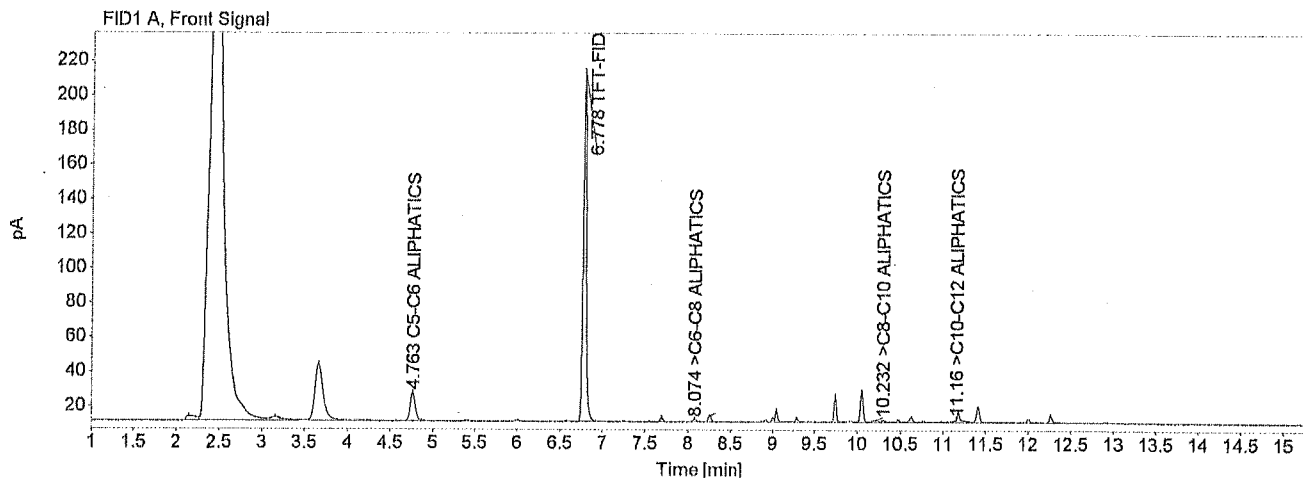


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1799.887	4.776	19.935
TFT-FID	622.706	6.784	10.303 103%
>C6-C8 ALIPHATICS	1943.341	8.065	20.902
>C8-C10 ALIPHATICS	1861.279	10.229	21.567
>C10-C12 ALIPHATICS	916.143	12.004	20.219 101%

Name	Peak Area	RT [min]	Amount [ug/L]
>C12-C13 AROMATICS			0.000
TFT-PID	1083.670	6.783	10.080
>C8-C10 AROMATICS	4809.084	10.605	19.617
>C10-C12 AROMATICS	528.464	12.260	17.862

Data file: D:\DATA\1192305232\1192305232\001F4301.D
 Sample name: EV23050160-01 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 11:41:48 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	69.260	4.763	0.767
TFT-FID	529.745	6.778	8.765 88%
>C6-C8 ALIPHATICS	5.641	8.074	0.061
>C8-C10 ALIPHATICS	6.546	10.232	0.076
>C10-C12 ALIPHATICS	98.618	11.160	2.013

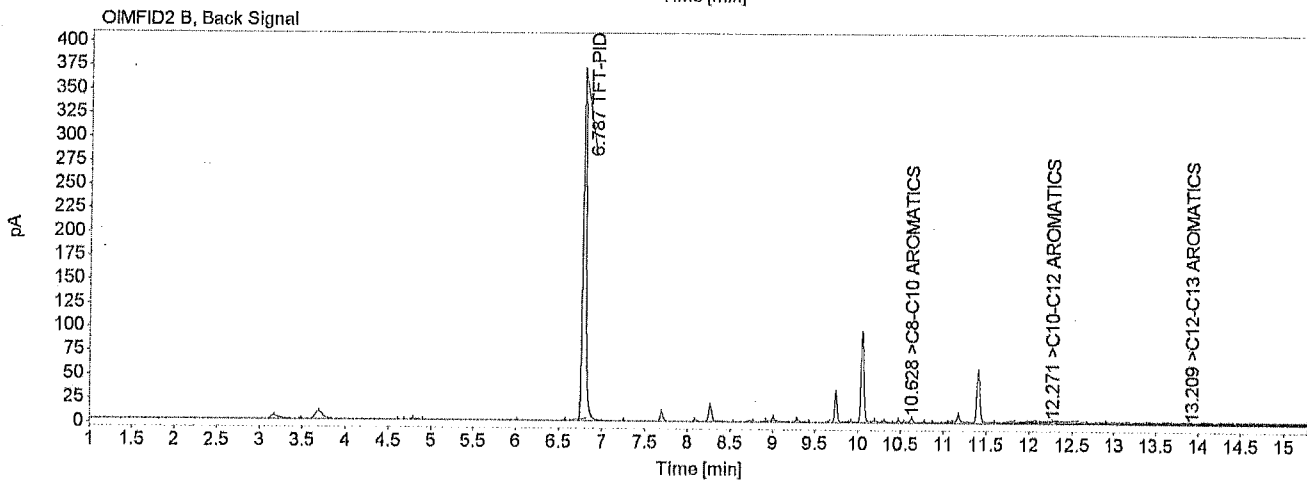
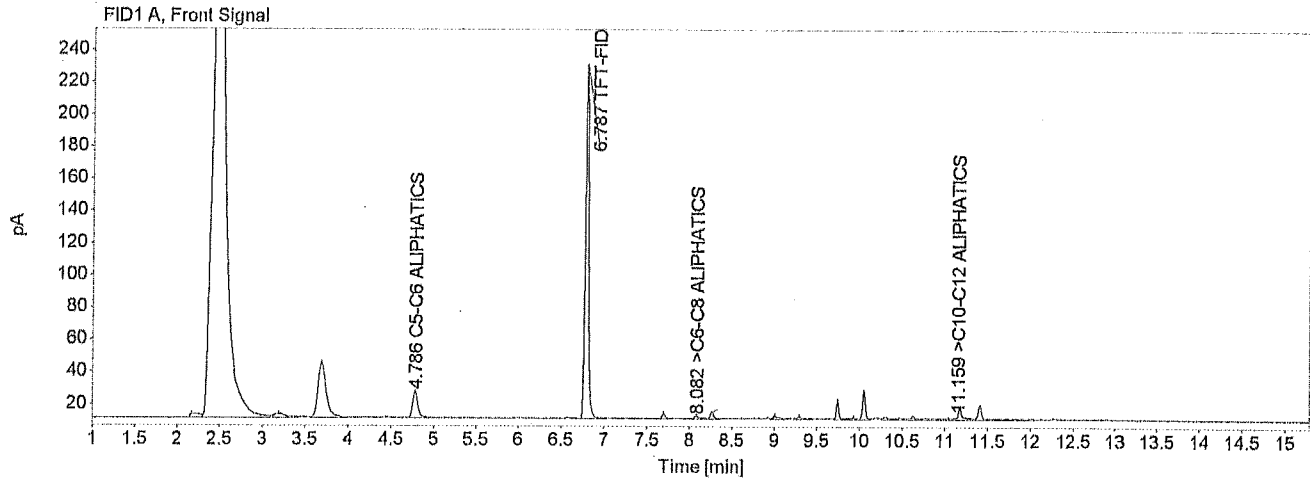
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	909.871	6.778	8.464
>C8-C10 AROMATICS	29.287	10.623	0.119
>C10-C12 AROMATICS	47.824	12.266	0.000
>C12-C13 AROMATICS	5.440	13.353	3.673

AUK

> C10 - C12 < 50 ug/l

Data file: D:\DATA\1192305232\1192305232\001F4401.D
 Sample name: EV23050160-02 VPH
 Dilution: 0.000
 Injection date: 5/24/2023 12:05:37 AM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	71.638	4.786	0.793
TFT-FID	567.665	6.787	9.392 <i>94%</i>
>C6-C8 ALIPHATICS	7.709	8.082	0.083
>C10-C12 ALIPHATICS	104.036	11.159	2.119

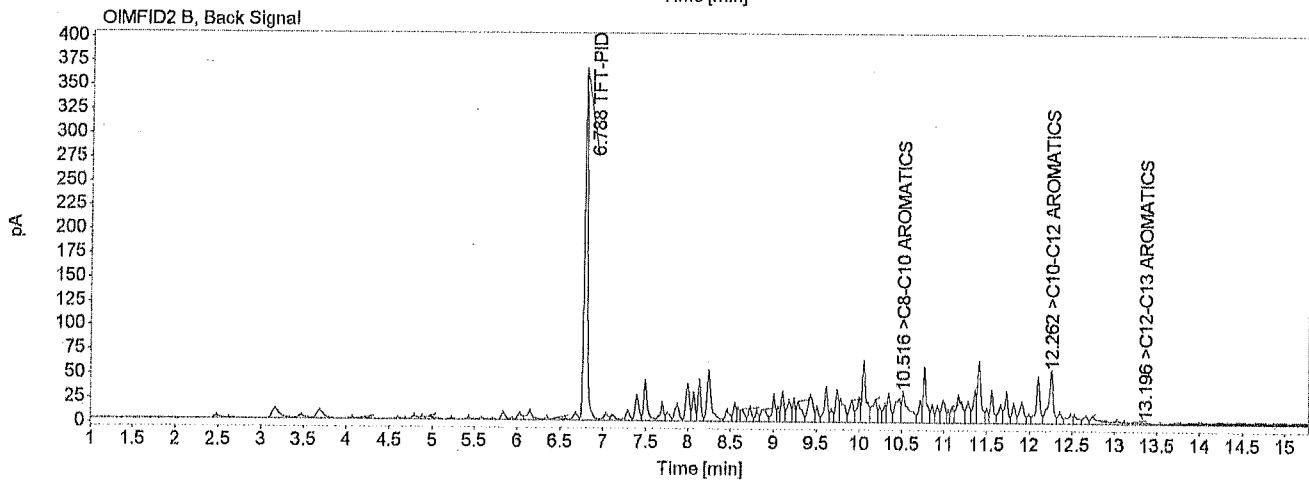
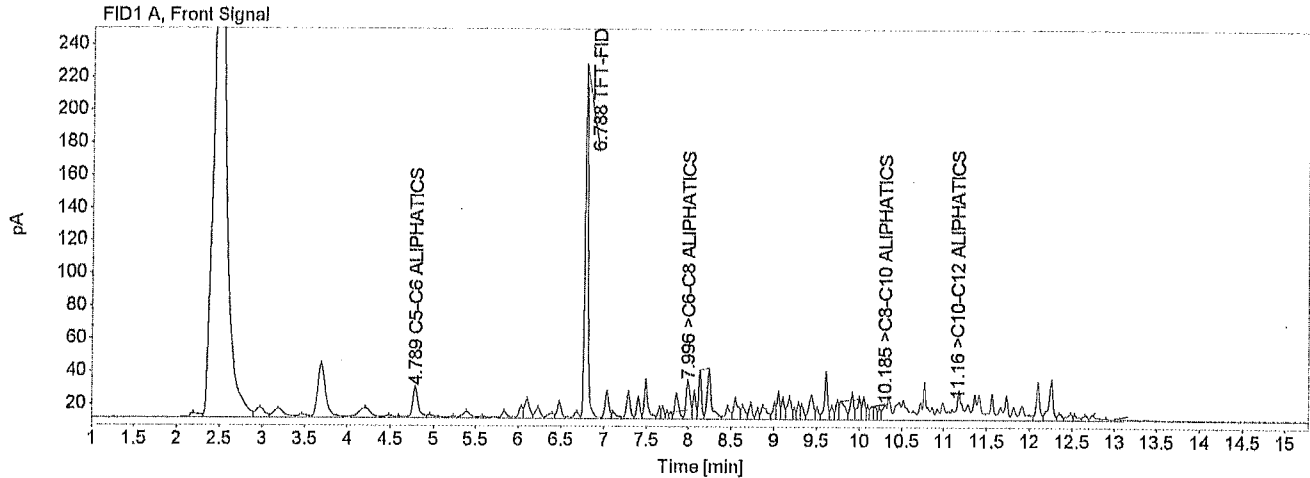
Name	Peak Area	RT [min]	Amount [ug/L]
>C8-C10 ALIPHATICS			0.000
TFT-PID	974.672	6.787	9.066
>C8-C10 AROMATICS	20.786	10.628	0.085
>C10-C12 AROMATICS	17.477	12.271	0.000
>C12-C13 AROMATICS	4.708	13.209	3.179

AKC

>C₁₀ - C₁₂ < 50 µg/l

Data file: D:\DATA\1192305232\1192305232\001F4501.D
 Sample name: EV23050160-04 VPH
 Dilution: 0.000
 Injection date: 5/24/2023 12:29:28 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	87.041	4.789	0.964
TFT-FID	570.902	6.788	9.446 <i>94%</i>
>C6-C8 ALIPHATICS	76.463	7.996	0.822
>C8-C10 ALIPHATICS	21.756	10.185	0.252
>C10-C12 ALIPHATICS	773.304	11.160	16.629

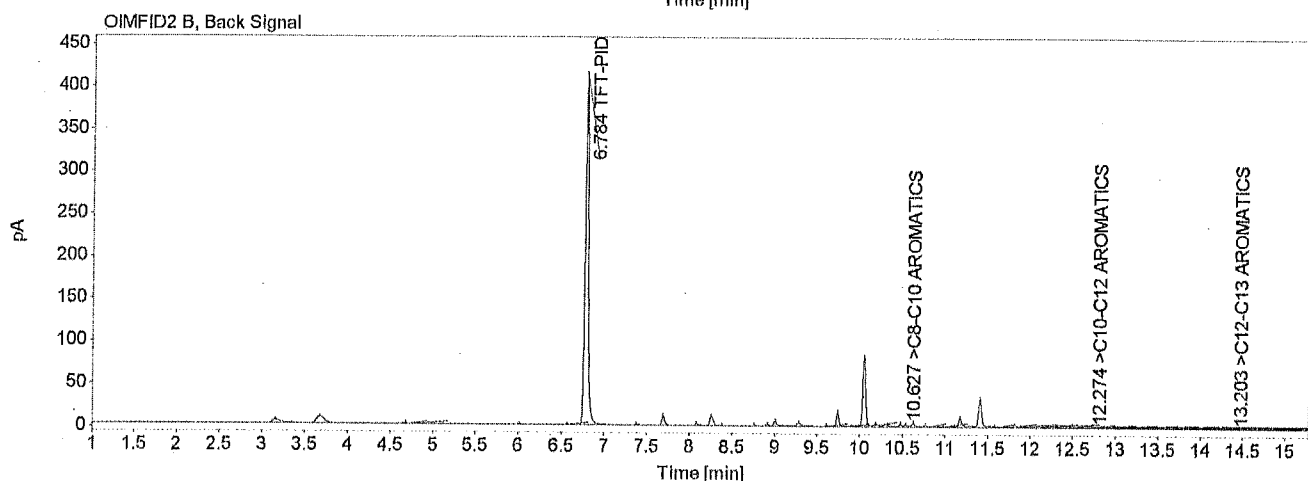
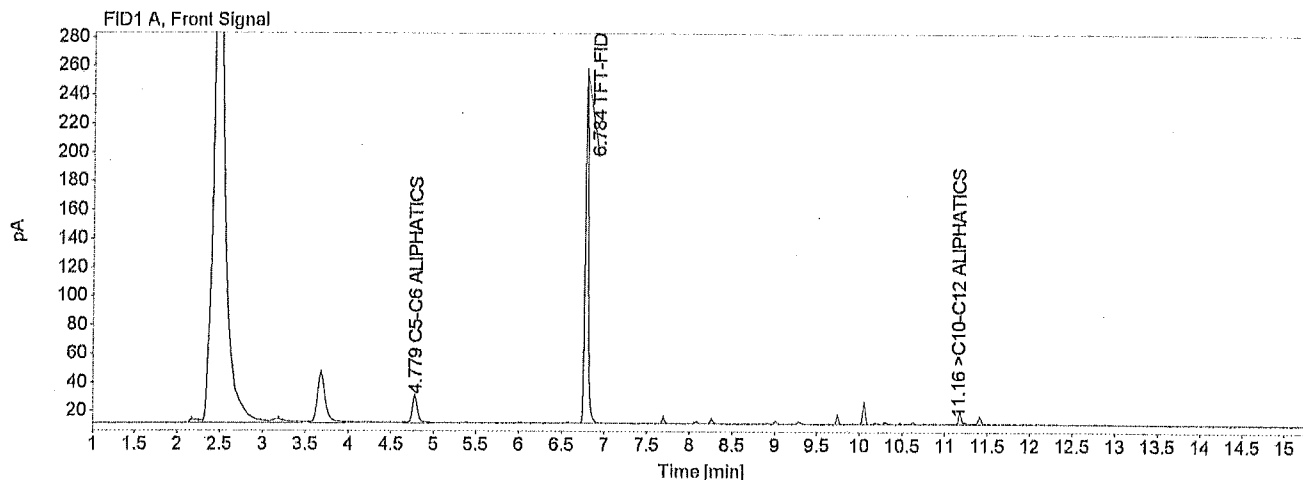
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	971.049	6.788	9.033
>C8-C10 AROMATICS	175.541	10.516	0.716
>C10-C12 AROMATICS	211.964	12.262	4.825
>C12-C13 AROMATICS	13.988	13.196	9.446

AK

> C10-C12 < 50 µg/L

Data file: D:\DATA\1192305232\1192305232\001F4601.D
 Sample name: EV23050160-05 VPH
 Dilution: 0.000
 Injection date: 5/24/2023 12:53:17 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



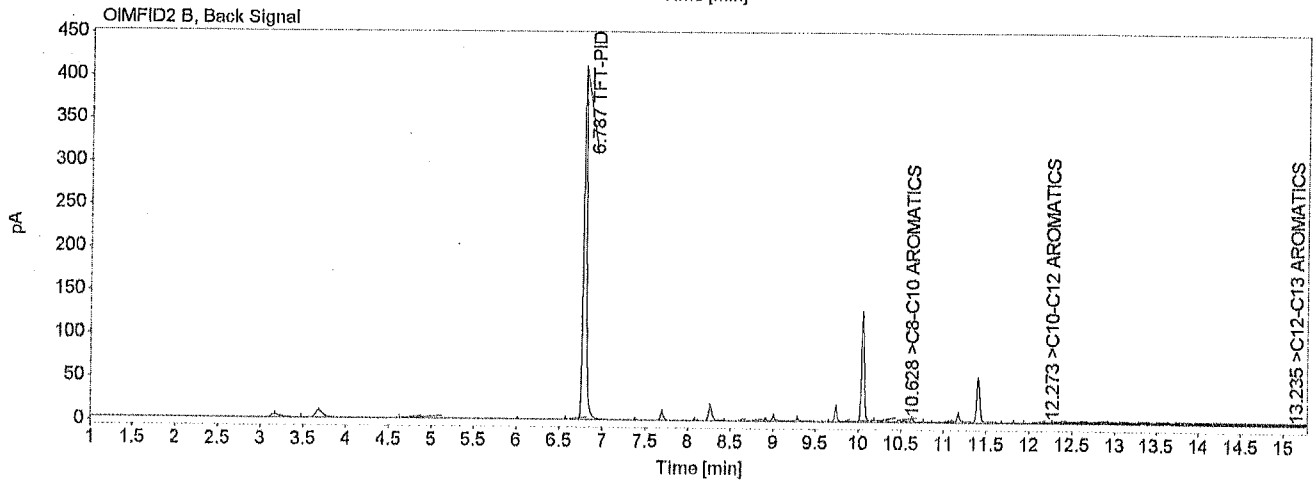
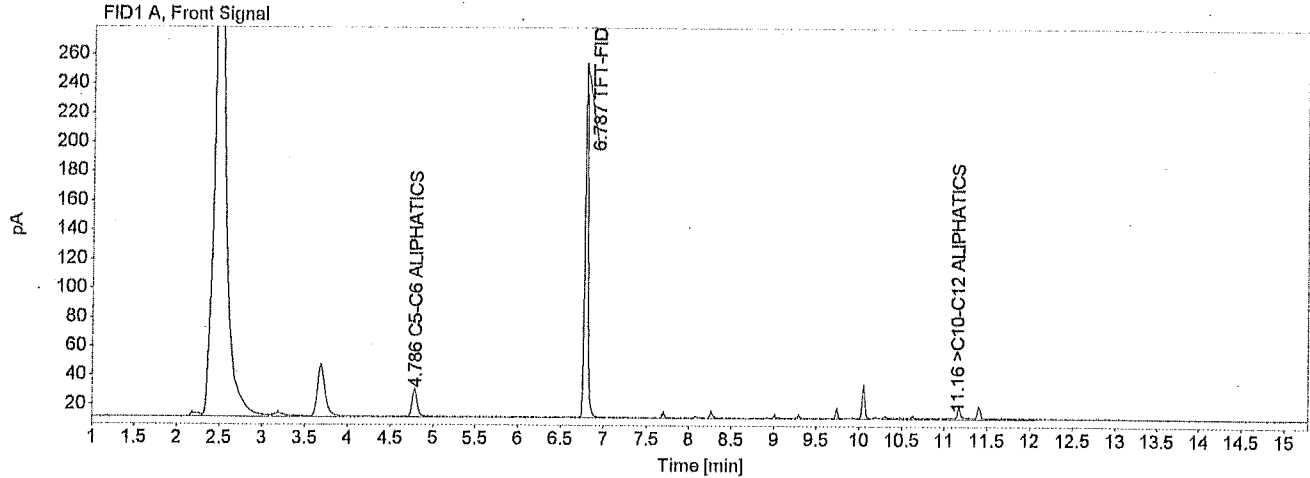
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	89.819	4.779	0.995
TFT-FID	633.771	6.784	10.486 105%
>C10-C12 ALIPHATICS	54.704	11.160	1.162
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1087.844	6.784	10.119
>C8-C10 AROMATICS	17.962	10.627	0.073
>C10-C12 AROMATICS	13.725	12.274	0.000
>C12-C13 AROMATICS	5.393	13.203	3.642

ALL

>C10-C12 < 50 µg/l

Data file: D:\DATA\1192305232\1192305232\001F4701.D
 Sample name: EV23050160-06 VPH
 Dilution: 0.000
 Injection date: 5/24/2023 1:17:05 AM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	81.677	4.786	0.905
TFT-FID	628.305	6.787	10.396 <i>104%</i>
>C10-C12 ALIPHATICS	107.348	11.160	2.184

Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1075.789	6.787	10.007
>C8-C10 AROMATICS	18.260	10.628	0.074
>C10-C12 AROMATICS	9.898	12.273	0.000
>C12-C13 AROMATICS	3.739	13.235	2.525

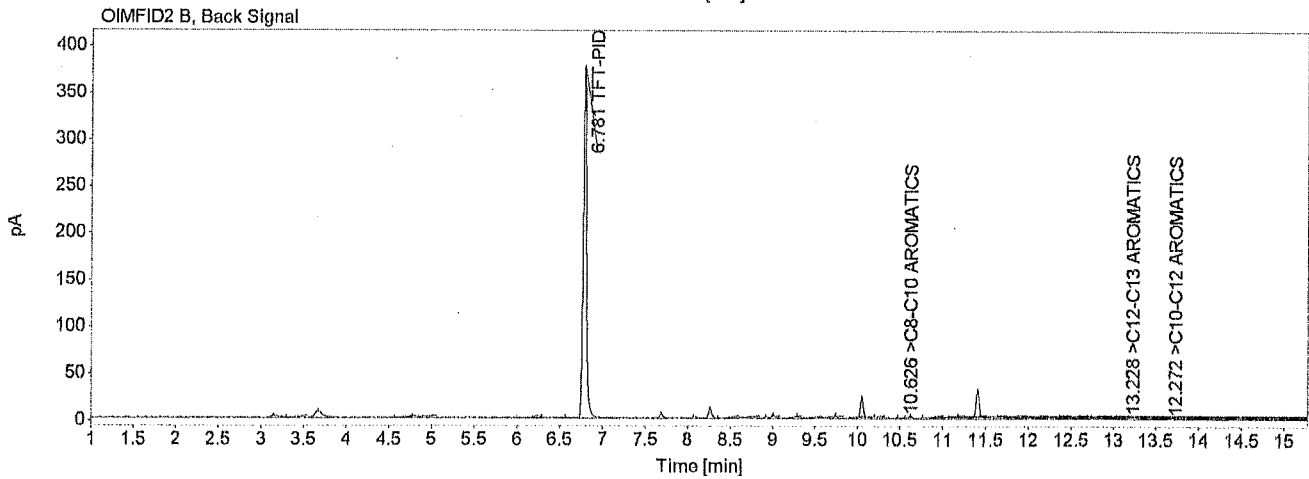
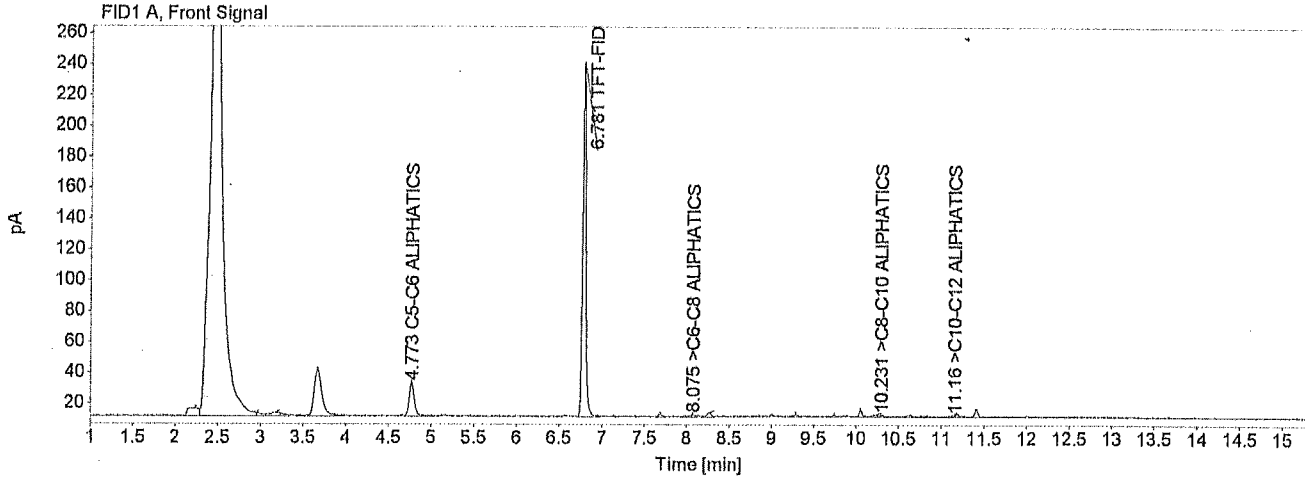
AUL

>C10 - C12 < 50 ug/l

5-21-23 DC

Data file: D:\DATA\1192305301\1192305301\001F1401.D
 Sample name: MB-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 2:59:30 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	91.971	4.773	0.968
TFT-FID	601.239	6.781	9.665 97%
>C6-C8 ALIPHATICS	7.790	8.075	0.081
>C8-C10 ALIPHATICS	5.546	10.231	0.059
>C10-C12 ALIPHATICS	53.330	11.160	1.254

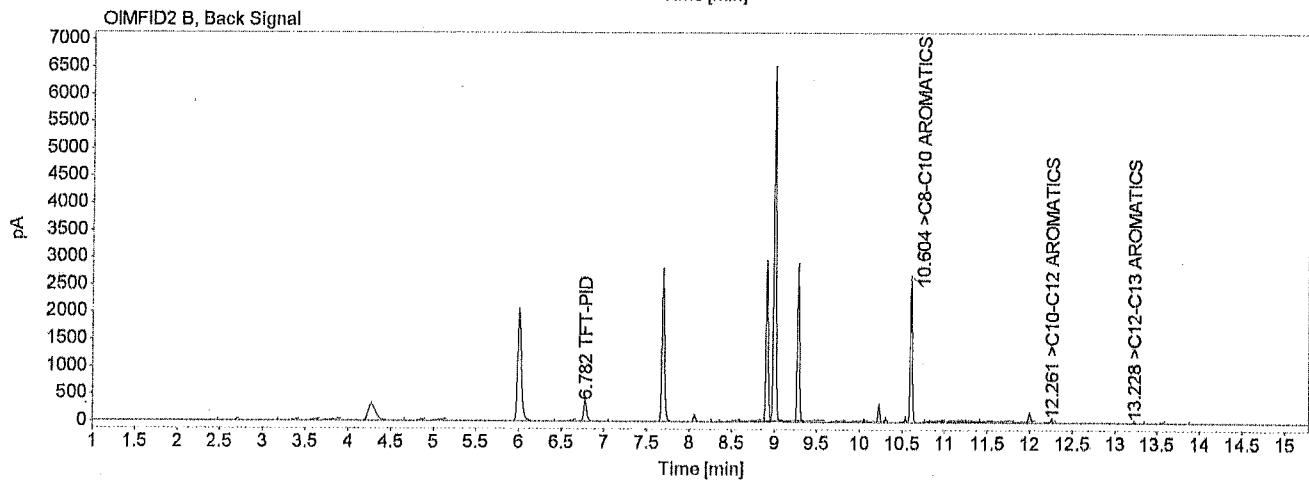
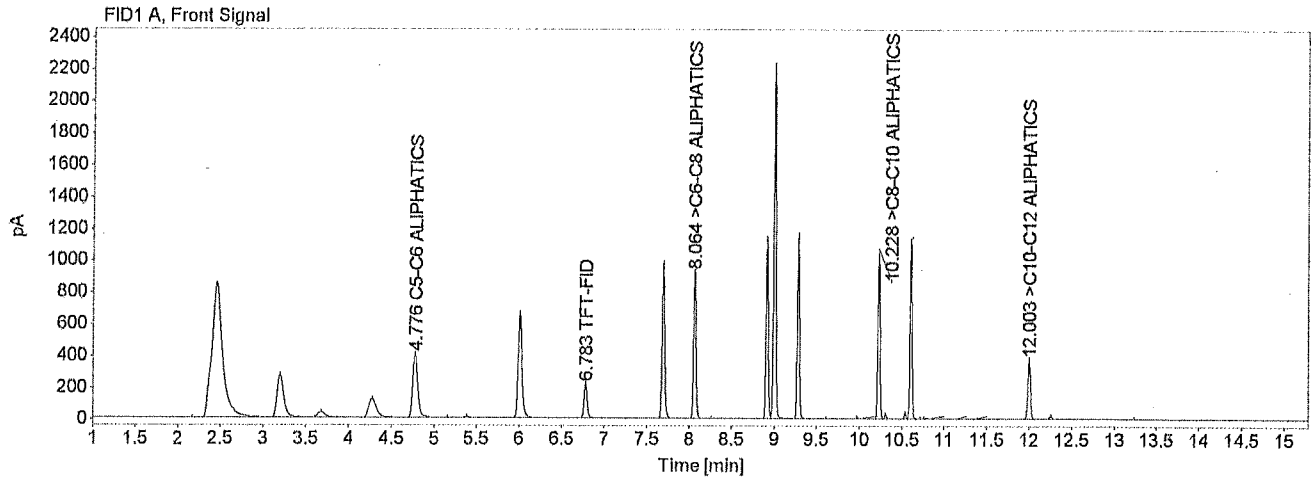
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	995.213	6.781	9.634
>C8-C10 AROMATICS	11.125	10.626	0.050
>C10-C12 AROMATICS	11.576	12.272	0.090
>C12-C13 AROMATICS	22.731	13.228	12.074

AUK

>C10-C12 < 50 ug/L

Data file: D:\DATA\1192305301\1192305301\001F1501.D
 Sample name: BS-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 3:23:14 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119

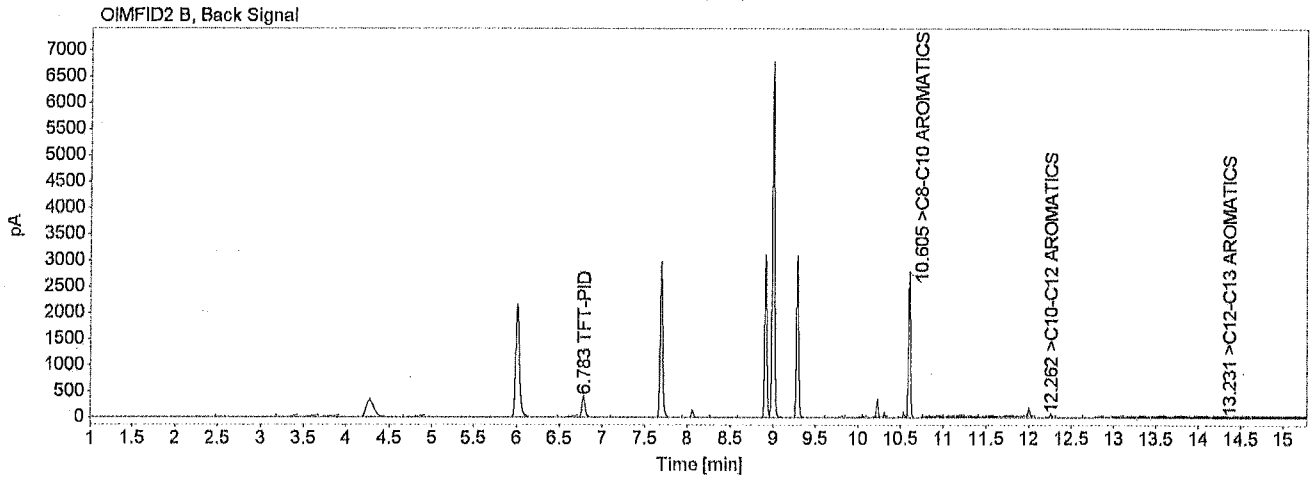
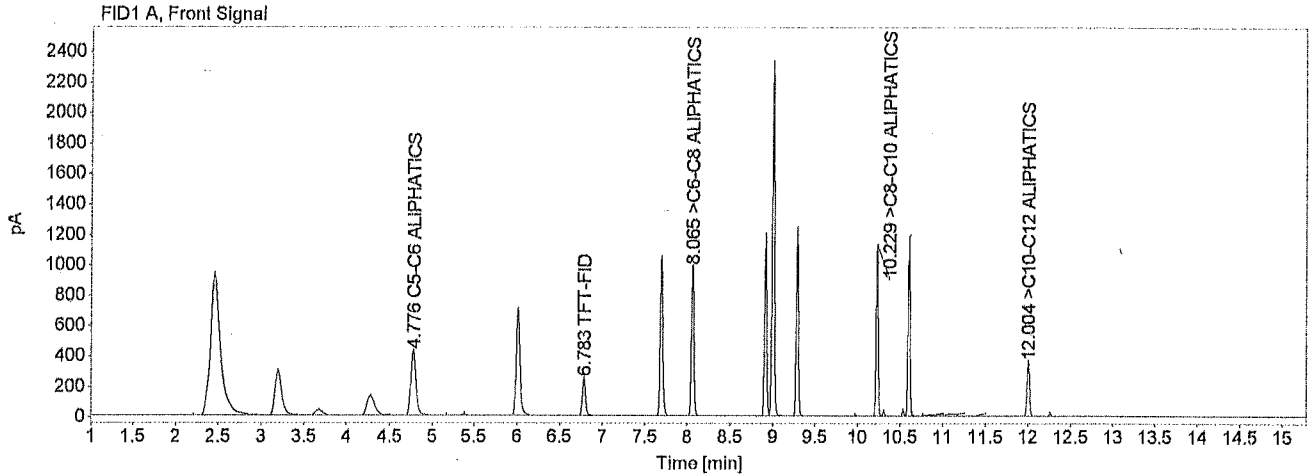


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1679.296	4.776	17.682
TFT-FID	564.210	6.783	9.070 91%
>C6-C8 ALIPHATICS	1836.251	8.064	19.037
>C8-C10 ALIPHATICS	1803.491	10.228	19.059
>C10-C12 ALIPHATICS	795.924	12.003	18.722 94%

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	945.650	6.782	9.155
>C8-C10 AROMATICS	4370.160	10.604	19.457
>C10-C12 AROMATICS	123.782	12.261	18.246
>C12-C13 AROMATICS	54.734	13.228	29.072

Data file: D:\DATA\1192305301\1192305301\001F1601.D
 Sample name: BSD-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 3:46:56 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119

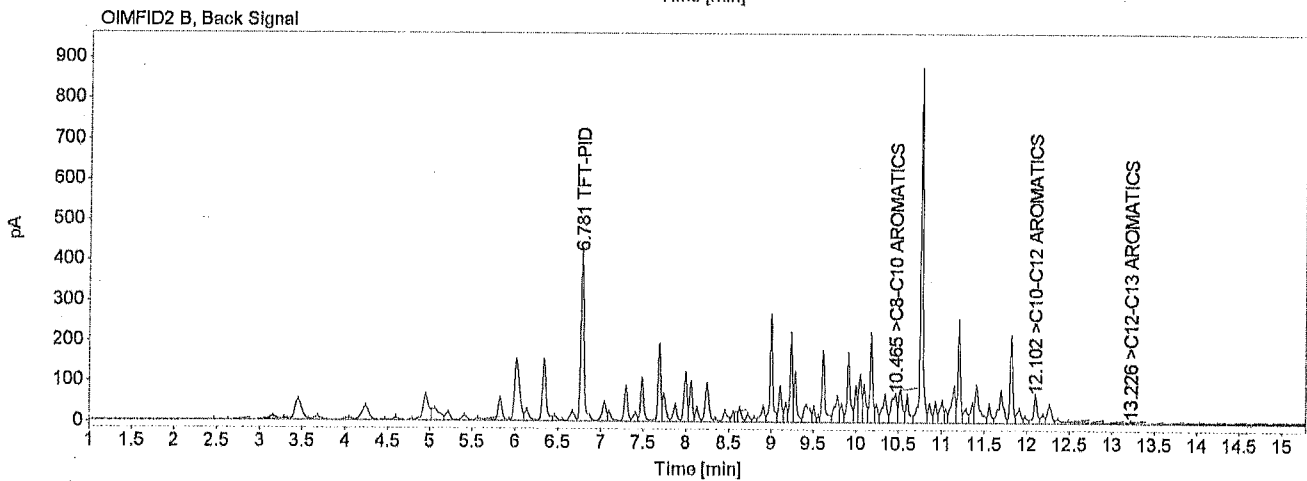
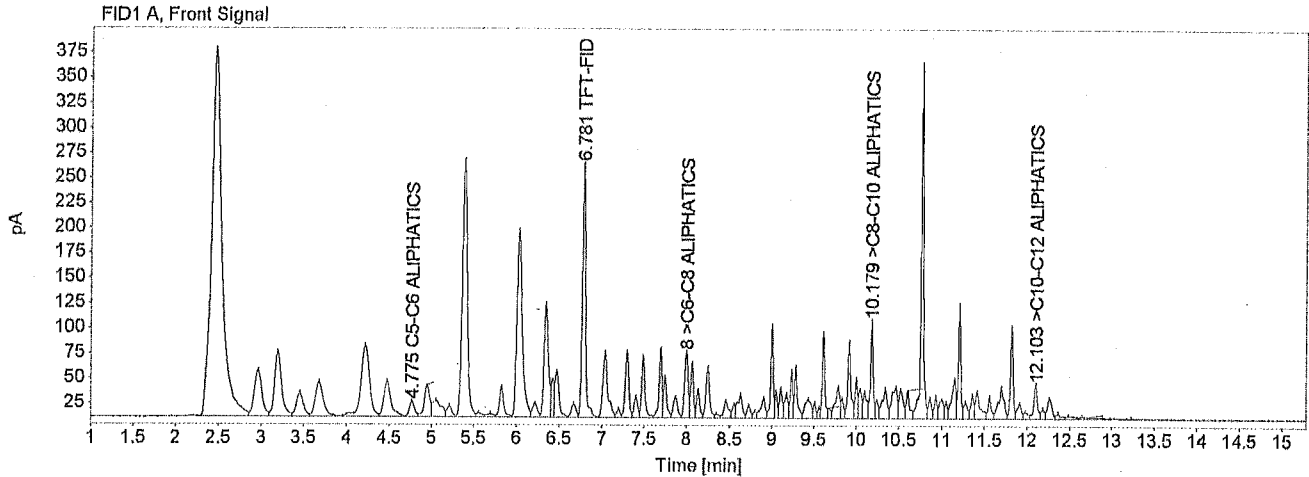


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1773.778	4.776	18.677
TFT-FID	621.308	6.783	9.988 100%
>C6-C8 ALIPHATICS	1944.441	8.065	20.158
>C8-C10 ALIPHATICS	1892.756	10.229	20.003
>C10-C12 ALIPHATICS	738.947	12.004	17.382 87%

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1043.163	6.783	10.099
>C8-C10 AROMATICS	4584.278	10.605	20.410
>C10-C12 AROMATICS	121.563	12.262	17.887
>C12-C13 AROMATICS	18.505	13.231	9.829

Data file: D:\DATA\1192305301\1192305301\001F2001.D
 Sample name: EV23050160-03 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 5:21:56 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



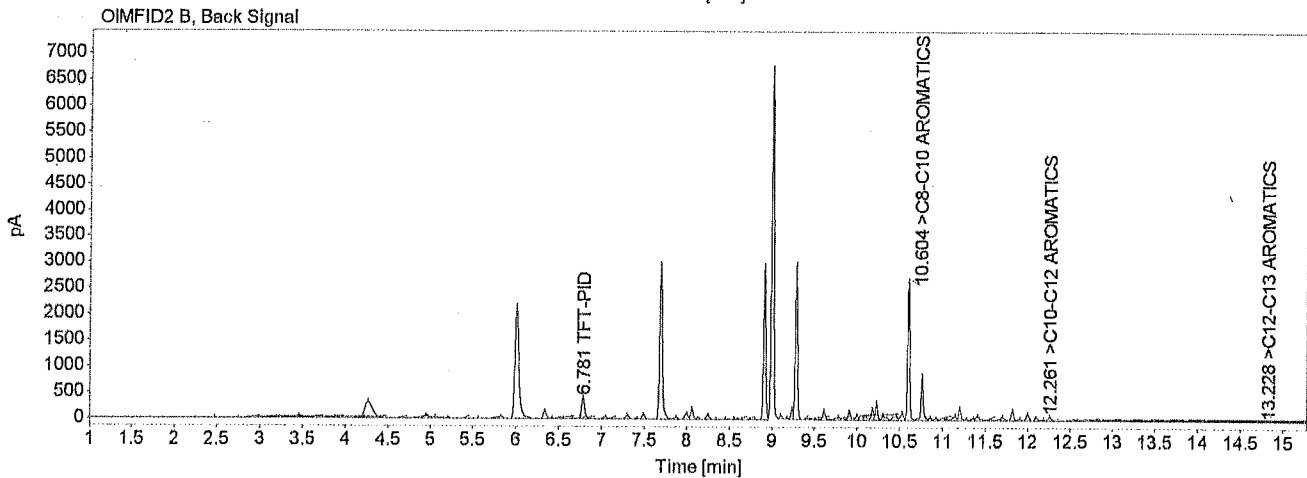
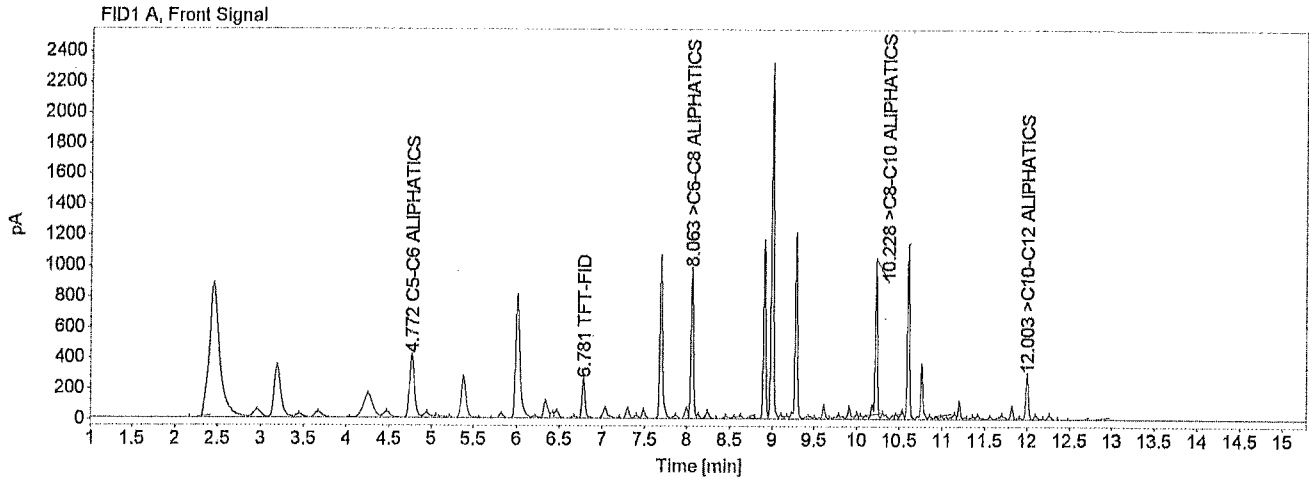
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	64.204	4.775	0.676
TFT-FID	676.230	6.781	10.871
>C6-C8 ALIPHATICS	195.954	8.000	2.031
>C8-C10 ALIPHATICS	205.637	10.179	2.173
>C10-C12 ALIPHATICS	101.708	12.103	2.392 RT

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1126.161	6.781	10.902
>C8-C10 AROMATICS	314.512	10.465	1.400
>C10-C12 AROMATICS	206.253	12.102	31.591
>C12-C13 AROMATICS	23.488	13.226	12.475

for MS

Data file: D:\DATA\1192305301\1192305301\001F1701.D
 Sample name: EV23050160-03MS VPH
 Dilution: 0.000
 Injection date: 5/30/2023 4:10:39 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

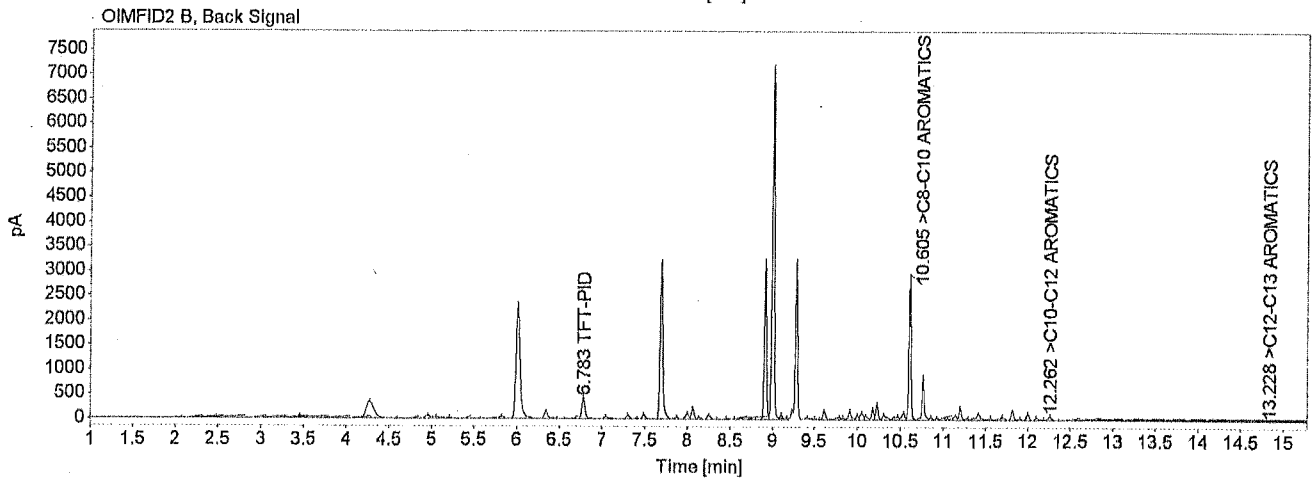
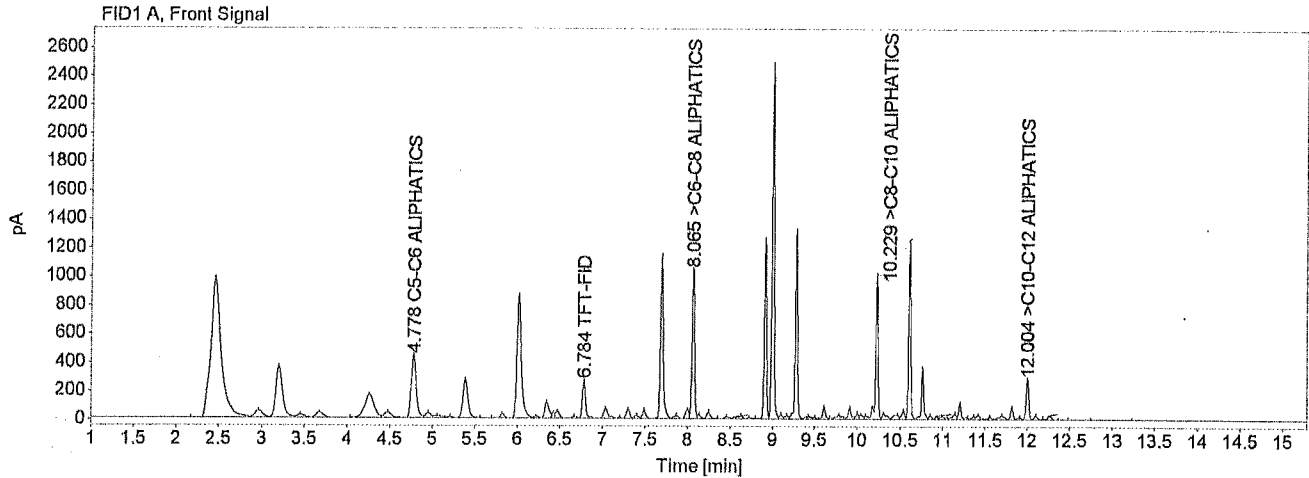
Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1683.221	4.772	17.724
TFT-FID	672.612	6.781	10.813 <i>108%</i>
>C6-C8 ALIPHATICS	1971.801	8.063	20.442
>C8-C10 ALIPHATICS	1969.633	10.228	20.815
>C10-C12 ALIPHATICS	633.363	12.003	14.898 <i>20x100 = 74%</i>
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1130.634	6.781	10.945
>C8-C10 AROMATICS	4524.087	10.604	20.142
>C10-C12 AROMATICS	230.517	12.261	35.517
>C12-C13 AROMATICS	29.133	13.228	15.474

Data file: D:\DATA\1192305301\1192305301\001F1801.D
Sample name: EV23050160-03MSD VPH
Dilution: 0.000
Injection date: 5/30/2023 4:34:25 PM
Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
Analysis method: VPH_S_053023.M
Instrument name: GC#119

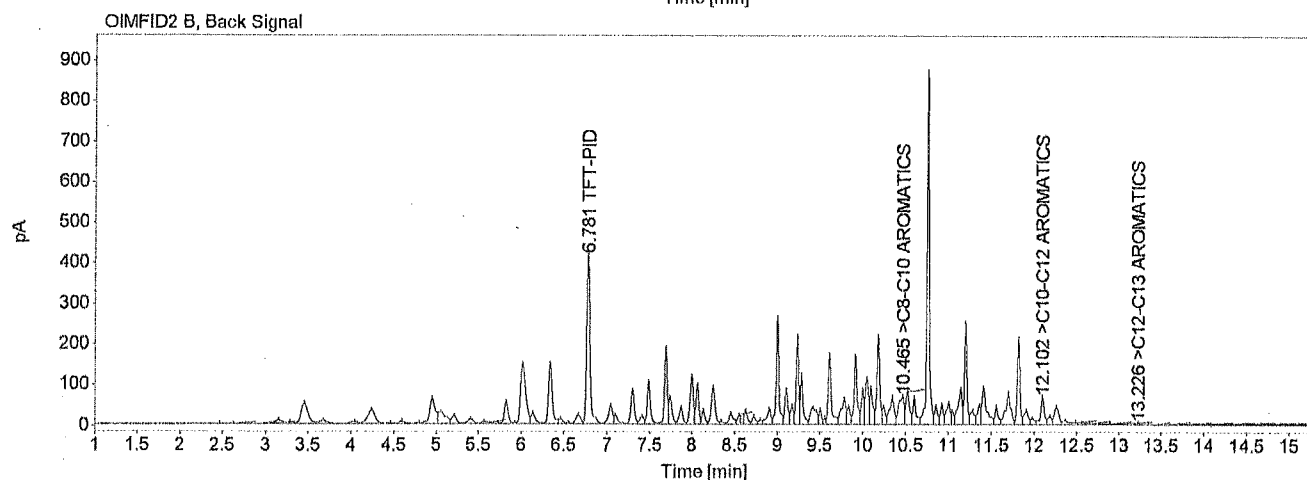
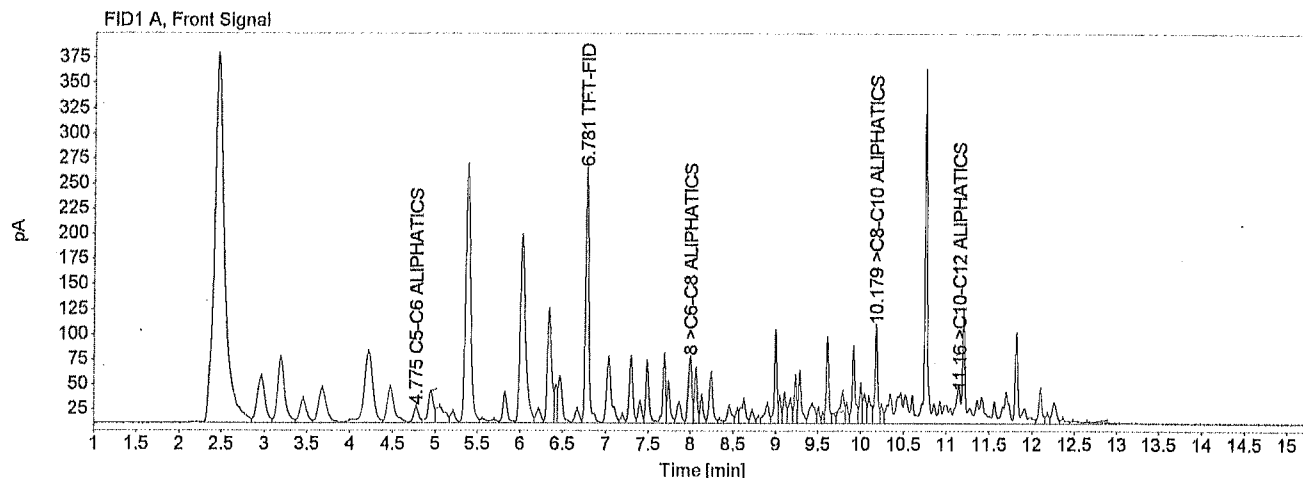


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1814.580	4.778	19.107
TFT-FID	702.529	6.784	11.294 113%
>C6-C8 ALIPHATICS	2103.679	8.065	21.809
>C8-C10 ALIPHATICS	1927.659	10.229	20.372
>C10-C12 ALIPHATICS	617.788	12.004	14.532 73%

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1169.785	6.783	11.324
>C8-C10 AROMATICS	4860.338	10.605	21.640
>C10-C12 AROMATICS	232.957	12.262	35.912
>C12-C13 AROMATICS	42.008	13.228	22.312

Data file: D:\DATA\1192305301\1192305301\001F2001.D
 Sample name: EV23050160-03 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 5:21:56 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	64.204	4.775	0.676
TFT-FID	675.837	6.781	10.865 109%
>C6-C8 ALIPHATICS	195.569	8.000	2.027
>C8-C10 ALIPHATICS	205.013	10.179	2.167
>C10-C12 ALIPHATICS	2425.698	11.160	57.058
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1126.161	6.781	10.902
>C8-C10 AROMATICS	314.512	10.465	1.400
>C10-C12 AROMATICS	206.253	12.102	31.591
>C12-C13 AROMATICS	23.488	13.226	12.475

AUK

$>C_{10} - C_{12} = 57 \mu\text{g/l}$

June 07, 2023

Erica Whitting
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0680180.003
Pace Project No.: 10654090

Dear Erica Whitting:

Enclosed are the analytical results for sample(s) received by the laboratory on May 20, 2023. 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: Jo Casey, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Andrea George, ERM
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0680180.003

Pace Project No.: 10654090

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

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

GMP+ Certification #: GMP050884

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0680180.003

Pace Project No.: 10654090

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10654090001	TRIP BLANK-20230519	Water	05/19/23 08:00	05/20/23 09:50
10654090002	PEO-MW-43-202305	Water	05/18/23 09:00	05/20/23 09:50
10654090003	PEO-MW-37-202305	Water	05/18/23 09:05	05/20/23 09:50
10654090004	PEO-MW-25-202305	Water	05/18/23 10:20	05/20/23 09:50
10654090005	PEO-MW-38-202305	Water	05/18/23 11:00	05/20/23 09:50
10654090006	PEO-MW-02-202305	Water	05/18/23 12:15	05/20/23 09:50
10654090007	PEO-MW-19-202305	Water	05/18/23 13:15	05/20/23 09:50
10654090008	PEO-MW-08-20230518	Water	05/18/23 14:15	05/20/23 09:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10654090

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10654090001	TRIP BLANK-20230519	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	PAB	8	PASI-M
10654090002	PEO-MW-43-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654090003	PEO-MW-37-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654090004	PEO-MW-25-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654090005	PEO-MW-38-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654090006	PEO-MW-02-202305	NWTPH-Dx	EB3	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: 0680180.003

Pace Project No.: 10654090

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654090007	PEO-MW-19-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654090008	PEO-MW-08-20230518	NWTPH-Dx	EB3	4	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	TWH	20	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: 0680180.003

Pace Project No.: 10654090

Sample: TRIP BLANK-20230519 **Lab ID: 10654090001** Collected: 05/19/23 08:00 Received: 05/20/23 09:50 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	22.6	1		05/24/23 18:31		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	50-150		1		05/24/23 18:31	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/25/23 00:03	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 00:03	100-41-4	
Toluene	0.15J	ug/L	1.0	0.10	1		05/25/23 00:03	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 00:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 00:03	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 00:03	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/25/23 00:03	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/25/23 00:03	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-43-202305 **Lab ID: 10654090002** Collected: 05/18/23 09:00 Received: 05/20/23 09:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	7.3	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 10:06	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 10:06		
Surrogates									
n-Triacontane (S)	71	%	50-150		1	05/24/23 12:05	05/26/23 10:06		
o-Terphenyl (S)	85	%	50-150		1	05/24/23 12:05	05/26/23 10:06	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	541	ug/L	100	22.6	1		05/25/23 16:07		
Surrogates									
a,a,a-Trifluorotoluene (S)	84	%	50-150		1		05/25/23 16:07	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	118000	ug/L	3300	361	1	06/01/23 06:54	06/05/23 13:54		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	46.8	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 17:23	7440-38-2	
Manganese, Dissolved	2650	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 17:26	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0063	1	05/21/23 15:27	05/22/23 19:24	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/21/23 15:27	05/22/23 19:24	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/21/23 15:27	05/22/23 19:24	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 19:24	56-55-3	
Benzo(a)pyrene	0.011J	ug/L	0.039	0.0078	1	05/21/23 15:27	05/22/23 19:24	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/21/23 15:27	05/22/23 19:24	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0085	1	05/21/23 15:27	05/22/23 19:24	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/21/23 15:27	05/22/23 19:24	207-08-9	
Chrysene	ND	ug/L	0.039	0.0084	1	05/21/23 15:27	05/22/23 19:24	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/21/23 15:27	05/22/23 19:24	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/21/23 15:27	05/22/23 19:24	206-44-0	
Fluorene	1.9	ug/L	0.039	0.0060	1	05/21/23 15:27	05/22/23 19:24	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.0099	1	05/21/23 15:27	05/22/23 19:24	193-39-5	
1-Methylnaphthalene	0.64	ug/L	0.039	0.0060	1	05/21/23 15:27	05/22/23 19:24	90-12-0	
2-Methylnaphthalene	2.0	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 19:24	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 19:24	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 19:24	85-01-8	
Pyrene	ND	ug/L	0.039	0.0088	1	05/21/23 15:27	05/22/23 19:24	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%	49-125		1	05/21/23 15:27	05/22/23 19:24	321-60-8	
p-Terphenyl-d14 (S)	82	%	42-125		1	05/21/23 15:27	05/22/23 19:24	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-43-202305 **Lab ID: 10654090002** Collected: 05/18/23 09:00 Received: 05/20/23 09:50 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		05/25/23 00:20	71-43-2	
Ethylbenzene	0.23J	ug/L	1.0	0.11	1		05/25/23 00:20	100-41-4	
Toluene	0.63J	ug/L	1.0	0.10	1		05/25/23 00:20	108-88-3	
m&p-Xylene	1.2J	ug/L	2.0	0.20	1		05/25/23 00:20	179601-23-1	
o-Xylene	0.51J	ug/L	1.0	0.18	1		05/25/23 00:20	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%	75-125		1		05/25/23 00:20	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/25/23 00:20	460-00-4	
Toluene-d8 (S)	102	%	75-125		1		05/25/23 00:20	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	161	mg/L	5.0	1.4	1		06/01/23 12:46		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	0.73J	mg/L	1.2	0.43	1		06/02/23 17:25	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-37-202305 Lab ID: 10654090003 Collected: 05/18/23 09:05 Received: 05/20/23 09:50 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 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.43	0.13	1	05/24/23 12:05	05/26/23 10:17	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	0.20	1	05/24/23 12:05	05/26/23 10:17		
Surrogates									
n-Triacontane (S)	84	%	50-150		1	05/24/23 12:05	05/26/23 10:17		
o-Terphenyl (S)	82	%	50-150		1	05/24/23 12:05	05/26/23 10:17	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 16:58		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/24/23 16:58	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	54900	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:03		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.0	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 17:30	7440-38-2	
Manganese, Dissolved	0.90	ug/L	0.50	0.16	1	06/01/23 07:06	06/05/23 17:30	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0064	1	05/21/23 15:27	05/22/23 19:43	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/21/23 15:27	05/22/23 19:43	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/21/23 15:27	05/22/23 19:43	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0075	1	05/21/23 15:27	05/22/23 19:43	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0078	1	05/21/23 15:27	05/22/23 19:43	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/21/23 15:27	05/22/23 19:43	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0086	1	05/21/23 15:27	05/22/23 19:43	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/21/23 15:27	05/22/23 19:43	207-08-9	
Chrysene	ND	ug/L	0.039	0.0085	1	05/21/23 15:27	05/22/23 19:43	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/21/23 15:27	05/22/23 19:43	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/21/23 15:27	05/22/23 19:43	206-44-0	
Fluorene	ND	ug/L	0.039	0.0061	1	05/21/23 15:27	05/22/23 19:43	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.010	1	05/21/23 15:27	05/22/23 19:43	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0061	1	05/21/23 15:27	05/22/23 19:43	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 19:43	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 19:43	91-20-3	
Phenanthrene	0.015J	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 19:43	85-01-8	B
Pyrene	ND	ug/L	0.039	0.0089	1	05/21/23 15:27	05/22/23 19:43	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%	49-125		1	05/21/23 15:27	05/22/23 19:43	321-60-8	
p-Terphenyl-d14 (S)	74	%	42-125		1	05/21/23 15:27	05/22/23 19:43	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-37-202305 **Lab ID: 10654090003** Collected: 05/18/23 09:05 Received: 05/20/23 09:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/25/23 00:54	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 00:54	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 00:54	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 00:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 00:54	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 00:54	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/25/23 00:54	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/25/23 00:54	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	44.5	mg/L	5.0	1.4	1		06/01/23 13:13		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	25.8	mg/L	1.2	0.43	1		06/02/23 18:24	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-25-202305		Lab ID: 10654090004		Collected: 05/18/23 10:20		Received: 05/20/23 09:50		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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.43	0.13	1	05/24/23 12:05	05/26/23 10:29	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	0.21	1	05/24/23 12:05	05/26/23 10:29		
Surrogates									
n-Triacontane (S)	63	%	50-150		1	05/24/23 12:05	05/26/23 10:29		
o-Terphenyl (S)	58	%	50-150		1	05/24/23 12:05	05/26/23 10:29	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 17:17		
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/24/23 17:17	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	57300	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:04		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.18J	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:03	7440-38-2	
Manganese, Dissolved	0.35J	ug/L	0.50	0.16	1	06/01/23 07:06	06/05/23 18:03	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0063	1	05/21/23 15:27	05/22/23 20:02	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/21/23 15:27	05/22/23 20:02	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/21/23 15:27	05/22/23 20:02	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 20:02	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0078	1	05/21/23 15:27	05/22/23 20:02	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/21/23 15:27	05/22/23 20:02	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0085	1	05/21/23 15:27	05/22/23 20:02	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/21/23 15:27	05/22/23 20:02	207-08-9	
Chrysene	ND	ug/L	0.039	0.0084	1	05/21/23 15:27	05/22/23 20:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/21/23 15:27	05/22/23 20:02	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/21/23 15:27	05/22/23 20:02	206-44-0	
Fluorene	ND	ug/L	0.039	0.0060	1	05/21/23 15:27	05/22/23 20:02	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.0099	1	05/21/23 15:27	05/22/23 20:02	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/21/23 15:27	05/22/23 20:02	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 20:02	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 20:02	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 20:02	85-01-8	
Pyrene	ND	ug/L	0.039	0.0088	1	05/21/23 15:27	05/22/23 20:02	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	64	%	49-125		1	05/21/23 15:27	05/22/23 20:02	321-60-8	
p-Terphenyl-d14 (S)	70	%	42-125		1	05/21/23 15:27	05/22/23 20:02	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-25-202305 **Lab ID: 10654090004** Collected: 05/18/23 10:20 Received: 05/20/23 09:50 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		05/25/23 01:11	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 01:11	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 01:11	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 01:11	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 01:11	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 01:11	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 01:11	460-00-4	
Toluene-d8 (S)	102	%	75-125		1		05/25/23 01:11	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	59.4	mg/L	5.0	1.4	1		06/01/23 13:25		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	11.7	mg/L	1.2	0.43	1		06/02/23 18:38	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-38-202305 **Lab ID: 10654090005** Collected: 05/18/23 11:00 Received: 05/20/23 09:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	13.3	mg/L	0.43	0.13	1	05/24/23 12:05	05/26/23 10:40	68334-30-5	
Motor Oil Range	0.31J	mg/L	0.43	0.21	1	05/24/23 12:05	05/26/23 10:40		
Surrogates									
n-Triacontane (S)	65	%	50-150		1	05/24/23 12:05	05/26/23 10:40		
o-Terphenyl (S)	74	%	50-150		1	05/24/23 12:05	05/26/23 10:40	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	931	ug/L	100	22.6	1		05/24/23 17:35		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%	50-150		1		05/24/23 17:35	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	105000	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:06		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	49.6	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:16	7440-38-2	
Manganese, Dissolved	1670	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 18:20	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0064	1	05/21/23 15:27	05/22/23 20:21	83-32-9	
Acenaphthylene	6.3	ug/L	0.039	0.0055	1	05/21/23 15:27	05/22/23 20:21	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/21/23 15:27	05/22/23 20:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0075	1	05/21/23 15:27	05/22/23 20:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0079	1	05/21/23 15:27	05/22/23 20:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/21/23 15:27	05/22/23 20:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0086	1	05/21/23 15:27	05/22/23 20:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0084	1	05/21/23 15:27	05/22/23 20:21	207-08-9	
Chrysene	ND	ug/L	0.039	0.0085	1	05/21/23 15:27	05/22/23 20:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/21/23 15:27	05/22/23 20:21	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/21/23 15:27	05/22/23 20:21	206-44-0	
Fluorene	ND	ug/L	0.039	0.0061	1	05/21/23 15:27	05/22/23 20:21	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.010	1	05/21/23 15:27	05/22/23 20:21	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0061	1	05/21/23 15:27	05/22/23 20:21	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 20:21	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 20:21	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 20:21	85-01-8	
Pyrene	ND	ug/L	0.039	0.0089	1	05/21/23 15:27	05/22/23 20:21	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	52	%	49-125		1	05/21/23 15:27	05/22/23 20:21	321-60-8	
p-Terphenyl-d14 (S)	82	%	42-125		1	05/21/23 15:27	05/22/23 20:21	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-38-202305 **Lab ID: 10654090005** Collected: 05/18/23 11:00 Received: 05/20/23 09:50 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	0.56J	ug/L	1.0	0.10	1		05/26/23 00:52	71-43-2	
Ethylbenzene	0.51J	ug/L	1.0	0.11	1		05/26/23 00:52	100-41-4	
Toluene	2.1	ug/L	1.0	0.10	1		05/26/23 00:52	108-88-3	
m&p-Xylene	3.5	ug/L	2.0	0.20	1		05/26/23 00:52	179601-23-1	
o-Xylene	1.7	ug/L	1.0	0.18	1		05/26/23 00:52	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/26/23 00:52	2199-69-1	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/26/23 00:52	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/26/23 00:52	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	133	mg/L	5.0	1.4	1		06/01/23 13:29		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	13.9	mg/L	1.2	0.43	1		06/02/23 18:52	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-02-202305		Lab ID: 10654090006		Collected: 05/18/23 12:15		Received: 05/20/23 09:50		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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	4.0	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 10:51	68334-30-5	
Motor Oil Range	0.26J	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 10:51		
Surrogates									
n-Triacontane (S)	73	%	50-150		1	05/24/23 12:05	05/26/23 10:51		
o-Terphenyl (S)	81	%	50-150		1	05/24/23 12:05	05/26/23 10:51	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	35.6J	ug/L	100	22.6	1		05/24/23 17:54		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%	50-150		1		05/24/23 17:54	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	91900	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:11		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	13.0	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:23	7440-38-2	
Manganese, Dissolved	1680	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 18:27	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0065	1	05/21/23 15:27	05/22/23 20:40	83-32-9	
Acenaphthylene	0.037J	ug/L	0.040	0.0056	1	05/21/23 15:27	05/22/23 20:40	208-96-8	
Anthracene	ND	ug/L	0.040	0.0049	1	05/21/23 15:27	05/22/23 20:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0076	1	05/21/23 15:27	05/22/23 20:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0080	1	05/21/23 15:27	05/22/23 20:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0083	1	05/21/23 15:27	05/22/23 20:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0088	1	05/21/23 15:27	05/22/23 20:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0085	1	05/21/23 15:27	05/22/23 20:40	207-08-9	
Chrysene	ND	ug/L	0.040	0.0087	1	05/21/23 15:27	05/22/23 20:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/21/23 15:27	05/22/23 20:40	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.013	1	05/21/23 15:27	05/22/23 20:40	206-44-0	
Fluorene	ND	ug/L	0.040	0.0062	1	05/21/23 15:27	05/22/23 20:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.010	1	05/21/23 15:27	05/22/23 20:40	193-39-5	
1-Methylnaphthalene	0.082	ug/L	0.040	0.0062	1	05/21/23 15:27	05/22/23 20:40	90-12-0	
2-Methylnaphthalene	0.027J	ug/L	0.040	0.0076	1	05/21/23 15:27	05/22/23 20:40	91-57-6	
Naphthalene	0.018J	ug/L	0.040	0.015	1	05/21/23 15:27	05/22/23 20:40	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.014	1	05/21/23 15:27	05/22/23 20:40	85-01-8	
Pyrene	ND	ug/L	0.040	0.0091	1	05/21/23 15:27	05/22/23 20:40	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%	49-125		1	05/21/23 15:27	05/22/23 20:40	321-60-8	
p-Terphenyl-d14 (S)	78	%	42-125		1	05/21/23 15:27	05/22/23 20:40	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-02-202305		Lab ID: 10654090006		Collected: 05/18/23 12:15	Received: 05/20/23 09:50	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		05/25/23 01:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 01:28	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 01:28	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 01:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 01:28	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 01:28	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 01:28	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/25/23 01:28	2037-26-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Minneapolis							
Alkalinity, Total as CaCO3	60.9	mg/L	5.0	1.4	1		06/01/23 13:42		
300.0 IC Anions		Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Sulfate	64.3	mg/L	1.2	0.43	1		06/02/23 19:06	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-19-202305 **Lab ID: 10654090007** Collected: 05/18/23 13:15 Received: 05/20/23 09:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.43	0.13	1	05/24/23 12:05	05/26/23 11:03	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	0.21	1	05/24/23 12:05	05/26/23 11:03		
Surrogates									
n-Triacontane (S)	74	%	50-150		1	05/24/23 12:05	05/26/23 11:03		
o-Terphenyl (S)	72	%	50-150		1	05/24/23 12:05	05/26/23 11:03	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 18:12		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	50-150		1		05/24/23 18:12	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	69000	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:13		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.16J	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:30	7440-38-2	
Manganese, Dissolved	787	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 18:33	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0064	1	05/21/23 15:27	05/22/23 20:59	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/21/23 15:27	05/22/23 20:59	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/21/23 15:27	05/22/23 20:59	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0075	1	05/21/23 15:27	05/22/23 20:59	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0078	1	05/21/23 15:27	05/22/23 20:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/21/23 15:27	05/22/23 20:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0086	1	05/21/23 15:27	05/22/23 20:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/21/23 15:27	05/22/23 20:59	207-08-9	
Chrysene	ND	ug/L	0.039	0.0085	1	05/21/23 15:27	05/22/23 20:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/21/23 15:27	05/22/23 20:59	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/21/23 15:27	05/22/23 20:59	206-44-0	
Fluorene	ND	ug/L	0.039	0.0061	1	05/21/23 15:27	05/22/23 20:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.010	1	05/21/23 15:27	05/22/23 20:59	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0061	1	05/21/23 15:27	05/22/23 20:59	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 20:59	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 20:59	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 20:59	85-01-8	
Pyrene	ND	ug/L	0.039	0.0089	1	05/21/23 15:27	05/22/23 20:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	63	%	49-125		1	05/21/23 15:27	05/22/23 20:59	321-60-8	
p-Terphenyl-d14 (S)	76	%	42-125		1	05/21/23 15:27	05/22/23 20:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-19-202305 **Lab ID: 10654090007** Collected: 05/18/23 13:15 Received: 05/20/23 09:50 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		05/25/23 01:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 01:45	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 01:45	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 01:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 01:45	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	99	%	75-125		1		05/25/23 01:45	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/25/23 01:45	460-00-4	
Toluene-d8 (S)	101	%	75-125		1		05/25/23 01:45	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	94.3	mg/L	5.0	1.4	1		06/01/23 13:47		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	10.1	mg/L	1.2	0.43	1		06/02/23 19:20	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003
Pace Project No.: 10654090

Sample: PEO-MW-08-20230518 Lab ID: 10654090008 Collected: 05/18/23 14:15 Received: 05/20/23 09:50 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 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.44	0.13	1	05/24/23 12:05	05/26/23 11:14	68334-30-5	
Motor Oil Range	ND	mg/L	0.44	0.21	1	05/24/23 12:05	05/26/23 11:14		
Surrogates									
n-Triacontane (S)	49	%	50-150		1	05/24/23 12:05	05/26/23 11:14		P2, S0
o-Terphenyl (S)	47	%	50-150		1	05/24/23 12:05	05/26/23 11:14	84-15-1	S0
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	48300	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:14		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.75	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:37	7440-38-2	
Manganese, Dissolved	224	ug/L	0.50	0.16	1	06/01/23 07:06	06/05/23 18:37	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0063	1	05/21/23 15:27	05/22/23 21:18	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/21/23 15:27	05/22/23 21:18	208-96-8	
Anthracene	0.018J	ug/L	0.039	0.0048	1	05/21/23 15:27	05/22/23 21:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 21:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0078	1	05/21/23 15:27	05/22/23 21:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/21/23 15:27	05/22/23 21:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0085	1	05/21/23 15:27	05/22/23 21:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/21/23 15:27	05/22/23 21:18	207-08-9	
Chrysene	ND	ug/L	0.039	0.0084	1	05/21/23 15:27	05/22/23 21:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/21/23 15:27	05/22/23 21:18	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/21/23 15:27	05/22/23 21:18	206-44-0	
Fluorene	ND	ug/L	0.039	0.0060	1	05/21/23 15:27	05/22/23 21:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.0099	1	05/21/23 15:27	05/22/23 21:18	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/21/23 15:27	05/22/23 21:18	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/21/23 15:27	05/22/23 21:18	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 21:18	91-20-3	
Phenanthrene	0.047	ug/L	0.039	0.014	1	05/21/23 15:27	05/22/23 21:18	85-01-8	B
Pyrene	ND	ug/L	0.039	0.0088	1	05/21/23 15:27	05/22/23 21:18	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	64	%	49-125		1	05/21/23 15:27	05/22/23 21:18	321-60-8	
p-Terphenyl-d14 (S)	77	%	42-125		1	05/21/23 15:27	05/22/23 21:18	1718-51-0	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	30.8	mg/L	5.0	1.4	1		06/01/23 13:51		

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654090

Sample: PEO-MW-08-20230518 **Lab ID: 10654090008** Collected: 05/18/23 14:15 Received: 05/20/23 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	51.6	mg/L	1.2	0.43	1		06/02/23 20:02	14808-79-8	

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654090

QC Batch: 883098 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10654090001, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007

METHOD BLANK: 4652879 Matrix: Water
Associated Lab Samples: 10654090001, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/24/23 15:26	
a,a,a-Trifluorotoluene (S)	%	102	50-150		05/24/23 15:26	

METHOD BLANK: 4652880 Matrix: Water
Associated Lab Samples: 10654090001, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/24/23 19:26	
a,a,a-Trifluorotoluene (S)	%	96	50-150		05/24/23 19:26	

LABORATORY CONTROL SAMPLE & LCSD: 4652881 4652882

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	911	859	91	86	68-125	6	20	
a,a,a-Trifluorotoluene (S)	%				103	99	50-150			

SAMPLE DUPLICATE: 4652883

Parameter	Units	10654743001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	637	660	4	30	
a,a,a-Trifluorotoluene (S)	%	99	100			

SAMPLE DUPLICATE: 4652884

Parameter	Units	10654258006 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1210	1080	11	30	
a,a,a-Trifluorotoluene (S)	%	97	98			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654090

QC Batch: 883443 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654090002

METHOD BLANK: 4654401 Matrix: Water

Associated Lab Samples: 10654090002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/25/23 15:51	
a,a,a-Trifluorotoluene (S)	%.	99	50-150		05/25/23 15:51	

METHOD BLANK: 4654402 Matrix: Water

Associated Lab Samples: 10654090002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/25/23 18:17	
a,a,a-Trifluorotoluene (S)	%.	100	50-150		05/25/23 18:17	

LABORATORY CONTROL SAMPLE & LCSD: 4654403 4654404

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	925	844	93	84	68-125	9	20	
a,a,a-Trifluorotoluene (S)	%.				105	104	50-150			

SAMPLE DUPLICATE: 4654405

Parameter	Units	10654090002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	541	550	2	30	
a,a,a-Trifluorotoluene (S)	%.	84	82			

SAMPLE DUPLICATE: 4654406

Parameter	Units	10654665009 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	<22.6	ND		30	
a,a,a-Trifluorotoluene (S)	%.	93	89			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654090

QC Batch: 883772

Analysis Method: EPA 6020B

QC Batch Method: EPA 3020A

Analysis Description: 6020B Water Dissolved UPD5

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

METHOD BLANK: 4656599

Matrix: Water

Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.092	06/05/23 17:17	
Manganese, Dissolved	ug/L	ND	0.50	0.16	06/05/23 17:17	

LABORATORY CONTROL SAMPLE: 4656600

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	98.0	98	80-120	
Manganese, Dissolved	ug/L	100	106	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4656601 4656602

Parameter	Units	10654090003 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	2.0	100	100	102	99.6	100	98	75-125	2	20	
Manganese, Dissolved	ug/L	0.90	100	100	107	105	106	104	75-125	3	20	

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654090

QC Batch: 883078 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV UST-WATER
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654090001, 10654090002, 10654090003, 10654090004, 10654090006, 10654090007

METHOD BLANK: 4652821 Matrix: Water
Associated Lab Samples: 10654090001, 10654090002, 10654090003, 10654090004, 10654090006, 10654090007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/24/23 23:12	
Ethylbenzene	ug/L	ND	1.0	0.11	05/24/23 23:12	
m&p-Xylene	ug/L	ND	2.0	0.20	05/24/23 23:12	
o-Xylene	ug/L	ND	1.0	0.18	05/24/23 23:12	
Toluene	ug/L	ND	1.0	0.10	05/24/23 23:12	
1,2-Dichlorobenzene-d4 (S)	%	100	75-125		05/24/23 23:12	
4-Bromofluorobenzene (S)	%	99	75-125		05/24/23 23:12	
Toluene-d8 (S)	%	103	75-125		05/24/23 23:12	

LABORATORY CONTROL SAMPLE & LCSD: 4652822 4652823

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.9	20.1	100	100	75-125	1	20	
Ethylbenzene	ug/L	20	19.0	18.9	95	95	75-125	1	20	
m&p-Xylene	ug/L	40	38.6	38.3	96	96	75-125	1	20	
o-Xylene	ug/L	20	19.5	19.4	97	97	75-125	0	20	
Toluene	ug/L	20	18.7	19.2	94	96	74-125	3	20	
1,2-Dichlorobenzene-d4 (S)	%				100	100	75-125			
4-Bromofluorobenzene (S)	%				102	99	75-125			
Toluene-d8 (S)	%				99	99	75-125			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654090

QC Batch: 883475	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV UST-WATER
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654090005

METHOD BLANK: 4654492 Matrix: Water

Associated Lab Samples: 10654090005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/26/23 00:01	
Ethylbenzene	ug/L	ND	1.0	0.11	05/26/23 00:01	
m&p-Xylene	ug/L	ND	2.0	0.20	05/26/23 00:01	
o-Xylene	ug/L	ND	1.0	0.18	05/26/23 00:01	
Toluene	ug/L	ND	1.0	0.10	05/26/23 00:01	
1,2-Dichlorobenzene-d4 (S)	%	100	75-125		05/26/23 00:01	
4-Bromofluorobenzene (S)	%	99	75-125		05/26/23 00:01	
Toluene-d8 (S)	%	105	75-125		05/26/23 00:01	

LABORATORY CONTROL SAMPLE & LCSD: 4654493 4654494

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.0	19.2	95	96	75-125	1	20	
Ethylbenzene	ug/L	20	18.7	19.2	94	96	75-125	2	20	
m&p-Xylene	ug/L	40	37.6	38.2	94	96	75-125	2	20	
o-Xylene	ug/L	20	18.8	19.2	94	96	75-125	2	20	
Toluene	ug/L	20	18.7	19.0	93	95	74-125	2	20	
1,2-Dichlorobenzene-d4 (S)	%				99	100	75-125			
4-Bromofluorobenzene (S)	%				100	101	75-125			
Toluene-d8 (S)	%				99	99	75-125			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654090

QC Batch: 882467 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

METHOD BLANK: 4650232 Matrix: Water
Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0062	05/22/23 18:27	
2-Methylnaphthalene	ug/L	ND	0.040	0.0076	05/22/23 18:27	
Acenaphthene	ug/L	ND	0.040	0.0065	05/22/23 18:27	
Acenaphthylene	ug/L	ND	0.040	0.0056	05/22/23 18:27	
Anthracene	ug/L	ND	0.040	0.0049	05/22/23 18:27	
Benzo(a)anthracene	ug/L	ND	0.040	0.0076	05/22/23 18:27	
Benzo(a)pyrene	ug/L	ND	0.040	0.0080	05/22/23 18:27	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0083	05/22/23 18:27	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0088	05/22/23 18:27	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/22/23 18:27	
Chrysene	ug/L	ND	0.040	0.0087	05/22/23 18:27	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0079	05/22/23 18:27	
Fluoranthene	ug/L	ND	0.040	0.013	05/22/23 18:27	
Fluorene	ug/L	ND	0.040	0.0062	05/22/23 18:27	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.010	05/22/23 18:27	
Naphthalene	ug/L	ND	0.040	0.015	05/22/23 18:27	
Phenanthrene	ug/L	0.017J	0.040	0.014	05/22/23 18:27	
Pyrene	ug/L	ND	0.040	0.0091	05/22/23 18:27	
2-Fluorobiphenyl (S)	%	64	49-125		05/22/23 18:27	
p-Terphenyl-d14 (S)	%	82	42-125		05/22/23 18:27	

Parameter	Units	4650233		4650234		% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	% Rec				
1-Methylnaphthalene	ug/L	1	0.58	0.55	58	55	46-125	5	20
2-Methylnaphthalene	ug/L	1	0.57	0.54	57	54	52-125	5	20
Acenaphthene	ug/L	1	0.64	0.62	64	62	51-125	3	20
Acenaphthylene	ug/L	1	0.63	0.60	63	60	50-125	4	20
Anthracene	ug/L	1	0.82	0.71	82	71	50-125	14	20
Benzo(a)anthracene	ug/L	1	0.85	0.72	85	72	59-125	18	20
Benzo(a)pyrene	ug/L	1	0.90	0.74	90	74	62-125	19	20
Benzo(b)fluoranthene	ug/L	1	0.92	0.78	92	78	56-125	17	20
Benzo(g,h,i)perylene	ug/L	1	0.88	0.73	88	73	35-125	18	20
Benzo(k)fluoranthene	ug/L	1	0.86	0.72	86	72	59-125	17	20
Chrysene	ug/L	1	0.89	0.75	89	75	60-125	18	20
Dibenz(a,h)anthracene	ug/L	1	0.90	0.75	90	75	30-125	18	20
Fluoranthene	ug/L	1	0.86	0.73	86	73	62-125	17	20
Fluorene	ug/L	1	0.65	0.62	65	62	53-125	5	20
Indeno(1,2,3-cd)pyrene	ug/L	1	0.88	0.74	88	74	50-125	18	20

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654090

LABORATORY CONTROL SAMPLE & LCSD:		4650233		4650234							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.62	0.58	62	58	49-125	7	20		
Phenanthrene	ug/L	1	0.82	0.73	82	73	56-125	12	20		
Pyrene	ug/L	1	0.89	0.78	89	78	60-125	14	20		
2-Fluorobiphenyl (S)	%				59	59	49-125				
p-Terphenyl-d14 (S)	%				88	75	42-125				

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654090

QC Batch:	883043	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

METHOD BLANK: 4652685 Matrix: Water
Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	0.12	05/26/23 08:35	
Motor Oil Range	mg/L	ND	0.40	0.19	05/26/23 08:35	
n-Triacontane (S)	%	77	50-150		05/26/23 08:35	
o-Terphenyl (S)	%	95	50-150		05/26/23 08:35	

LABORATORY CONTROL SAMPLE: 4652686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range	mg/L	2	1.0	52	50-150	
Motor Oil Range	mg/L	2	1.0	50	50-150	
n-Triacontane (S)	%			51	50-150	
o-Terphenyl (S)	%			51	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652687 4652688

Parameter	Units	10653844003 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result					
Diesel Fuel Range	mg/L	0.15J	2	2	1.6	1.9	74	87	50-150	15	30
Motor Oil Range	mg/L	ND	2	2	1.4	1.5	70	72	50-150	3	30
n-Triacontane (S)	%						70	72	50-150		
o-Terphenyl (S)	%						80	71	50-150		

SAMPLE DUPLICATE: 4652689

Parameter	Units	10654258002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	7.4	7.2	3	30	
Motor Oil Range	mg/L	0.26J	0.24J		30	
n-Triacontane (S)	%	72	75			
o-Terphenyl (S)	%	74	77			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654090

QC Batch: 884241 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

METHOD BLANK: 4658940 Matrix: Water
Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	06/01/23 12:32	

LABORATORY CONTROL SAMPLE & LCSD: 4658941 4658942

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.0	42.6	105	107	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4658943 4658944

Parameter	Units	10654090002 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	161	40	40	206	205	112	110	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4658945 4658946

Parameter	Units	10654090003 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	44.5	40	40	86.1	90.2	104	114	80-120	5	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654090

QC Batch: 884834

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: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

METHOD BLANK: 4662377

Matrix: Water

Associated Lab Samples: 10654090002, 10654090003, 10654090004, 10654090005, 10654090006, 10654090007, 10654090008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	06/02/23 16:57	

LABORATORY CONTROL SAMPLE: 4662378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	47.3	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4662379 4662380

Parameter	Units	10654090002		4662380		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfate	mg/L	0.73J	50	50	49.0	49.5	97	98	80-120	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4662381 4662382

Parameter	Units	10654507002		4662382		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfate	mg/L	302	250	250	512	514	84	85	80-120	0	20 E

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QUALIFIERS

Project: 0680180.003

Pace Project No.: 10654090

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: 882558

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

Batch: 883078

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

Batch: 883098

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

Batch: 883443

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

Batch: 883475

[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.

P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0680180.003
Pace Project No.: 10654090

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10654090002	PEO-MW-43-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654090003	PEO-MW-37-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654090004	PEO-MW-25-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654090005	PEO-MW-38-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654090006	PEO-MW-02-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654090007	PEO-MW-19-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654090008	PEO-MW-08-20230518	EPA 3510C	883043	NWTPH-Dx	883550
10654090001	TRIP BLANK-20230519	NWTPH-Gx	883098		
10654090002	PEO-MW-43-202305	NWTPH-Gx	883443		
10654090003	PEO-MW-37-202305	NWTPH-Gx	883098		
10654090004	PEO-MW-25-202305	NWTPH-Gx	883098		
10654090005	PEO-MW-38-202305	NWTPH-Gx	883098		
10654090006	PEO-MW-02-202305	NWTPH-Gx	883098		
10654090007	PEO-MW-19-202305	NWTPH-Gx	883098		
10654090002	PEO-MW-43-202305	EPA 3010A	883771	EPA 6010D	884563
10654090003	PEO-MW-37-202305	EPA 3010A	883771	EPA 6010D	884563
10654090004	PEO-MW-25-202305	EPA 3010A	883771	EPA 6010D	884563
10654090005	PEO-MW-38-202305	EPA 3010A	883771	EPA 6010D	884563
10654090006	PEO-MW-02-202305	EPA 3010A	883771	EPA 6010D	884563
10654090007	PEO-MW-19-202305	EPA 3010A	883771	EPA 6010D	884563
10654090008	PEO-MW-08-20230518	EPA 3010A	883771	EPA 6010D	884563
10654090002	PEO-MW-43-202305	EPA 3020A	883772	EPA 6020B	885151
10654090003	PEO-MW-37-202305	EPA 3020A	883772	EPA 6020B	885151
10654090004	PEO-MW-25-202305	EPA 3020A	883772	EPA 6020B	885151
10654090005	PEO-MW-38-202305	EPA 3020A	883772	EPA 6020B	885151
10654090006	PEO-MW-02-202305	EPA 3020A	883772	EPA 6020B	885151
10654090007	PEO-MW-19-202305	EPA 3020A	883772	EPA 6020B	885151
10654090008	PEO-MW-08-20230518	EPA 3020A	883772	EPA 6020B	885151
10654090002	PEO-MW-43-202305	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090003	PEO-MW-37-202305	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090004	PEO-MW-25-202305	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090005	PEO-MW-38-202305	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090006	PEO-MW-02-202305	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090007	PEO-MW-19-202305	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090008	PEO-MW-08-20230518	EPA 3510C	882467	EPA 8270E by SIM	882558
10654090001	TRIP BLANK-20230519	EPA 8260D	883078		
10654090002	PEO-MW-43-202305	EPA 8260D	883078		
10654090003	PEO-MW-37-202305	EPA 8260D	883078		
10654090004	PEO-MW-25-202305	EPA 8260D	883078		
10654090005	PEO-MW-38-202305	EPA 8260D	883475		
10654090006	PEO-MW-02-202305	EPA 8260D	883078		
10654090007	PEO-MW-19-202305	EPA 8260D	883078		
10654090002	PEO-MW-43-202305	SM 2320B	884241		
10654090003	PEO-MW-37-202305	SM 2320B	884241		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0680180.003

Pace Project No.: 10654090

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10654090004	PEO-MW-25-202305	SM 2320B	884241		
10654090005	PEO-MW-38-202305	SM 2320B	884241		
10654090006	PEO-MW-02-202305	SM 2320B	884241		
10654090007	PEO-MW-19-202305	SM 2320B	884241		
10654090008	PEO-MW-08-20230518	SM 2320B	884241		
10654090002	PEO-MW-43-202305	EPA 300.0	884834		
10654090003	PEO-MW-37-202305	EPA 300.0	884834		
10654090004	PEO-MW-25-202305	EPA 300.0	884834		
10654090005	PEO-MW-38-202305	EPA 300.0	884834		
10654090006	PEO-MW-02-202305	EPA 300.0	884834		
10654090007	PEO-MW-19-202305	EPA 300.0	884834		
10654090008	PEO-MW-08-20230518	EPA 300.0	884834		

REPORT OF LABORATORY ANALYSIS

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Effective Date: 4/14/2023

Sample Condition Upon Receipt
 Client Name: ERM

Project #: **WO#: 10654090**
 PM: JMT Due Date: 06/06/23
 CLIENT: ERM-Oregon

Courier: FedEx UPS USPS Client
 Pace Speedee Commercial

See Exceptions
 ENV-FRM-MIN4-0142

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No
 Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: T1 (0461) T2 (0436) T3 (0459) T4 (0402) T5 (0178)
 T6 (0235) T7 (0042) T8 (0775) T9(0727) 01339252/1710
 Biological Tissue Frozen? Yes No N/A
 Temp Blank? Yes No
 Type of Ice: Wet Blue Dry None
 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: 10.3 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: ERM 5-20-23

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

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

Location (Check one):	Duluth	<input checked="" type="checkbox"/> Minneapolis	Virginia	COMMENTS
Chain of Custody Present and Filled Out?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	1.
Chain of Custody Relinquished?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	2.
Sampler Name and/or Signature on COC?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other _____
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	6.
Sufficient Sample Volume?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	11. If no, write ID/Date/Time of container below: <u>MW-08 labels on samples.</u> <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	12. Sample # <u>2-8:</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide) Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, <u>DRO</u> /8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 pH Paper Lot # Residual Chlorine <u>Logan</u> 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	13.
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	
3 Trip Blanks Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>417235 (4)</u>

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____ emailed to verify sample ID's of last 2 samples, if they should be -202305
 Project Manager Review: Julia Bauer Date: 5/22/23

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: ERM Line: (3)



DC#_ Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt
(SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? Yes No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? Yes No

If anything is OVER 6.0° C, you **MUST** document containers in this section **HERE**



Tracking Number	Temperature
3985 3707 4548	1.8
4526	2.8
4559	2.7
4560	0.8
4570	1.3
4537	2.3
3923 7143 9817	3.4

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

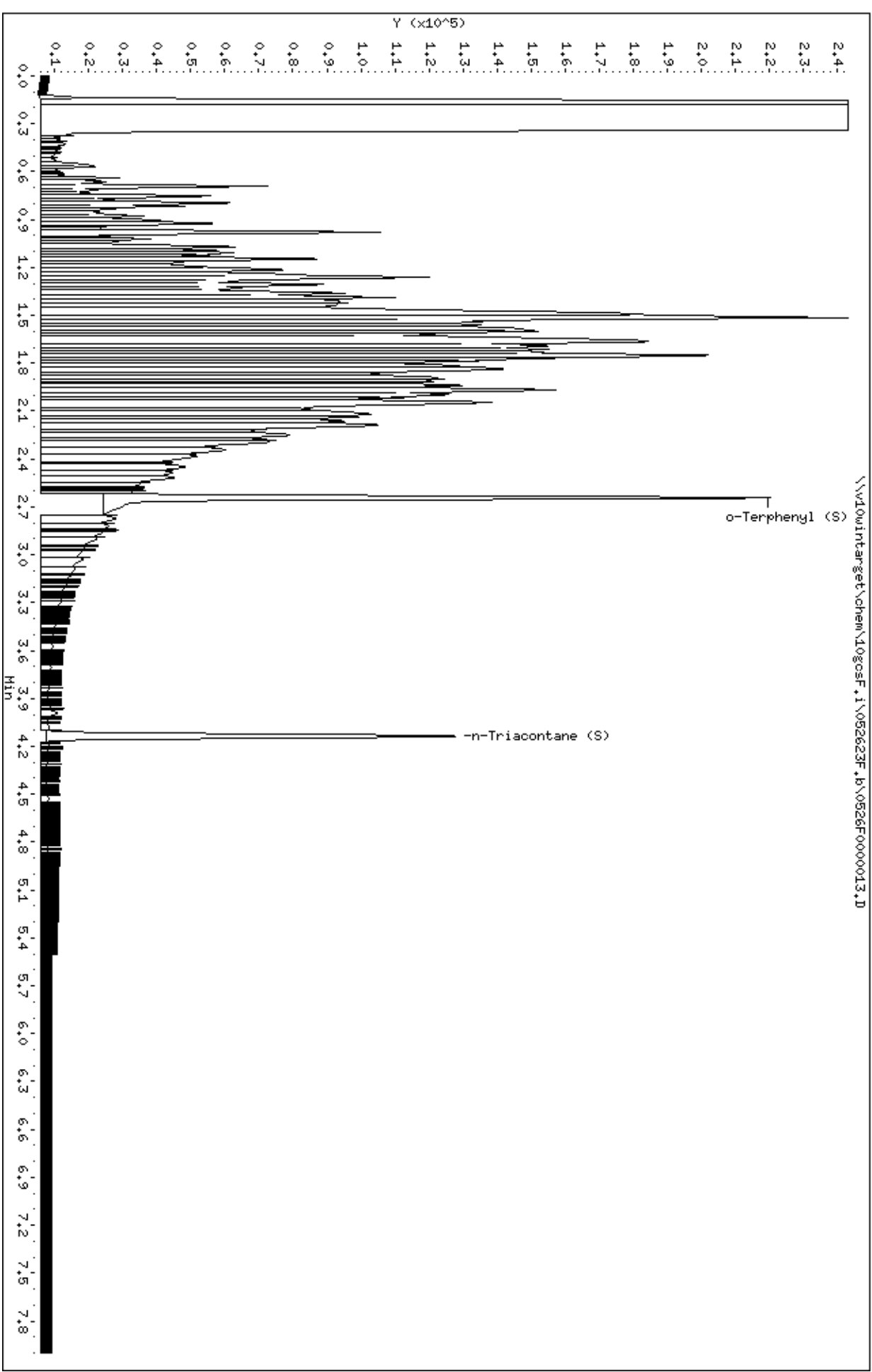
Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

MW#08 (008) labeled MW-03 on samples themselves. Times are the same. "Sample #s do not match" stickers placed on samples.

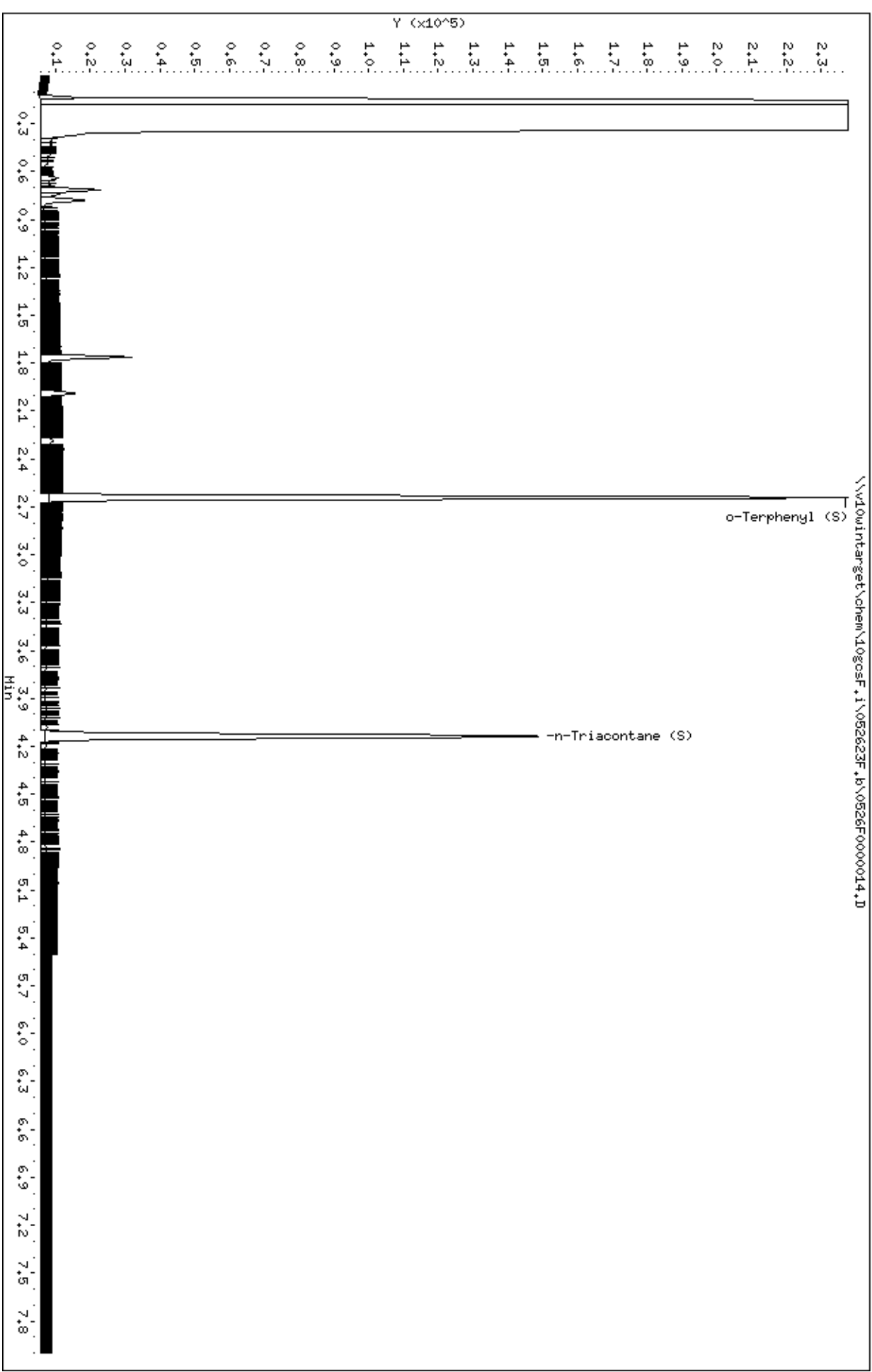
Data File: \\w10wintrarget\chem\10gocsf.1\052623F.1\0526F0000013.D
Date: 26-MAY-2023 10:06
Client ID: PEO-HM-43-202305
Sample Info: 10654090002
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



Data File: \\dlowintarget\chem\logosf.i\052623F.b\0526F0000014.D
Date: 26-MAY-2023 10:17
Client ID: PED-HM-37-202305
Sample Info: 10654090003
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gosc.f.1
Operator: EB3
Column diameter: 0.32



Date : 26-MAY-2023 10:29

Instrument: logsf.1

Client ID: PED-HM-25-202305

Operator: EB3

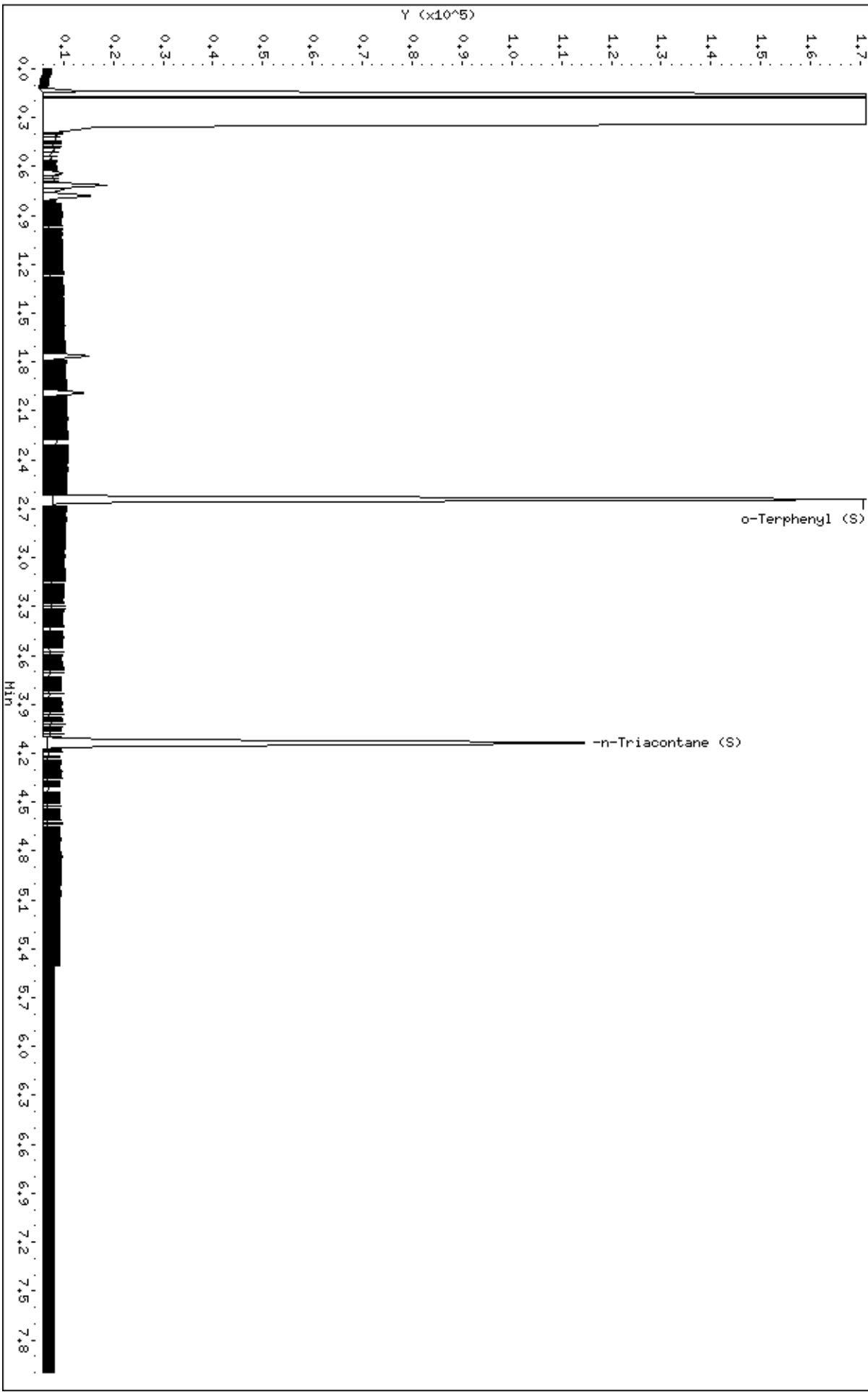
Sample Info: 10654090004

Volume Injected (uL): 1.0

Column diameter: 0.32

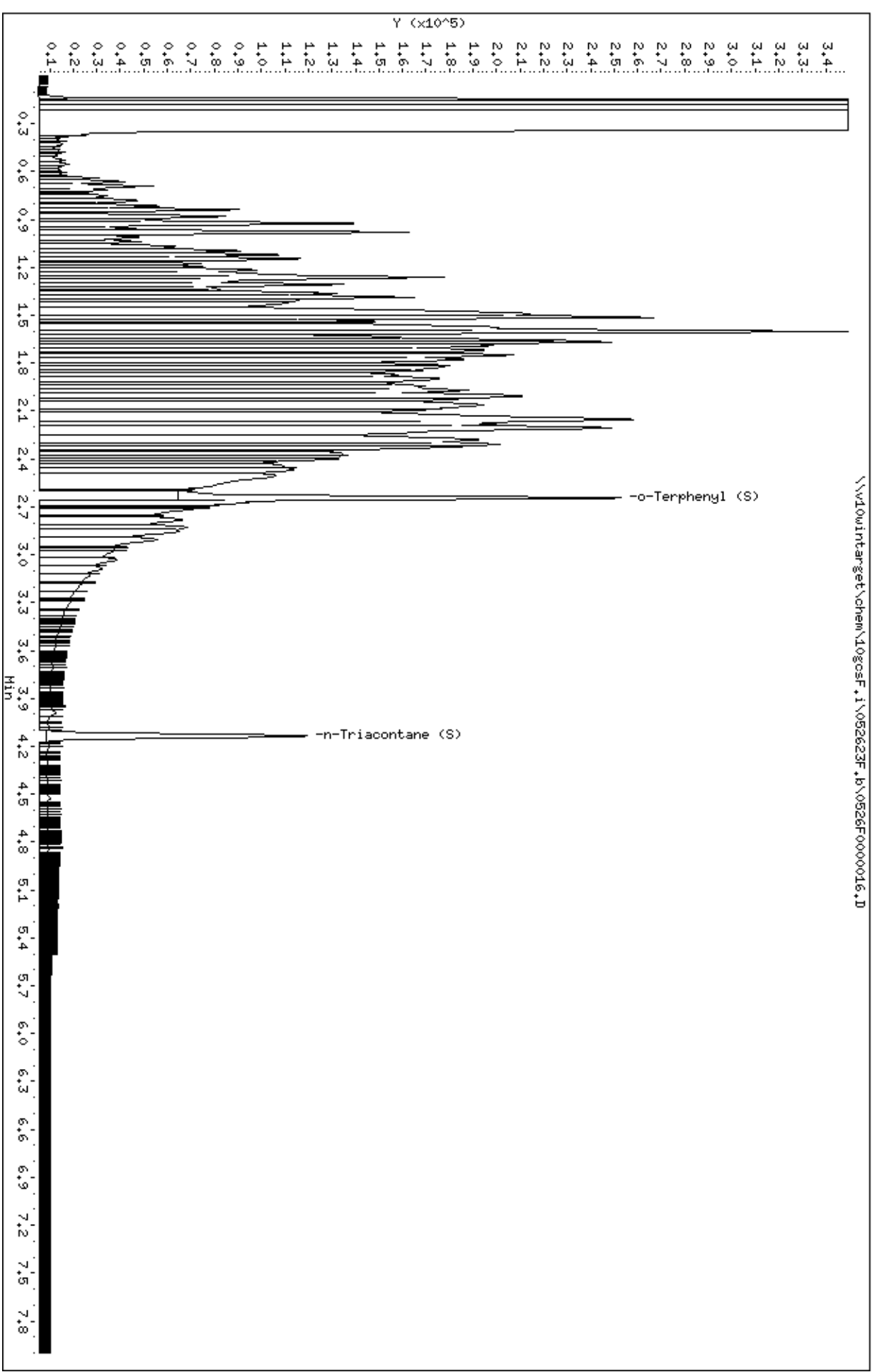
Column phase: DB-5-MS2420048

\\dowintarget\chem\logsf.1\052623F.b\0526F0000015.D



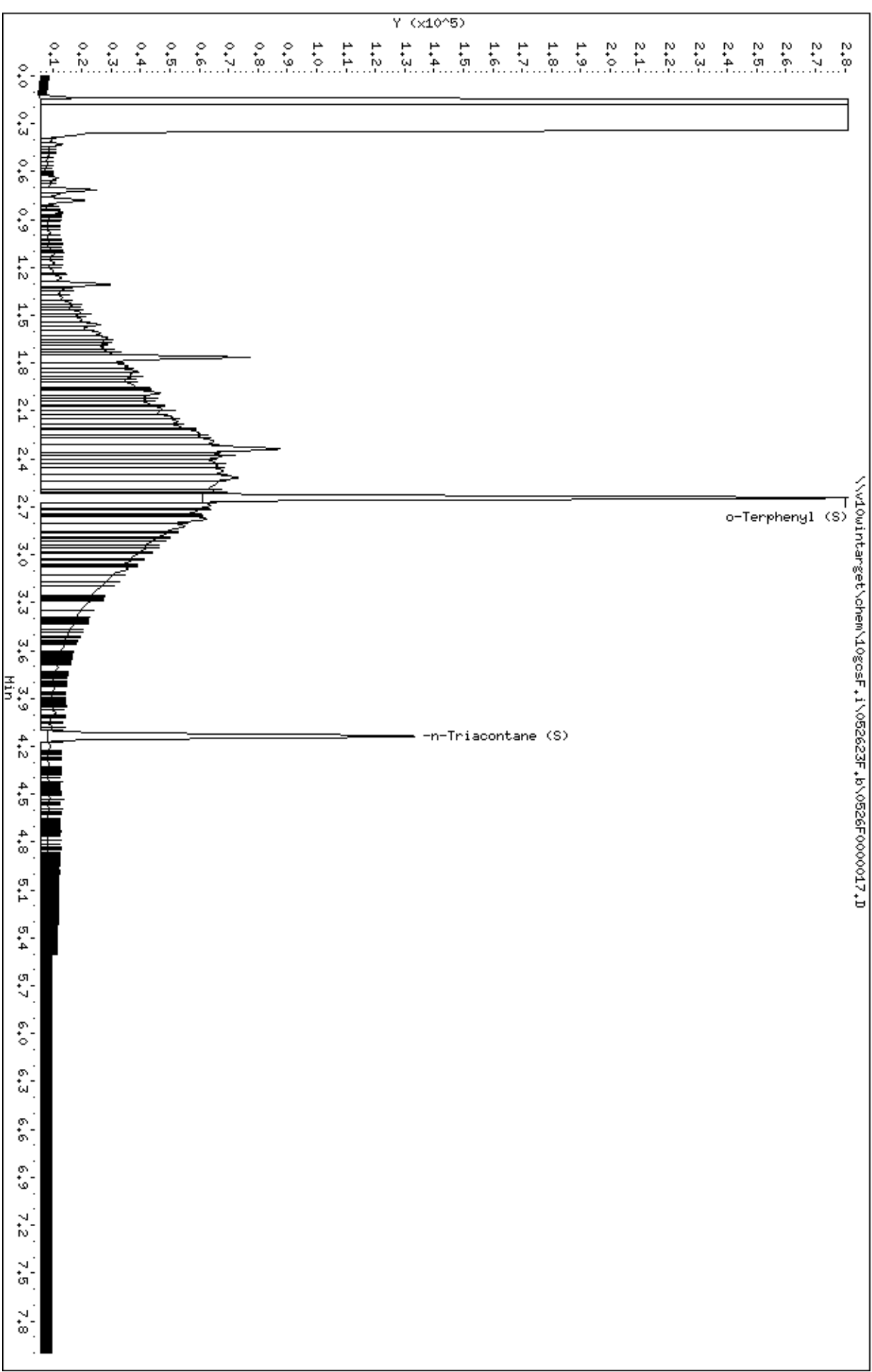
Data File: \\wlowintarget\chem\logosf.i\052623f.b\0526f0000016.D
Date: 26-MAY-2023 10:40
Client ID: PED-HM-38-202305
Sample Info: 10654090005
Volume Injected (uL): 1.0
Column phase: DB-5-MS22420048

Instrument: logosf.i
Operator: EB3
Column diameter: 0.32



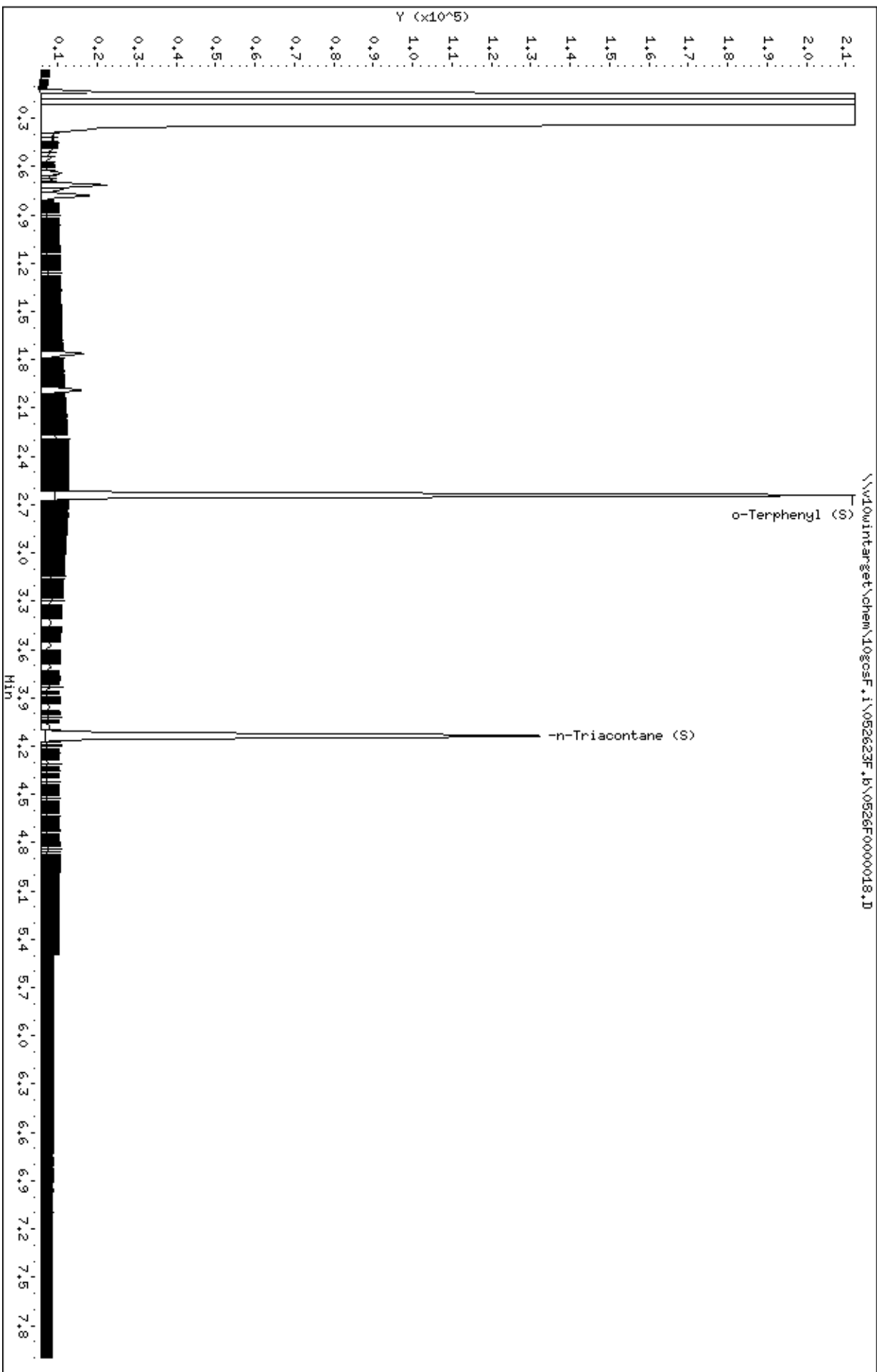
Data File: \\10win\target\chem\10gocsf.1\052623F.1\0526F0000017.D
Date: 26-MAY-2023 10:51
Client ID: PED-HM-02-202305
Sample Info: 10654090006
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



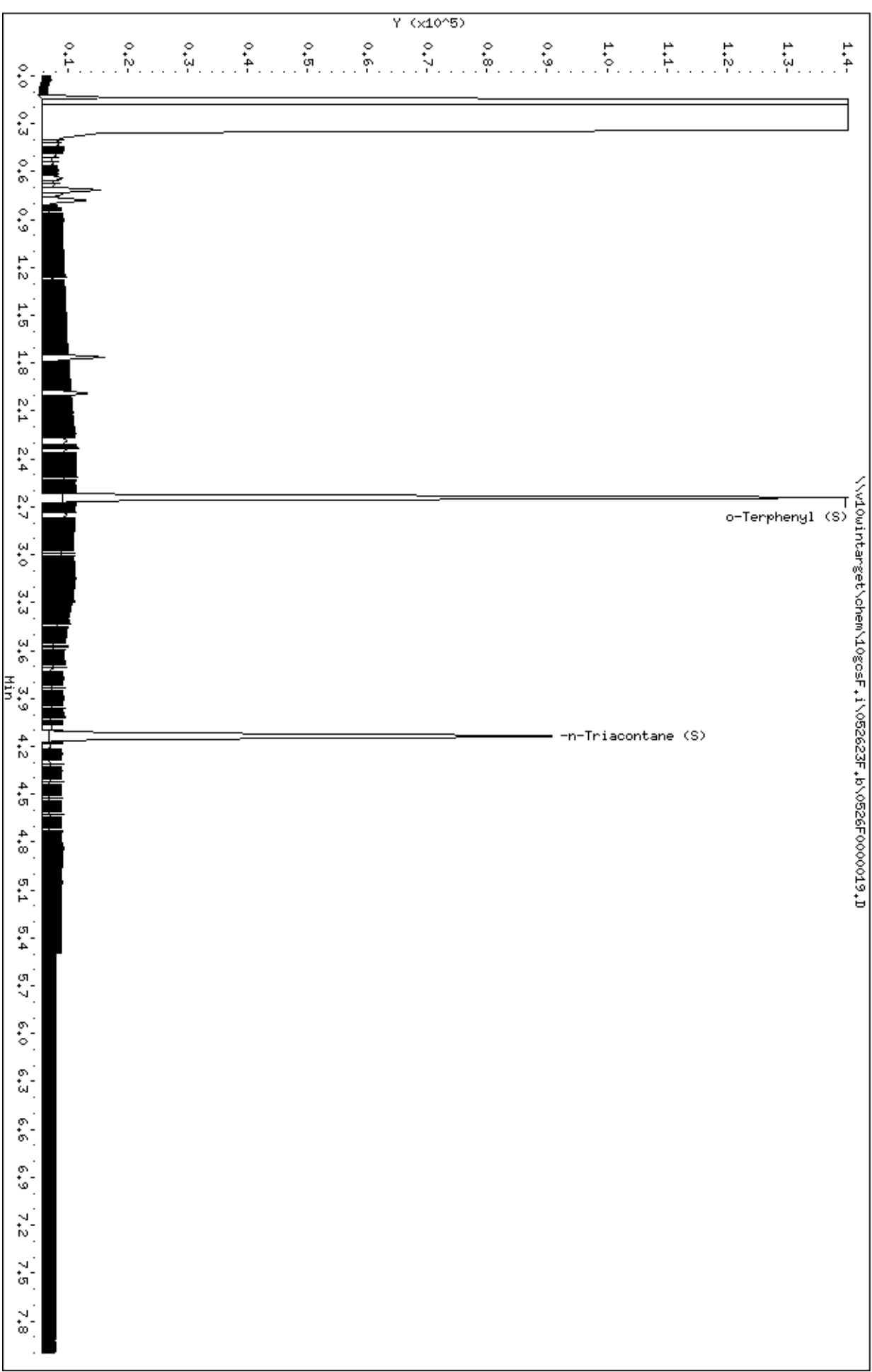
Data File: \\10win\intarget\chem\10gocsf.1\052623F.1\0526F0000018.D
Date: 26-MAY-2023 11:03
Client ID: PED-HM-19-202305
Sample Info: 10654090007
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



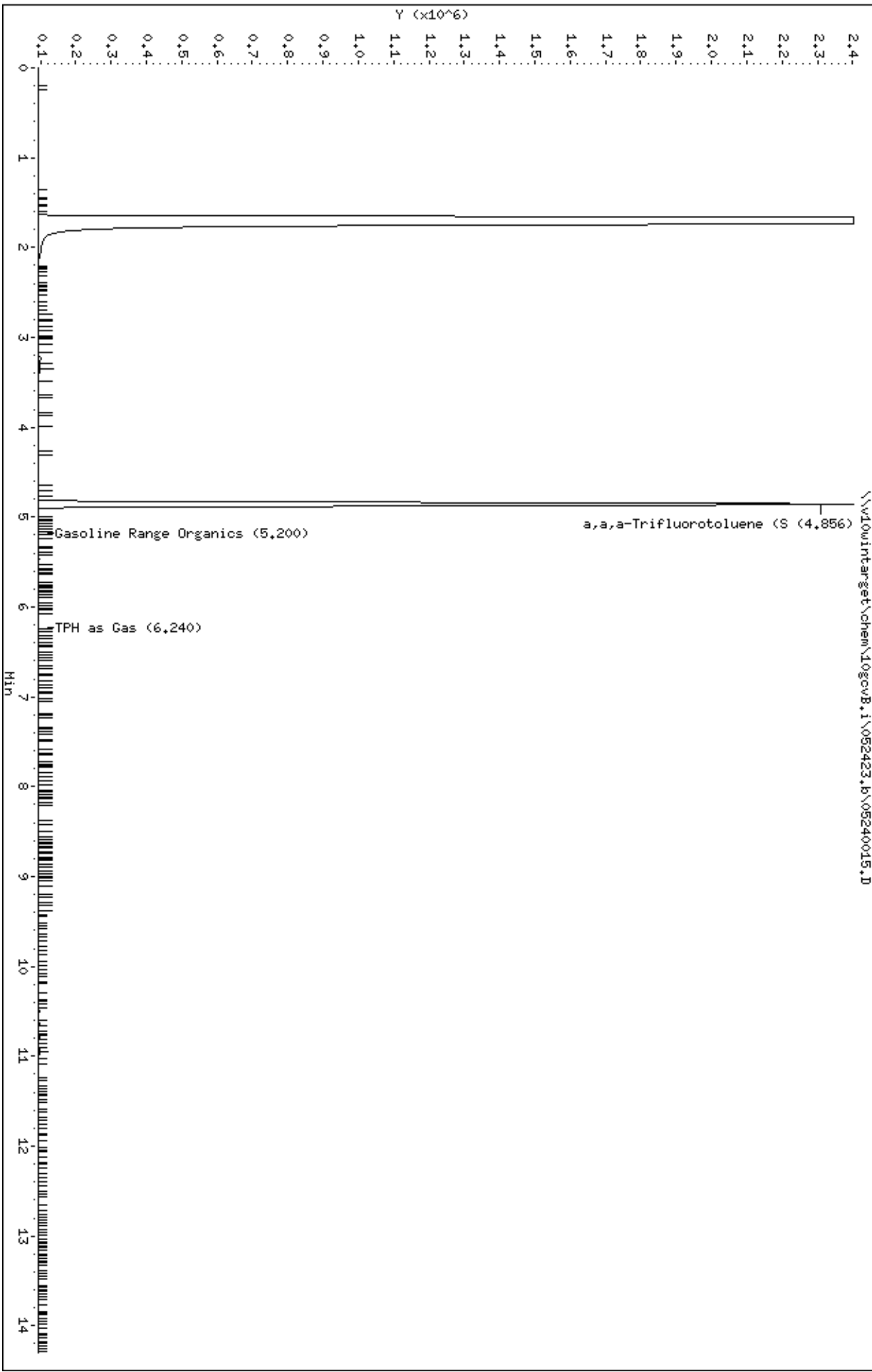
Data File: \\10win\target\chem\10gocsf.1\052623F.1\0526F0000019.D
Date: 26-MAY-2023 11:14
Client ID: PED-HM-08-20230518
Sample Info: 10654090008
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



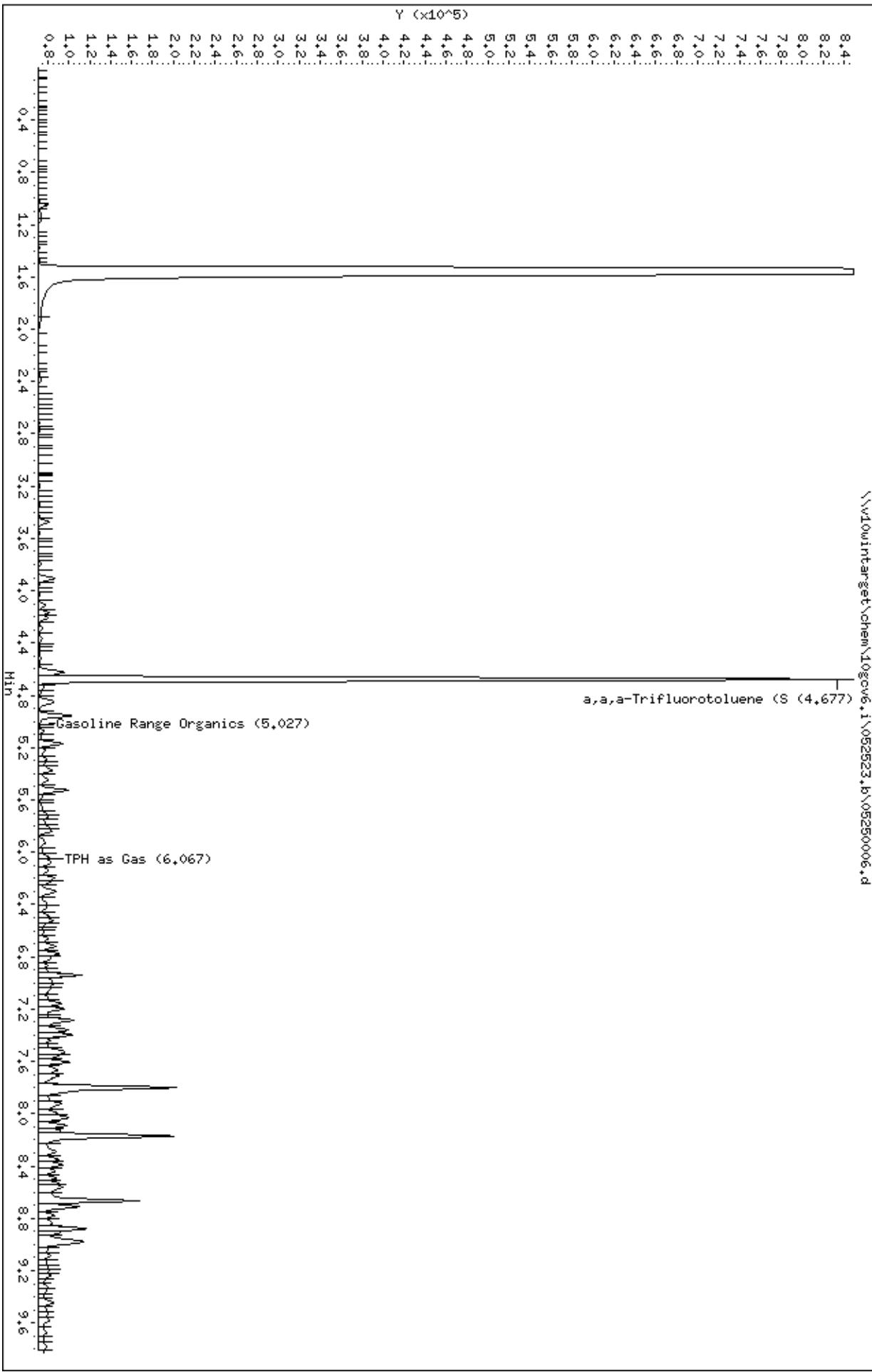
Data File: \\LowIntarget\chem\10gcvb.i\052423.b\05240015.D
Date: 24-MAY-2023 18:31
Client ID: TRIP BLANK-20230519
Sample Info: 10654090001,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



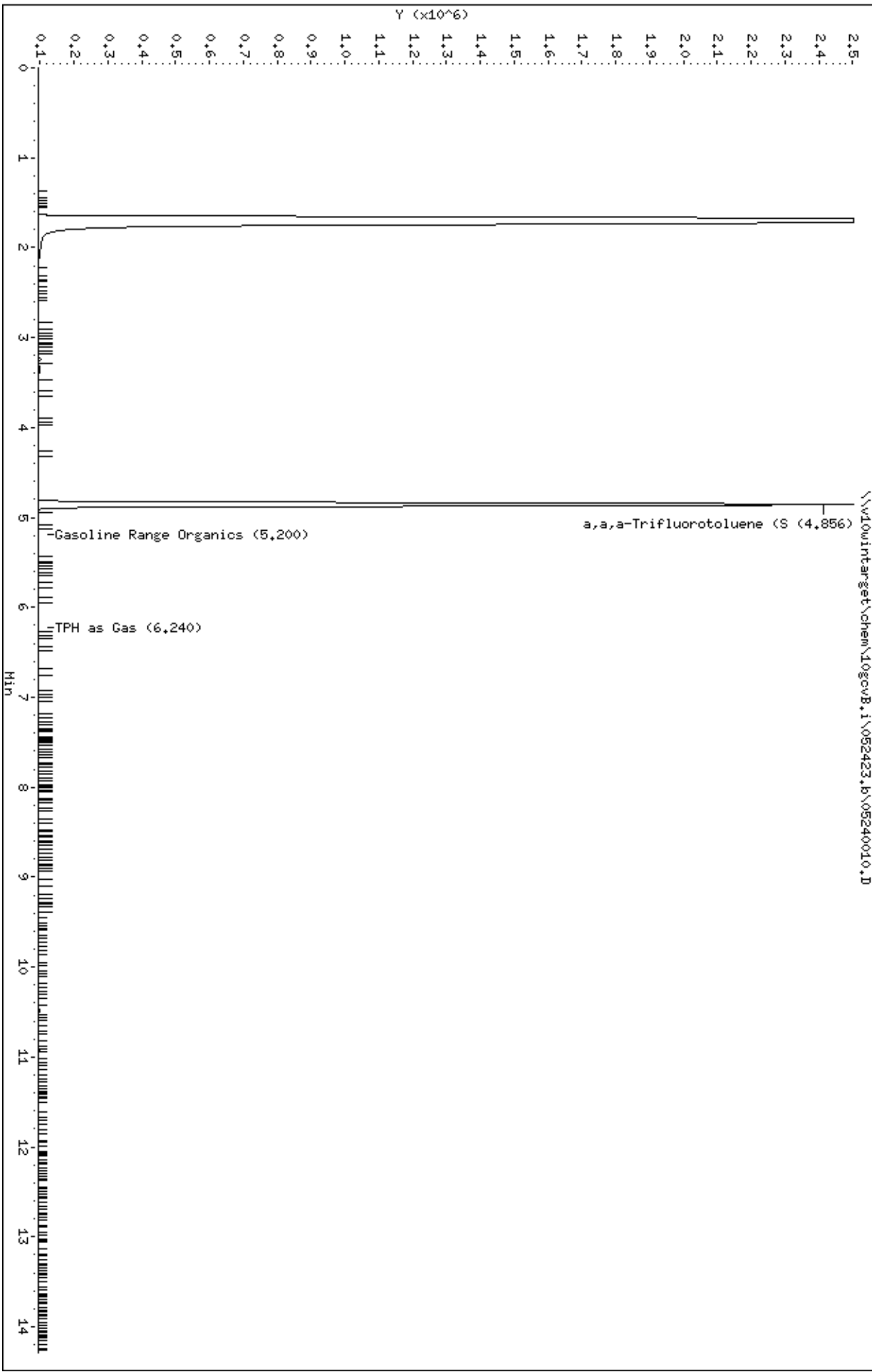
Data File: \\vl0win\intarget\chem\10gcw6.1\052523.b\052500006.d
Date: 25-MAY-2023 16:07
Client ID: PE0-HM-43-202305
Sample Info: 10654090002,
Purge Volume: 5.0
Column phase: DB-624US1772861H

Instrument: 10gcw6.1
Operator: TH2
Column diameter: 0.18



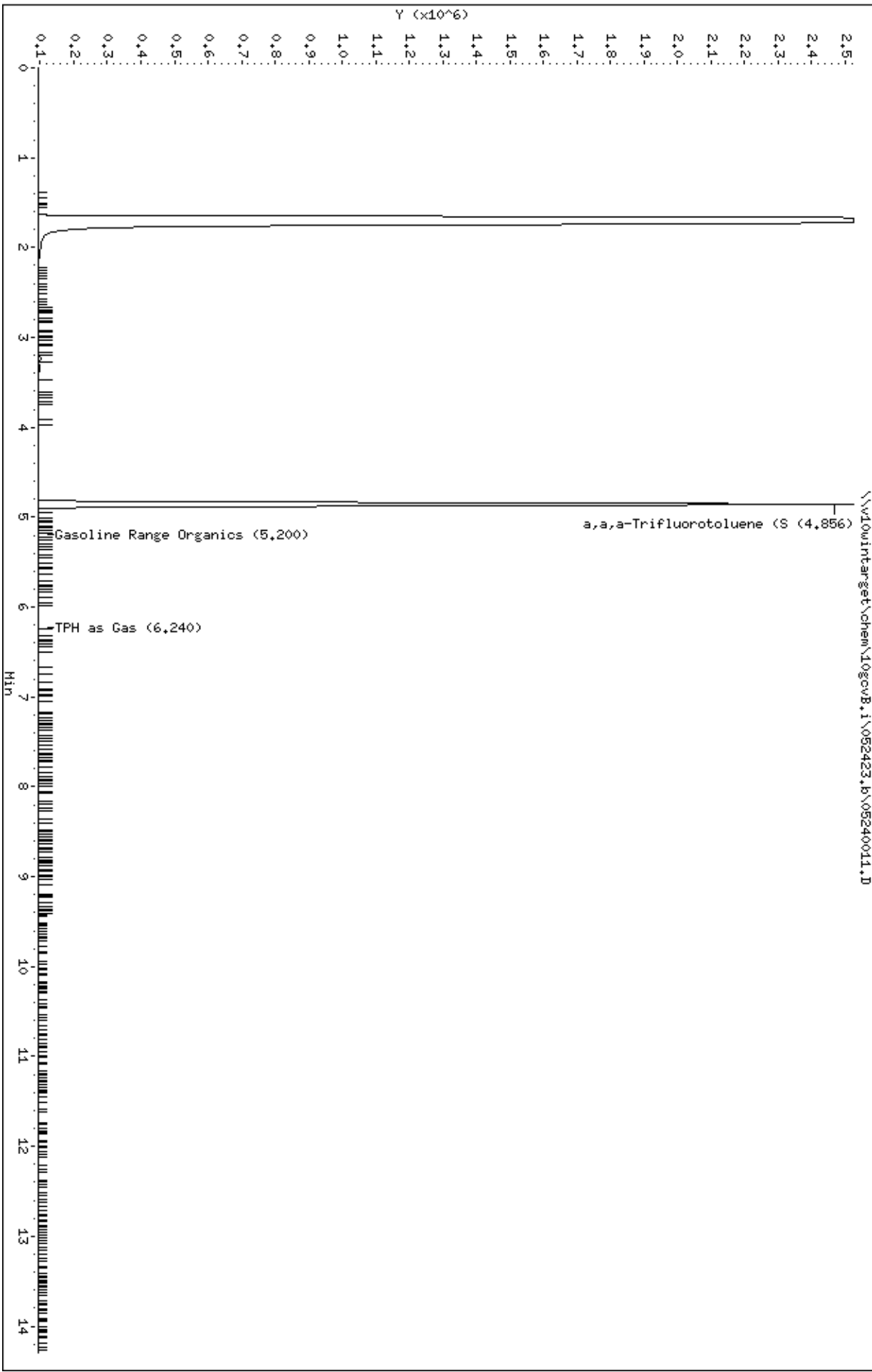
Data File: \\LowIntarget\chem\10gcvb.i\052423.b\05240010.D
Date: 24-MAY-2023 16:58
Client ID: PED-HM-37-202305
Sample Info: 10654090003,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



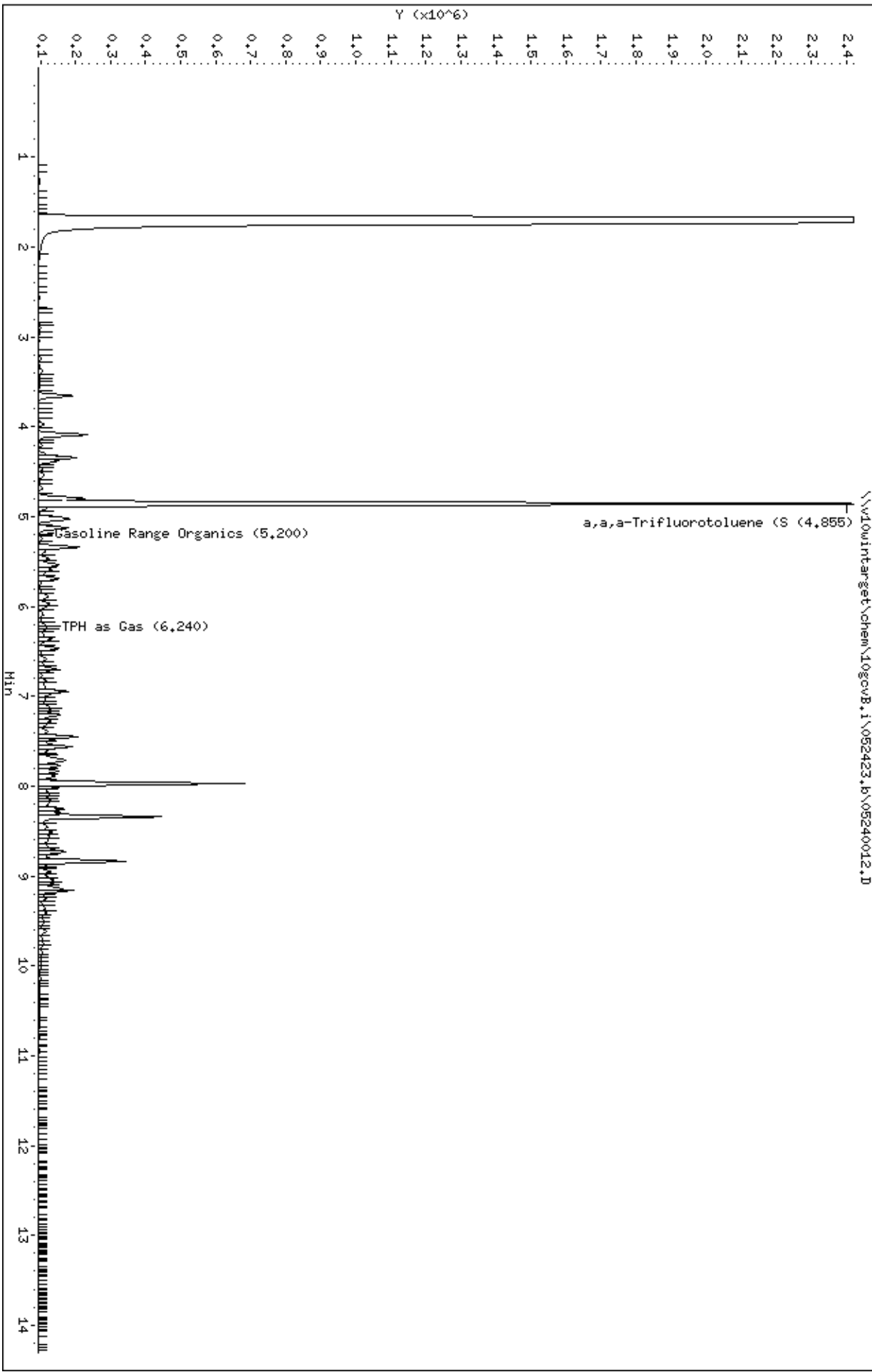
Data File: \\dlowintarget\chem\logvb.i\052423.b\05240011.D
Date: 24-MAY-2023 17:17
Client ID: PED-HM-25-202305
Sample Info: 10654090004,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



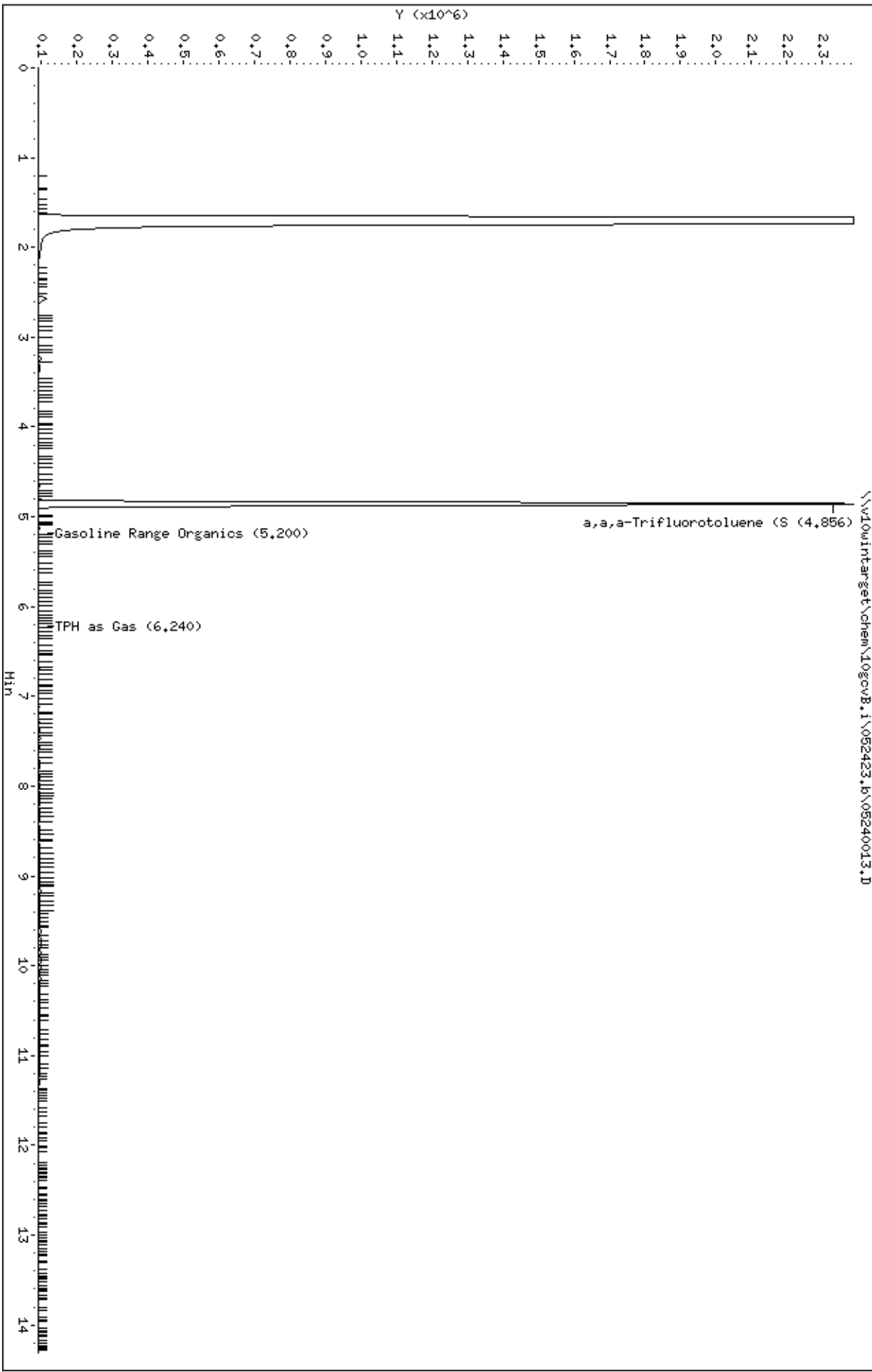
Data File: \\vdowintarget\chem\10gcvb.1\052423.b\05240012.D
Date: 24-MAY-2023 17:35
Client ID: PED-HM-38-202305
Sample Info: 10654090005,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TH2
Column diameter: 0.18



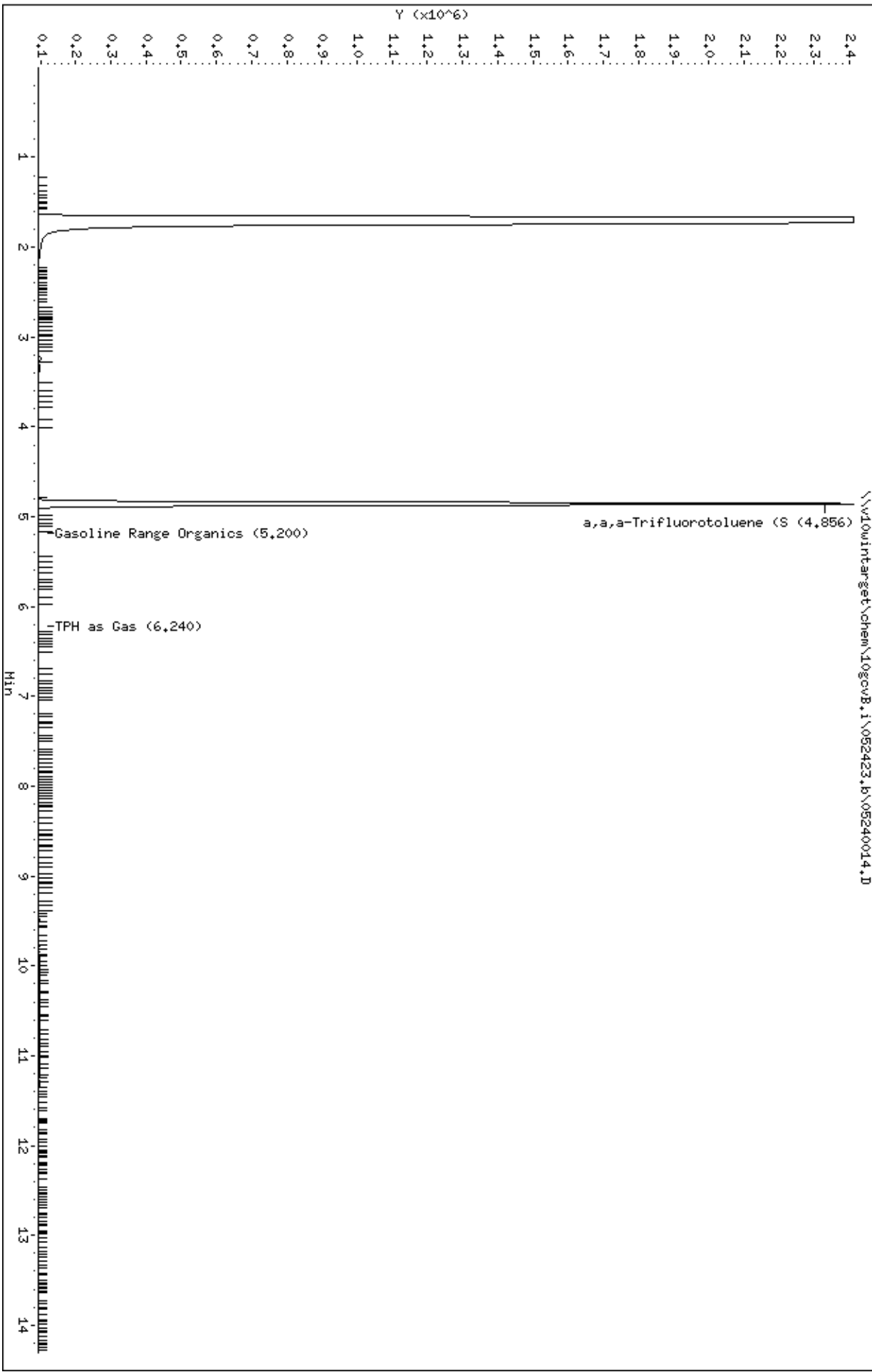
Data File: \\vlowintarget\chem\10gcvb.i\052423.b\05240013.D
Date: 24-MAY-2023 17:54
Client ID: PED-HM-02-202305
Sample Info: 10654090006,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



Data File: \\D:\LowIntarget\chem\10gcvb.i\052423.b\05240014.D
Date: 24-MAY-2023 18:12
Client ID: PEO-HM-19-202305
Sample Info: 10654090007,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18





May 31, 2023

Ms. Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414

Dear Ms. Bowser,

On May 23rd, 7 samples were received by our laboratory and assigned our laboratory project number EV23050159. The project was identified as your Workorder 10654090 / Workorder Name 0680180.003. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-01
CLIENT SAMPLE ID	TRIP BLANK-20230519	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/19/2023 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.4		UG/L	1	1.1	0.38	05/23/2023	DLC

SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	87.8%		10.0	8.78	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-02
CLIENT SAMPLE ID	PEO-MW-43-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	440		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	98.1%		10.0	9.81	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-03
CLIENT SAMPLE ID	PEO-MW-37-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 9:05:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	1.8		UG/L	1	1.1	0.38		05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	105%		10.0	10.5	60	140		05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-04
CLIENT SAMPLE ID	PEO-MW-25-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 10:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.6		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	106%		10.0	10.6	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-05
CLIENT SAMPLE ID	PEO-MW-38-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	540		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	115%		10.0	11.5	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-06
CLIENT SAMPLE ID	PEO-MW-02-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 12:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	21		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	104%		10.0	10.4	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050159-07
CLIENT SAMPLE ID	PEO-MW-19-202305	DATE RECEIVED:	05/23/2023
		COLLECTION DATE:	5/18/2023 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	2.1		UG/L	1	1.1	0.38	05/23/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	103%		10.0	10.3	60	140	05/23/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-052323W2 - Batch R436703 - Water by NWVPH Prepared 05/23/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	2.1		UG/L	1.1	0.38	1.1		05/23/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	106		10.0	10.6	60	140	05/23/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-053023W - Batch R436704 - Water by NWVPH Prepared 05/30/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	1.3		UG/L	1.1	0.38	1.1		05/30/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	96.6		10.0	9.66	60	140	05/30/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050159
CLIENT PROJECT:	Workorder 10654090 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R436703 - Water by NWVPH Prepared 05/23/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
>C10-C12 Aliphatics - BS	NWVPH	97.4			20.0	19.5	70	130		05/23/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	101	4		20.0	20.2	70	130	25	05/23/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
TFT - Aliphatic - BS	NWVPH	114			10.0	11.4	60	140		05/23/2023	DLC
TFT - Aliphatic - BSD	NWVPH	103			10.0	10.3	60	140		05/23/2023	DLC

ALS Test Batch ID: R436704 - Water by NWVPH Prepared 05/30/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
>C10-C12 Aliphatics - BS	NWVPH	93.6			20.0	18.7	70	130		05/30/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	86.9	7		20.0	17.4	70	130	25	05/30/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS		RPD	ANALYSIS DATE	ANALYSIS BY
							MIN	MAX			
TFT - Aliphatic - BS	NWVPH	90.7			10.0	9.07	60	140		05/30/2023	DLC
TFT - Aliphatic - BSD	NWVPH	99.9			10.0	9.99	60	140		05/30/2023	DLC

APPROVED BY



Rob Greer
Laboratory Director

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Paac Analytical

ALS Job #: EV23050159

Project: 10654090/0680180.003

Received Date: 5/23/23 Received Time: 0910 By: CA

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express
Standard Overnight

	Yes	No	N/A
Were custody seals on outside of shipping container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>Outside Front</u>			
Custody seal date: <u>5/22/23</u> Seal name: <u>BC</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 1.8°C Cold Cool Ambient N/A

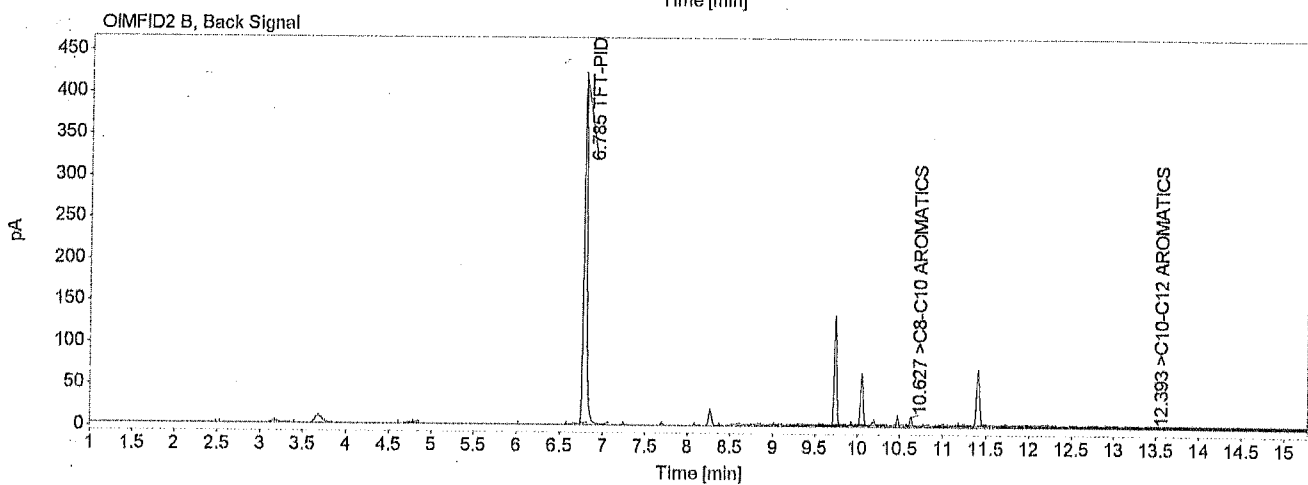
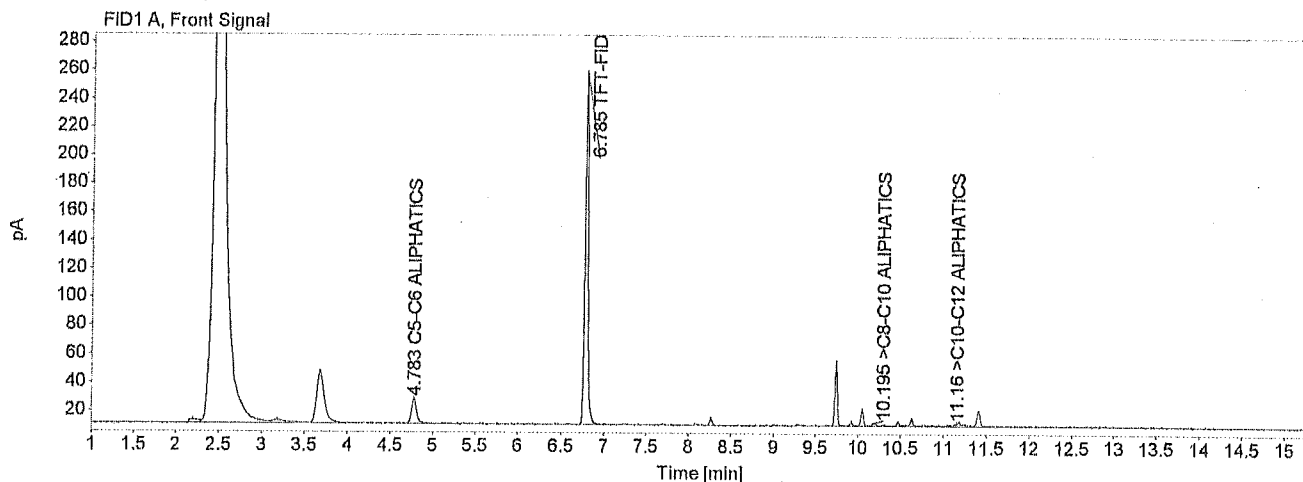
Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Data file: D:\DATA\1192305232\1192305232\001F2601.D
 Sample name: MB-052323W2 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 4:57:20 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



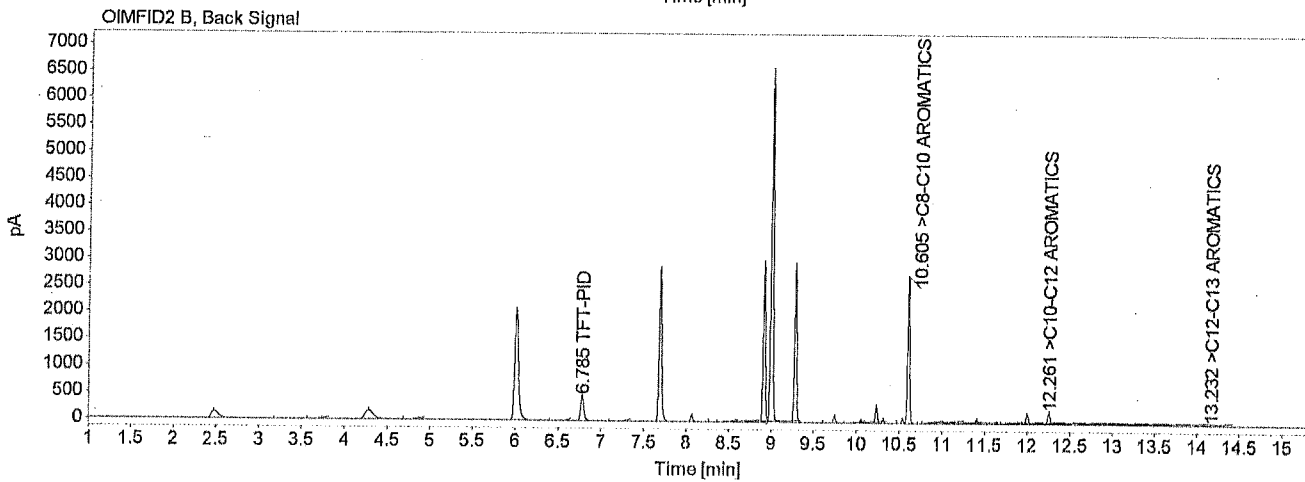
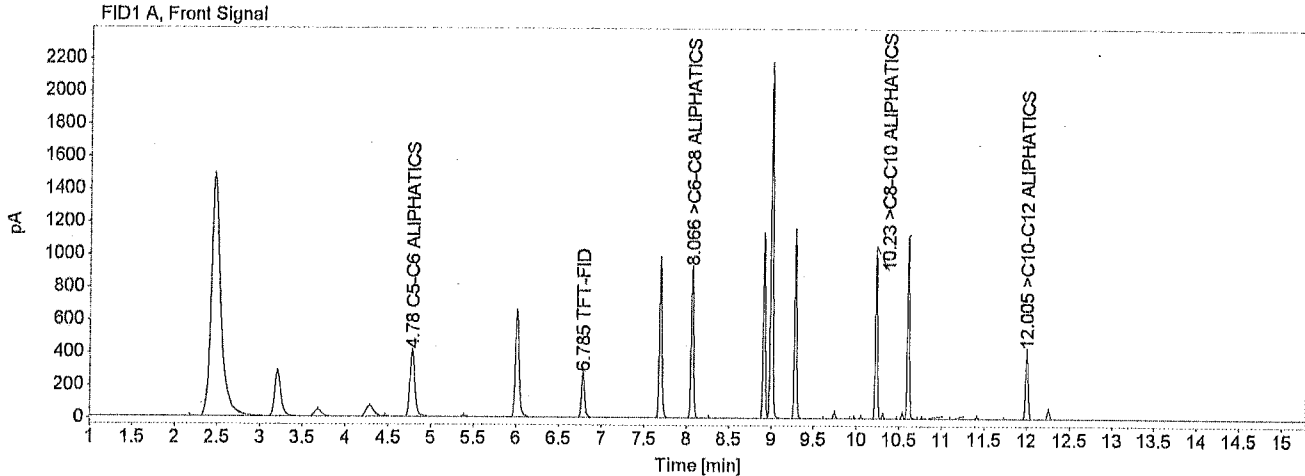
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	79.349	4.783	0.879
TFT-FID	639.311	6.785	10.578 106%
>C8-C10 ALIPHATICS	8.986	10.195	0.104
>C10-C12 ALIPHATICS	104.984	11.160	2.138
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	1098.207	6.785	10.216
>C8-C10 AROMATICS	30.808	10.627	0.126
>C10-C12 AROMATICS	8.231	12.393	0.000
>C12-C13 AROMATICS	7.006	13.330	4.731

AUK

>C10-C12 < 50 µg/L

Data file: D:\DATA\1192305232\1192305232\001F2701.D
 Sample name: BS-052323W2 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 5:21:02 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

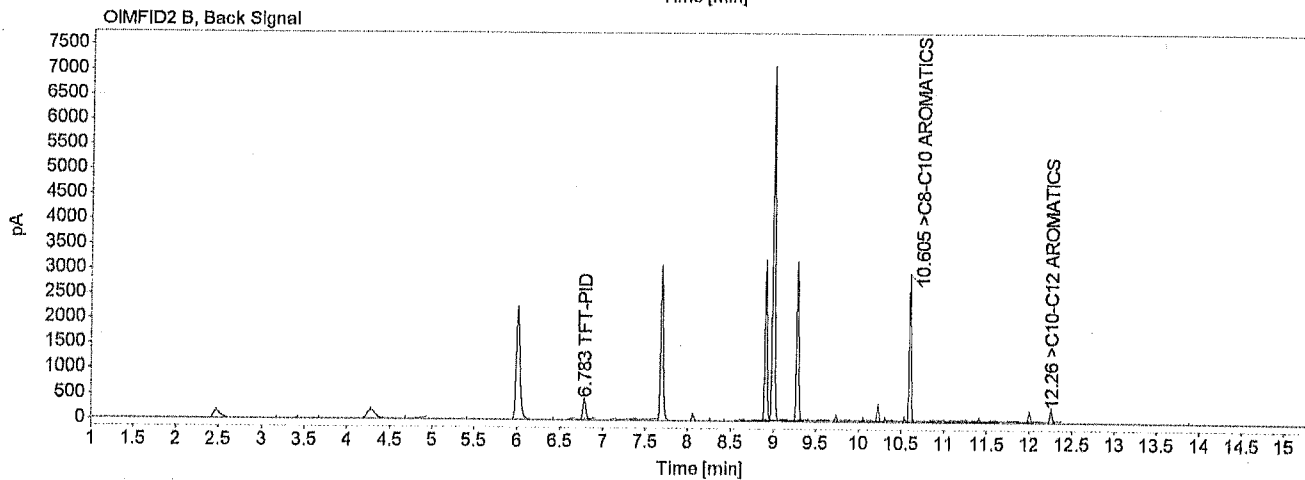
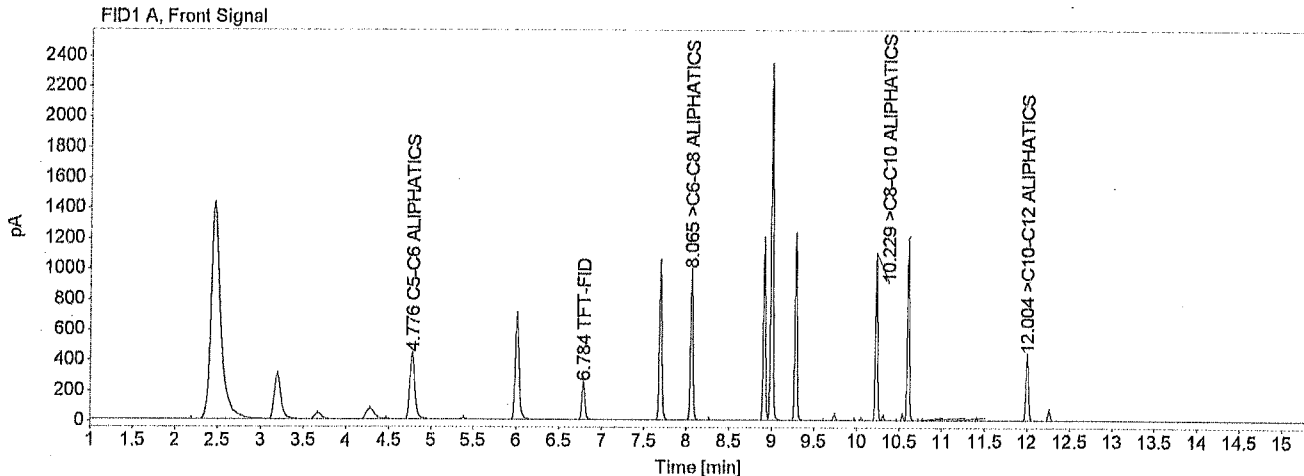
Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1680.684	4.780	18.615
TFT-FID	690.651	6.785	11.427 <i>114/</i>
>C6-C8 ALIPHATICS	1824.557	8.066	19.624
>C8-C10 ALIPHATICS	1773.493	10.230	20.550
>C10-C12 ALIPHATICS	887.100	12.005	19.470 <i>97/</i>
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1186.991	6.785	11.041
>C8-C10 AROMATICS	4487.088	10.605	18.303
>C10-C12 AROMATICS	441.406	12.261	14.276
>C12-C13 AROMATICS	6.681	13.232	4.512

Data file: D:\DATA\1192305232\1192305232\001F2801.D
 Sample name: BSD-052323W2 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 5:44:48 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119

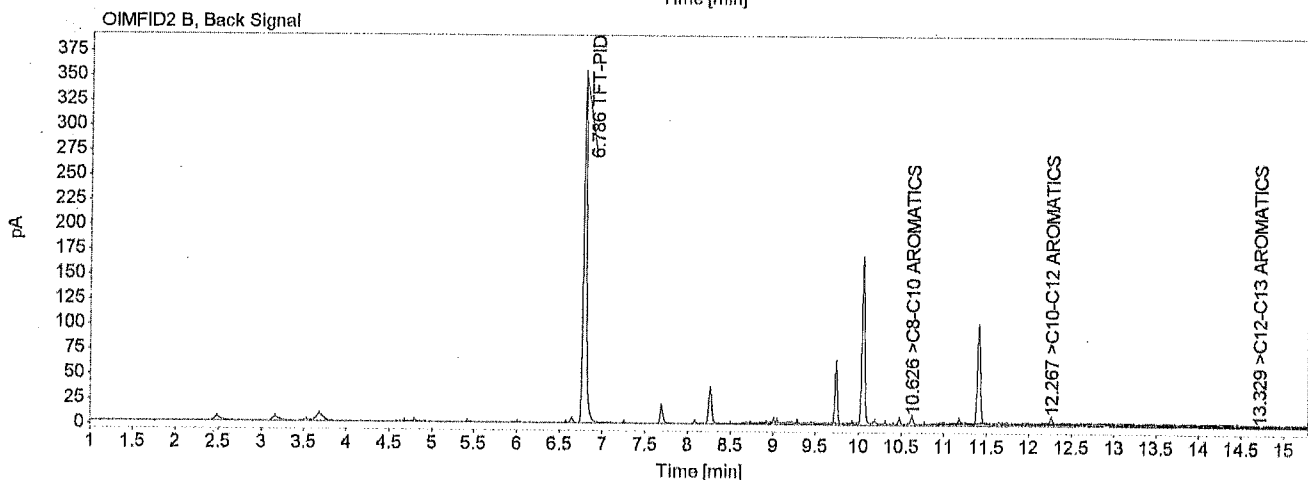
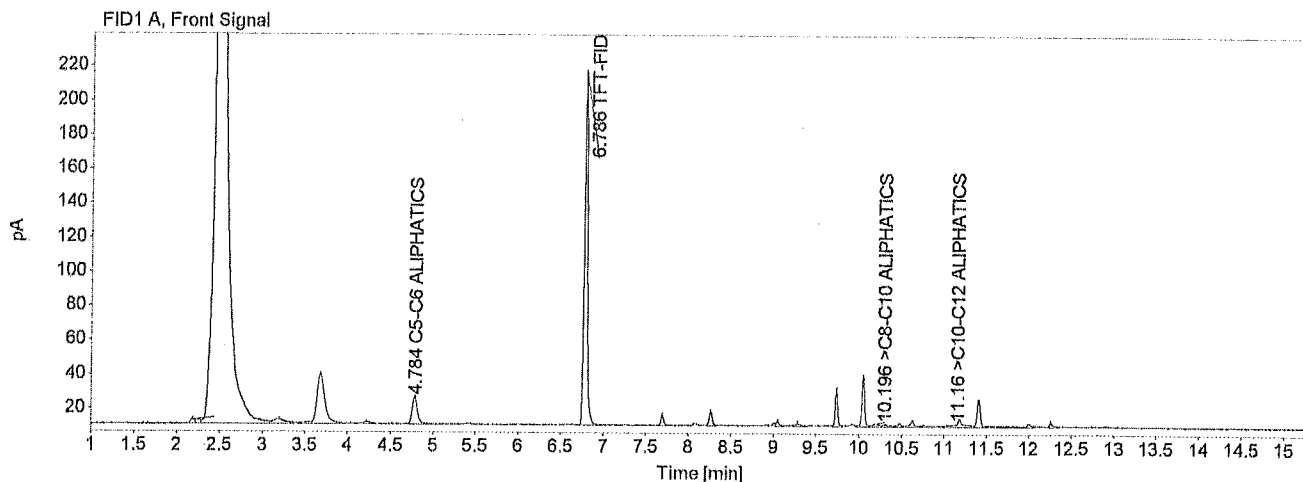


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1799.887	4.776	19.935
TFT-FID	622.706	6.784	10.303 103%
>C6-C8 ALIPHATICS	1943.341	8.065	20.902
>C8-C10 ALIPHATICS	1861.279	10.229	21.567
>C10-C12 ALIPHATICS	916.143	12.004	20.219 101%

Name	Peak Area	RT [min]	Amount [ug/L]
>C12-C13 AROMATICS			0.000
TFT-PID	1083.670	6.783	10.080
>C8-C10 AROMATICS	4809.084	10.605	19.617
>C10-C12 AROMATICS	528.464	12.260	17.862

Data file: D:\DATA\1192305232\1192305232\001F3101.D
 Sample name: EV23050159-01 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 6:56:06 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	68.441	4.784	0.758
TFT-FID	530.772	6.786	8.782 87%
>C8-C10 ALIPHATICS	7.079	10.196	0.082
>C10-C12 ALIPHATICS	116.909	11.160	2.371

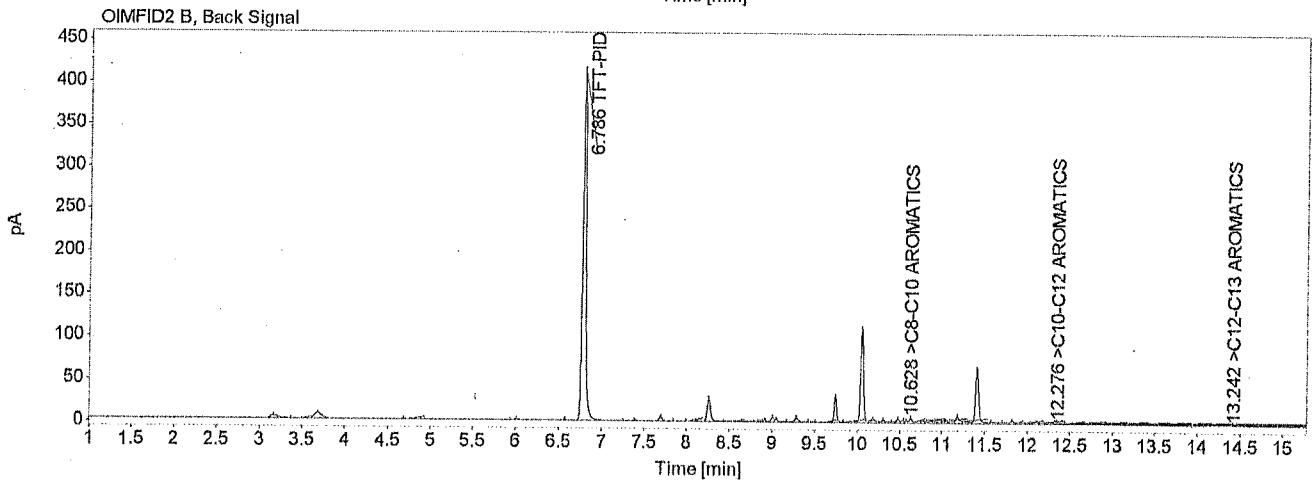
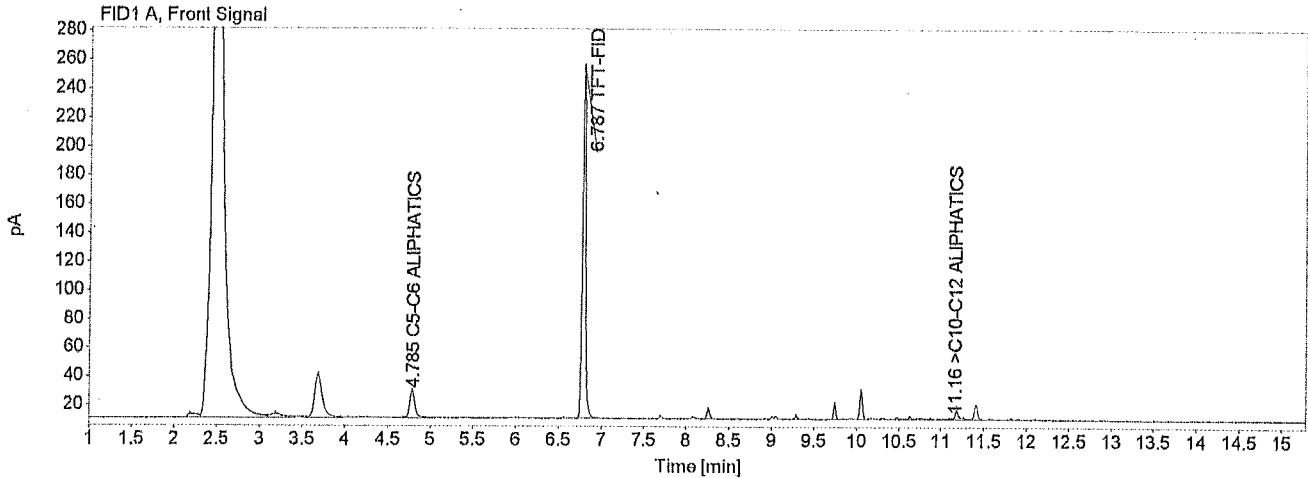
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
TFT-PID	925.196	6.786	8.606
>C8-C10 AROMATICS	30.971	10.626	0.126
>C10-C12 AROMATICS	44.332	12.267	0.000
>C12-C13 AROMATICS	5.586	13.329	3.772

AKK

> C₁₀ - C₁₂ < 50 µg/l

Data file: D:\DATA\1192305232\1192305232\001F3301.D
 Sample name: EV23050159-03 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 7:43:38 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	91.003	4.785	1.008
TFT-FID	636.508	6.787	10.531 105%
>C10-C12 ALIPHATICS	87.763	11.160	1.802

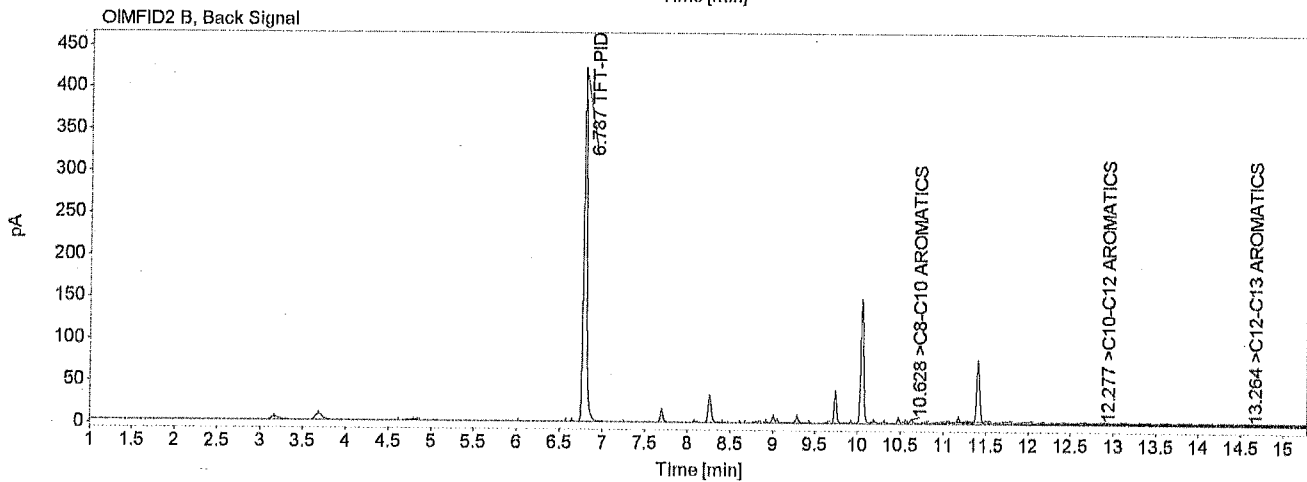
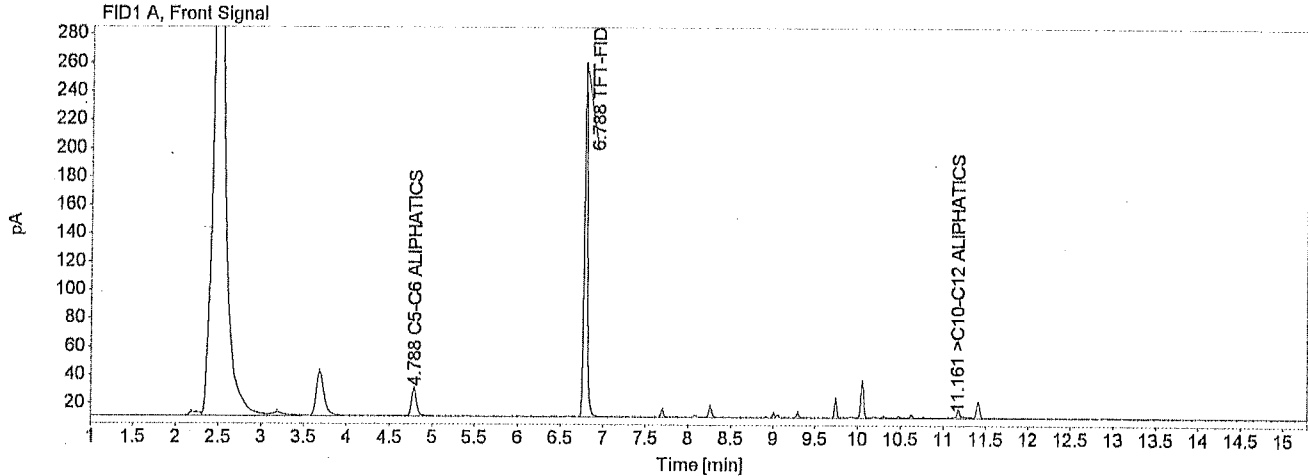
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1090.772	6.786	10.146
>C8-C10 AROMATICS	18.594	10.628	0.076
>C10-C12 AROMATICS	14.788	12.276	0.000
>C12-C13 AROMATICS	5.573	13.242	3.764

AUK

>C10 - C12 < 50 ug/l

Data file: D:\DATA\1192305232\1192305232\001F3401.D
 Sample name: EV23050159-04 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 8:07:23 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	85.166	4.788	0.943
TFT-FID	642.265	6.788	10.627 106%
>C10-C12 ALIPHATICS	77.580	11.161	1.604

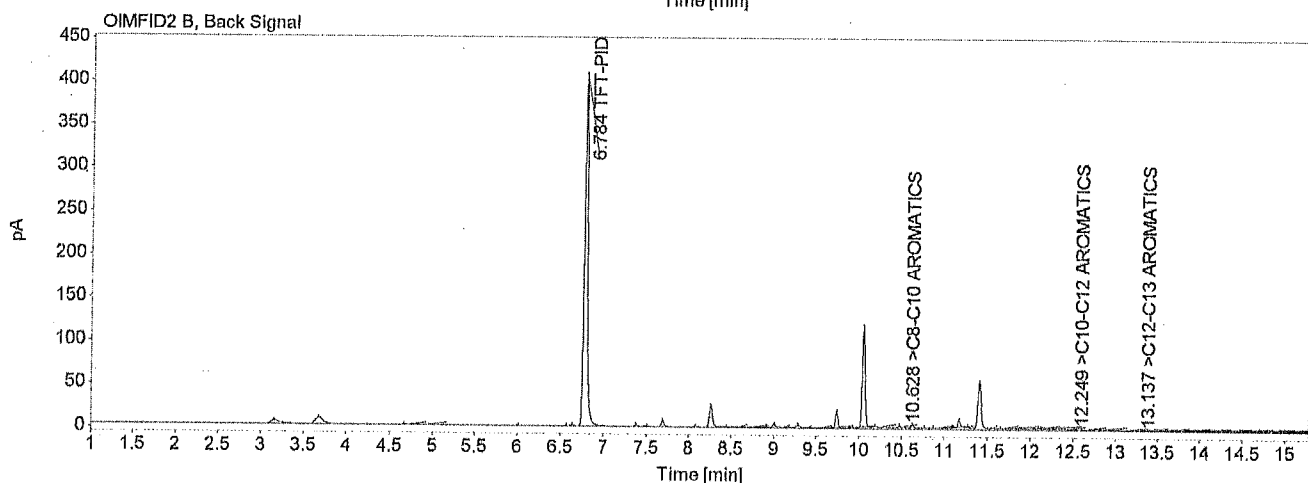
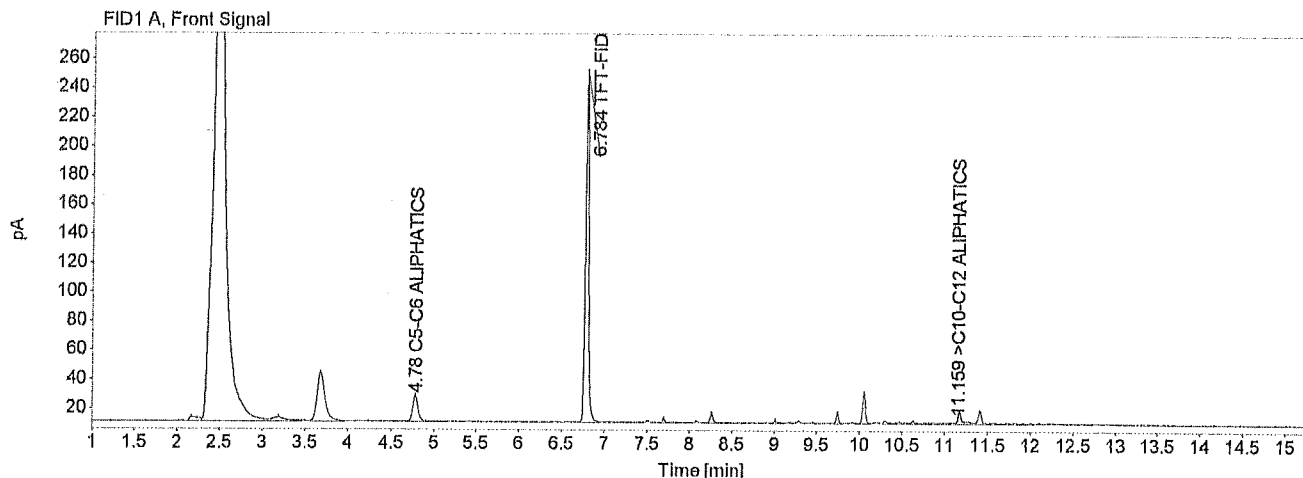
Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1103.582	6.787	10.266
>C8-C10 AROMATICS	17.362	10.628	0.071
>C10-C12 AROMATICS	17.794	12.277	0.000
>C12-C13 AROMATICS	6.325	13.264	4.271

AUK

> C10 - C12 < 50 ug/L

Data file: D:\DATA\1192305232\1192305232\001F3701.D
 Sample name: EV23050159-07 VPH
 Dilution: 0.000
 Injection date: 5/23/2023 9:18:46 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_051823.M
 Instrument name: GC#119



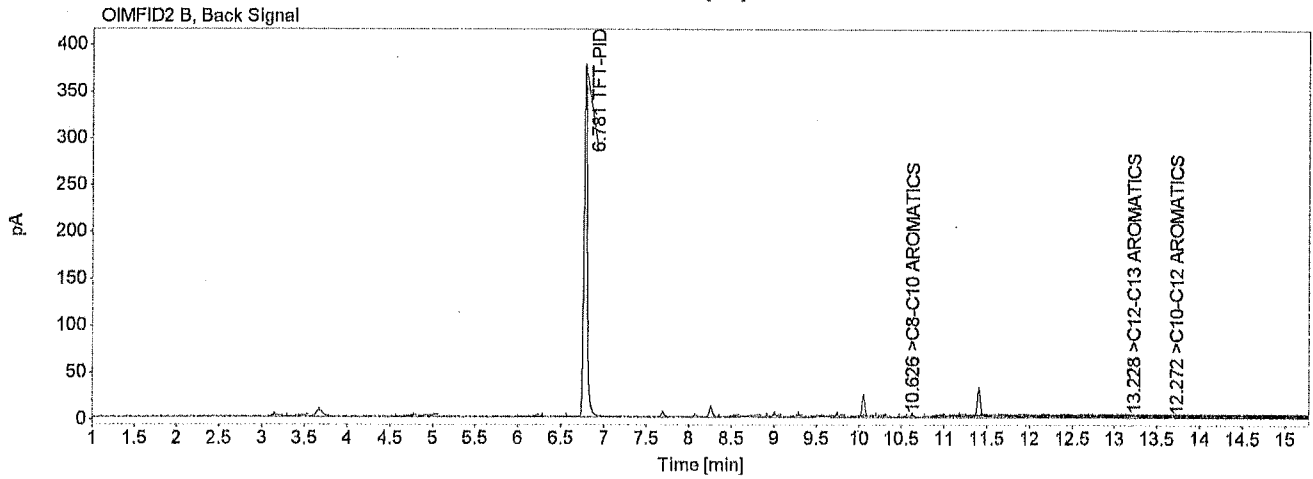
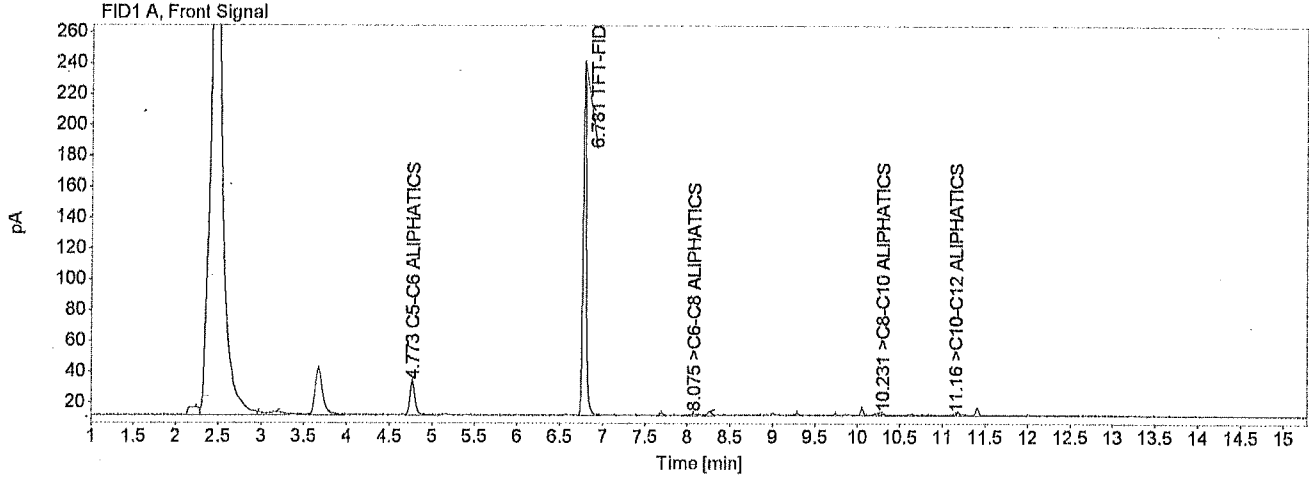
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	77.828	4.780	0.862
TFT-FID	624.237	6.784	10.328 ^{103%}
>C10-C12 ALIPHATICS	103.667	11.159	2.112

Name	Peak Area	RT [min]	Amount [ug/L]
>C6-C8 ALIPHATICS			0.000
>C8-C10 ALIPHATICS			0.000
TFT-PID	1073.666	6.784	9.987
>C8-C10 AROMATICS	21.126	10.628	0.086
>C10-C12 AROMATICS	18.369	12.249	0.000
>C12-C13 AROMATICS	6.467	13.137	4.367

AUC
 > C10 - C12 < 50 µg/l

Data file: D:\DATA\1192305301\1192305301\001F1401.D
 Sample name: MB-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 2:59:30 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	91.971	4.773	0.968
TFT-FID	601.239	6.781	9.665 <i>97%</i>
>C6-C8 ALIPHATICS	7.790	8.075	0.081
>C8-C10 ALIPHATICS	5.546	10.231	0.059
>C10-C12 ALIPHATICS	53.330	11.160	1.254

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	995.213	6.781	9.634
>C8-C10 AROMATICS	11.125	10.626	0.050
>C10-C12 AROMATICS	11.576	12.272	0.090
>C12-C13 AROMATICS	22.731	13.228	12.074

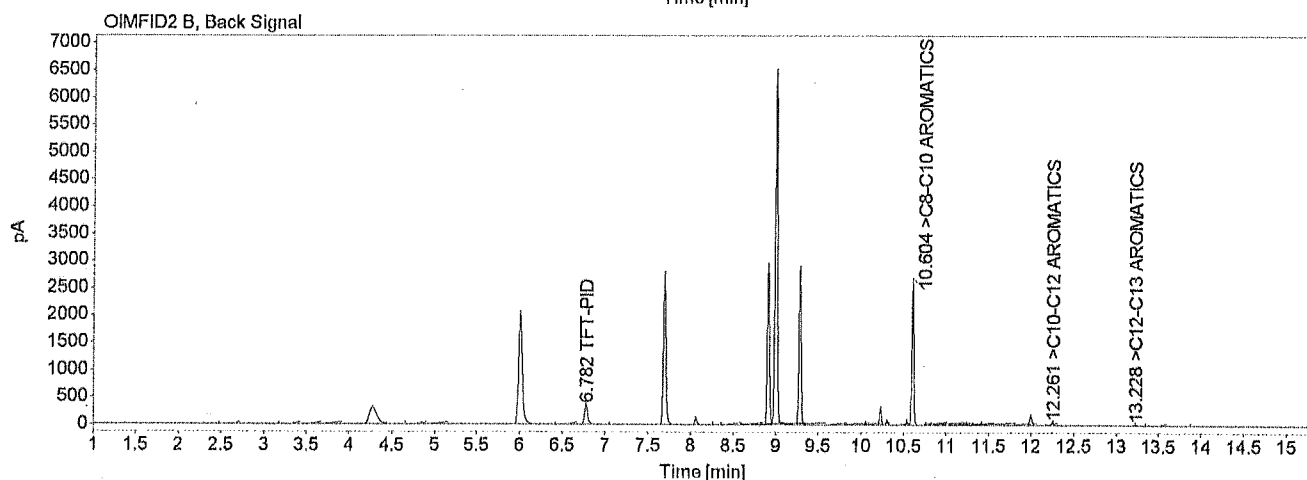
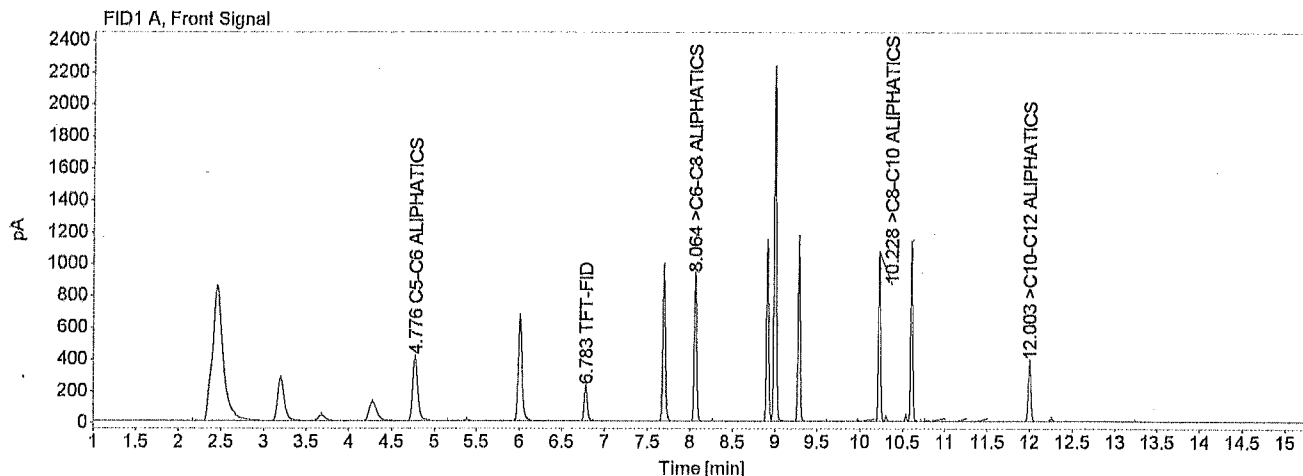
AUK

>C10-C12 < 50 ug/L

5-31-23 DC

Data file: D:\DATA\1192305301\1192305301\001F1501.D
 Sample name: BS-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 3:23:14 PM
 Acq. method: GX_SHORT_RUN_040 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119

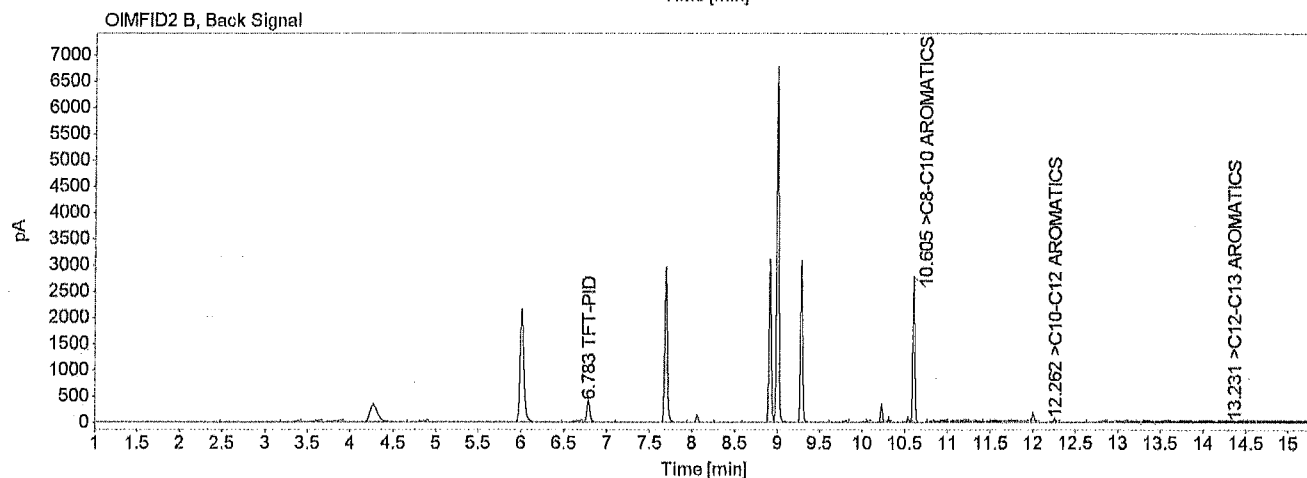
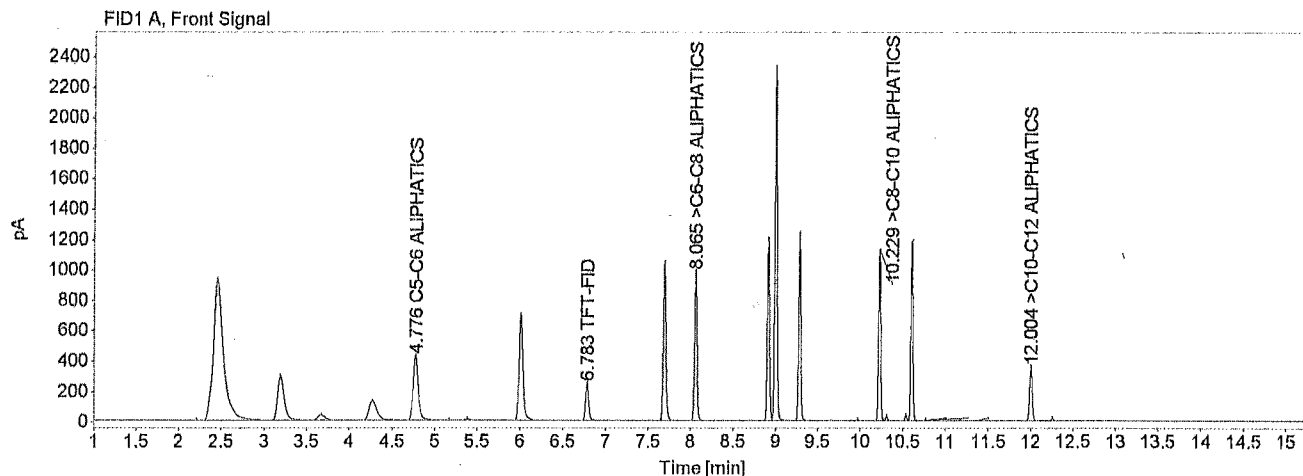


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1679.296	4.776	17.682
TFT-FID	564.210	6.783	9.070 91%
>C6-C8 ALIPHATICS	1836.251	8.064	19.037
>C8-C10 ALIPHATICS	1803.491	10.228	19.059
>C10-C12 ALIPHATICS	795.924	12.003	18.722 94%

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	945.650	6.782	9.155
>C8-C10 AROMATICS	4370.160	10.604	19.457
>C10-C12 AROMATICS	123.782	12.261	18.246
>C12-C13 AROMATICS	54.734	13.228	29.072

Data file: D:\DATA\1192305301\1192305301\001F1601.D
 Sample name: BSD-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 3:46:56 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119

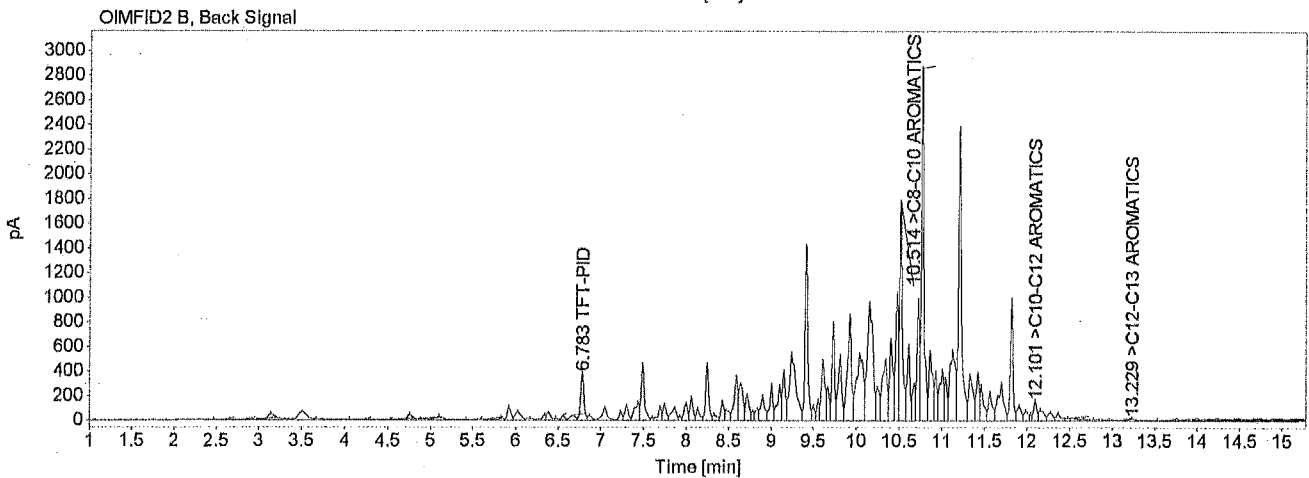
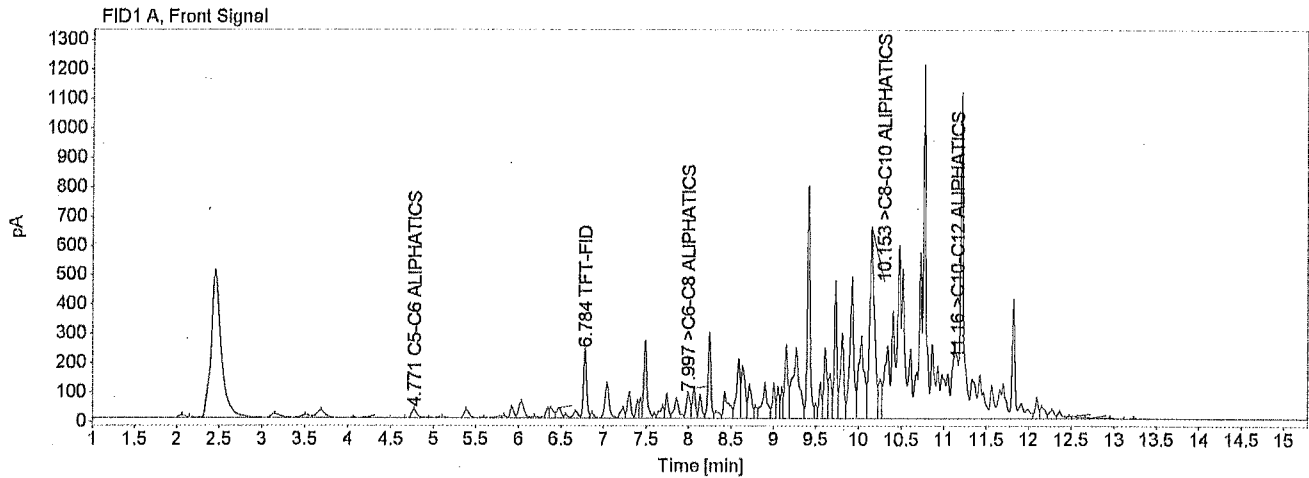


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1773.778	4.776	18.677
TFT-FID	621.308	6.783	9.988 100%
>C6-C8 ALIPHATICS	1944.441	8.065	20.158
>C8-C10 ALIPHATICS	1892.756	10.229	20.003
>C10-C12 ALIPHATICS	738.947	12.004	17.382 87%

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1043.163	6.783	10.099
>C8-C10 AROMATICS	4584.278	10.605	20.410
>C10-C12 AROMATICS	121.563	12.262	17.887
>C12-C13 AROMATICS	18.505	13.231	9.829

Data file: D:\DATA\1192305301\1192305301\001F3201.D
 Sample name: EV23050159-02 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 10:07:04 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	136.628	4.771	1.439
TFT-FID	610.042	6.784	9.807 98%
>C6-C8 ALIPHATICS	270.997	7.997	2.809
>C8-C10 ALIPHATICS	2531.375	10.153	26.752
>C10-C12 ALIPHATICS	18778.758	11.160	441.717

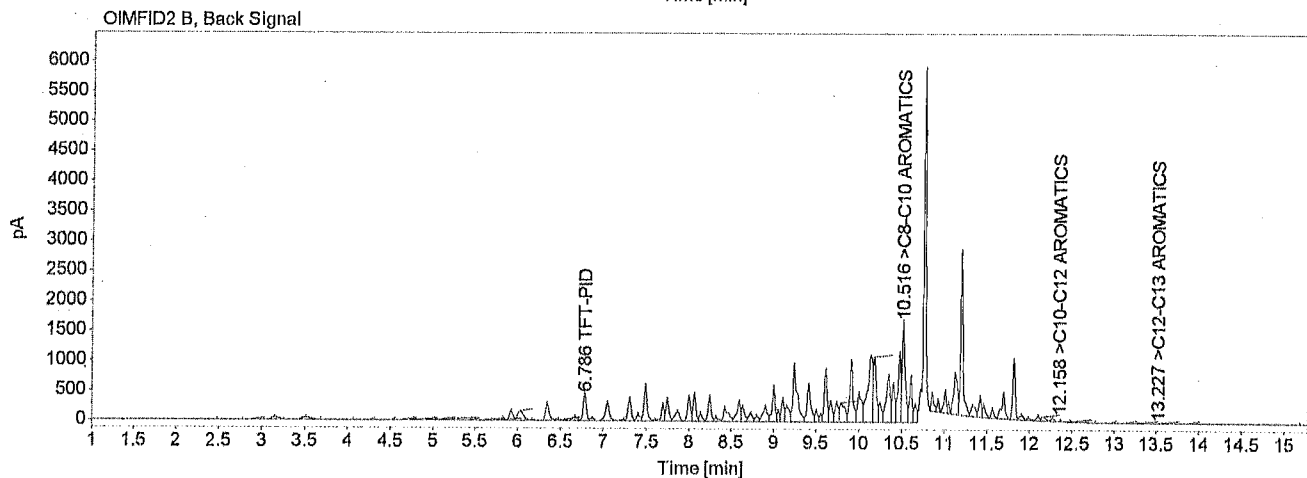
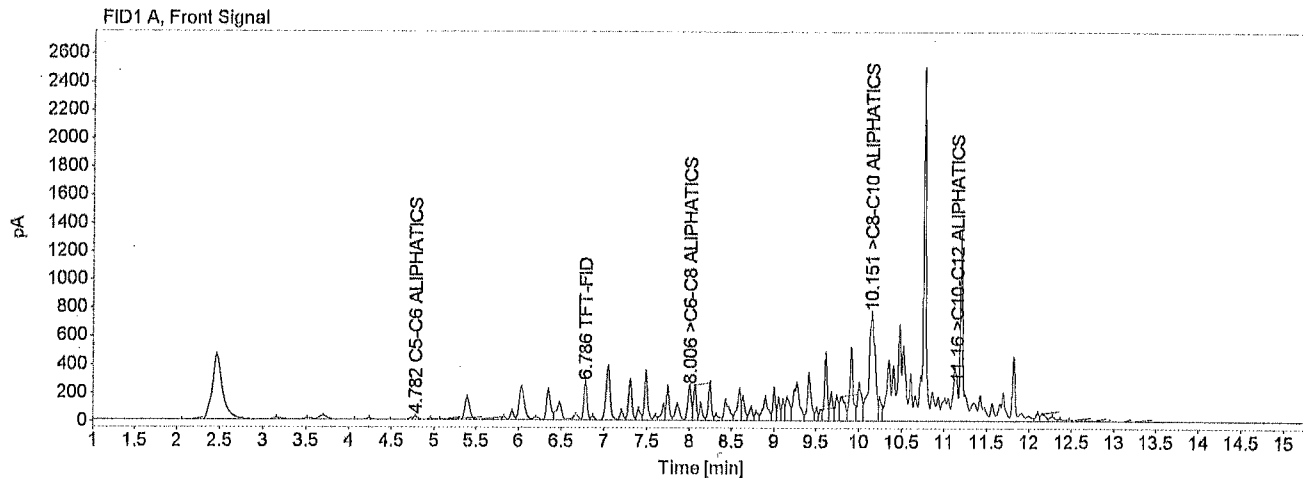
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1036.842	6.783	10.037
>C8-C10 AROMATICS	4009.287	10.514	17.850
>C10-C12 AROMATICS	433.046	12.101	68.288
>C12-C13 AROMATICS	92.852	13.229	49.318

AKK

$>C_{10} - C_{12} = 440 \mu\text{g/l}$

Data file: D:\DATA\1192305301\1192305301\001F3301.D
 Sample name: EV23050159-05 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 10:30:50 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	106.528	4.782	1.122
TFT-FID	717.106	6.786	11.528 //5/
>C6-C8 ALIPHATICS	694.615	8.006	7.201
>C8-C10 ALIPHATICS	3885.700	10.151	41.064
>C10-C12 ALIPHATICS	22768.523	11.160	535.565

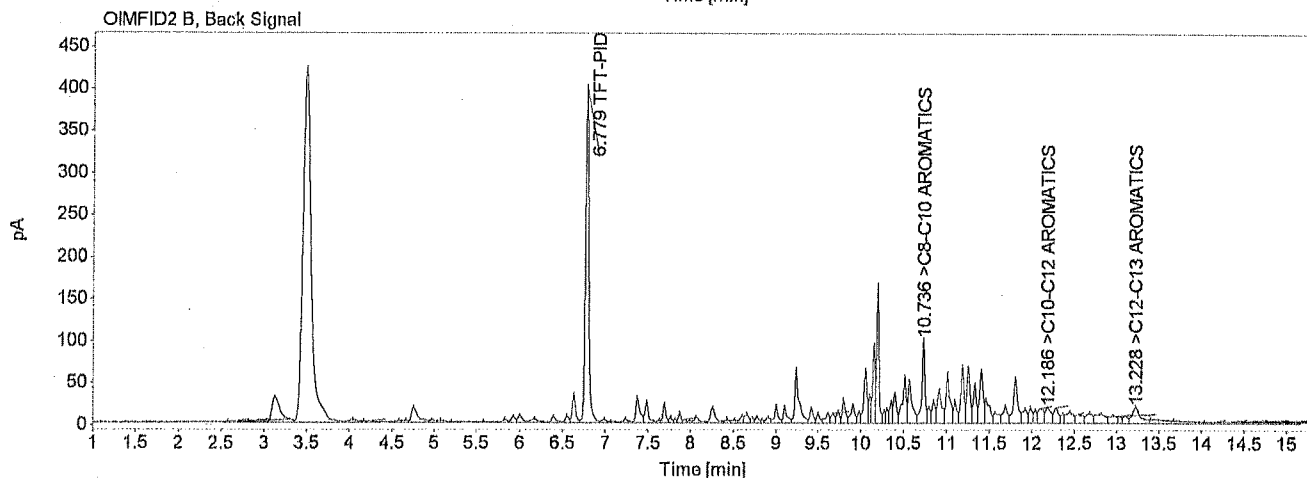
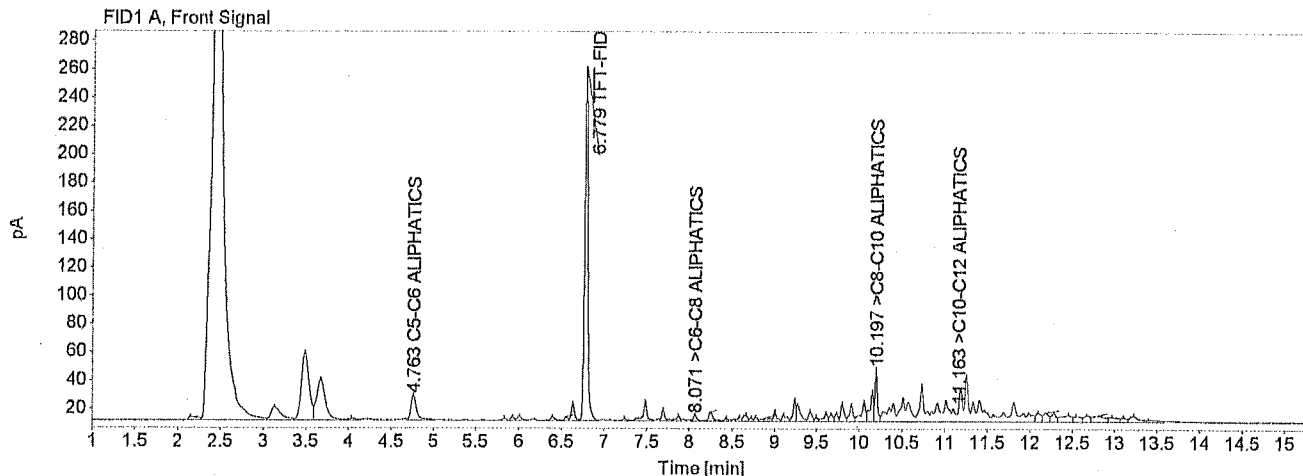
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1224.740	6.786	11.856
>C8-C10 AROMATICS	4173.453	10.516	18.581
>C10-C12 AROMATICS	264.766	12.158	41.059
>C12-C13 AROMATICS	18.924	13.227	10.051

AUK

$$>C_{10} - C_{12} = 540 \mu\text{g/L}$$

Data file: D:\DATA\1192305301\1192305301\001F3101.D
 Sample name: EV23050159-06 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 9:43:19 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	82.350	4.763	0.867
TFT-FID	649.084	6.779	10.434 <i>104%</i>
>C6-C8 ALIPHATICS	12.753	8.071	0.132
>C8-C10 ALIPHATICS	74.555	10.197	0.788
>C10-C12 ALIPHATICS	892.840	11.163	21.002
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1066.154	6.779	10.321
>C8-C10 AROMATICS	247.646	10.736	1.103
>C10-C12 AROMATICS	80.918	12.186	11.310
>C12-C13 AROMATICS	128.113	13.228	68.047

AUK

>C10 - C12 < 50 ug/l

05-31-23 De

June 07, 2023

Erica Whitting
ERM Portland
1050 SW 6th Ave
Suite 1650
Portland, OR 97204

RE: Project: 0680180.003
Pace Project No.: 10654258

Dear Erica Whitting:

Enclosed are the analytical results for sample(s) received by the laboratory on May 23, 2023. 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: Jo Casey, ERM Portland
ERM Global EDD Mailbox, ERM
Stephanie Frith, ERM Portland
Andrea George, ERM
Rachel James, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 0680180.003

Pace Project No.: 10654258

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

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

GMP+ Certification #: GMP050884

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 0680180.003

Pace Project No.: 10654258

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10654258001	TRIP BLANK-20230520	Water	05/20/23 08:00	05/23/23 08:50
10654258002	PEO-MW-11-202305	Water	05/19/23 08:45	05/23/23 08:50
10654258003	PEO-MW-34-202305	Water	05/19/23 09:35	05/23/23 08:50
10654258004	PEO-MW-35-202305	Water	05/19/23 10:15	05/23/23 08:50
10654258005	PEO-MW-03-202305	Water	05/19/23 11:00	05/23/23 08:50
10654258006	PEO-MW-06-202305	Water	05/19/23 12:30	05/23/23 08:50
10654258007	PEO-MW-21-202305	Water	05/20/23 09:45	05/23/23 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 0680180.003

Pace Project No.: 10654258

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10654258001	TRIP BLANK-20230520	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	PAB	8	PASI-M
10654258002	PEO-MW-11-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654258003	PEO-MW-34-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654258004	PEO-MW-35-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654258005	PEO-MW-03-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654258006	PEO-MW-06-202305	NWTPH-Dx	EB3	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: 0680180.003

Pace Project No.: 10654258

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	PAB	8	PASI-M
		SM 2320B	AB3	1	PASI-M
		EPA 300.0	AR3	1	PASI-M
10654258007	PEO-MW-21-202305	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020B	TJ1	2	PASI-M
		EPA 8270E by SIM	JLR	20	PASI-M
		EPA 8260D	PAB	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: 0680180.003

Pace Project No.: 10654258

Sample: TRIP BLANK-20230520 **Lab ID: 10654258001** Collected: 05/20/23 08:00 Received: 05/23/23 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	22.6	1		05/24/23 21:35		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%.	50-150		1		05/24/23 21:35	98-08-8	
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/24/23 23:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/24/23 23:46	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/24/23 23:46	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/24/23 23:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/24/23 23:46	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125		1		05/24/23 23:46	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125		1		05/24/23 23:46	460-00-4	
Toluene-d8 (S)	102	%.	75-125		1		05/24/23 23:46	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-11-202305		Lab ID: 10654258002		Collected: 05/19/23 08:45		Received: 05/23/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	7.4	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 11:25	68334-30-5	
Motor Oil Range	0.26J	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 11:25		
Surrogates									
n-Triacontane (S)	72	%	50-150		1	05/24/23 12:05	05/26/23 11:25		
o-Terphenyl (S)	74	%	50-150		1	05/24/23 12:05	05/26/23 11:25	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	103	ug/L	100	22.6	1		05/24/23 19:45		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/24/23 19:45	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	181000	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:16		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	90.8	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:43	7440-38-2	
Manganese, Dissolved	3020	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 18:47	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0066	1	05/23/23 16:44	05/24/23 20:39	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0057	1	05/23/23 16:44	05/24/23 20:39	208-96-8	
Anthracene	ND	ug/L	0.040	0.0050	1	05/23/23 16:44	05/24/23 20:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0077	1	05/23/23 16:44	05/24/23 20:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0081	1	05/23/23 16:44	05/24/23 20:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0084	1	05/23/23 16:44	05/24/23 20:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0089	1	05/23/23 16:44	05/24/23 20:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0086	1	05/23/23 16:44	05/24/23 20:39	207-08-9	
Chrysene	ND	ug/L	0.040	0.0088	1	05/23/23 16:44	05/24/23 20:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0080	1	05/23/23 16:44	05/24/23 20:39	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.013	1	05/23/23 16:44	05/24/23 20:39	206-44-0	
Fluorene	ND	ug/L	0.040	0.0063	1	05/23/23 16:44	05/24/23 20:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.010	1	05/23/23 16:44	05/24/23 20:39	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0063	1	05/23/23 16:44	05/24/23 20:39	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0077	1	05/23/23 16:44	05/24/23 20:39	91-57-6	
Naphthalene	ND	ug/L	0.040	0.015	1	05/23/23 16:44	05/24/23 20:39	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.014	1	05/23/23 16:44	05/24/23 20:39	85-01-8	
Pyrene	ND	ug/L	0.040	0.0092	1	05/23/23 16:44	05/24/23 20:39	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%	49-125		1	05/23/23 16:44	05/24/23 20:39	321-60-8	
p-Terphenyl-d14 (S)	48	%	42-125		1	05/23/23 16:44	05/24/23 20:39	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-11-202305 **Lab ID: 10654258002** Collected: 05/19/23 08:45 Received: 05/23/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	0.34J	ug/L	1.0	0.10	1		05/25/23 02:02	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 02:02	100-41-4	
Toluene	1.1	ug/L	1.0	0.10	1		05/25/23 02:02	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 02:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 02:02	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 02:02	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 02:02	460-00-4	
Toluene-d8 (S)	104	%	75-125		1		05/25/23 02:02	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	250	mg/L	5.0	1.4	1		06/01/23 19:47		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	2.6	mg/L	1.2	0.43	1		06/03/23 07:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-34-202305		Lab ID: 10654258003		Collected: 05/19/23 09:35		Received: 05/23/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	1.9	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 11:48	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 11:48		
Surrogates									
n-Triacontane (S)	63	%	50-150		1	05/24/23 12:05	05/26/23 11:48		
o-Terphenyl (S)	65	%	50-150		1	05/24/23 12:05	05/26/23 11:48	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 20:03		
Surrogates									
a,a,a-Trifluorotoluene (S)	95	%	50-150		1		05/24/23 20:03	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	67400	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:18		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	11.2	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 18:57	7440-38-2	
Manganese, Dissolved	1170	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 19:00	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0063	1	05/23/23 16:44	05/24/23 21:01	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/23/23 16:44	05/24/23 21:01	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/23/23 16:44	05/24/23 21:01	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0074	1	05/23/23 16:44	05/24/23 21:01	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0078	1	05/23/23 16:44	05/24/23 21:01	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/23/23 16:44	05/24/23 21:01	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0085	1	05/23/23 16:44	05/24/23 21:01	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/23/23 16:44	05/24/23 21:01	207-08-9	
Chrysene	ND	ug/L	0.039	0.0084	1	05/23/23 16:44	05/24/23 21:01	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0077	1	05/23/23 16:44	05/24/23 21:01	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/23/23 16:44	05/24/23 21:01	206-44-0	
Fluorene	ND	ug/L	0.039	0.0060	1	05/23/23 16:44	05/24/23 21:01	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.0099	1	05/23/23 16:44	05/24/23 21:01	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/23/23 16:44	05/24/23 21:01	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/23/23 16:44	05/24/23 21:01	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/23/23 16:44	05/24/23 21:01	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/23/23 16:44	05/24/23 21:01	85-01-8	
Pyrene	ND	ug/L	0.039	0.0088	1	05/23/23 16:44	05/24/23 21:01	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%	49-125		1	05/23/23 16:44	05/24/23 21:01	321-60-8	
p-Terphenyl-d14 (S)	38	%	42-125		1	05/23/23 16:44	05/24/23 21:01	1718-51-0	S5

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-34-202305 Lab ID: 10654258003 Collected: 05/19/23 09:35 Received: 05/23/23 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		05/25/23 02:19	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 02:19	100-41-4	
Toluene	0.13J	ug/L	1.0	0.10	1		05/25/23 02:19	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 02:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 02:19	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1		05/25/23 02:19	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 02:19	460-00-4	
Toluene-d8 (S)	103	%	75-125		1		05/25/23 02:19	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	53.2	mg/L	5.0	1.4	1		06/01/23 20:20		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	53.5	mg/L	1.2	0.43	1		06/03/23 07:41	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-35-202305		Lab ID: 10654258004		Collected: 05/19/23 10:15		Received: 05/23/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 11:59	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 11:59		
Surrogates									
n-Triacontane (S)	55	%	50-150		1	05/24/23 12:05	05/26/23 11:59		
o-Terphenyl (S)	54	%	50-150		1	05/24/23 12:05	05/26/23 11:59	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 20:22		
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%	50-150		1		05/24/23 20:22	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	19800	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:19		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	6.7	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 19:03	7440-38-2	
Manganese, Dissolved	502	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 19:07	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0065	1	05/24/23 17:39	05/25/23 21:19	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0056	1	05/24/23 17:39	05/25/23 21:19	208-96-8	
Anthracene	ND	ug/L	0.040	0.0049	1	05/24/23 17:39	05/25/23 21:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0076	1	05/24/23 17:39	05/25/23 21:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0079	1	05/24/23 17:39	05/25/23 21:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0082	1	05/24/23 17:39	05/25/23 21:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0087	1	05/24/23 17:39	05/25/23 21:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/24/23 17:39	05/25/23 21:19	207-08-9	
Chrysene	ND	ug/L	0.040	0.0086	1	05/24/23 17:39	05/25/23 21:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/24/23 17:39	05/25/23 21:19	53-70-3	
Fluoranthene	0.020J	ug/L	0.040	0.012	1	05/24/23 17:39	05/25/23 21:19	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/24/23 17:39	05/25/23 21:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.010	1	05/24/23 17:39	05/25/23 21:19	193-39-5	
1-Methylnaphthalene	0.0079J	ug/L	0.040	0.0062	1	05/24/23 17:39	05/25/23 21:19	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0075	1	05/24/23 17:39	05/25/23 21:19	91-57-6	
Naphthalene	ND	ug/L	0.040	0.014	1	05/24/23 17:39	05/25/23 21:19	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.014	1	05/24/23 17:39	05/25/23 21:19	85-01-8	
Pyrene	ND	ug/L	0.040	0.0090	1	05/24/23 17:39	05/25/23 21:19	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%	49-125		1	05/24/23 17:39	05/25/23 21:19	321-60-8	
p-Terphenyl-d14 (S)	84	%	42-125		1	05/24/23 17:39	05/25/23 21:19	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-35-202305 **Lab ID: 10654258004** Collected: 05/19/23 10:15 Received: 05/23/23 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		05/25/23 02:36	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 02:36	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 02:36	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 02:36	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 02:36	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 02:36	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 02:36	460-00-4	
Toluene-d8 (S)	102	%	75-125		1		05/25/23 02:36	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	30.8	mg/L	5.0	1.4	1		06/01/23 20:24		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	13.8	mg/L	1.2	0.43	1		06/03/23 07:55	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-03-202305 **Lab ID: 10654258005** Collected: 05/19/23 11:00 Received: 05/23/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 12:11	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 12:11		
Surrogates									
n-Triacontane (S)	90	%	50-150		1	05/24/23 12:05	05/26/23 12:11		
o-Terphenyl (S)	89	%	50-150		1	05/24/23 12:05	05/26/23 12:11	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 20:40		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%	50-150		1		05/24/23 20:40	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	57600	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:21		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.23J	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 19:10	7440-38-2	
Manganese, Dissolved	1.8	ug/L	0.50	0.16	1	06/01/23 07:06	06/05/23 19:10	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0064	1	05/23/23 16:44	05/24/23 21:23	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0055	1	05/23/23 16:44	05/24/23 21:23	208-96-8	
Anthracene	ND	ug/L	0.039	0.0048	1	05/23/23 16:44	05/24/23 21:23	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0075	1	05/23/23 16:44	05/24/23 21:23	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0079	1	05/23/23 16:44	05/24/23 21:23	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/23/23 16:44	05/24/23 21:23	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0086	1	05/23/23 16:44	05/24/23 21:23	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0084	1	05/23/23 16:44	05/24/23 21:23	207-08-9	
Chrysene	ND	ug/L	0.039	0.0085	1	05/23/23 16:44	05/24/23 21:23	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/23/23 16:44	05/24/23 21:23	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.012	1	05/23/23 16:44	05/24/23 21:23	206-44-0	
Fluorene	ND	ug/L	0.039	0.0061	1	05/23/23 16:44	05/24/23 21:23	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.010	1	05/23/23 16:44	05/24/23 21:23	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0061	1	05/23/23 16:44	05/24/23 21:23	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.0074	1	05/23/23 16:44	05/24/23 21:23	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/23/23 16:44	05/24/23 21:23	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.014	1	05/23/23 16:44	05/24/23 21:23	85-01-8	
Pyrene	ND	ug/L	0.039	0.0089	1	05/23/23 16:44	05/24/23 21:23	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	60	%	49-125		1	05/23/23 16:44	05/24/23 21:23	321-60-8	
p-Terphenyl-d14 (S)	68	%	42-125		1	05/23/23 16:44	05/24/23 21:23	1718-51-0	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-03-202305 **Lab ID: 10654258005** Collected: 05/19/23 11:00 Received: 05/23/23 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		05/25/23 03:26	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 03:26	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 03:26	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 03:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 03:26	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	98	%	75-125		1		05/25/23 03:26	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 03:26	460-00-4	
Toluene-d8 (S)	101	%	75-125		1		05/25/23 03:26	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	69.2	mg/L	5.0	1.4	1		06/01/23 20:27		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	5.3	mg/L	1.2	0.43	1		06/03/23 08:37	14808-79-8	

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-06-202305		Lab ID: 10654258006		Collected: 05/19/23 12:30		Received: 05/23/23 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 3510C									
Pace Analytical Services - Minneapolis									
Diesel Fuel Range	0.93	mg/L	0.42	0.12	1	05/24/23 12:05	05/26/23 12:22	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	0.20	1	05/24/23 12:05	05/26/23 12:22		
Surrogates									
n-Triacontane (S)	97	%	50-150		1	05/24/23 12:05	05/26/23 12:22		
o-Terphenyl (S)	95	%	50-150		1	05/24/23 12:05	05/26/23 12:22	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	1210	ug/L	100	22.6	1		05/24/23 20:58		
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%	50-150		1		05/24/23 20:58	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	61700	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:23		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A									
Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.2	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 19:17	7440-38-2	
Manganese, Dissolved	841	ug/L	25.0	8.2	50	06/01/23 07:06	06/05/23 19:20	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C									
Pace Analytical Services - Minneapolis									
Acenaphthene	0.76	ug/L	0.039	0.0064	1	05/24/23 17:39	05/25/23 21:38	83-32-9	
Acenaphthylene	0.35	ug/L	0.039	0.0055	1	05/24/23 17:39	05/25/23 21:38	208-96-8	
Anthracene	0.10	ug/L	0.039	0.0048	1	05/24/23 17:39	05/25/23 21:38	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.0075	1	05/24/23 17:39	05/25/23 21:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0079	1	05/24/23 17:39	05/25/23 21:38	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0081	1	05/24/23 17:39	05/25/23 21:38	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0086	1	05/24/23 17:39	05/25/23 21:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0084	1	05/24/23 17:39	05/25/23 21:38	207-08-9	
Chrysene	ND	ug/L	0.039	0.0085	1	05/24/23 17:39	05/25/23 21:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.0078	1	05/24/23 17:39	05/25/23 21:38	53-70-3	
Fluoranthene	0.030J	ug/L	0.039	0.012	1	05/24/23 17:39	05/25/23 21:38	206-44-0	
Fluorene	2.3	ug/L	0.039	0.0061	1	05/24/23 17:39	05/25/23 21:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.010	1	05/24/23 17:39	05/25/23 21:38	193-39-5	
1-Methylnaphthalene	2.7	ug/L	0.039	0.0061	1	05/24/23 17:39	05/25/23 21:38	90-12-0	
2-Methylnaphthalene	2.3	ug/L	0.039	0.0074	1	05/24/23 17:39	05/25/23 21:38	91-57-6	
Naphthalene	ND	ug/L	0.039	0.014	1	05/24/23 17:39	05/25/23 21:38	91-20-3	
Phenanthrene	1.0	ug/L	0.039	0.014	1	05/24/23 17:39	05/25/23 21:38	85-01-8	
Pyrene	0.035J	ug/L	0.039	0.0089	1	05/24/23 17:39	05/25/23 21:38	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%	49-125		1	05/24/23 17:39	05/25/23 21:38	321-60-8	
p-Terphenyl-d14 (S)	89	%	42-125		1	05/24/23 17:39	05/25/23 21:38	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-06-202305 **Lab ID: 10654258006** Collected: 05/19/23 12:30 Received: 05/23/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/25/23 02:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 02:52	100-41-4	
Toluene	0.23J	ug/L	1.0	0.10	1		05/25/23 02:52	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 02:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 02:52	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 02:52	2199-69-1	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/25/23 02:52	460-00-4	
Toluene-d8 (S)	100	%	75-125		1		05/25/23 02:52	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	72.7	mg/L	5.0	1.4	1		06/01/23 20:31		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	2.8	mg/L	1.2	0.43	1		06/03/23 08:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-21-202305 **Lab ID: 10654258007** Collected: 05/20/23 09:45 Received: 05/23/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
NWTPH-Dx GCS Silica Gel LV									
Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range	ND	mg/L	0.43	0.13	1	05/24/23 12:05	05/26/23 12:34	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	0.20	1	05/24/23 12:05	05/26/23 12:34		
Surrogates									
n-Triacontane (S)	88	%	50-150		1	05/24/23 12:05	05/26/23 12:34		
o-Terphenyl (S)	87	%	50-150		1	05/24/23 12:05	05/26/23 12:34	84-15-1	
NWTPH-Gx GCV									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	22.6	1		05/24/23 21:53		
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	50-150		1		05/24/23 21:53	98-08-8	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	40400	ug/L	3300	361	1	06/01/23 06:54	06/05/23 14:24		
6020B MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.23J	ug/L	0.50	0.092	1	06/01/23 07:06	06/05/23 19:24	7440-38-2	
Manganese, Dissolved	20.7	ug/L	0.50	0.16	1	06/01/23 07:06	06/05/23 19:24	7439-96-5	
8270E MSSV PAH by SIM									
Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0065	1	05/23/23 16:44	05/24/23 21:45	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0056	1	05/23/23 16:44	05/24/23 21:45	208-96-8	
Anthracene	ND	ug/L	0.040	0.0049	1	05/23/23 16:44	05/24/23 21:45	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.0076	1	05/23/23 16:44	05/24/23 21:45	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0079	1	05/23/23 16:44	05/24/23 21:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0082	1	05/23/23 16:44	05/24/23 21:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0087	1	05/23/23 16:44	05/24/23 21:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/23/23 16:44	05/24/23 21:45	207-08-9	
Chrysene	ND	ug/L	0.040	0.0086	1	05/23/23 16:44	05/24/23 21:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.0079	1	05/23/23 16:44	05/24/23 21:45	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.012	1	05/23/23 16:44	05/24/23 21:45	206-44-0	
Fluorene	ND	ug/L	0.040	0.0061	1	05/23/23 16:44	05/24/23 21:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.010	1	05/23/23 16:44	05/24/23 21:45	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0062	1	05/23/23 16:44	05/24/23 21:45	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.0075	1	05/23/23 16:44	05/24/23 21:45	91-57-6	
Naphthalene	ND	ug/L	0.040	0.014	1	05/23/23 16:44	05/24/23 21:45	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.014	1	05/23/23 16:44	05/24/23 21:45	85-01-8	
Pyrene	ND	ug/L	0.040	0.0090	1	05/23/23 16:44	05/24/23 21:45	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	81	%	49-125		1	05/23/23 16:44	05/24/23 21:45	321-60-8	
p-Terphenyl-d14 (S)	69	%	42-125		1	05/23/23 16:44	05/24/23 21:45	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0680180.003

Pace Project No.: 10654258

Sample: PEO-MW-21-202305 **Lab ID: 10654258007** Collected: 05/20/23 09:45 Received: 05/23/23 08:50 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D MSV UST									
Analytical Method: EPA 8260D									
Pace Analytical Services - Minneapolis									
Benzene	ND	ug/L	1.0	0.10	1		05/25/23 03:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.11	1		05/25/23 03:09	100-41-4	
Toluene	ND	ug/L	1.0	0.10	1		05/25/23 03:09	108-88-3	
m&p-Xylene	ND	ug/L	2.0	0.20	1		05/25/23 03:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.18	1		05/25/23 03:09	95-47-6	
Surrogates									
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1		05/25/23 03:09	2199-69-1	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/25/23 03:09	460-00-4	
Toluene-d8 (S)	102	%	75-125		1		05/25/23 03:09	2037-26-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	41.7	mg/L	5.0	1.4	1		06/02/23 08:04		
300.0 IC Anions									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	3.6	mg/L	1.2	0.43	1		06/03/23 09:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch: 883098 Analysis Method: NWTPH-Gx
 QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
 Laboratory: Pace Analytical Services - Minneapolis
 Associated Lab Samples: 10654258001, 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

METHOD BLANK: 4652879 Matrix: Water
 Associated Lab Samples: 10654258001, 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/24/23 15:26	
a,a,a-Trifluorotoluene (S)	%	102	50-150		05/24/23 15:26	

METHOD BLANK: 4652880 Matrix: Water
 Associated Lab Samples: 10654258001, 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	22.6	05/24/23 19:26	
a,a,a-Trifluorotoluene (S)	%	96	50-150		05/24/23 19:26	

LABORATORY CONTROL SAMPLE & LCSD: 4652881 4652882

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	911	859	91	86	68-125	6	20	
a,a,a-Trifluorotoluene (S)	%				103	99	50-150			

SAMPLE DUPLICATE: 4652883

Parameter	Units	10654743001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	637	660	4	30	
a,a,a-Trifluorotoluene (S)	%	99	100			

SAMPLE DUPLICATE: 4652884

Parameter	Units	10654258006 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1210	1080	11	30	
a,a,a-Trifluorotoluene (S)	%	97	98			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch:	883772	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3020A	Analysis Description:	6020B Water Dissolved UPD5
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

METHOD BLANK: 4656599 Matrix: Water
Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.092	06/05/23 17:17	
Manganese, Dissolved	ug/L	ND	0.50	0.16	06/05/23 17:17	

LABORATORY CONTROL SAMPLE: 4656600

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	98.0	98	80-120	
Manganese, Dissolved	ug/L	100	106	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4656601 4656602

Parameter	Units	10654090003 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	2.0	100	100	102	99.6	100	98	75-125	2	20	
Manganese, Dissolved	ug/L	0.90	100	100	107	105	106	104	75-125	3	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch:	883078	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 8260D	Analysis Description:	8260D MSV UST-WATER
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654258001, 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

METHOD BLANK: 4652821 Matrix: Water

Associated Lab Samples: 10654258001, 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	0.10	05/24/23 23:12	
Ethylbenzene	ug/L	ND	1.0	0.11	05/24/23 23:12	
m&p-Xylene	ug/L	ND	2.0	0.20	05/24/23 23:12	
o-Xylene	ug/L	ND	1.0	0.18	05/24/23 23:12	
Toluene	ug/L	ND	1.0	0.10	05/24/23 23:12	
1,2-Dichlorobenzene-d4 (S)	%	100	75-125		05/24/23 23:12	
4-Bromofluorobenzene (S)	%	99	75-125		05/24/23 23:12	
Toluene-d8 (S)	%	103	75-125		05/24/23 23:12	

LABORATORY CONTROL SAMPLE & LCSD: 4652822 4652823

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.9	20.1	100	100	75-125	1	20	
Ethylbenzene	ug/L	20	19.0	18.9	95	95	75-125	1	20	
m&p-Xylene	ug/L	40	38.6	38.3	96	96	75-125	1	20	
o-Xylene	ug/L	20	19.5	19.4	97	97	75-125	0	20	
Toluene	ug/L	20	18.7	19.2	94	96	74-125	3	20	
1,2-Dichlorobenzene-d4 (S)	%				100	100	75-125			
4-Bromofluorobenzene (S)	%				102	99	75-125			
Toluene-d8 (S)	%				99	99	75-125			

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654258

QC Batch: 882901 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654258002, 10654258003, 10654258005, 10654258007

METHOD BLANK: 4652076 Matrix: Water
Associated Lab Samples: 10654258002, 10654258003, 10654258005, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0062	05/24/23 16:15	
2-Methylnaphthalene	ug/L	ND	0.040	0.0076	05/24/23 16:15	
Acenaphthene	ug/L	ND	0.040	0.0065	05/24/23 16:15	
Acenaphthylene	ug/L	ND	0.040	0.0056	05/24/23 16:15	
Anthracene	ug/L	ND	0.040	0.0049	05/24/23 16:15	
Benzo(a)anthracene	ug/L	ND	0.040	0.0076	05/24/23 16:15	
Benzo(a)pyrene	ug/L	ND	0.040	0.0080	05/24/23 16:15	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0083	05/24/23 16:15	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0088	05/24/23 16:15	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/24/23 16:15	
Chrysene	ug/L	ND	0.040	0.0087	05/24/23 16:15	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0079	05/24/23 16:15	
Fluoranthene	ug/L	ND	0.040	0.013	05/24/23 16:15	
Fluorene	ug/L	ND	0.040	0.0062	05/24/23 16:15	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.010	05/24/23 16:15	
Naphthalene	ug/L	ND	0.040	0.015	05/24/23 16:15	
Phenanthrene	ug/L	ND	0.040	0.014	05/24/23 16:15	
Pyrene	ug/L	ND	0.040	0.0091	05/24/23 16:15	
2-Fluorobiphenyl (S)	%	83	49-125		05/24/23 16:15	
p-Terphenyl-d14 (S)	%	89	42-125		05/24/23 16:15	

LABORATORY CONTROL SAMPLE & LCSD: 4652077 4652078

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.78	0.76	78	76	46-125	2	20	
2-Methylnaphthalene	ug/L	1	0.78	0.73	78	73	52-125	7	20	
Acenaphthene	ug/L	1	0.83	0.78	83	78	51-125	6	20	
Acenaphthylene	ug/L	1	0.85	0.80	85	80	50-125	7	20	
Anthracene	ug/L	1	0.97	0.87	97	87	50-125	11	20	
Benzo(a)anthracene	ug/L	1	0.92	0.92	92	92	59-125	0	20	
Benzo(a)pyrene	ug/L	1	0.99	1.0	99	101	62-125	2	20	
Benzo(b)fluoranthene	ug/L	1	1.0	1.0	101	102	56-125	1	20	
Benzo(g,h,i)perylene	ug/L	1	0.75	0.75	75	75	35-125	1	20	
Benzo(k)fluoranthene	ug/L	1	0.94	0.98	94	98	59-125	3	20	
Chrysene	ug/L	1	0.98	1.0	98	103	60-125	5	20	
Dibenz(a,h)anthracene	ug/L	1	0.65	0.62	65	62	30-125	4	20	
Fluoranthene	ug/L	1	1.0	0.96	100	96	62-125	4	20	
Fluorene	ug/L	1	0.88	0.82	88	82	53-125	7	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.96	0.96	96	96	50-125	1	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

LABORATORY CONTROL SAMPLE & LCSD: 4652077			4652078								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.77	0.74	77	74	49-125	5	20		
Phenanthrene	ug/L	1	0.93	0.87	93	87	56-125	7	20		
Pyrene	ug/L	1	1.0	1.0	103	101	60-125	2	20		
2-Fluorobiphenyl (S)	%				81	76	49-125				
p-Terphenyl-d14 (S)	%				94	90	42-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003
Pace Project No.: 10654258

QC Batch: 883092 Analysis Method: EPA 8270E by SIM
QC Batch Method: EPA 3510C Analysis Description: 8270E Water PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654258004, 10654258006

METHOD BLANK: 4652847 Matrix: Water

Associated Lab Samples: 10654258004, 10654258006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0062	05/25/23 17:50	
2-Methylnaphthalene	ug/L	ND	0.040	0.0076	05/25/23 17:50	
Acenaphthene	ug/L	ND	0.040	0.0065	05/25/23 17:50	
Acenaphthylene	ug/L	ND	0.040	0.0056	05/25/23 17:50	
Anthracene	ug/L	ND	0.040	0.0049	05/25/23 17:50	
Benzo(a)anthracene	ug/L	ND	0.040	0.0076	05/25/23 17:50	
Benzo(a)pyrene	ug/L	ND	0.040	0.0080	05/25/23 17:50	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0083	05/25/23 17:50	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0088	05/25/23 17:50	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/25/23 17:50	
Chrysene	ug/L	ND	0.040	0.0087	05/25/23 17:50	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.0079	05/25/23 17:50	
Fluoranthene	ug/L	ND	0.040	0.013	05/25/23 17:50	
Fluorene	ug/L	ND	0.040	0.0062	05/25/23 17:50	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.010	05/25/23 17:50	
Naphthalene	ug/L	ND	0.040	0.015	05/25/23 17:50	
Phenanthrene	ug/L	ND	0.040	0.014	05/25/23 17:50	
Pyrene	ug/L	ND	0.040	0.0091	05/25/23 17:50	
2-Fluorobiphenyl (S)	%	63	49-125		05/25/23 17:50	
p-Terphenyl-d14 (S)	%	84	42-125		05/25/23 17:50	

LABORATORY CONTROL SAMPLE: 4652848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.81	81	46-125	
2-Methylnaphthalene	ug/L	1	0.78	78	52-125	
Acenaphthene	ug/L	1	0.83	83	51-125	
Acenaphthylene	ug/L	1	0.84	84	50-125	
Anthracene	ug/L	1	0.84	84	50-125	
Benzo(a)anthracene	ug/L	1	0.86	86	59-125	
Benzo(a)pyrene	ug/L	1	0.90	90	62-125	
Benzo(b)fluoranthene	ug/L	1	1.0	100	56-125	
Benzo(g,h,i)perylene	ug/L	1	0.82	82	35-125	
Benzo(k)fluoranthene	ug/L	1	0.88	88	59-125	
Chrysene	ug/L	1	0.95	95	60-125	
Dibenz(a,h)anthracene	ug/L	1	0.76	76	30-125	
Fluoranthene	ug/L	1	0.91	91	62-125	
Fluorene	ug/L	1	0.85	85	53-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.92	92	50-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

LABORATORY CONTROL SAMPLE: 4652848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.81	81	49-125	
Phenanthrene	ug/L	1	0.90	90	56-125	
Pyrene	ug/L	1	0.96	96	60-125	
2-Fluorobiphenyl (S)	%			75	49-125	
p-Terphenyl-d14 (S)	%			92	42-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652849 4652850

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10654229008 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1-Methylnaphthalene	ug/L	ND	0.99	1	0.77	0.72	78	72	30-125	6	30	
2-Methylnaphthalene	ug/L	ND	0.99	1	0.73	0.70	74	69	30-125	5	30	
Acenaphthene	ug/L	ND	0.99	1	0.76	0.70	77	70	30-125	8	30	
Acenaphthylene	ug/L	ND	0.99	1	0.77	0.70	77	70	30-125	8	30	
Anthracene	ug/L	ND	0.99	1	0.81	0.74	82	74	33-128	9	30	
Benzo(a)anthracene	ug/L	ND	0.99	1	0.81	0.76	82	75	33-125	6	30	
Benzo(a)pyrene	ug/L	ND	0.99	1	0.86	0.80	87	79	32-125	8	30	
Benzo(b)fluoranthene	ug/L	ND	0.99	1	0.87	0.82	88	81	31-125	6	30	
Benzo(g,h,i)perylene	ug/L	ND	0.99	1	0.85	0.78	86	78	31-125	8	30	
Benzo(k)fluoranthene	ug/L	ND	0.99	1	0.86	0.78	87	77	35-127	10	30	
Chrysene	ug/L	ND	0.99	1	0.86	0.81	87	80	39-125	6	30	
Dibenz(a,h)anthracene	ug/L	ND	0.99	1	0.88	0.82	89	81	30-125	7	30	
Fluoranthene	ug/L	ND	0.99	1	0.85	0.81	86	80	43-125	5	30	
Fluorene	ug/L	ND	0.99	1	0.79	0.72	79	71	30-125	8	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.99	1	0.87	0.80	88	79	30-125	9	30	
Naphthalene	ug/L	ND	0.99	1	0.76	0.73	76	72	31-125	3	30	
Phenanthrene	ug/L	ND	0.99	1	0.83	0.80	84	79	33-125	5	30	
Pyrene	ug/L	ND	0.99	1	0.89	0.84	90	83	41-125	6	30	
2-Fluorobiphenyl (S)	%						77	69	49-125			
p-Terphenyl-d14 (S)	%						85	79	42-125			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch: 883043 Analysis Method: NWTPH-Dx
 QC Batch Method: EPA 3510C Analysis Description: NWTPH-Dx GCS LV SG
 Laboratory: Pace Analytical Services - Minneapolis
 Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

METHOD BLANK: 4652685 Matrix: Water
 Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	0.12	05/26/23 08:35	
Motor Oil Range	mg/L	ND	0.40	0.19	05/26/23 08:35	
n-Triacontane (S)	%	77	50-150		05/26/23 08:35	
o-Terphenyl (S)	%	95	50-150		05/26/23 08:35	

LABORATORY CONTROL SAMPLE: 4652686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range	mg/L	2	1.0	52	50-150	
Motor Oil Range	mg/L	2	1.0	50	50-150	
n-Triacontane (S)	%			51	50-150	
o-Terphenyl (S)	%			51	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4652687 4652688

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10653844003 Result	Spike Conc.	Spike Conc.	Result						
Diesel Fuel Range	mg/L	0.15J	2	2	1.6	1.9	74	87	15	30	
Motor Oil Range	mg/L	ND	2	2	1.4	1.5	70	72	3	30	
n-Triacontane (S)	%						70	72			
o-Terphenyl (S)	%						80	71			

SAMPLE DUPLICATE: 4652689

Parameter	Units	10654258002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	7.4	7.2	3	30	
Motor Oil Range	mg/L	0.26J	0.24J		30	
n-Triacontane (S)	%	72	75			
o-Terphenyl (S)	%	74	77			

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch: 884599

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006

METHOD BLANK: 4660813

Matrix: Water

Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	06/01/23 18:54	

LABORATORY CONTROL SAMPLE & LCSD: 4660814

4660815

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.9	42.6	105	107	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4660816

4660817

Parameter	Units	10654258002 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	250	40	40	294	297	109	116	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4660818

4660819

Parameter	Units	10654455002 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	192	40	40	233	235	102	106	80-120	1	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch: 884601

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10654258007

METHOD BLANK: 4660820

Matrix: Water

Associated Lab Samples: 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	1.4	06/02/23 07:54	

LABORATORY CONTROL SAMPLE & LCSD: 4660821

4660822

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	43.0	43.0	108	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4660823

4660824

Parameter	Units	10654258007 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	41.7	40	40	84.1	84.2	106	106	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4660825

4660826

Parameter	Units	10654569001 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	203	40	40	248	249	112	116	80-120	1	20	

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QUALITY CONTROL DATA

Project: 0680180.003

Pace Project No.: 10654258

QC Batch: 884917

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: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

METHOD BLANK: 4663518

Matrix: Water

Associated Lab Samples: 10654258002, 10654258003, 10654258004, 10654258005, 10654258006, 10654258007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.43	06/03/23 08:09	

LABORATORY CONTROL SAMPLE: 4663519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	47.7	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4663520 4663521

Parameter	Units	10654309002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Sulfate	mg/L	21.7	250	250	256	257	94	94	80-120	0	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4663522 4663523

Parameter	Units	10654792004		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Sulfate	mg/L	5.7	50	50	51.8	52.0	92	93	80-120	1	20		

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QUALIFIERS

Project: 0680180.003

Pace Project No.: 10654258

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: 883034

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

Batch: 883078

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

Batch: 883098

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

ANALYTE QUALIFIERS

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: 0680180.003
Pace Project No.: 10654258

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10654258002	PEO-MW-11-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654258003	PEO-MW-34-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654258004	PEO-MW-35-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654258005	PEO-MW-03-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654258006	PEO-MW-06-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654258007	PEO-MW-21-202305	EPA 3510C	883043	NWTPH-Dx	883550
10654258001	TRIP BLANK-20230520	NWTPH-Gx	883098		
10654258002	PEO-MW-11-202305	NWTPH-Gx	883098		
10654258003	PEO-MW-34-202305	NWTPH-Gx	883098		
10654258004	PEO-MW-35-202305	NWTPH-Gx	883098		
10654258005	PEO-MW-03-202305	NWTPH-Gx	883098		
10654258006	PEO-MW-06-202305	NWTPH-Gx	883098		
10654258007	PEO-MW-21-202305	NWTPH-Gx	883098		
10654258002	PEO-MW-11-202305	EPA 3010A	883771	EPA 6010D	884563
10654258003	PEO-MW-34-202305	EPA 3010A	883771	EPA 6010D	884563
10654258004	PEO-MW-35-202305	EPA 3010A	883771	EPA 6010D	884563
10654258005	PEO-MW-03-202305	EPA 3010A	883771	EPA 6010D	884563
10654258006	PEO-MW-06-202305	EPA 3010A	883771	EPA 6010D	884563
10654258007	PEO-MW-21-202305	EPA 3010A	883771	EPA 6010D	884563
10654258002	PEO-MW-11-202305	EPA 3020A	883772	EPA 6020B	885151
10654258003	PEO-MW-34-202305	EPA 3020A	883772	EPA 6020B	885151
10654258004	PEO-MW-35-202305	EPA 3020A	883772	EPA 6020B	885151
10654258005	PEO-MW-03-202305	EPA 3020A	883772	EPA 6020B	885151
10654258006	PEO-MW-06-202305	EPA 3020A	883772	EPA 6020B	885151
10654258007	PEO-MW-21-202305	EPA 3020A	883772	EPA 6020B	885151
10654258002	PEO-MW-11-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10654258003	PEO-MW-34-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10654258004	PEO-MW-35-202305	EPA 3510C	883092	EPA 8270E by SIM	883334
10654258005	PEO-MW-03-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10654258006	PEO-MW-06-202305	EPA 3510C	883092	EPA 8270E by SIM	883334
10654258007	PEO-MW-21-202305	EPA 3510C	882901	EPA 8270E by SIM	883034
10654258001	TRIP BLANK-20230520	EPA 8260D	883078		
10654258002	PEO-MW-11-202305	EPA 8260D	883078		
10654258003	PEO-MW-34-202305	EPA 8260D	883078		
10654258004	PEO-MW-35-202305	EPA 8260D	883078		
10654258005	PEO-MW-03-202305	EPA 8260D	883078		
10654258006	PEO-MW-06-202305	EPA 8260D	883078		
10654258007	PEO-MW-21-202305	EPA 8260D	883078		
10654258002	PEO-MW-11-202305	SM 2320B	884599		
10654258003	PEO-MW-34-202305	SM 2320B	884599		
10654258004	PEO-MW-35-202305	SM 2320B	884599		
10654258005	PEO-MW-03-202305	SM 2320B	884599		
10654258006	PEO-MW-06-202305	SM 2320B	884599		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0680180.003

Pace Project No.: 10654258

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10654258007	PEO-MW-21-202305	SM 2320B	884601		
10654258002	PEO-MW-11-202305	EPA 300.0	884917		
10654258003	PEO-MW-34-202305	EPA 300.0	884917		
10654258004	PEO-MW-35-202305	EPA 300.0	884917		
10654258005	PEO-MW-03-202305	EPA 300.0	884917		
10654258006	PEO-MW-06-202305	EPA 300.0	884917		
10654258007	PEO-MW-21-202305	EPA 300.0	884917		

REPORT OF LABORATORY ANALYSIS

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Effective Date: 4/14/2023

Sample Condition Upon Receipt Client Name: ERM

Project #: WO#: 10654258 PM: JMT Due Date: 06/07/23 CLIENT: ERM-Oregon

Courier: FedEx UPS USPS Client Pace Speedee Commercial

Tracking Number: 5923 7146 1064 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 (0436) T3 (0459) T4 (0402) T5 (0178) Type of Ice: Wet Blue Dry None T6 (0235) T7 (0042) T8 (0775) T9(0727) 01339252/1710 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: -0.1 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: HES-23-23 Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

Table with 2 columns: Location (Check one) and COMMENTS. Rows include Chain of Custody Present and Filled Out?, Chain of Custody Relinquished?, Sampler Name and/or Signature on COC?, Samples Arrived within Hold Time?, Short Hold Time Analysis (<72 hr)?, Rush Turn Around Time Requested?, Sufficient Sample Volume?, Correct Containers Used?, -Pace Containers Used?, Containers Intact?, Field Filtered Volume Received for Dissolved Tests?, Is sufficient information available to reconcile the samples to the COC?, All containers needing acid/base preservation have been checked?, All containers needing preservation are found to be in compliance with EPA recommendation?, Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS, Headspace in Methyl Mercury Container?, Extra labels present on soil VOA or WIDRO containers?, Headspace in VOA Vials (greater than 6mm)?, 3 Trip Blanks Present?, Trip Blank Custody Seals Present?.

CLIENT NOTIFICATION/RESOLUTION Person Contacted: Date/Time: Comments/Resolution: let client know about missing containers-2 coolers are delayed by FedEx Project Manager Review: Julie Bauer Date: 5/23/23 Field Data Required? Yes No

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: Line:



DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? Yes No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? Yes No

If anything is OVER 6.0° C, you **MUST** document containers in this section **HERE**



Tracking Number	Temperature
592371461020	1.5
592371461075	1.4
59237146 ? missing label	0.3
592371461064	2.3

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

missing Item # 4 and # 6, All Vials Accounted for.

Effective Date: 4/14/2023

Sample Condition Upon Receipt
 Client Name: ERM

Project #: **WO# : 10654258**
 PM: JMT Due Date: 06/07/23
 CLIENT: ERM-Oregon

Courier: FedEx 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
 Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: T1 (0461) T2 (0436) T3 (0459) T4 (0402) T5 (0178)
 T6 (0235) T7 (0042) T8 (0775) T9(0727) 01339252/1710
 Biological Tissue Frozen? Yes No N/A
 Temp Blank? Yes No
 Type of Ice: Wet Blue Dry None
 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: 1.3, 1.4 °C
 Average Corrected Temp (no temp blank only): _____ °C
 Correction Factor: +0.3 Cooler Temp Corrected w/temp blank: 1.6, 1.7 °C
 See Exceptions ENV-FRM-MIN4-0142 1 Container

USDA Regulated Soil: N/A, water sample/other: _____) Date/Initials of Person Examining Contents: JMM 5/24/23

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

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

Location (Check one):	Duluth	Minneapolis	Virginia	COMMENTS
Chain of Custody Present and Filled Out?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Relinquished?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Sampler Name and/or Signature on COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Samples Arrived within Hold Time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other _____
Rush Turn Around Time Requested?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Sufficient Sample Volume?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Correct Containers Used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. <u>2 AG10, 2 AG3H, 1 BP3N, 1 BP3U</u>
-Pace Containers Used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Per sample, received MW-35 and MW-06</u>
Containers Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12. Sample # <u>061-002</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRD/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pH Paper Lot # Residual Chlorine 0-6 Roll <u>208422</u> 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
3 Trip Blanks Present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pace Trip Blank Lot # (if purchased): _____
Trip Blank Custody Seals Present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____
 Project Manager Review: Julia Barber Date: 5/24/23

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: JMM Line: 2



DC#_ Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt
(SCUR) Exception Form

Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? Yes No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

Multiple Cooler Project? Yes No

If anything is OVER 6.0° C, you **MUST** document containers in this section **HERE**



Tracking Number	Temperature
592371461053	1.6
592371461031	1.7

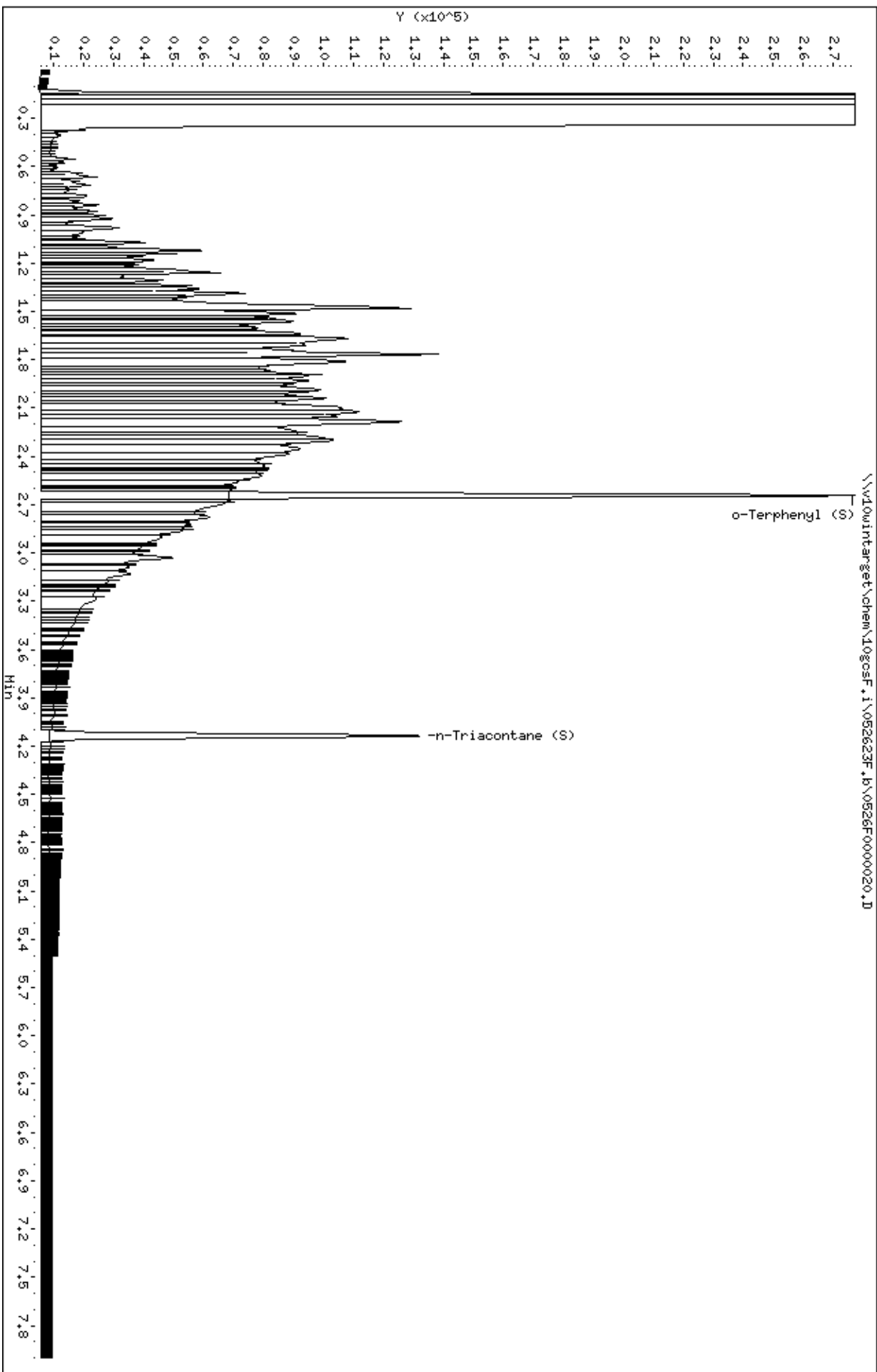
Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples										
Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	
								<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

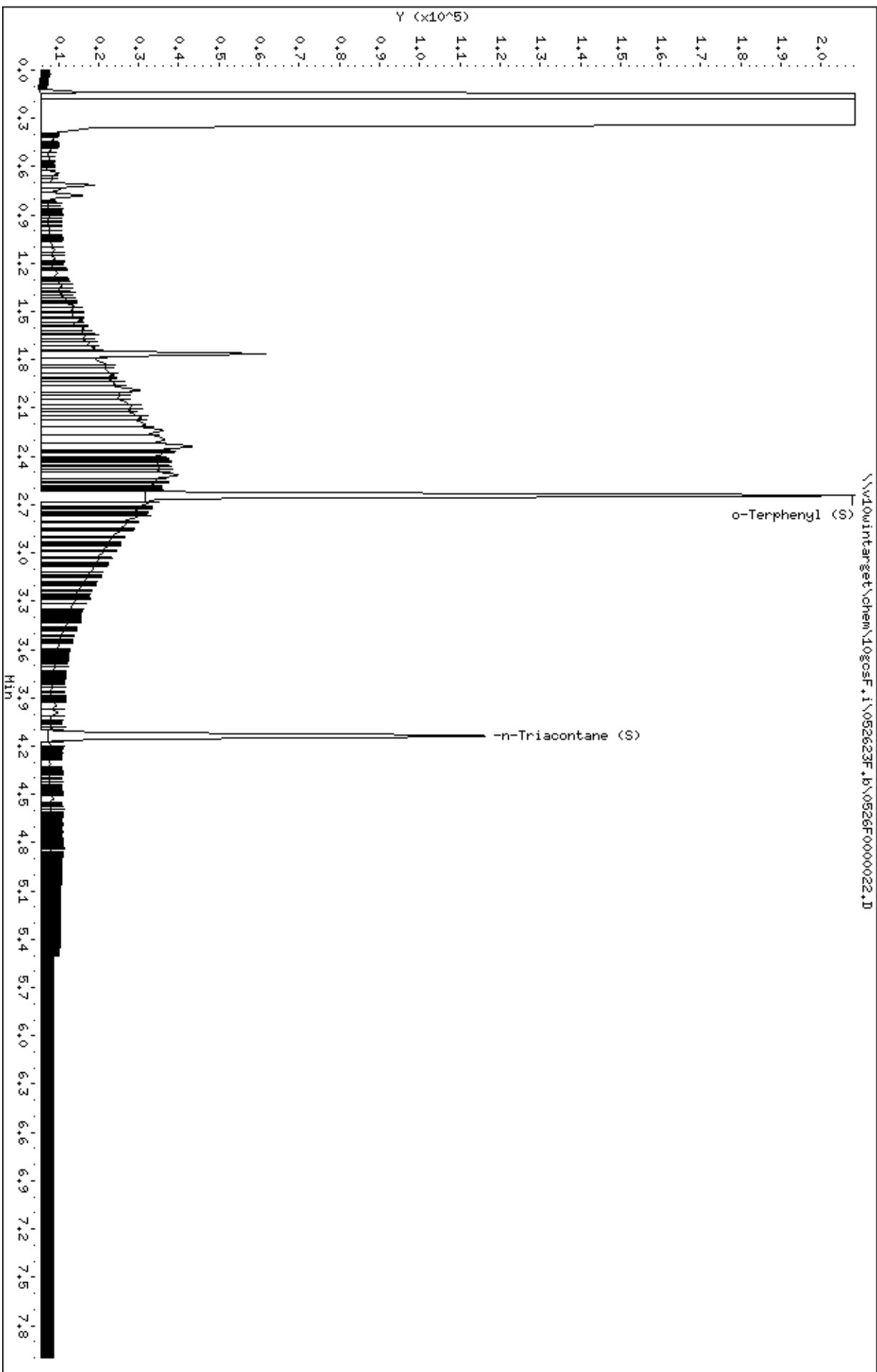
Data File: \\10win\target\chem\10gocsf.1\052623F.1\0526F0000020.D
Date: 26-MAY-2023 11:25
Client ID: PEO-HM-11-202305
Sample Info: 10654258002
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



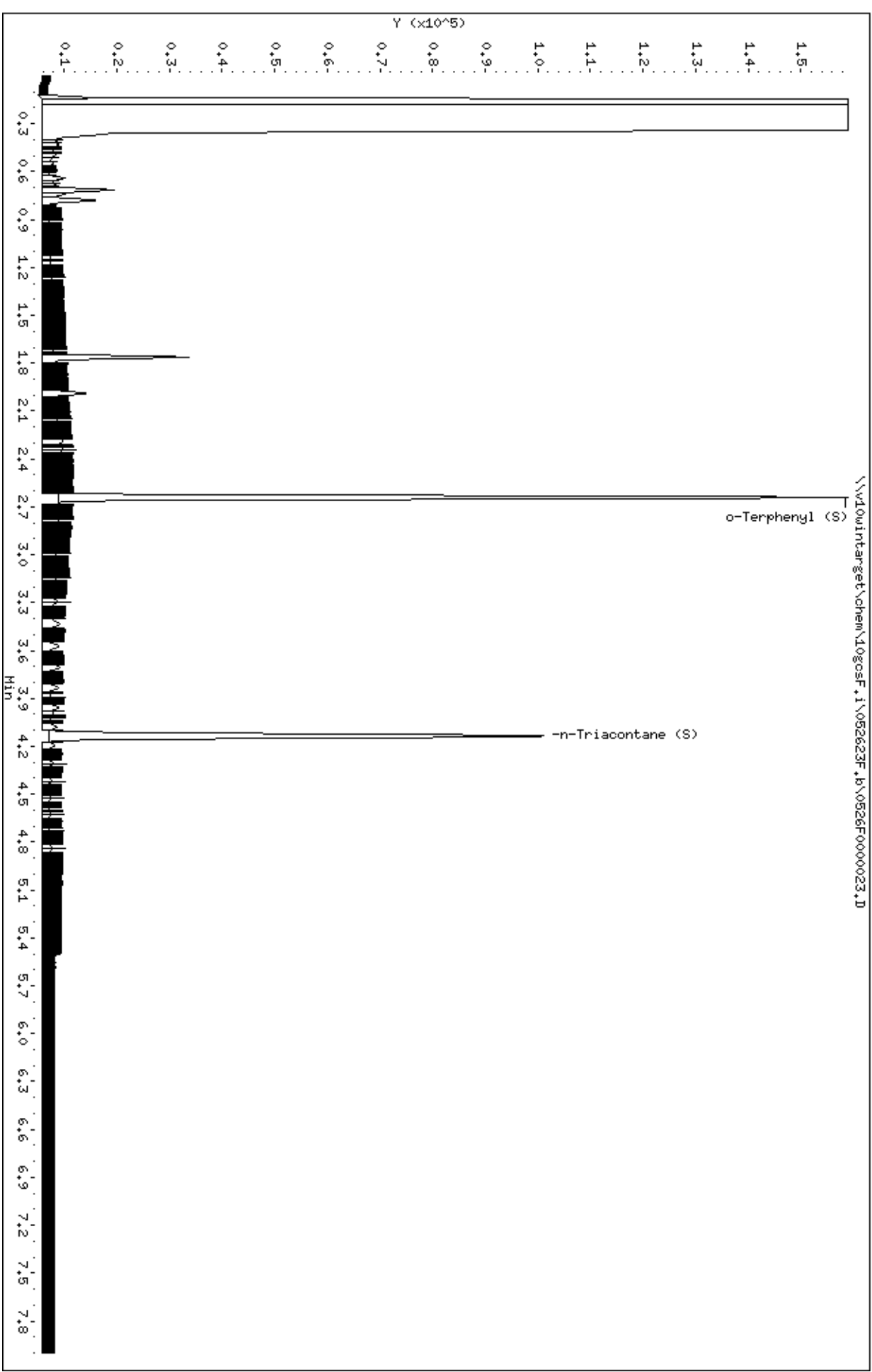
Data File: \\w10wintrarget\chem\10gocsf.1\052623F.1\0526F0000022.D
Date : 26-MAY-2023 11:48
Client ID: PE0-HM-34-202305
Sample Info: 10654258003
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: 10gocsf.1
Operator: EB3
Column diameter: 0.32



Data File: \\dowintarget\chem\logosf.1\052623F.1\0526F0000023.D
Date: 26-MAY-2023 11:59
Client ID: PED-HM-35-202305
Sample Info: 10654258004
Volume Injected (uL): 1.0
Column phase: DB-5-MS2420048

Instrument: logosf.1
Operator: EB3
Column diameter: 0.32



Date : 26-MAY-2023 12:11

Instrument: logosf.1

Client ID: PED-HM-03-202305

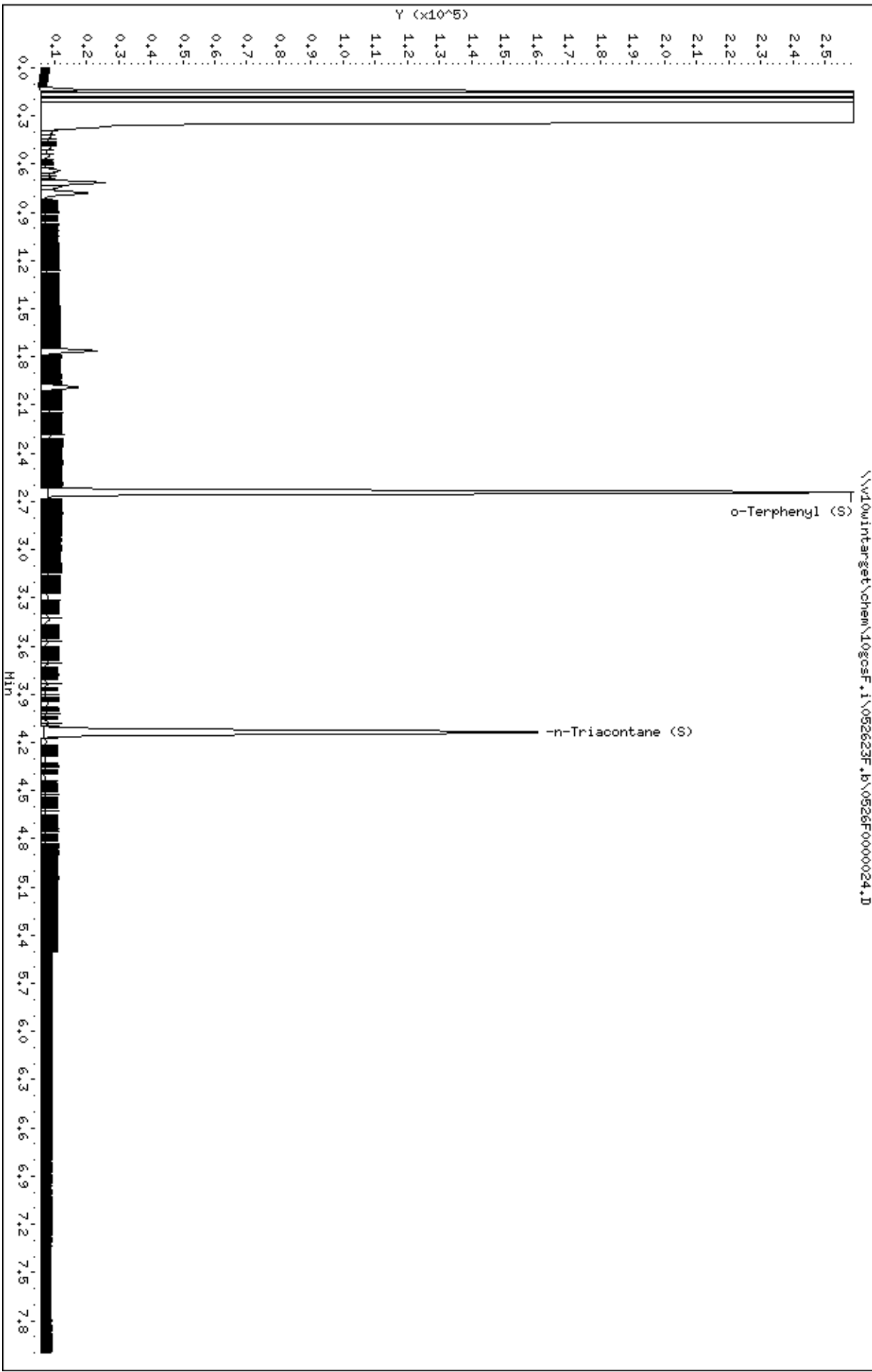
Sample Info: 10654258005

Volume Injected (uL): 1.0

Operator: EB3

Column phase: DB-5-MS2420048

Column diameter: 0.32



Date : 26-MAY-2023 12:22

Instrument: 10gocsf.1

Client ID: PED-HM-06-202305

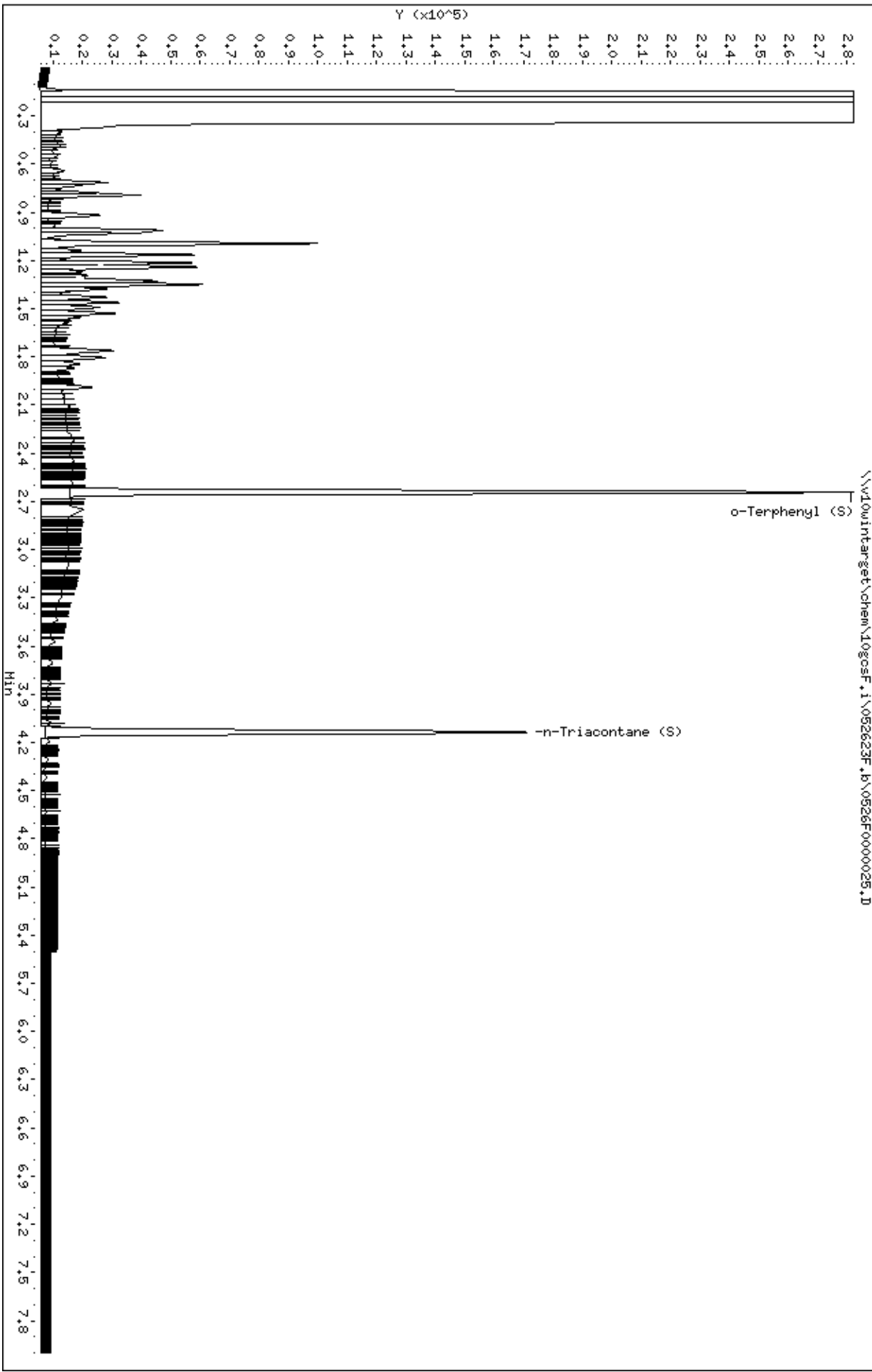
Operator: EB3

Sample Info: 10654258006

Volume Injected (uL): 1.0

Column diameter: 0.32

Column phase: DB-5-MS2420048



Date : 26-MAY-2023 12:34

Instrument: 10gocsf.1

Client ID: PED-HM-21-202305

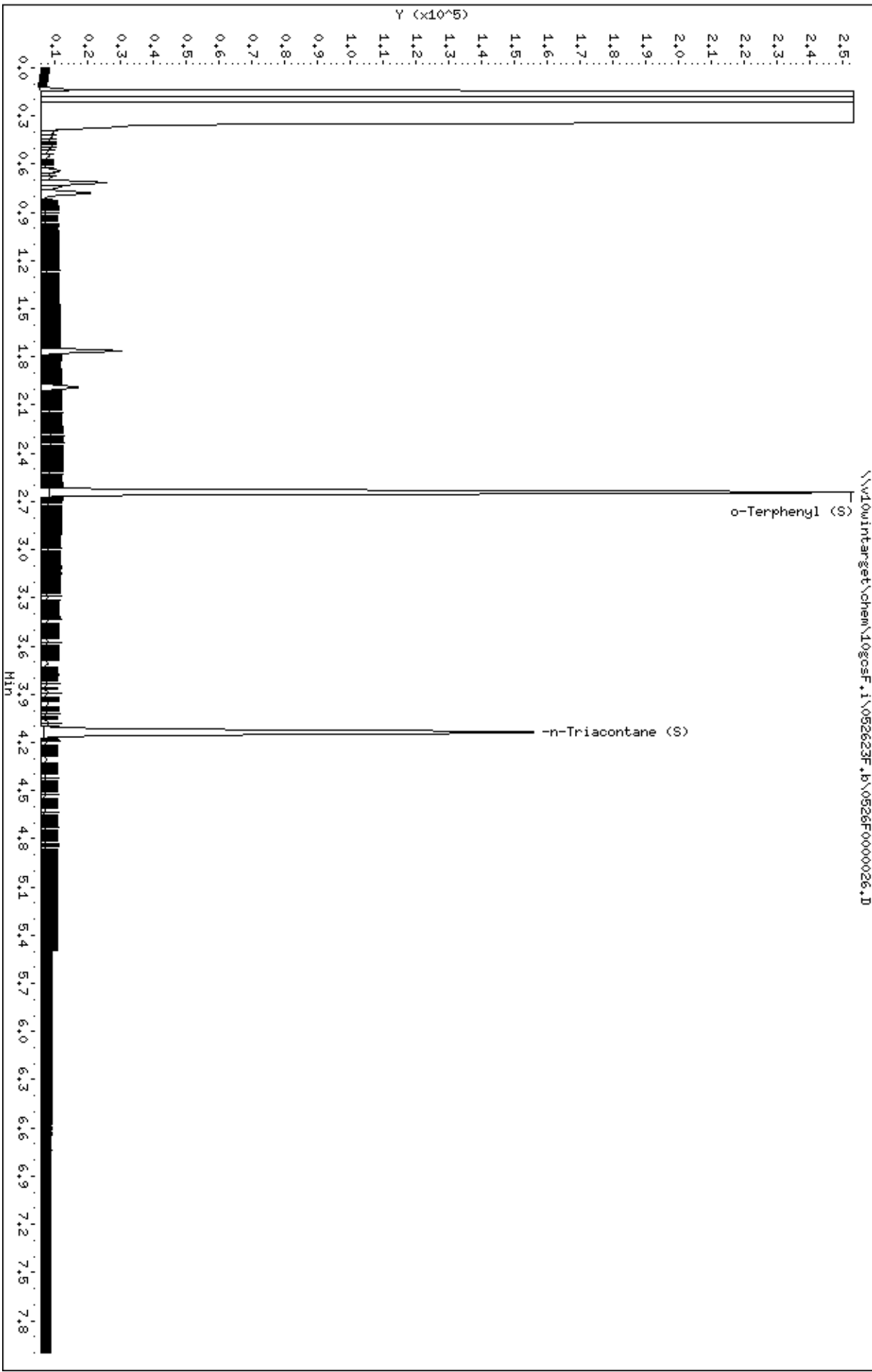
Operator: EB3

Sample Info: 10654258007

Volume Injected (uL): 1.0

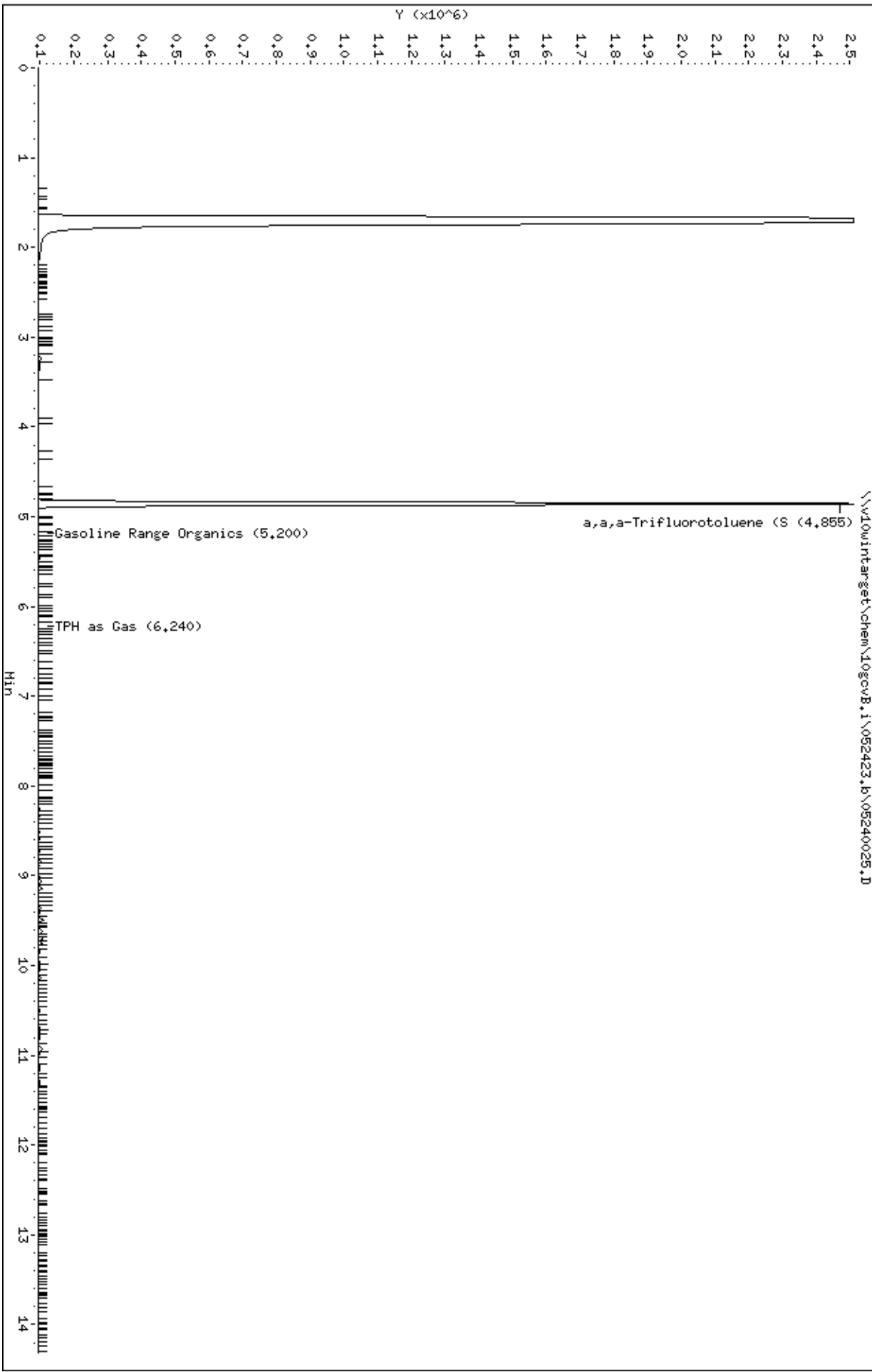
Column diameter: 0.32

Column phase: DB-5-MS2420048



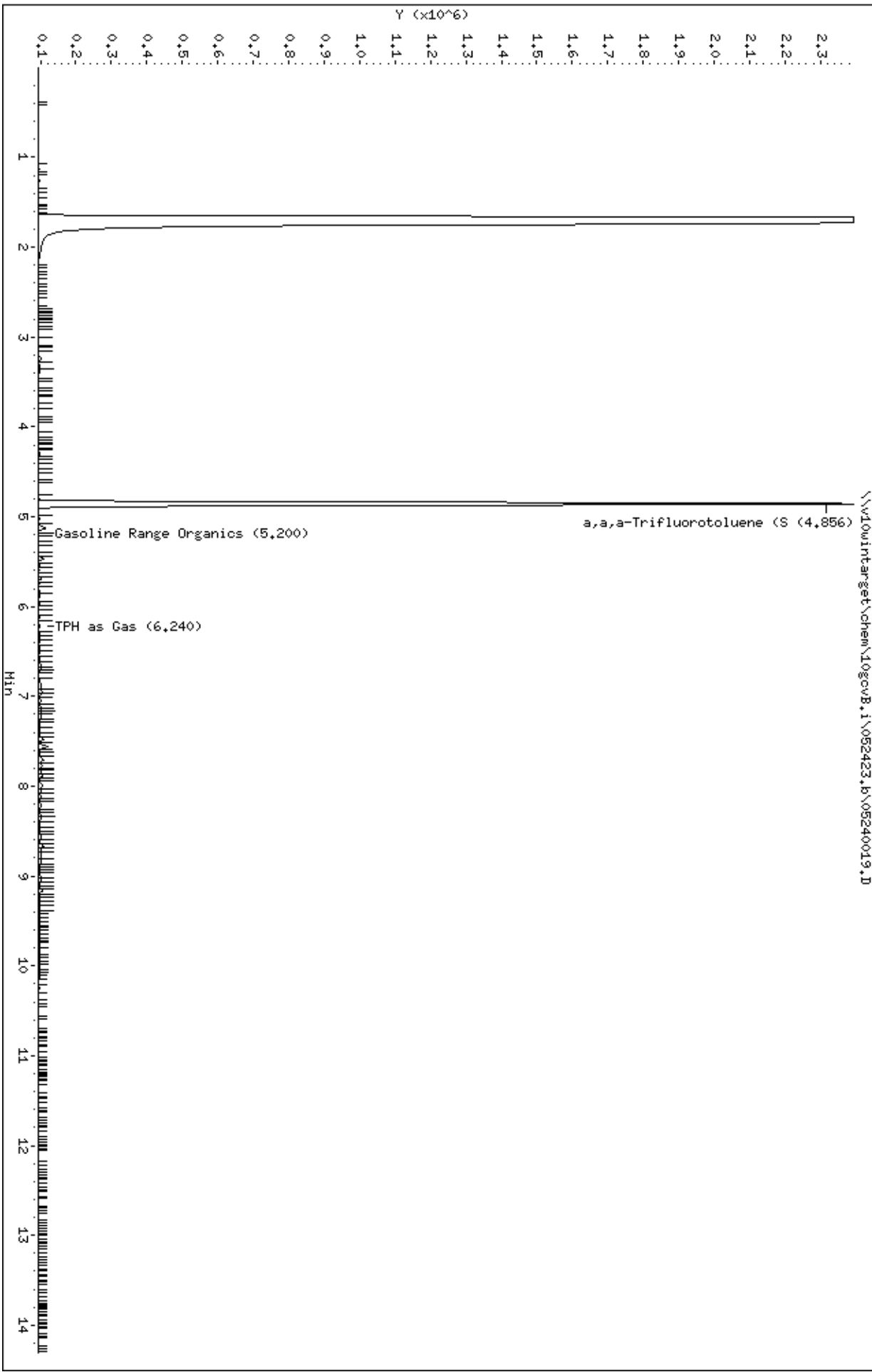
Data File: \\vlowintarget\chem\10gcvb.1\052423.b\05240025.D
Date: 24-MAY-2023 21:35
Client ID: TRIP BLANK-20230520
Sample Info: 10654258001,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TM2
Column diameter: 0.18



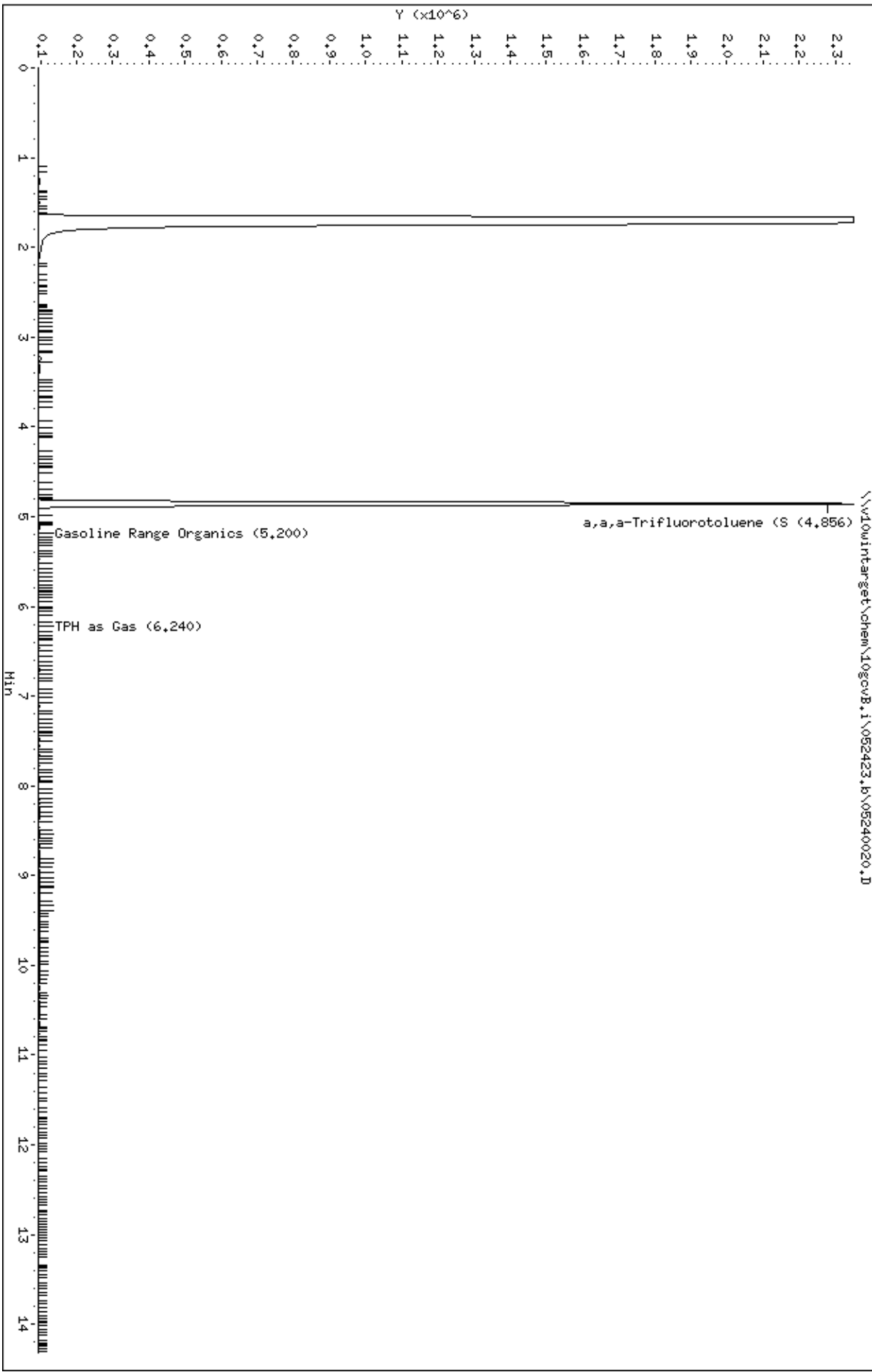
Data File: \\LowIntarget\chem\logvb.i\052423.b\05240019.D
Date: 24-MAY-2023 19:45
Client ID: PED-HM-11-202305
Sample Info: 10654258002,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



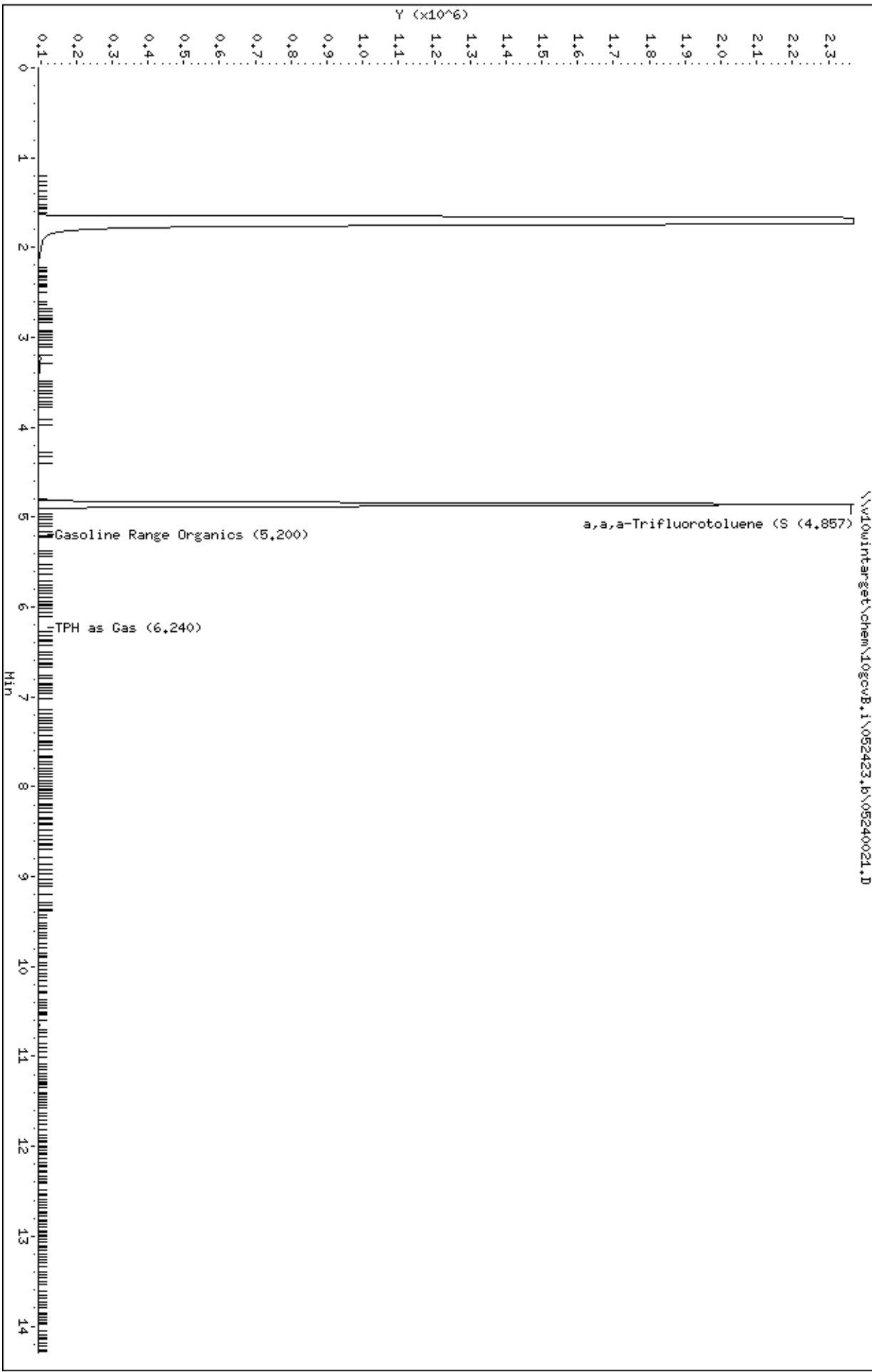
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Date: 24-MAY-2023 20:03
Client ID: PED-HM-34-202305
Sample Info: 10654258003,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TH2
Column diameter: 0.18



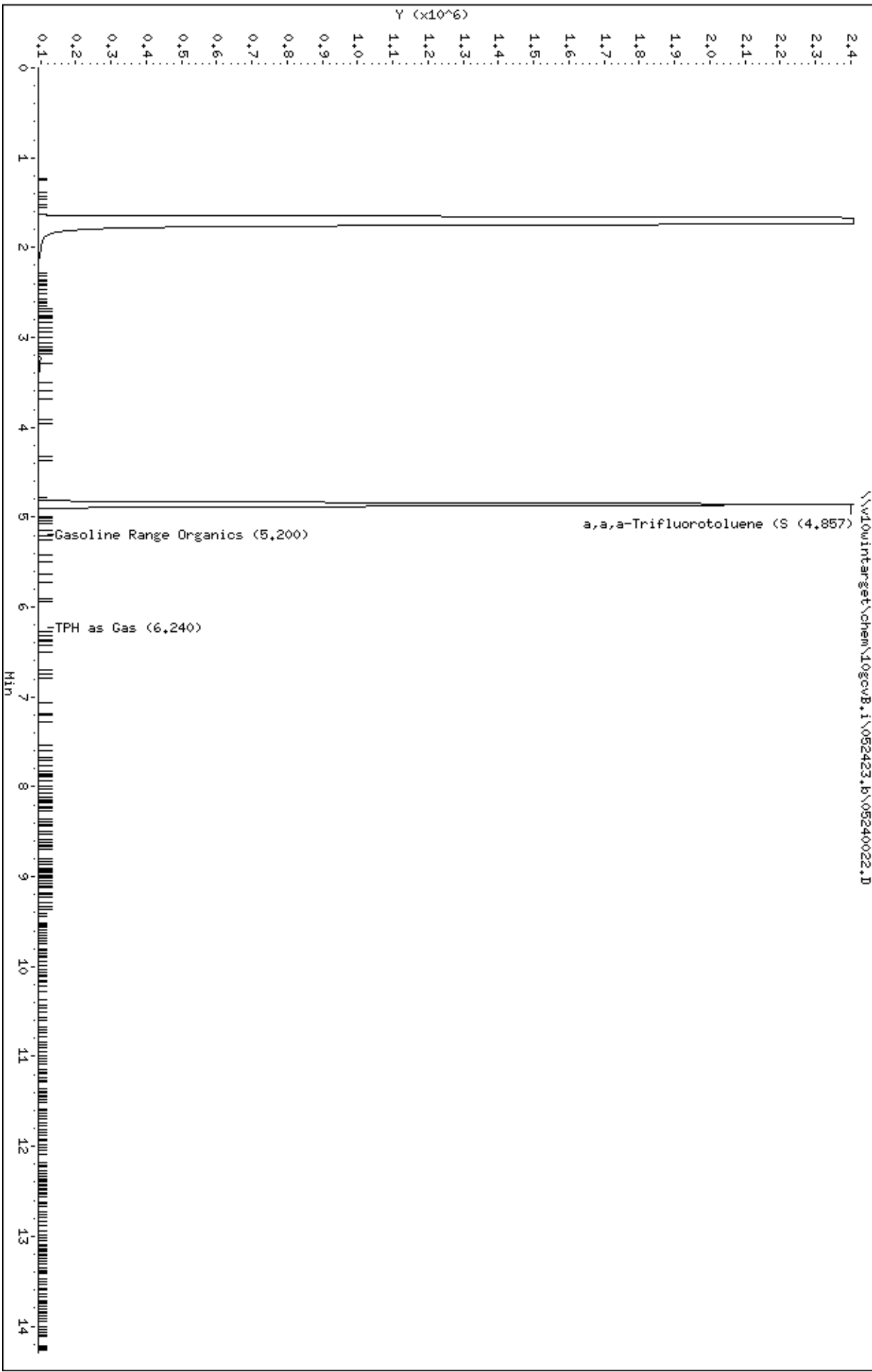
Data File: \\Lowintarget\chem\logvb.i\052423.b\05240021.D
Date: 24-MAY-2023 20:22
Client ID: PE0-HM-35-202305
Sample Info: 10654258004,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TM2
Column diameter: 0.18



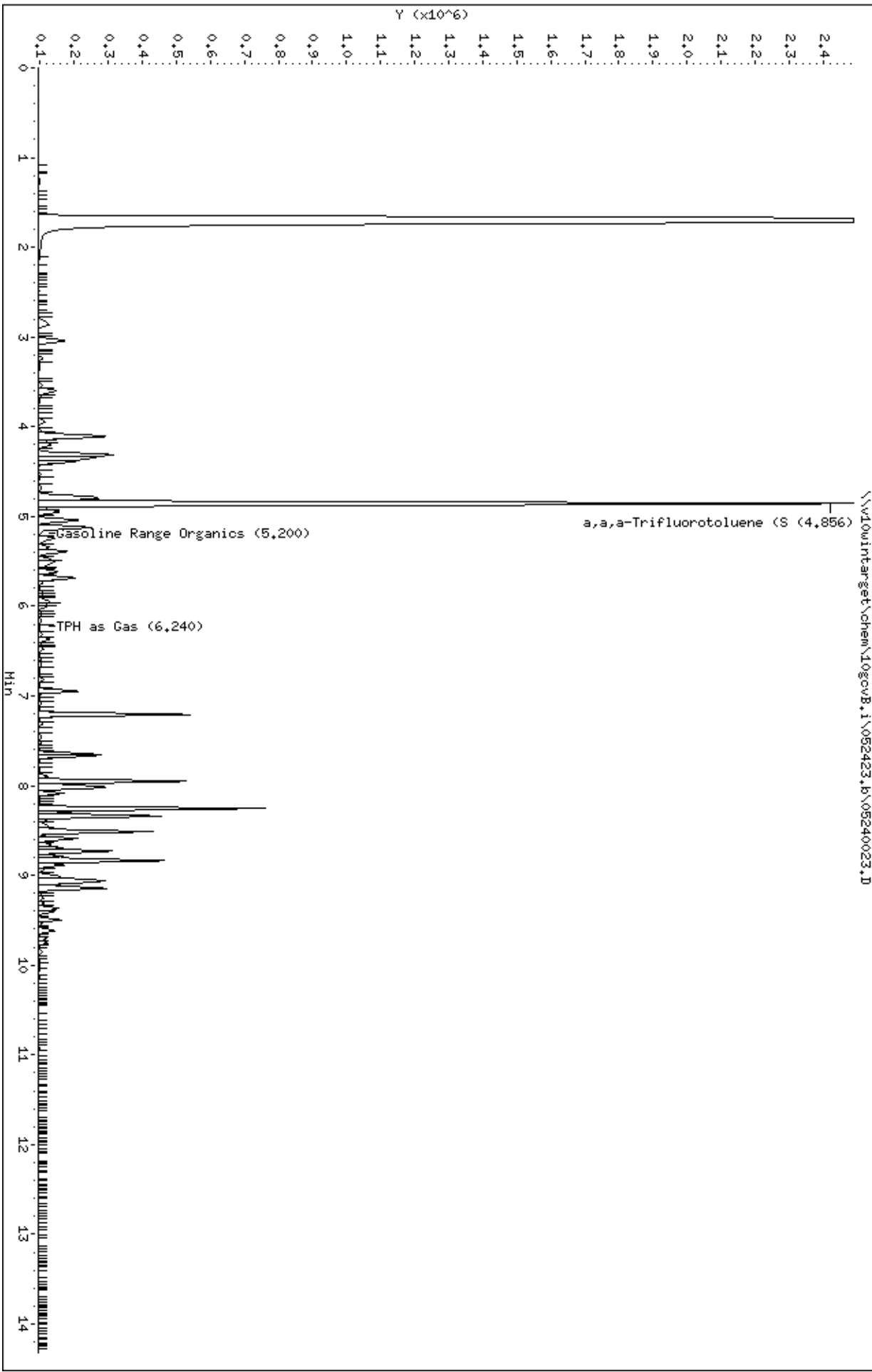
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Date: 24-MAY-2023 20:40
Client ID: PED-HM-03-202305
Sample Info: 10654258005,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TH2
Column diameter: 0.18



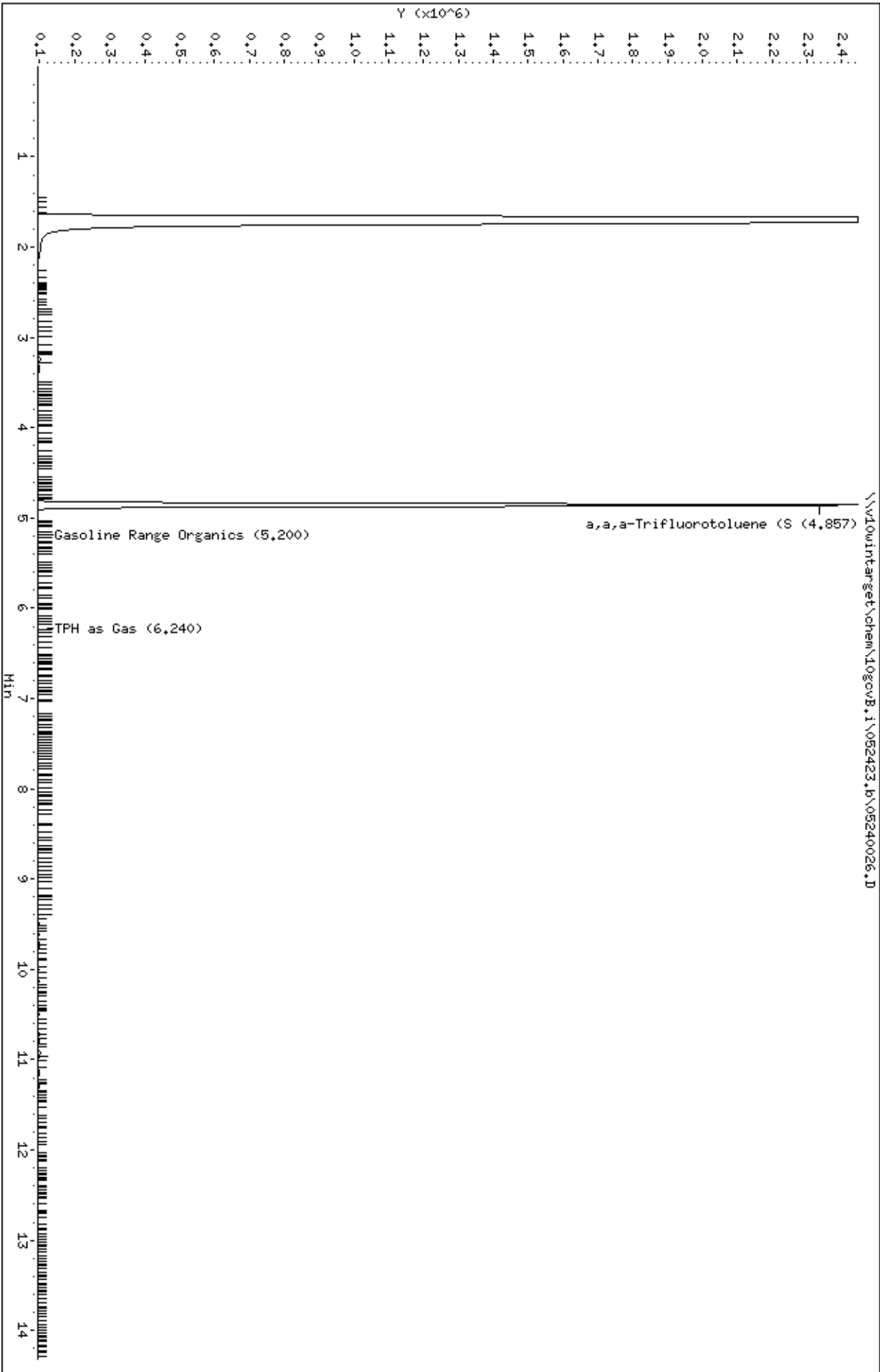
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Date: 24-MAY-2023 20:58
Client ID: PED-HM-06-202305
Sample Info: 10654258006,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.i
Operator: TH2
Column diameter: 0.18



Data File: \\vdowintarget\chem\10gcvb.1\052423.b\05240026.D
Date: 24-MAY-2023 21:53
Client ID: PED-HM-21-202305
Sample Info: 10654258007,
Purge Volume: 5.0
Column phase: DB-624US1279823H

Instrument: 10gcvb.1
Operator: TM2
Column diameter: 0.18





May 31, 2023

Ms. Julie Bowser
Pace Analytical Minnesota
1700 Elm Street
Minneapolis, MN 55414

Dear Ms. Bowser,

On May 24th, 7 samples were received by our laboratory and assigned our laboratory project number EV23050170. The project was identified as your Workorder 10654258 / Workorder Name 0680180.003. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-01
CLIENT SAMPLE ID	TRIP BLANK-20230520	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/20/2023 8:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.8		UG/L	1	1.1	0.38	05/30/2023	DLC

SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	91.2%		10.0	9.12	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-02
CLIENT SAMPLE ID	PEO-MW-11-202305	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/19/2023 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	94		UG/L	1	1.1	0.38		05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	106%		10.0	10.6	60	140		05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-03
CLIENT SAMPLE ID	PEO-MW-34-202305	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/19/2023 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS		ANALYSIS DATE	ANALYSIS BY
							MDL			
>C10-C12 Aliphatics	NWVPH	17		UG/L	1	1.1	0.38		05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX		ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	107%		10.0	10.7	60	140		05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-04
CLIENT SAMPLE ID	PEO-MW-35-202305	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/19/2023 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	4.8		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	96.6%		10.0	9.66	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-05
CLIENT SAMPLE ID	PEO-MW-03-202305	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/19/2023 11:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.8		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	103%		10.0	10.3	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-06
CLIENT SAMPLE ID	PEO-MW-06-202305	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/19/2023 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	500		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	108%		10.0	10.8	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS JOB#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	ALS SAMPLE#:	EV23050170-07
CLIENT SAMPLE ID	PEO-MW-21-202305	DATE RECEIVED:	05/24/2023
		COLLECTION DATE:	5/20/2023 9:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	QUAL	UNITS	DILUTION FACTOR	RL	LIMITS MDL	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWVPH	1.5		UG/L	1	1.1	0.38	05/30/2023	DLC
SURROGATE	METHOD	RESULTS	QUAL	SPIKE ADDED	RESULT	MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	98.0%		10.0	9.80	60	140	05/30/2023	DLC

CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-053023W - Batch R436704 - Water by NWVPH Prepared 05/30/2023 00:00

ANALYTE	METHOD	RESULTS	QUAL	UNITS	RL	LIMITS			ANALYSIS DATE	ANALYSIS BY
						MDL	PQL			
>C10-C12 Aliphatics	NWVPH	1.3		UG/L	1.1	0.38	1.1		05/30/2023	DLC

SURROGATE	METHOD	%REC	QUAL	SPIKE ADDED	RESULT	CONTROL LIMITS		ANALYSIS DATE	ANALYSIS BY
						MIN	MAX		
TFT - Aliphatic	NWVPH	96.6		10.0	9.66	60	140	05/30/2023	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414	DATE:	5/31/2023
CLIENT CONTACT:	Julie Bowser	ALS SDG#:	EV23050170
CLIENT PROJECT:	Workorder 10654258 / Workorder Name 0680180.003	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R436704 - Water by NWVPH Prepared 05/30/2023 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
							MIN	MAX	RPD		
>C10-C12 Aliphatics - BS	NWVPH	93.6			20.0	18.7	70	130		05/30/2023	DLC
>C10-C12 Aliphatics - BSD	NWVPH	86.9	7		20.0	17.4	70	130	25	05/30/2023	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	RESULT	LIMITS			ANALYSIS DATE	ANALYSIS BY
							MIN	MAX	RPD		
TFT - Aliphatic - BS	NWVPH	90.7			10.0	9.07	60	140		05/30/2023	DLC
TFT - Aliphatic - BSD	NWVPH	99.9			10.0	9.99	60	140		05/30/2023	DLC

APPROVED BY

Rob Greer
Laboratory Director

EV23050170

Chain of Custody

PASI Minnesota Laboratory



Workorder: 10654258

Workorder Name: 0680180.003

Results Requested By: 6/7/2023



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

Subcontract To: ALS
 8620 Holly Drive
 Suite 100
 Everett, WA 98208
 P.O. 10654258

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers			Requested Analysis	LAB USE ONLY
					TOH				
1	TRIP BLANK-20230520	5/20/2023 08:00	10654258001	Water	2				
2	PEO-MW-11-202305	5/19/2023 08:45	10654258002	Water	3				
3	PEO-MW-34-202305	5/19/2023 09:35	10654258003	Water	3				
4	PEO-MW-35-202305	5/19/2023 10:15	10654258004	Water	3				
5	PEO-MW-03-202305	5/19/2023 11:00	10654258005	Water	3				
6	PEO-MW-06-202305	5/19/2023 12:30	10654258006	Water	3				
7	PEO-MW-21-202305	5/20/2023 09:45	10654258007	Water	3				

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>Julie Bowser</i>	5/20/2023 15:40	<i>Julie Bowser</i>	5/20/2023 15:40	need chroms flag to MDL Aliphatics C10-C12 only ERM EQUIS edd
2					
3					

Cooler Temperature on Receipt: 1.1 °C Custody Seal: Y or N Received on Ice: Y or N Samples Intact: Y or N

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Pace Analytical

ALS Job #: EV23050170

Project: 10654258 / 0680180.003

Received Date: 5/24/23 Received Time: 0910 By: CE

Type of shipping container: Cooler Box Other

Shipped via: FedEx Ground UPS Mail Courier Hand Delivered
FedEx Express
Priority overnight

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals on outside of shipping container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, how many? <u>1</u> Where? <u>outside</u>			
Custody seal date: <u>5-23</u> Seal name: <u>RM</u>			

Was Chain of Custody properly filled out (ink, signed, dated, etc.)?

Did all bottles have labels?

Did all bottle labels and tags agree with Chain of Custody?

Were samples received within hold time?

Did all bottles arrive in good condition (unbroken, etc.)?

Was sufficient amount of sample sent for the tests indicated?

Was correct preservation added to samples?

If no, Sample Control added preservative to the following:

<u>Sample Number</u>	<u>Reagent</u>	<u>Analyte</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Were VOA vials checked for absence of air bubbles?
Bubbles present in sample #: _____

Temperature of cooler upon receipt: 1.1°C ON ICE Cold Cool Ambient N/A

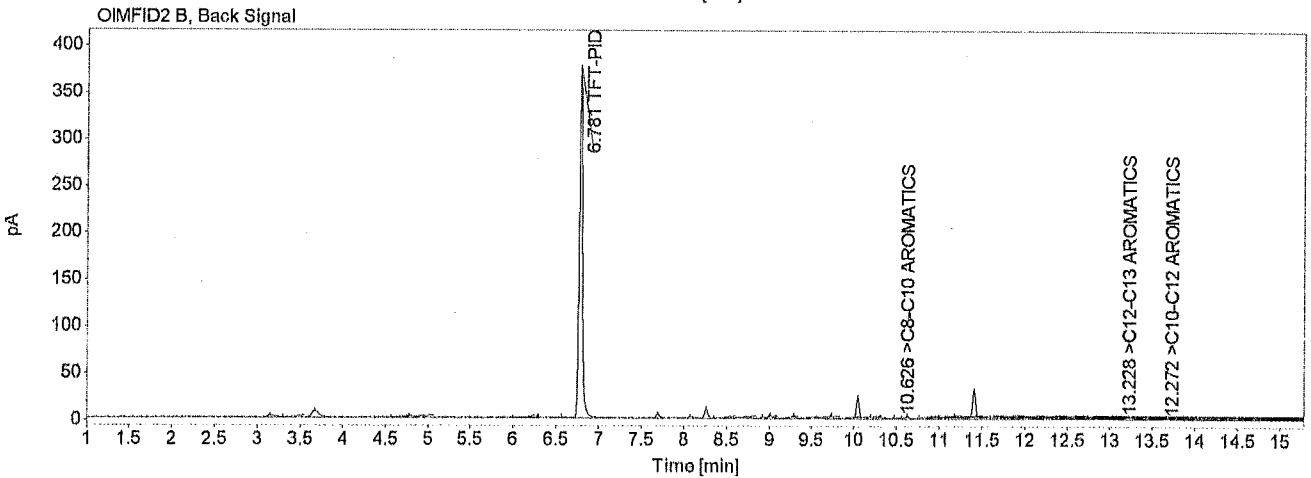
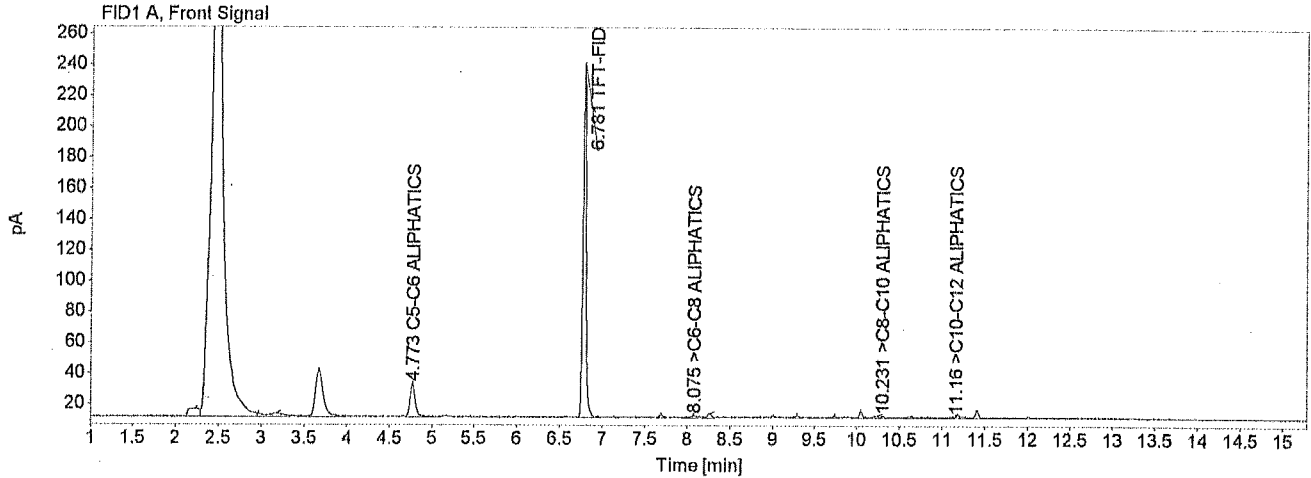
Explain any discrepancies: _____

Was client contacted? _____ Who was called? _____ By whom? _____ Date: _____

Outcome of call: _____

Data file: D:\DATA\1192305301\1192305301\001F1401.D
 Sample name: MB-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 2:59:30 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	91.971	4.773	0.968
TFT-FID	601.239	6.781	9.665 <i>97%</i>
>C6-C8 ALIPHATICS	7.790	8.075	0.081
>C8-C10 ALIPHATICS	5.546	10.231	0.059
>C10-C12 ALIPHATICS	53.330	11.160	1.254

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	995.213	6.781	9.634
>C8-C10 AROMATICS	11.125	10.626	0.050
>C10-C12 AROMATICS	11.576	12.272	0.090
>C12-C13 AROMATICS	22.731	13.228	12.074

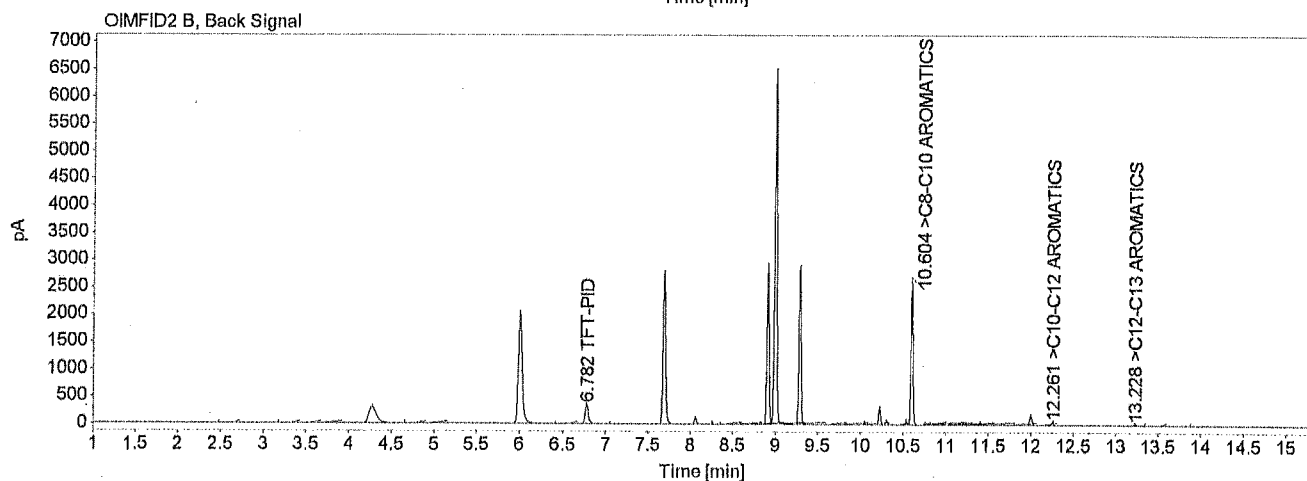
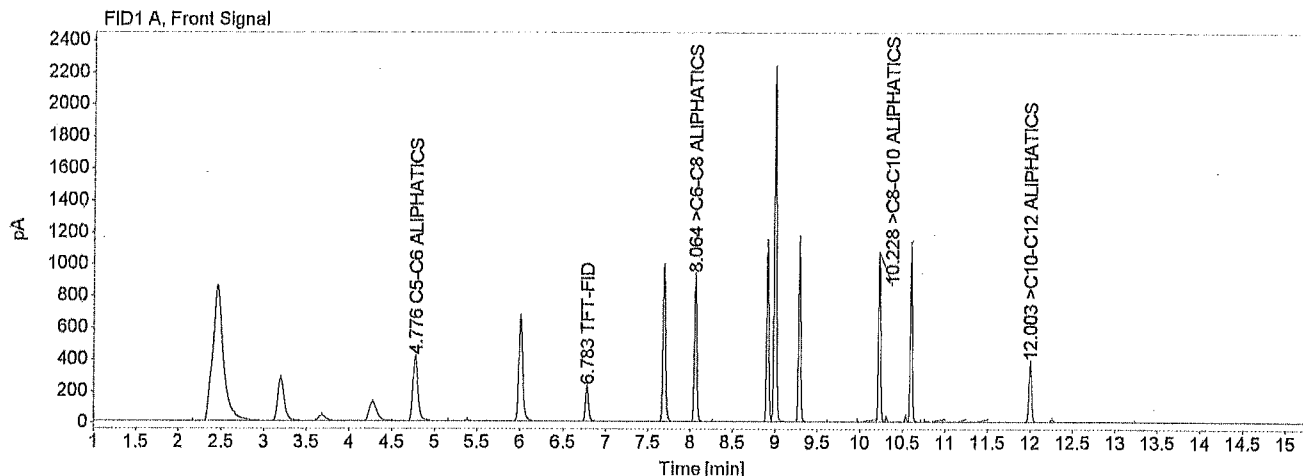
AK

>C10-C12 < 50 µg/l

5-31-23 DC

Data file: D:\DATA\1192305301\1192305301\001F1501.D
 Sample name: BS-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 3:23:14 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

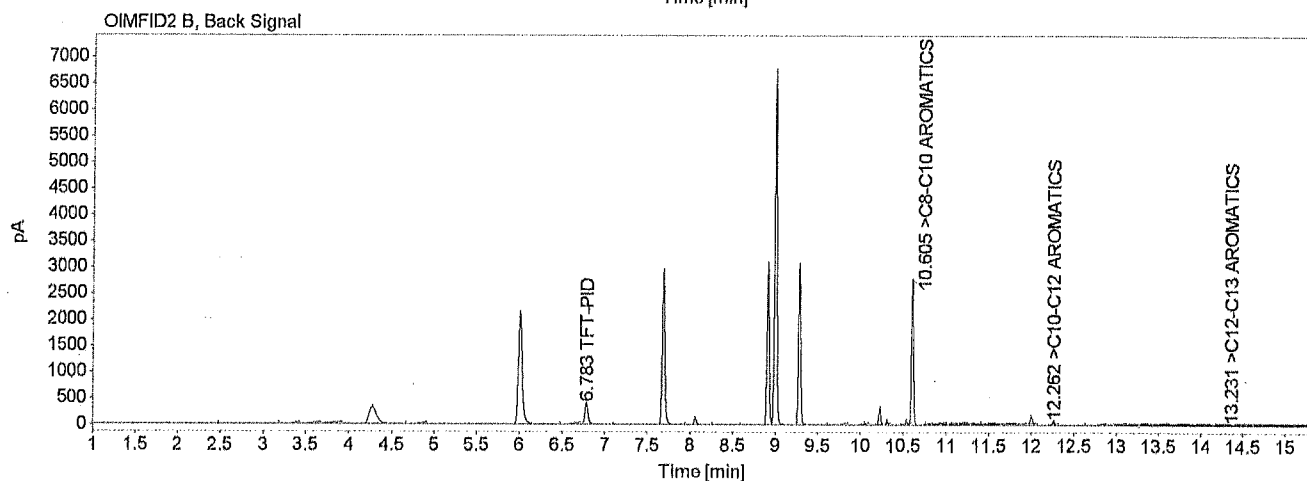
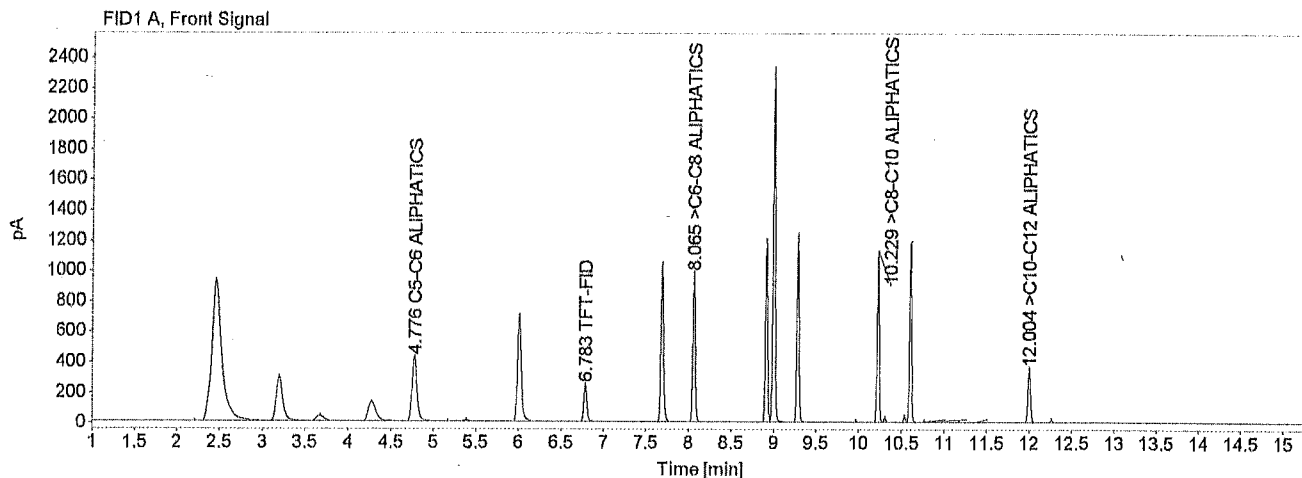
Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1679.296	4.776	17.682
TFT-FID	564.210	6.783	9.070 91%
>C6-C8 ALIPHATICS	1836.251	8.064	19.037
>C8-C10 ALIPHATICS	1803.491	10.228	19.059
>C10-C12 ALIPHATICS	795.924	12.003	18.722 94%
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	945.650	6.782	9.155
>C8-C10 AROMATICS	4370.160	10.604	19.457
>C10-C12 AROMATICS	123.782	12.261	18.246
>C12-C13 AROMATICS	54.734	13.228	29.072

Data file: D:\DATA\1192305301\1192305301\001F1601.D
 Sample name: BSD-053023W VPH
 Dilution: 0.000
 Injection date: 5/30/2023 3:46:56 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119

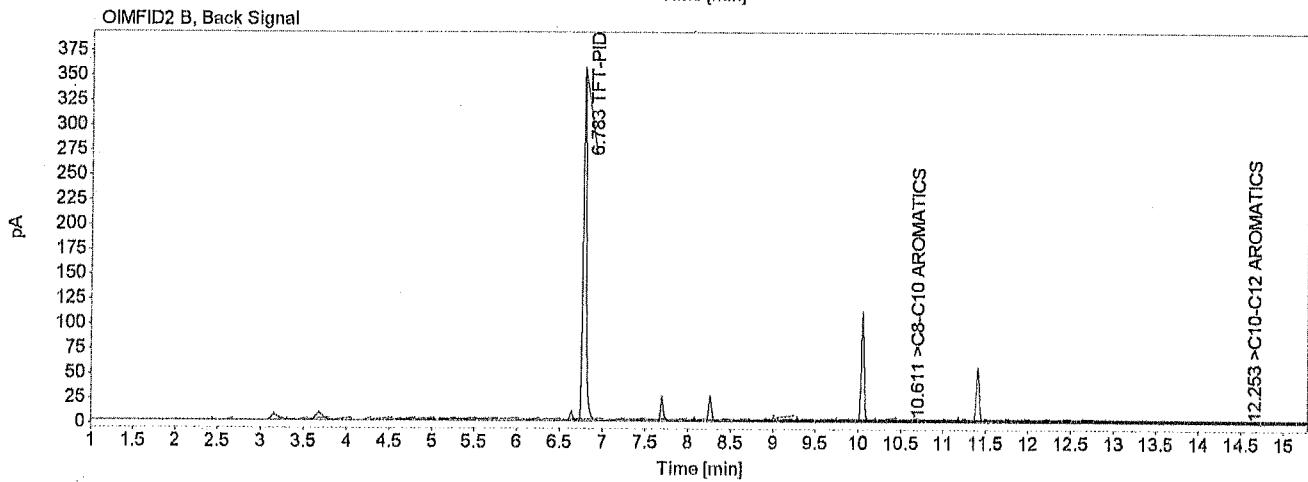
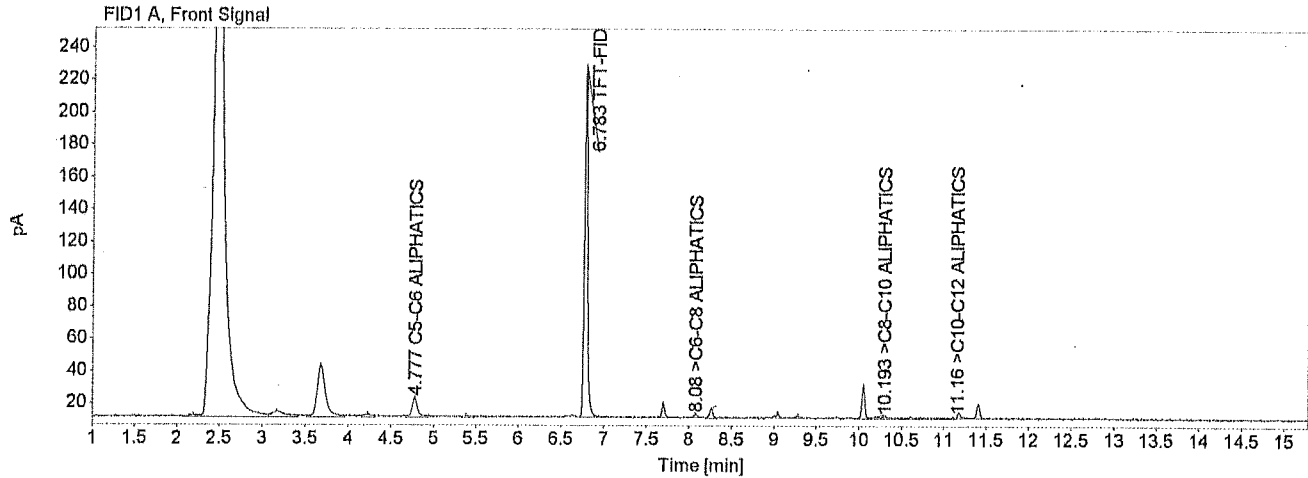


Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	1773.778	4.776	18.677
TFT-FID	621.308	6.783	9.988 100%
>C6-C8 ALIPHATICS	1944.441	8.065	20.158
>C8-C10 ALIPHATICS	1892.756	10.229	20.003
>C10-C12 ALIPHATICS	738.947	12.004	17.382 87%

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1043.163	6.783	10.099
>C8-C10 AROMATICS	4584.278	10.605	20.410
>C10-C12 AROMATICS	121.563	12.262	17.887
>C12-C13 AROMATICS	18.505	13.231	9.829

Data file: D:\DATA\1192305301\1192305301\001F2201.D
 Sample name: EV23050170-01 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 6:09:26 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



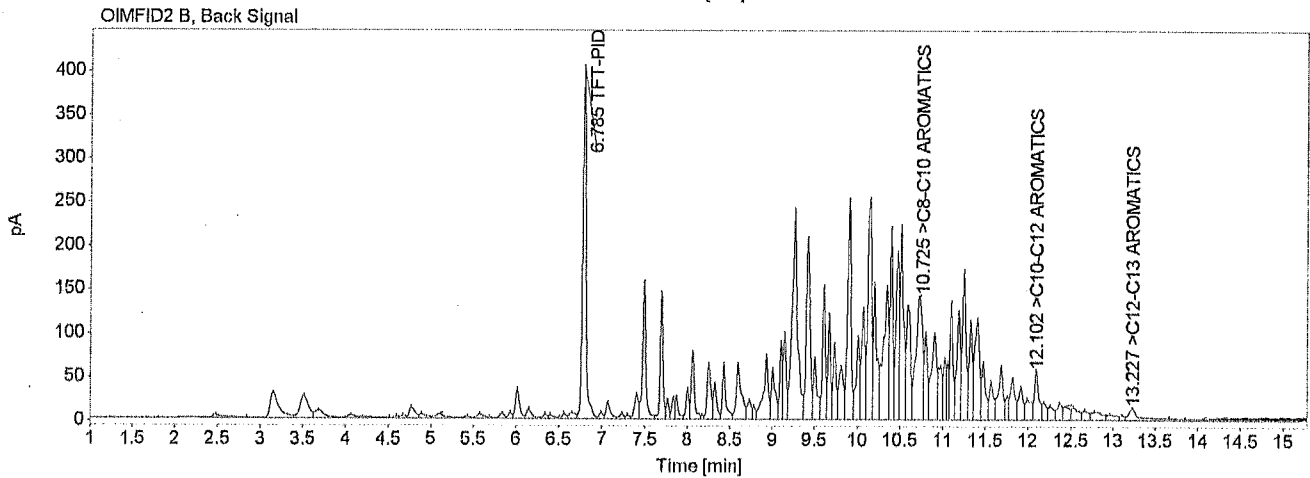
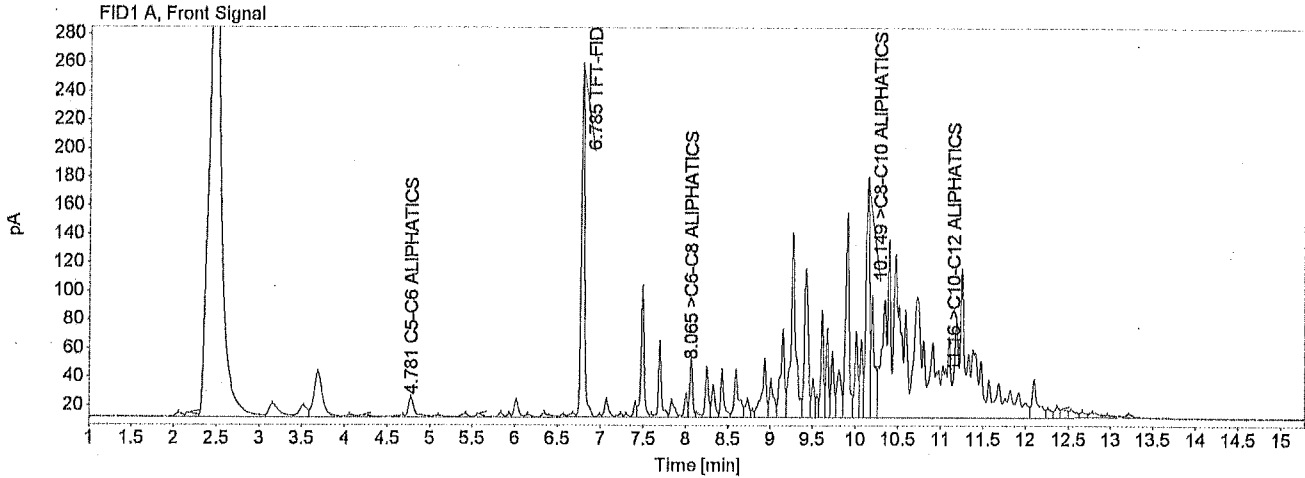
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	56.378	4.777	0.594
TFT-FID	567.202	6.783	9.118 <i>91%</i>
>C6-C8 ALIPHATICS	7.822	8.080	0.081
>C8-C10 ALIPHATICS	5.042	10.193	0.053
>C10-C12 ALIPHATICS	76.206	11.160	1.793

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	935.920	6.783	9.060
>C8-C10 AROMATICS	11.965	10.611	0.053
>C10-C12 AROMATICS	10.011	12.253	0.000
>C12-C13 AROMATICS	8.034	13.142	4.267

ALK
>C10 - C12 < 50 ug/L

Data file: D:\DATA\1192305301\1192305301\001F2901.D
 Sample name: EV23050170-02 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 8:55:43 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



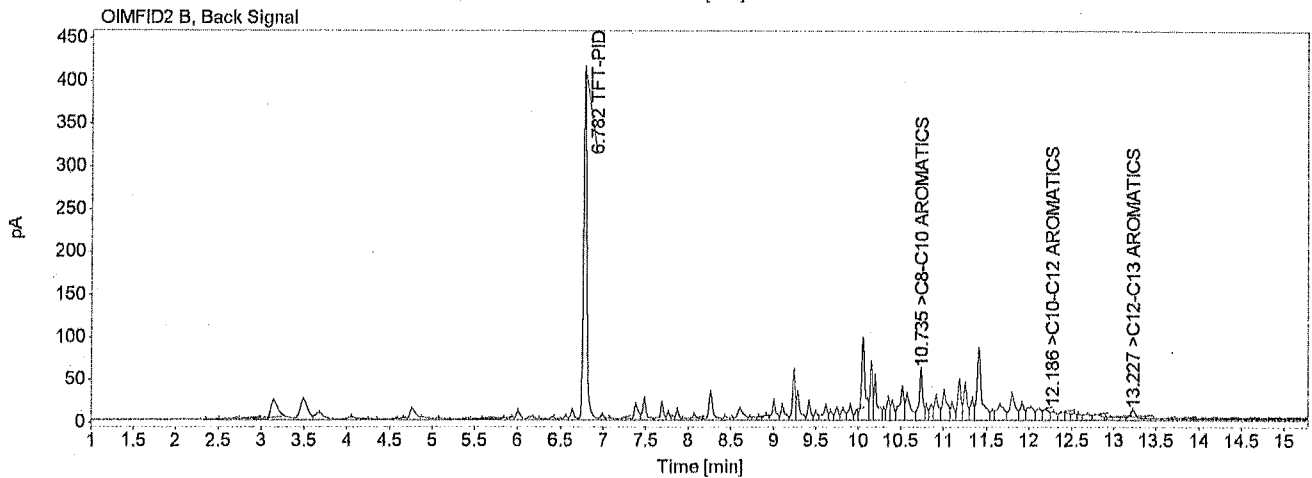
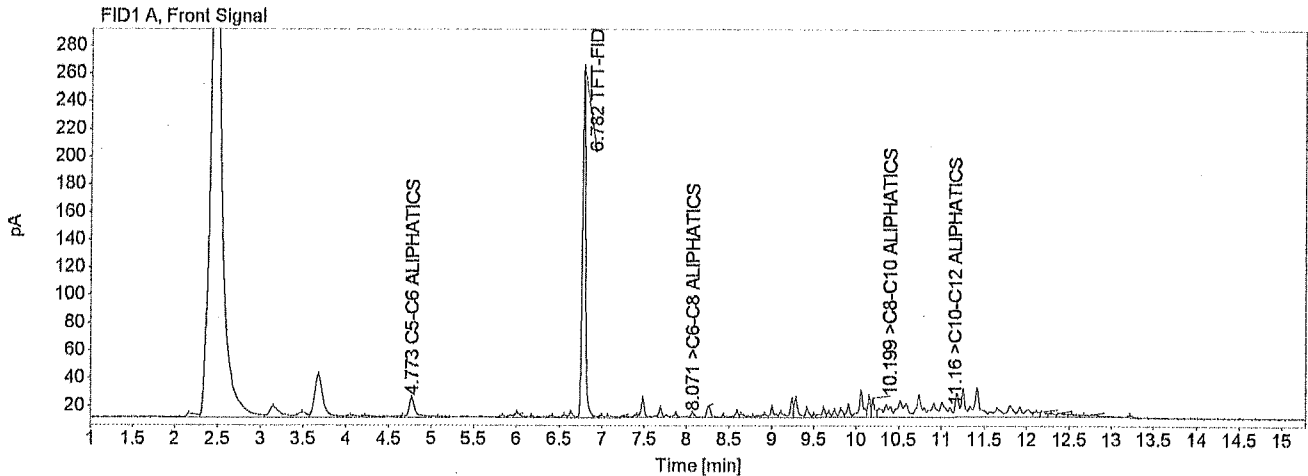
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	67.824	4.781	0.714
TFT-FID	660.884	6.785	10.624 106%
>C6-C8 ALIPHATICS	95.109	8.065	0.986
>C8-C10 ALIPHATICS	508.429	10.149	5.373
>C10-C12 ALIPHATICS	3998.640	11.160	94.057
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1108.176	6.785	10.728
>C8-C10 AROMATICS	771.437	10.725	3.435
>C10-C12 AROMATICS	201.010	12.102	30.742
>C12-C13 AROMATICS	118.271	13.227	62.819

AUK

$>C_{10} - C_{12} = 94 \mu\text{g/L}$

05-31-23 DC

Data file: D:\DATA\1192305301\1192305301\001F2301.D
Sample name: EV23050170-03 VPH
Dilution: 0.000
Injection date: 5/30/2023 6:33:11 PM
Acq. method: GX_SHORT_RUN_040 218.M
Acq. operator: SYSTEM
Analysis method: VPH_S_053023.M
Instrument name: GC#119



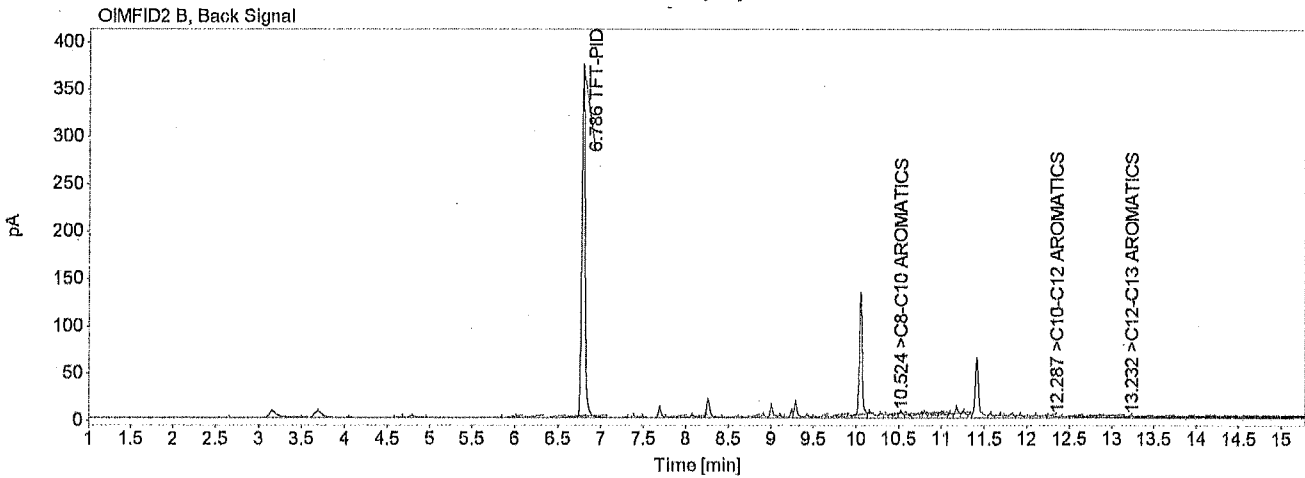
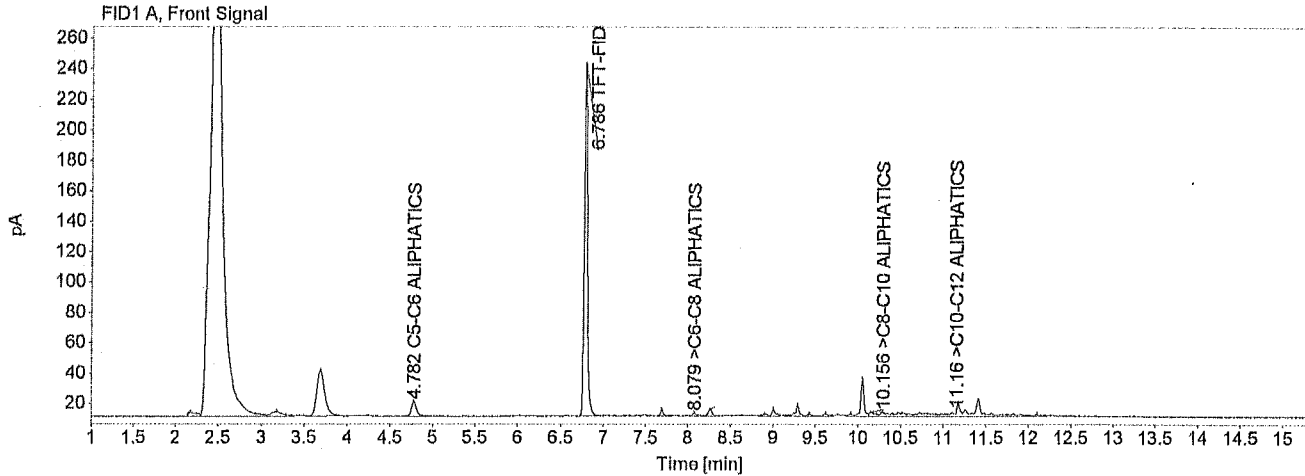
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	74.076	4.773	0.780
TFT-FID	665.965	6.782	10.706 107%
>C6-C8 ALIPHATICS	11.331	8.071	0.117
>C8-C10 ALIPHATICS	34.902	10.199	0.369
>C10-C12 ALIPHATICS	711.131	11.160	16.727

Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1100.965	6.782	10.658
>C8-C10 AROMATICS	175.590	10.735	0.782
>C10-C12 AROMATICS	61.689	12.186	8.199
>C12-C13 AROMATICS	68.167	13.227	36.207

AUK
 > C₁₀ - C₁₂ < 50 µg/L

Data file: D:\DATA\1192305301\1192305301\001F3001.D
 Sample name: EV23050170-04 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 9:19:30 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	41.097	4.782	0.433
TFT-FID	601.111	6.786	9.663 97%
>C6-C8 ALIPHATICS	7.867	8.079	0.082
>C8-C10 ALIPHATICS	15.367	10.156	0.162
>C10-C12 ALIPHATICS	204.315	11.160	4.806

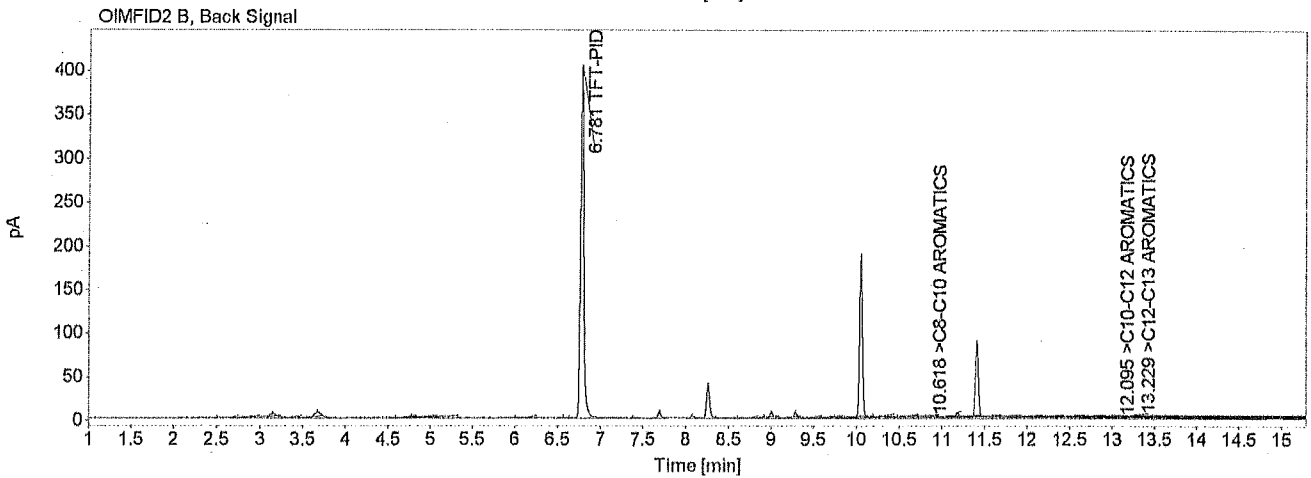
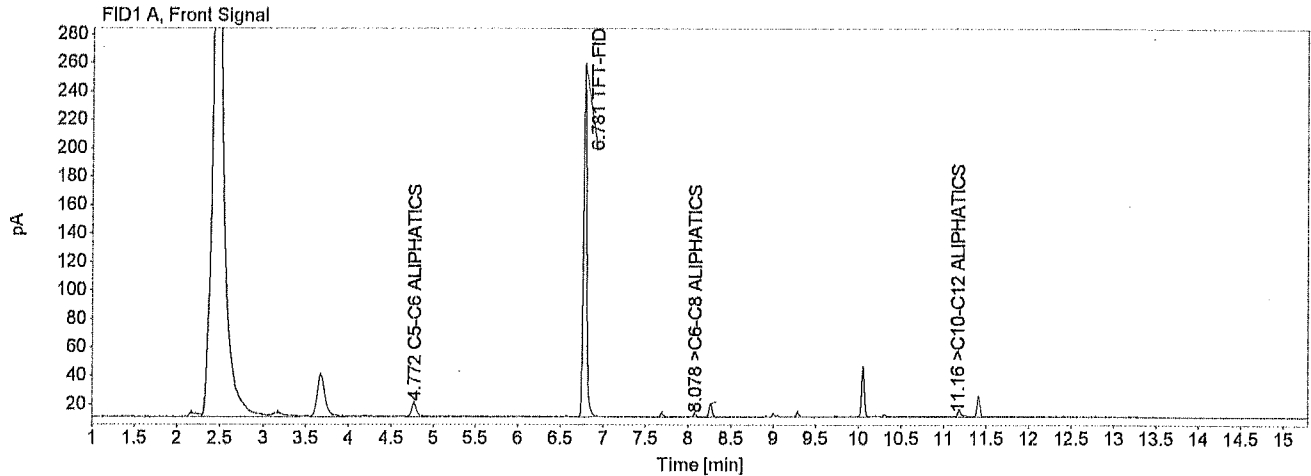
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	990.862	6.786	9.592
>C8-C10 AROMATICS	24.223	10.524	0.108
>C10-C12 AROMATICS	19.204	12.287	1.325
>C12-C13 AROMATICS	23.286	13.232	12.368

AUK

>C₁₀ - C₁₂ < 50 µg/L

Data file: D:\DATA\1192305301\1192305301\001F2401.D
 Sample name: EV23050170-05 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 6:56:52 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



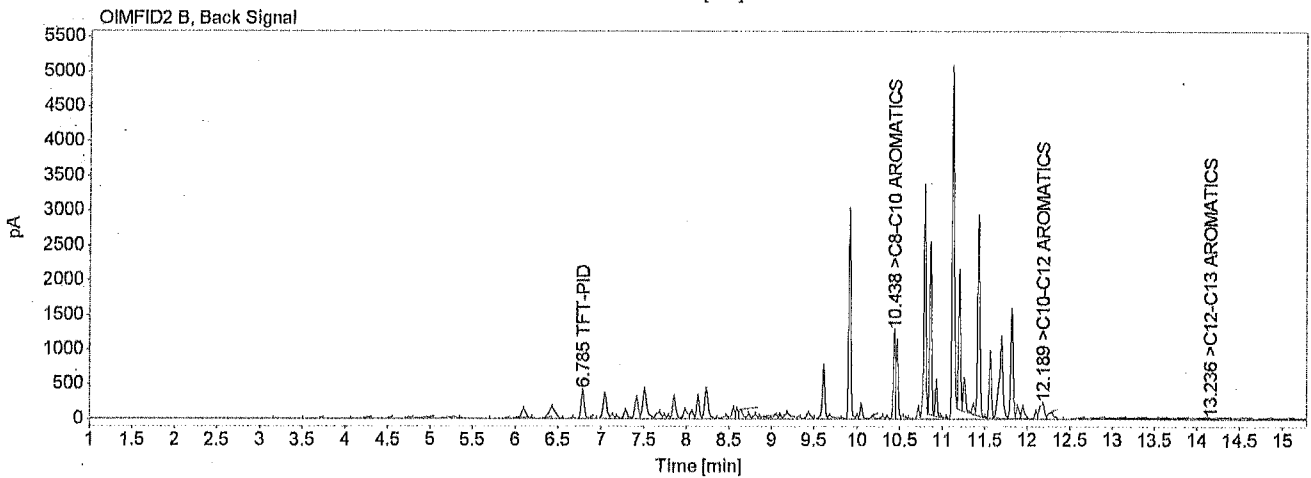
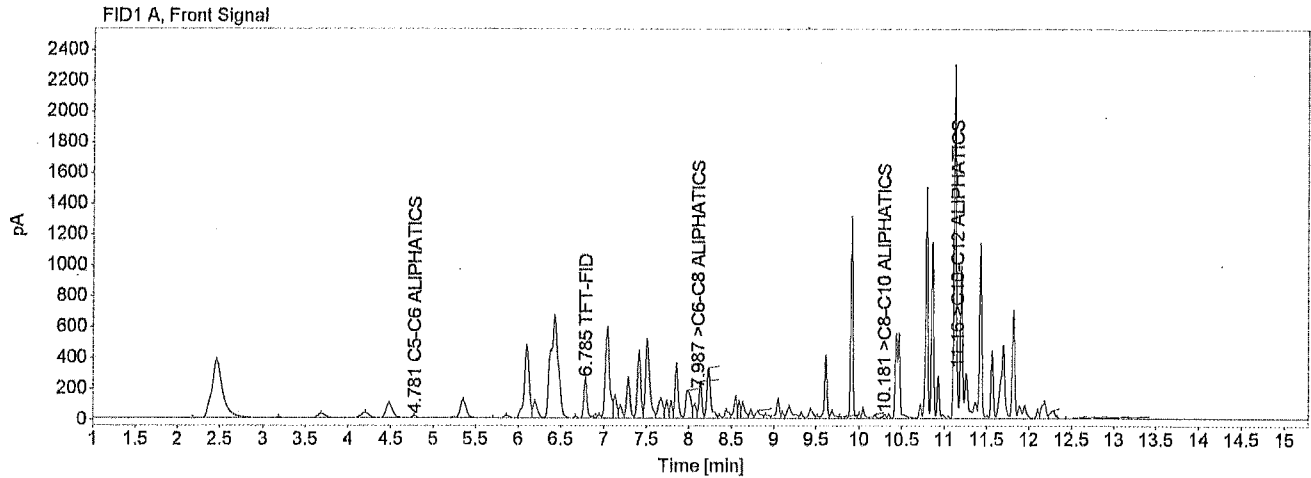
Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	40.699	4.772	0.429
TFT-FID	638.793	6.781	10.269 103%
>C6-C8 ALIPHATICS	5.651	8.078	0.059
>C10-C12 ALIPHATICS	76.922	11.160	1.809

Name	Peak Area	RT [min]	Amount [ug/L]
>C8-C10 ALIPHATICS			0.000
TFT-PID	1064.034	6.781	10.301
>C8-C10 AROMATICS	8.055	10.618	0.036
>C10-C12 AROMATICS	5.805	12.095	0.000
>C12-C13 AROMATICS	25.375	13.229	13.478

AUC
 > C10 - C12 < 50 ug/l

Data file: D:\DATA\1192305301\1192305301\001F2501.D
 Sample name: EV23050170-06 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 7:20:35 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	61.445	4.781	0.647
TFT-FID	672.325	6.785	10.808 / 08%
>C6-C8 ALIPHATICS	773.016	7.987	8.014
>C8-C10 ALIPHATICS	80.953	10.181	0.856
>C10-C12 ALIPHATICS	21262.291	11.160	500.135

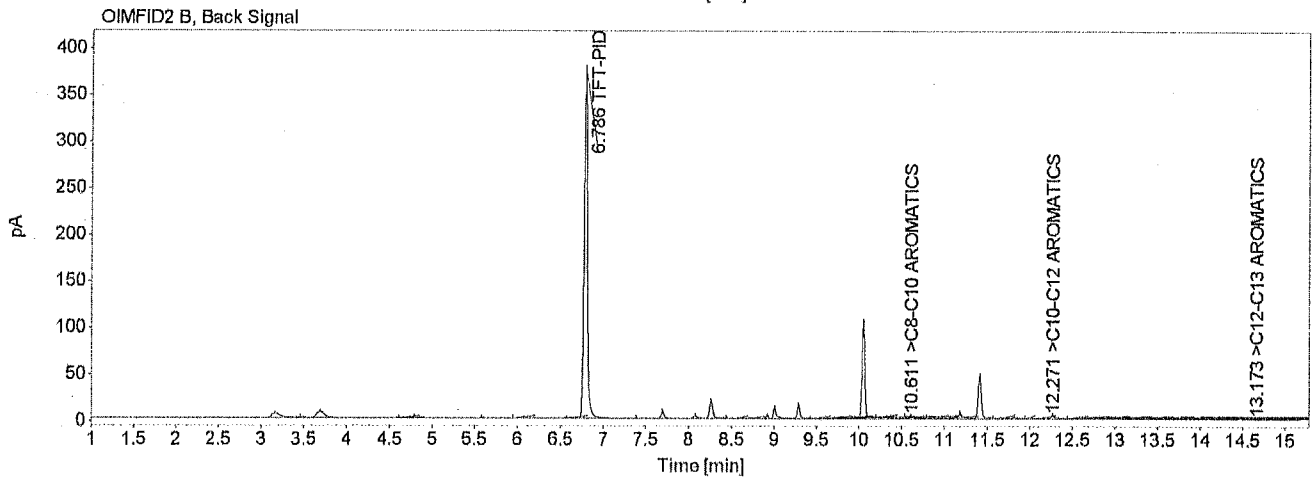
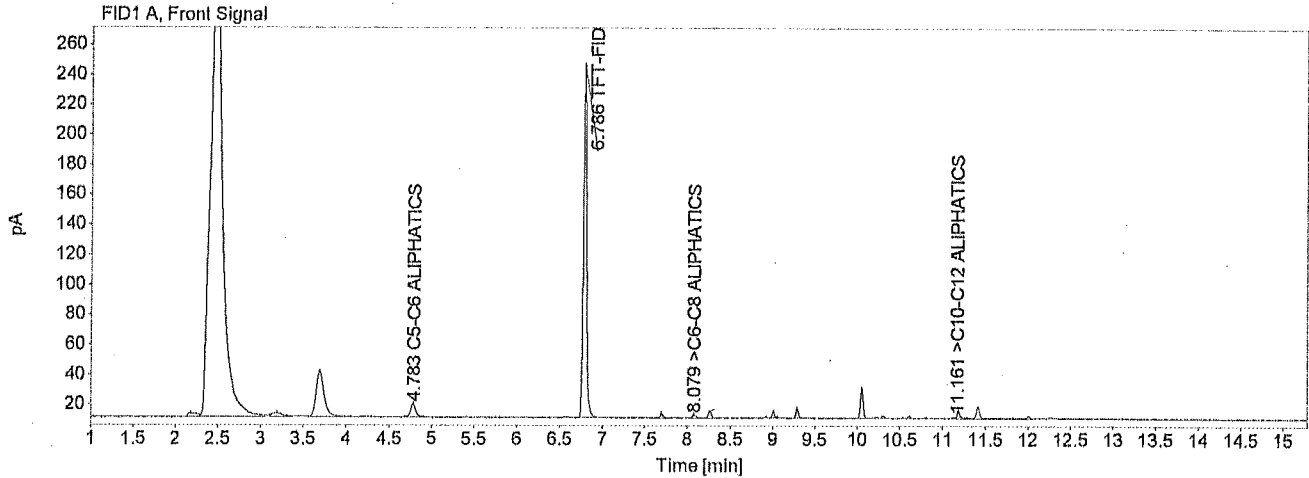
Name	Peak Area	RT [min]	Amount [ug/L]
TFT-PID	1094.761	6.785	10.598
>C8-C10 AROMATICS	2164.084	10.438	9.635
>C10-C12 AROMATICS	894.002	12.189	142.875
>C12-C13 AROMATICS	11.746	13.236	6.239

AUC

$>C_{10} - C_{12} = 500 \mu\text{g/L}$

Data file: D:\DATA\1192305301\1192305301\001F2801.D
 Sample name: EV23050170-07 VPH
 Dilution: 0.000
 Injection date: 5/30/2023 8:31:54 PM
 Acq. method: GX_SHORT_RUN_040
 218.M

Acq. operator: SYSTEM
 Analysis method: VPH_S_053023.M
 Instrument name: GC#119



Name	Peak Area	RT [min]	Amount [ug/L]
C5-C6 ALIPHATICS	36.310	4.783	0.382
TFT-FID	609.563	6.786	9.799 98/
>C6-C8 ALIPHATICS	7.271	8.079	0.075
>C10-C12 ALIPHATICS	62.405	11.161	1.468
Name	Peak Area	RT [min]	Amount [ug/L]
>C8-C10 ALIPHATICS			0.000
TFT-PID	998.871	6.786	9.670
>C8-C10 AROMATICS	14.030	10.611	0.062
>C10-C12 AROMATICS	17.787	12.271	1.095
>C12-C13 AROMATICS	6.646	13.173	3.530

ALK

>C10 - C12 < 50 ug/l

ATTACHMENT D QUALITY ASSURANCE MEMO

**Memo**

To	Erica Whiting
From	Jack James
Date	14 June 2023
Reference	0680180
Subject	Data Review of PEO Groundwater Sampling, Second Quarter 2023 Pace Analytical Services, LLC Data Packages 10653430, 10653648, 10653844, 10654090, and 10654258.

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

The laboratory noted in report 10653844 that sample TRIP BLANK-20230518 arrived with two broken vials. The laboratory was able to complete all requested analyses with the received volume and data quality was not impacted.

CHAIN-OF-CUSTODY DISCREPANCIES

The laboratory identified several discrepancies for sample identifications from report 10654090. The laboratory contacted ERM and was provided with clarification for the identifications. No qualifications were necessary.

PRESERVATION EVALUATION

The sample shipments were received at the laboratory in good condition, with correct chemical preservation, headspace-free where required, and within the method-prescribed temperature preservation requirements of less than 6 °C. No qualifications were necessary.

HOLDING TIME EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. No qualifications were necessary.

BLANK EVALUATION

The method and trip blank results were non-detected for each of the target analytes, with the exceptions noted in Table 1. Non-detected results or results greater than five times the blank concentrations were considered not affected by the laboratory contamination and were not qualified. Results less than or equal to the report limit (RL) were qualified as non-detect (U) at the RL. Results less than the blank concentration (when the blank concentration was greater than the RL) were qualified as non-detect (U) at the sample concentration. Results within five times the blank concentration and greater than the RL were qualified as estimated with a high bias (J+).

When trip blank detections were attributed to and qualified for laboratory introduced contamination, no further qualification was necessary.

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 2. No data were qualified if an outlier could be verified by another in-control recovery. Additionally, non-detect results associated with high RPDs were not qualified. No qualifications were necessary.

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 exception noted in Table 2. Qualifications were not necessary as either the outlier could be confirmed by another in-control recovery and the concentration in the parent sample was greater than four times that of the spike concentration.

The laboratory applied a "M1" qualifier to the sulfate result for sample PEO-MW-41-202305 from report 10653844 indicating a MS recovery exceeding the laboratory control limit. However, the reported recoveries for the MS/MSD samples were within the control limits and qualifications were not necessary.

SURROGATE SPIKE EVALUATION

The surrogate recoveries for project samples were within acceptable limits with the exceptions noted in Table 3. Sample results associated with low surrogate recoveries were qualified as estimates (UJ) for non-detects.

CALIBRATION RANGE EXCEEDANCES

Two non-project parent samples MS/MSD results exceeded the instrument calibration range. Qualifications were not applied based on the MS/MSD results exceeding the calibration 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, indicating acceptable laboratory precision.

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 4. 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. Professional judgment was used when one result was qualified as not detected due to method blank contamination and the other was greater than the RL. In this instance the RL of the non-detect result was used in the calculation for comparison purposes. The dissolved manganese difference exceeded the control limit for sample pair PEO-MW-26-202305/PEO-MW-Z2-202305. The detected results in both the parent and field duplicate were qualified as estimated with no bias (J).

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
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
Second Quarter 2023
Portland, Oregon

Lab Package	Blank ID	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10653648	MBLK-R436154	C10-C12 Aliphatics	1.4	1.1	TRIP BLANK-20230517	0.89	1.1	µg/L	1.1 U
					PEO-MW-44-202305	2.4	1.1	µg/L	J+
					PEO-MW-Z1-202305	1.8	1.1	µg/L	J+
					PEO-MW-24A-202305	1.2	1.1	µg/L	1.2 U
					PEO-MW-28A-202305	1.5	1.1	µg/L	J+
					PEO-MW-45-202305	1.3	1.1	µg/L	1.3 U
10653844	MB-052323W2	C10-C12 Aliphatics	2.1	1.1	TRIP BLANK-20230518	2.0	1.1	µg/L	2.0 U
					PEO-MW-41-202305	2.1	1.1	µg/L	2.1 U
					PEO-MW-26-202305	1.2	1.1	µg/L	1.2 U
					PEO-MW-Z2-202305	2.2	1.1	µg/L	J+
	MB-053023W	C10-C12 Aliphatics	1.3	1.1	None for qualification, samples > 5x blank	--	--	µg/L	--
10654090	MB 4650232	Phenanthrene	0.017	0.04	PEO-MW-37-202305	0.015	0.039	µg/L	0.039 U
					PEO-MW-08-20230518	0.047	0.039	µg/L	J+
	TRIP BLANK-20230519	Toluene	0.15	1.0	PEO-MW-43-202305	0.63	1.0	µg/L	1.0 U
	MB-052323W2	C10-C12 Aliphatics	2.1	1.1	TRIP BLANK-20230519	2.4	1.1	µg/L	J+
					PEO-MW-37-202305	1.8	1.1	µg/L	1.8 U
					PEO-MW-25-202305	1.6	1.1	µg/L	1.6 U
		PEO-MW-19-202305	2.1	1.1	µg/L	2.1 U			
	MB-053023W	C10-C12 Aliphatics	1.3	1.1	None for qualification, samples > 5x blank	--	--	µg/L	--

Table 1
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
Second Quarter 2023
Portland, Oregon

Lab Package	Blank ID	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10654258	MB-053023W	C10-C12 Aliphatics	1.3	1.1	TRIP BLANK-20230520	1.8	1.1	µg/L	J+
					PEO-MW-35-202305	4.8	1.1	µg/L	J+
					PEO-MW-03-202305	1.8	1.1	µg/L	J+
					PEO-MW-21-202305	1.5	1.1	µg/L	J+

Lab packages reviewed: 10653430, 10653648, 10653844, 10654090, and 10654258

Notes:

MB or MBLK = Method blank

J+ = Detected results are estimated with a high bias

U = Non-detected

µg/L = Micrograms per liter

Table 2
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
First Quarter 2023
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
10653844	LCS 4650884 LCSD 4650885	None for qualification, sample ND	Diesel Fuel Range SG	41/66	50-150	48	20	--	--	--
			Motor Oil Range SG	47/71	50-150	41	20	--	--	--
MS/MSD										
10653844	PEO-MW-36-202305 MS/MSD	None for qualification, parent sample > 4x spike	Manganese, Dissolved	159/81	75-125	6	20	--	--	--

Lab packages reviewed: 10653430, 10653648, 10653844, 10654090, and 10654258

Notes:

LCS/LCSD = Laboratory control sample/laboratory control sample duplicate

MS/MSD = Matrix spike/matrix spike duplicate

ND = Not detected

RPD = Relative percent difference

SG = Silica gel

Table 3
Surrogate Recovery Results out of Acceptable Limits
PEO Groundwater Sampling
Second Quarter 2023
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
10653844	PEO-MW-26-202305	NWTPH-Dx	n-Triacontane	47	50-150	Motor Oil Range SG	1	UJ
			o-Terphenyl	45	50-150	Diesel Fuel Range SG	1	UJ
	PEO-MW-Z2-202305	NWTPH-Dx	n-Triacontane	29	50-150	Motor Oil Range SG	1	UJ
			o-Terphenyl	37	50-150	Diesel Fuel Range SG	1	UJ
	LCS 4650884	NWTPH-Dx	o-Terphenyl	46	50-150	No qualification for laboratory QC sample	--	--
10654090	PEO-MW-08-20230518	NWTPH-Dx	n-Triacontane	49	50-150	Motor Oil Range SG	1	UJ
			o-Terphenyl	47	50-150	Diesel Fuel Range SG	1	UJ
10654258	PEO-MW-34-202305	8270E	p-Terphenyl-d14	38	42-125	All in group	1	UJ

Lab packages reviewed: 10653430, 10653648, 10653844, 10654090, and 10654258

Notes:

LCS = Laboratory control sample

NWTPH = Northwest total petroleum hydrocarbons

QC = Quality control

SG = Silica gel

UJ = Non-detected, estimated report limit

Table 4
Field Duplicate Evaluation
PEO Groundwater Sampling
Second Quarter 2023
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						
10653648	PEO-MW-44-202305 PEO-MW-Z1-202305	Total Hardness by 2340B, Dissolved	119000	117000	3300	3300	--	NA	µg/L	1.7	30	--
		Arsenic, Dissolved	0.65	0.65	0.50	0.50	0.00	1.00	µg/L	--	NA	--
		Manganese, Dissolved	21.7	17.9	0.50	0.50	--	NA	µg/L	19	30	--
		Alkalinity, Total as CaCO3	88.8	88.8	5.0	5.0	--	NA	mg/L	0	30	--
		Sulfate	65.0	65.7	1.2	1.2	--	NA	mg/L	1.1	30	--
		C10-C12 Aliphatics	2.4	1.8	1.1	1.1	0.6	2.2	µg/L	--	NA	--
10653844	PEO-MW-26-202305 PEO-MW-Z2-202305	Total Hardness by 2340B, Dissolved	33500	34000	3300	3300	--	NA	µg/L	1.5	30	--
		Arsenic, Dissolved	1.8	1.9	0.50	0.50	0.1	1.00	µg/L	--	NA	--
		Manganese, Dissolved	3.0	1.9	0.50	0.50	1.1	1.00	µg/L	--	NA	J
		Alkalinity, Total as CaCO3	23.4	24.1	5.0	5.0	0.7	10.0	mg/L	--	NA	--
		Sulfate	23.0	23.6	1.2	1.2	--	NA	mg/L	2.6	30	--
		Pyrene	ND	0.010	0.042	0.038	--	NA	µg/L	--	NA	--
		C10-C12 Aliphatics	ND ¹	2.2	1.1	1.1	1.1	2.2	µg/L	--	NA	--

Lab packages reviewed: 10653430, 10653648, 10653844, 10654090, and 10654258

Notes:

1 = Sample result qualified as not detected due to method blank contamination, report limit used in calculation

J = Estimated detected result

mg/L = Milligrams per liter

NA = Not applicable

ND = Not detected

RPD = Relative percent difference

µg/L = Micrograms per liter