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ENVIRONMENT

Mr. Robert Weimer
Alaska Department of Environmental Conservation (ADEC)
555 Cordova Street
Anchorage, Alaska 95501

Subject:
2019 First Semi Annual Groundwater Monitoring Report

Date:
December 31, 2019

Contact:
Nicole Monroe

Phone:
503.785.9414

Email:
Nicole.Monroe@arcadis.com

Our ref:
30015193

Dear Mr. Weimer,

On behalf of Chevron Environmental Management Company (Chevron), Arcadis US, Inc. (Arcadis) has prepared the attached *2019 Groundwater Monitoring Report* for the first semi-annual groundwater sampling events for the following facility:

Chevron Branded Station No.	ADEC File No.	Hazard ID:	Location
351860	2100.38.503	4692	5138 Old Seward Highway. Anchorage, Alaska

If you have any questions, please do not hesitate to contact me.

Sincerely,

Arcadis U.S., Inc.

Nicole Monroe, P.E.
Project Manager

Copies:
Tim Bishop, CEMC (*electronic copy*)
Steve Wuerth

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Chevron Site No. 351860
5138 Old Seward Highway
Anchorage, Alaska
ADEC File No. 2100.38.503
Hazard ID:4692

December 31 2019

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Chevron Branded Service Station 351860

5138 Old Seward Highway
Anchorage, Alaska

ADEC File ID: 2100.38.053
Hazard ID: 4692

Prepared for:

Chevron Environmental Management Company

Prepared by:

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Our Ref.:

30015193

Date:

December 31, 2019

Evan Wujcik
Environmental Engineer

Max Elias
Environmental Scientist

Nicole Monroe, P.E.
Project Manager
EV-149409

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SEMI-ANNUAL STATUS REPORT
FIRST HALF 2019
December 31, 2019

Facility No:	Chevron Site No. 351860	Address:	5138 old Seward Highway, Anchorage, Alaska

Arcadis Contact Person / Phone No.:	Nicole Monroe / 503-785-9414
Arcadis Project No.:	30015193
Primary Agency/Regulatory ID No.:	Alaska Department of Environmental Conservation (ADEC) / Robert Weimer /ADEC file ID: 2100.38.053

WORK CONDUCTED THIS PERIOD [First Half 2019]:

1. Conducted semi-annual groundwater monitoring activities on April 24, 2019.
2. Well survey conducted on June 8, 2019
3. Prepared the 2019 First *Semi-Annual Status Report*.

WORK PROPOSED NEXT PERIOD [Second Half 2019]:

1. Conduct semi-annual groundwater monitoring activities in the Second half of 2019.
2. Prepare the *Semi-Annual Status Report, Second Half 2019*.

Current Phase of Project:	Monitoring	
Frequency of Monitoring / Sampling:	Semi-Annual	
Is Light Non-Aqueous Phase Liquid (LNAPL) Present On-site:	No	
Cumulative LNAPL Recovered to Date:	0.0	(gallons)
Approximate Depth to Groundwater:	4.17 to 6.65	(feet below top of casing)
Approximate Groundwater Elevation:	103.64 to 107.01	(feet relative to corresponding datum)
Groundwater Flow Direction	South-Southwest	

Groundwater Gradient	0.012	(feet per foot)
Current Remediation Techniques:	None	
Permits for Discharge:	None	
Summary of Unusual Activity:	None	
Agency Directive Requirements:	None	

1 INTRODUCTION

On behalf of Chevron Environmental Management Company (CEMC), Arcadis US, Inc. (Arcadis), has prepared this report to document the first semi-annual groundwater sampling event of 2019 for Chevron Facility No. 351860, located at 5138 Old Seward Highway, Anchorage, Alaska (the site). The site location and site plan are shown on Figure 1 and Figure 2, respectively.

This work was conducted under the direction of a "qualified person" [18 AAC 75. 990 (100), and 18 AAC 78.995 (118)]. A site background and a historical summary are attached as Appendix A. Field notes, data sheets, and general procedures are included as Appendix B.

2 GROUNDWATER MONITORING

2.1 Groundwater Gauging Methods

The 2019 first semi-annual groundwater gauging event was conducted on April 24, 2019. Site monitoring wells were gauged with an oil/water interface probe to determine depth-to-water and to ascertain if LNAPL was present. Well survey was conducted on June 8, 2019.

In order to prevent the possibility of cross-contamination, wells were gauged in the order of lowest to highest historical petroleum hydrocarbon concentrations in groundwater. In addition, non-disposable groundwater gauging equipment was decontaminated prior to and after each use with a detergent solution and rinsed in potable water.

2.2 Groundwater Elevation and Flow Direction

During the 2019 first semi-annual event, monitoring wells MW-1 through MW-10 were scheduled to be gauged for groundwater elevations and the presence of LNAPL. The groundwater monitoring event field notes are presented in Appendix B.

The inferred groundwater flow direction for the second semi-annual 2019 monitoring events is to the south-southwest and is consistent with historical flow direction. Current and historical groundwater depth-to-water and elevation data are included in Table 1 and Table 2 respectively. Historical Groundwater Poly

Aromatic Hydrocarbons Analytical Data is included as Table 3. A groundwater elevation contour map is presented as Figure 3.

2.3 Groundwater Sampling Methods

The first semi-annual groundwater monitoring event were conducted on April 24, 2019. Groundwater samples were collected from monitoring wells MW-1 through MW-10 using a low flow sampling method.

Sampling procedures were conducted in accordance with ADEC *Field Sampling Guidance* (ADEC, 2017). Monitoring well caps were removed to allow groundwater levels to stabilize and equilibrate before using an electronic interface probe (EIP) meter capable of 0.01 foot accuracy to measure the depth to groundwater and total well depth. A bladder pump with compressor & control unit with clean/disposable Teflon lined tubing and bladders was used to purge groundwater from the wells and collect samples to minimize the risk of volatile contaminant absorption by the sampling equipment. Water table drawdown was continuously monitored during purging with a water level meter and the flow rate of the pump was adjusted to limit drawdown to 0.1 meter. The intake of the pump was set as close as possible to the soil groundwater interface. Water quality parameters were monitored during purging with a multi-parameter water quality meter equipped with a flow through cell and Turbidity meter. Parameters were recorded every 3 to 5 minutes until a minimum of three (minimum of four if using temperature as an indicator) of the parameters listed below stabilized. The flow rate was reduced to 100-150 ml/minute and samples were collected from the discharge line into laboratory sample bottles. Water quality parameters were considered stable when three successive readings were within the following ADEC limits:

- ± 3% for temperature (minimum of ± 0.2 C°),
- ± 0.1 for pH,
- ± 3% for conductivity,
- ± 10 mv for redox potential,
- ± 10% for dissolved oxygen, and
- ± 10% for turbidity.

Sample bottles were labeled, stored in a cooler packed with ice, and submitted to Eurofins Lancaster Laboratories Environmental (Eurofins) in Lancaster, Pennsylvania, under proper chain-of-custody procedures. Field notes documenting the first and second-annual event are presented in Appendix C.

Groundwater samples collected from monitoring wells MW-1 through MW-10 were submitted to the analytical laboratory for the following analyses:

- Lead by Method 6010C
- Nitrate and Sulfate by Method EPA 300.0
- Ferrous Iron by Method B-2011
- Total Alkalinity and Phenolphthalein Alkalinity by Method B-2011

Additionally, groundwater sampled from MW-2, MW-3, and MW-6 through MW-10 were analyzed for the following analyses:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX), by United States Environmental Protection Agency (USEPA) method 8260C

- Total Petroleum Hydrocarbons-Gasoline range organics (TPH-g) by Alaska method AK101
- Total Petroleum Hydrocarbons-Diesel range organics (TPH-d) by Alaska method AK102-SV 4/8/02

A groundwater duplicate sample was collected from monitoring wells MW-2. The duplicate samples were analyzed for BTEX, and TPH-g, TPH-d and Lead. The duplicate samples were submitted blind with the sample set to Eurofins.

2.4 Groundwater Analytical Results

Routine analytical results for the above-mentioned constituents obtained from the first semi-annual 2019 groundwater monitoring event are summarized in Table 1 and are shown on Figure 4. Historical Groundwater Poly Aromatic Hydrocarbons Analytical Data is included as Table 3. Current and Historical results for monitored natural attenuation (MNA) parameters is summarized in Table 4.

3 LABORATORY DATA QUALITY ASSURANCE SUMMARY

As required by ADEC (Technical Memorandum 06-002, dated March, 2009), Arcadis completed a laboratory data review checklist for each of the laboratory reports generated for the 2019 first semi-annual events. The laboratory reports are included as Appendix C and data review checklists are included as Appendix D. The following quality assurance (QA) summary describes six parameters, related to the quality and usability of the data presented in this report.

3.1 Precision

The relative percent difference (RPD) for matrix spike/matrix spike duplicate (MS/MSD), laboratory control sample / laboratory control sample duplicate (LCS/LCSD) and field duplicate (FD) were within the control limits.

The precision of the data, as measured by laboratory quality control (QC) indicators, suggest that the Data Quality Objectives (DQOs) were met.

3.2 Accuracy

The MS / MSD recovery exceedances were observed for parameters DRO C10-C25, sulfate, nitrate nitrogen and ferrous iron in sample MW-3-W-190424. The associated results were qualified as estimated.

The accuracy of the data, as measured by laboratory quality control (QC) indicators, suggest that the DQOs were met with the exception of the estimated data.

3.3 Representativeness

The data appear to be representative of site conditions and are generally consistent with historical groundwater monitoring results and expected impacts to groundwater.

3.4 Comparability

The laboratory results are presented in the same units as previous reports to allow comparison.

3.5 Completeness

The results appear to be valid and usable, and thus, the laboratory results have 100% completeness.

3.6 Sensitivity

The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCLs for compounds.

4 CONCLUSIONS AND RECOMMENDATIONS

The groundwater data collected during the first semi-annual 2019 events indicate groundwater flow directions (south-southwest) are generally consistent with historical data. During the first semi-annual 2019 groundwater monitoring events, groundwater samples were collected for analysis from monitoring wells MW-1 through MW-10. Analytical results from the monitoring wells are generally consistent with historical data.

Groundwater monitoring will continue in accordance with the current semi-annual schedule. The second semi-annual sampling event of 2019 will be conducted in the fall of 2019.

5 REFERENCES

ADEC. *Field Sampling Guidance*. Division of Spill Prevention and Response Contaminated Sites Program. August, 2017.

ADEC Technical Memorandum, March, 2017. *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling*. ADEC, Division of Spill Prevention and Response Contaminated Sites Program.

TABLES

Table 1. Current Groundwater Gauging and Analytical Results
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft)	Datum	DTW* (ft bTOC)	LNAPL Thickness (ft)	GW Elev (ft)	TPH-g (mg/L)	TPH-d (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)
ADEC Groundwater Cleanup Levels								**2.2**	**1.5**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**
MW-1	4/24/2019	--	111.18	NAVD88	4.17	0.00	107.01	**--**	**--**	**--**	**--**	**--**	**--**	< 0.0071
MW-2	4/24/2019	--	110.92	NAVD88	5.56	0.00	105.36	**0.063 J [0.072 J]**	**9.9 [9.5]**	< 0.0002 [<0.0002]	< 0.0002 [<0.0002]	< 0.0004 [<0.0004]	< 0.001 [<0.001]	**0.0074 J** [< 0.0071]
MW-3	4/24/2019	--	110.51	NAVD88	5.43	0.00	105.08	< 0.014	< 0.37BJ	< 0.0002	< 0.0002	< 0.0004	< 0.001	< 0.0071
MW-4	4/24/2019	--	110.79	NAVD88	5.81	0.00	104.98	**--**	**--**	**--**	**--**	**--**	**--**	< 0.0071
MW-5	4/24/2019	--	111.03	NAVD88	6.05	0.00	104.98	**--**	**--**	**--**	**--**	**--**	**--**	< 0.0071
MW-6	4/24/2019	--	109.75	NAVD88	4.78	0.00	104.97	**0.31**	< 0.49B	**0.004**	< 0.001B[a]	**0.009**	**0.019**	< 0.0071
MW-7	4/24/2019	--	110.43	NAVD88	5.45	0.00	104.98	**0.13**	**2.5**	**0.002**	**0.006**	**0.006**	**0.026**	< 0.0071
MW-8	4/24/2019	--	110.39	NAVD88	5.48	0.00	104.91	**0.93**	< 0.45BJ	**0.0005 J**	< 0.0002	**0.012**	**0.056**	< 0.0071
MW-9	4/24/2019	--	109.76	NAVD88	4.81	0.00	104.95	**6**	**0.72**	**0.004**	**0.022**	**0.12**	**0.72 D**	< 0.0071
MW-10	4/24/2019	--	110.29	NAVD88	6.65	0.00	103.64	**0.92**	< 0.39B	**0.012**	< 0.001B[a]	**0.007**	**0.15**	< 0.0071
QA (EQB)	4/24/2019	--	--	--	--	--	--	< 0.014	**0.14 J**	< 0.0002	**0.001**	< 0.0004	< 0.001	< 0.0071
QA (TB)	4/24/2019	--	--	--	--	--	--	< 0.014	**--**	< 0.0002	< 0.0002	< 0.0004	< 0.001	**--**

Notes:

ID = Identification
MW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet
GW Elev = Groundwater elevation
mg/L = Milligrams per liter
<0.0002 = Not detected at or above the method detection limit (MDL)
Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level
Bold = Value exceeds MDL
-- = Not Available or Not Analysed
LNAPL = Light Non-Aqueous Phase Liquid
[ ] = Blind Duplicate Sample
NADV88 = North American Vertical Datum of 1988
QA (EQB) = Quality Assurance (Equipment Blank)
QA (TB) = Quality Assurance (Trip Blank)

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to Alaska Series Method AK101
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to Alaska Series Method AK102-SV 4/8/02
Samples analyzed by USEPA Method 8260C:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
Lead by Method 6010C
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
D = Results from diluted sample
B = Compound considered non-detect at the listed value due to associated blank contamination.
[a] = Non detect reported to Limit of Quantitation
Monitoring well MW-10 was not resurveyed. The TOC is from the previous consultant.
* = Depth to water taken from Recent Well Survey 6/3/2019
ADEC = Alaska Department of Environmental Conservation

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-1	12/18/2007	110.47	4.88	--	105.59	--	**0.566**	--	--	--	--	--	--	
MW-1	5/26/2009	117.14	4.24	--	112.90	<0.01	**0.89**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.00012**	
MW-1	9/24/2009	117.14	5.09	--	112.05	<0.010	**1.3 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.237**	
MW-1	11/9/2009	117.14	5.82	--	111.32	<0.010	**1.0 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0336**	
MW-1	3/1/2010	110.43	7.87	--	102.56	<0.010	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0688**	
MW-1	5/7/2010	110.43	4.15	--	106.28	<0.010	**0.51**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0216**	
MW-1	07/19/2010	110.43	4.83	--	105.60	<0.010	**1.1**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0206**	
MW-1	10/4/2010	110.43	5.19	--	105.24	<0.010	**1.0 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0148 J**	
MW-1	4/19/2011	110.43	5	--	105.43	--	--	--	--	--	--	--	<0.0069	
MW-1	6/7/2011	110.43	4.71	--	105.72	--	--	--	--	--	--	--	<0.0022 UJ	
MW-1	9/16/2011	110.43	4.8	--	105.63	--	--	--	--	--	--	--	**0.0611**	
MW-1	10/31/2011	110.43	5.39	--	105.04	--	--	--	--	--	--	--	--	
MW-1	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	**0.0836**	
MW-1	6/20/2012	110.43	4.28	--	106.15	--	--	--	--	--	--	--	**0.0041 J**	
MW-1	9/19/2012	110.43	4.32	--	106.11	--	--	--	--	--	--	--	<0.0051	
MW-1	11/7/2012	110.43	4.94	--	105.49	--	--	--	--	--	--	--	--	
MW-1	6/8/2013	110.43	4.13	--	106.3	--	--	--	--	--	--	--	--	
MW-1	6/9/2013	--	--	--	--	--	--	--	--	--	--	--	**0.0029 J**	
MW-1	6/9/2013	--	--	--	--	--	--	--	--	--	--	--	<0.0012	collected via hydrasleeve
MW-1	8/18/2013	110.43	4.43	--	106	--	--		--	--	--	--	--	
MW-1	8/20/2013	--	--	--	--	--	--		--	--	--	--	**0.021**	
MW-1	11/04/2013	110.43	4.2	--	106.23	--	--		--	--	--	--	--	
MW-1	6/5/2014	110.43	4.46	--	105.97	--	--	--	--	--	--	--	**0.0023 J**	
MW-1	9/22/2014	110.43	3.92	--	106.51	--	--	--	--	--	--	--	**0.0028 J**	
MW-1	4/30/2015	110.43	4.49	--	105.94	--	--	--	--	--	--	--	<0.0047	
MW-1	9/22/2015	110.34	4.43	--	105.91	--	--	--	--	--	--	--	--	
MW-1	11/10/2015	110.34	4.34	--	106	--	--	--	--	--	--	--	--	
MW-1	6/07/2016	110.43	4.49	--	105.94	--	--	--	--	--	--	--	<0.0051	
MW-1	9/19/2016	110.43	4.21	--	106.22	--	--	--	--	--	--	--	<0.0062	
MW-1	6/02/2017	110.43	4.2	--	106.23	--	--	--	--	--	--	--	<0.0062	
MW-1	8/17/2017	110.79	3.93	--	106.86	--	--	--	--	--	--	--	**0.0069 J / 0.0109 J**	
MW-1	6/19/2018	110.79	4.12	--	106.67	--	--	--	--	--	--	--	<0.0071	
MW-1	11/1/2018	110.79	4.25	--	106.54	--	--	--	--	--	--	--	<0.0071	
MW-1	4/24/2019	111.18	4.17	0.00	107.01	--	--	--	--	--	--	--	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-2	12/18/2007	110.44	5.13	--	105.31	--	**3.76**	**0.535**	--	--	--	--	--	
MW-2	5/27/2009	117.06	4.65	--	112.41	**0.14**	**11**	--	<0.0005	<0.0005	**0.0009**	**0.0019**	**0.022**	
MW-2	9/24/2009	117.06	5.43	--	111.63	**0.031 J**	**3.1**	--	<0.0005	<0.0005	<0.0005	<0.0015	**1**	
MW-2	11/9/2009	117.06	5.84	--	111.22	<0.010	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.239**	
MW-2	3/1/2010	110.34	7.25	--	103.09	**0.026 J**	**2.3 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
MW-2	5/7/2010	110.34	4.58	--	105.76	**0.12**	**22**	--	<0.0005	<0.0005	**0.0037**	**0.0032 J**	**0.084**	
MW-2	7/19/2010	110.34	5.19	--	105.15	**0.079 J**	**1.8**	--	<0.0005	<0.0005	<0.0005	**0.0022 J**	**0.0526**	
MW-2	10/4/2010	110.34	5.25	--	105.09	**0.055 J**	**3.7**	--	<0.0005	<0.0005	<0.0005	**0.0018 J**	**0.0276**	
MW-2	4/19/2011	110.34	5.79	--	104.55	--	--	--	--	--	--	--	--	
MW-2	4/20/2011	--	--	--	--	**0.017 J**	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
MW-2	6/7/2011	110.34	5	--	105.34	**0.071 J**	**6.5**	--	<0.0005	<0.0005	**0.0008 J**	**0.0036 J**	**0.171 J**	
MW-2	9/16/2011	110.34	5.1	--	105.24	<0.050	**1.8 J**	--	<0.0025	<0.0025	<0.0025	**0.0084 J**	**0.351**	
MW-2	10/31/2011	110.34	5.55	--	104.79	--	--	--	--	--	--	--	--	
MW-2	11/1/2011	--	--	--	--	<0.010	**5.5**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0571**	
MW-2	6/20/2012	110.34	4.58	--	105.76	<0.010	**2.5**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0103 J**	
MW-2	9/19/2012	110.34	3.4	--	106.94	<0.010	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0858**	
MW-2	11/7/2012	110.34	4.92	--	105.42	<0.010	**0.56 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0925**	
MW-2	6/8/2013	110.34	4.42	--	105.92	--	--	--	--	--	--	--	--	
MW-2	6/9/2013	--	--	--	--	<0.050	**11**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.0053 J**	
MW-2	6/9/2013	--	--	--	--	<0.050	**4.3**	--	<0.00024	<0.00023	<0.00024	<0.00072	<0.0012	collected via hydrasleeve
MW-2	8/18/2013	110.34	4.81	--	105.53	--	--	--	--	--	--	--	--	
MW-2	8/20/2013	--	--	--	--	<0.050	**0.12 J**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.065**	
MW-2	11/04/2013	110.34	4.67	--	105.67	--	--	--	--	--	--	--	--	
MW-2	11/08/2013	--	--	--	--	<0.050	**1.5**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.14**	
MW-2	6/5/2014	110.34	4.47	--	105.87	<0.050	**2**	--	**0.00026 J**	<0.00011	<0.00016	<0.00040	**0.014**	
MW-2	9/22/2014	110.34	4.49	--	105.85	<0.050	**0.12 J**	--	<0.00015	<0.00011	<0.00016	<0.00040	**0.032**	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-2	4/30/2015	110.34	4.69	--	105.65	**0.24**	**18**	--	<0.0005	<0.0005	<0.0017	<0.0030	**0.0096 J**	
MW-2	9/22/2015	110.34	4.76	--	105.58	<0.010	**0.62 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.389**	
MW-2	11/10/2015	110.34	4.81	--	105.53	<0.010	**0.35 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	**0.0886**	
MW-2	6/07/2016	110.34	7.37	--	102.97	<0.010	**1.2**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0051	
MW-2	9/19/2016	110.34	4.74	--	105.60	<0.010	**1.1 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	**0.0158 J / 0.0356**	
MW-2	6/02/2017	110.34	4.66	--	105.68	**0.046 J**	**4.6**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0062	
MW-2	8/18/2017	110.5	4.19	--	106.31	<0.010	**0.11 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0060	
MW-2	6/19/2018	110.50	4.43	--	106.07	<0.010	**0.98 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0071	TOC adjusted for 1" cut in order for lid to be placed back on.
MW-2	11/1/2018	110.5	7.89	--	102.61	<0.014	**0.28**	--	<0.0002	<0.0002	<0.0002	<0.0005	**0.0076 J**	
MW-2	4/24/2019	110.5	5.56	0.00	105.36	**0.063 J [0.072 J]**	**9.9 [9.5]**	--	< 0.0002 [<0.0002]	< 0.0002 [<0.0002]	< 0.0004 [<0.0004]	< 0.001 [<0.001]	**0.0074 J** [< 0.0071]	DTW taken from Well Survey on 6/3/2019
MW-3	5/27/2009	116.47	5.37	--	111.1	<0.01	**0.47**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.000091**	
MW-3	9/24/2009	116.47	6.3	--	110.17	<0.010	**0.67**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0557**	
MW-3	11/9/2009	116.47	6.2	--	110.27	<0.010	**0.48**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0153**	
MW-3	3/3/2010	109.76	6.74	--	103.02	<0.010	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0192**	
MW-3	5/7/2010	109.76	5.57	--	104.19	<0.010	**0.63**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0105 J**	
MW-3	7/19/2010	109.76	5.89	--	103.87	<0.010	**0.47**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0145 J**	
MW-3	10/4/2010	109.76	6.12	--	103.64	<0.010	**0.43**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0101 J**	
MW-3	4/19/2011	109.76	3.64	--	106.12	--	--	--	--	--	--	--	--	
MW-3	4/20/2011	--	--	--	--	**0.012 J**	**0.72**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0073 J**	
MW-3	6/7/2011	109.76	5.88	--	103.88	--	--	--	--	--	--	--	--	
MW-3	9/16/2011	109.76	6.09	--	103.67	<0.010	**0.46**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0146 J**	
MW-3	10/31/2011	109.76	6.34	--	103.42	--	--	--	--	--	--	--	--	
MW-3	6/20/2012	109.76	5	--	104.76	<0.010	**2.6**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0418**	
MW-3	9/19/2012	109.76	4.41	--	105.35	<0.010	**1.3**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0448**	
MW-3	11/7/2012	109.76	4.6	--	105.16	<0.010	**0.99**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.037**	
MW-3	6/8/2013	109.76	4.42	--	105.34	--	--	--	--	--	--	--	--	
MW-3	6/9/2013	--	--	--	--	<0.050	**0.48 J**	--	<0.00024	<0.00023	<0.00024	<0.00072	<0.0012	
MW-3	6/9/2013	--	--	--	--	<0.050	**0.67**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.0037 J**	collected via hydrasleeve
MW-3	8/18/2013	109.76	5.45	--	104.31	--	--	--	--	--	--	--	--	
MW-3	8/20/2013	--	--	--	--	<0.050	**0.29 J**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.018**	
MW-3	11/04/2013	109.76	5.04	--	104.72	--	--	--	--	--	--	--	--	
MW-3	6/5/2014	109.76	5.51	--	104.25	<0.050	**0.36 J**	--	<0.00015	<0.00011	<0.00016	<0.00040	**0.0030 J**	
MW-3	9/22/2014	109.76	4.93	--	104.83	<0.050	**0.27 J**	--	<0.00015	<0.00011	<0.00016	<0.00040	**0.0028 J**	
MW-3	4/30/2015	109.76	6.06	--	103.7	**0.043 J**	**0.16 J**	--	<0.0005	<0.0005	<0.0005	**0.0020 J**	<0.0047	
MW-3	9/22/2015	109.76	5.48	--	104.28	--	--	--	--	--	--	--	--	
MW-3	11/10/2015	109.76	5.76	--	104	--	--	--	--	--	--	--	--	
MW-3	6/07/2016	109.76	5.39	--	104.37	<0.010	**0.58**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0051	
MW-3	9/19/2016	109.76	5.35	--	104.41	<0.010	**0.56**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0062	
MW-3	6/02/2017	109.76	5.72	--	104.04	<0.010	**0.7**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0062	
MW-3	8/17/2017	110.1	4.76	--	105.34	<0.010	**0.35 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0060	
MW-3	6/20/2018	110.1	4.87	--	105.23	<0.010	**0.46 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	**0.0207 J**	
MW-3	11/1/2018	110.1	5.53	--	104.57	<0.014	**0.27**	--	<0.0002	<0.0002	<0.0002	<0.0005	<0.0071	
MW-3	4/24/2019	110.51	5.43	0.00	105.08	< 0.014	< 0.37BJ	--	< 0.0002	< 0.0002	< 0.0004	< 0.001	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-4	12/18/2007	110.05	5.88	--	104.17	--	--	--	--	--	--	--	--	
MW-4	9/24/2009	116.71	6.59	--	110.12	<0.010 / 0.012 J	**0.20 J / 0.20 J**	--	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	**0.0757 / 0.0729**	
MW-4	11/9/2009	116.71	6.49	--	110.22	<0.010	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0526**	
MW-4	3/3/2010	110.00	6.98	--	103.02	<0.010	<0.25	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0129 J**	
MW-4	5/7/2010	110	5.92	--	104.08	<0.010	**0.21 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0088 J**	
MW-4	7/19/2010	110	6.2	--	103.8	<0.010	**0.16 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0275**	
MW-4	10/4/2010	110	6.38	--	103.62	<0.010	**0.12 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0378**	
MW-4	4/19/2011	110	3.86	--	106.14	--	--	--	--	--	--	--	<0.0069	
MW-4	6/7/2011	110	6.14	--	103.86	--	--	--	--	--	--	--	<0.0022 UJ	
MW-4	9/16/2011	110	6.39	--	103.61	--	--	--	--	--	--	--	**0.0134 J**	
MW-4	10/31/2011	110	6.58	--	103.42	--	--	--	--	--	--	--	--	
MW-4	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	**0.0578**	
MW-4	6/20/2012	110	5.32	--	104.68	--	--	--	--	--	--	--	**0.0061 J**	
MW-4	9/19/2012	110	4.76	--	105.24	--	--	--	--	--	--	--	<0.0051	
MW-4	11/7/2012	110	4.89	--	105.11	--	--	--	--	--	--	--	--	
MW-4	6/8/2013	110	5.57	--	104.43	--	--	--	--	--	--	--	--	
MW-4	6/9/2013	--	--	--	--	--	--	--	--	--	--	--	**0.0021 J**	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-4	6/9/2013	--	--	--	--	--	--	--	--	--	--	--	<0.0012	collected via hydrasleeve
MW-4	8/18/2013	110	5.36	--	104.64	--	--	--	--	--	--	--	--	
MW-4	8/20/2013	--	--	--	--	--	--	--	--	--	--	--	<0.0064 J	
MW-4	11/04/2013	110	5.45	--	104.55	--	--	--	--	--	--	--	--	
MW-4	6/5/2014	110	5.94	--	104.06	--	--	--	--	--	--	--	**0.0020 J**	
MW-4	9/22/2014	110	5.41	--	104.59	--	--	--	--	--	--	--	<0.0018	
MW-4	4/30/2015	110	6.48	--	103.52	--	--	--	--	--	--	--	<0.0047	
MW-4	9/22/2015	110	5.91	--	104.09	--	--	--	--	--	--	--	--	
MW-4	11/10/2015[3]	110	6.17	--	103.83	--	--	--	--	--	--	--	--	
MW-4	6/07/2016	110	5.81	--	104.19	--	--	--	--	--	--	--	<0.0051	
MW-4	9/20/2016	110	5.92	--	104.08	--	--	--	--	--	--	--	<0.0062	
MW-4	6/02/2017	110	6.1	--	103.9	--	--	--	--	--	--	--	<0.0062	
MW-4	8/18/2017	110.35	5.23	--	105.12	--	--	--	--	--	--	--	<0.0060	
MW-4	6/20/2018	110.35	5.26	--	105.09	--	--	--	--	--	--	--	**0.0176 J**	
MW-4	11/1/2018	110.35	5.87	--	104.48	--	--	--	--	--	--	--	<0.0071	
MW-4	4/24/2019	110.79	5.81	0.00	104.98	--	--	--	--	--	--	--	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-5	12/18/2007	110.37	6.17	--	104.2	--	--	--	--	--	--	--	--	
MW-5	5/27/2009	117.01	5.98	--	111.03	<0.01	**0.088**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.00025**	
MW-5	9/24/2009	117.01	6.88	--	110.13	<0.010	**0.16 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0906**	
MW-5	11/9/2009	117.01	6.78	--	110.23	<0.010	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0525**	
MW-5	3/3/2010	110.30	7.23	--	103.07	<0.010	<0.50	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0237**	
MW-5	5/7/2010	110.3	6.24	--	104.06	<0.010	**0.16 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0159**	
MW-5	7/19/2010	110.3	6.48	--	103.82	<0.010	**0.49**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0474**	
MW-5	4/19/2011	110.3							Ice in Well					
MW-5	6/7/2011	110.3	5.39	--	104.91	--	--	--	--	--	--	--	**0.0398 J**	
MW-5	9/16/2011	110.3	6.62	--	103.68	--	--	--	--	--	--	--	**0.0145 J**	
MW-5	10/31/2011	110.3	6.84	--	103.46	--	--	--	--	--	--	--	--	
MW-5	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	**0.0034 J**	
MW-5	6/20/2012	110.3	5.55	--	104.75	--	--	--	--	--	--	--	**0.0069 J**	
MW-5	9/19/2012	110.3	5.03	--	105.27	--	--	--	--	--	--	--	<0.0051	
MW-5	11/7/2012	110.3	5.13	--	105.17	--	--	--	--	--	--	--	--	
MW-5	6/8/2013	110.3	5.31	--	104.99	--	--	--	--	--	--	--	--	
MW-5	6/9/2013	--	--	--	--	--	--	--	--	--	--	--	<0.0012	
MW-5	6/9/2013	--	--	--	--	--	--	--	--	--	--	--	<0.0012	collected via hydrasleeve
MW-5	8/18/2013	110.3	6.11	--	104.19	--	--	--	--	--	--	--	--	
MW-5	8/20/2013	--	--	--	--	--	--	--	--	--	--	--	<0.0021 J	
MW-5	11/04/2013	110.3	5.41	--	104.89	--	--	--	--	--	--	--	--	
MW-5	6/5/2014	110.3	6.2	--	104.1	--	--	--	--	--	--	--	**0.0027 J**	
MW-5	9/22/2014	110.3	5.63	--	104.67	--	--	--	--	--	--	--	**0.0020 J**	
MW-5	4/30/2015	110.3	6.75	--	103.55	--	--	--	--	--	--	--	<0.0047	
MW-5	9/22/2015	110.3	6.16	--	104.14	--	--	--	--	--	--	--	--	
MW-5	11/10/2015	110.3	6.41	--	103.89	--	--	--	--	--	--	--	--	
MW-5	6/07/2016	110.3	6.07	--	104.23	--	--	--	--	--	--	--	<0.0051	
MW-5	9/19/2016	110.3	6.01	--	104.29	--	--	--	--	--	--	--	<0.0062	
MW-5	6/02/2017	110.3	6.35	--	103.95	--	--	--	--	--	--	--	<0.0062	
MW-5	8/18/2017	110.66	5.49	--	105.17	--	--	--	--	--	--	--	<0.0060	
MW-5	6/20/2018	110.66	5.5	--	105.16	--	--	--	--	--	--	--	**0.0183 J**	
MW-5	11/1/2018	110.66	6.1	--	104.56	--	--	--	--	--	--	--	<0.0071	
MW-5	4/24/2019	111.03	6.05	0.00	104.98	--	--	--	--	--	--	--	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-6	12/18/2007	109.19	5.04	--	104.15	**0.31**	--	--	**0.037**	**0.002**	--	**0.03**	--	
MW-6	5/27/2009	115.78	4.8	--	110.98	**0.35**	**0.31**	--	**0.041**	**0.0015**	**0.0029**	**0.044**	**0.00027**	
MW-6	9/24/2009	115.78	5.68	--	110.1	**0.31**	<0.50	--	**0.035**	**0.0019 J**	**0.0005 J**	**0.042**	**0.171**	
MW-6	11/9/2009	115.78	5.6	--	110.18	**0.65**	**1.2 J**	--	**0.03**	**0.0021**	**0.0082**	**0.074**	**0.0757**	
MW-6	3/3/2010	109.08	--	--	--	--	--	--	--	--	--	--	--	
MW-6	5/7/2010	109.08	5	--	104.08	**0.27**	**0.55**	--	**0.036**	**0.0015 J**	**0.0012 J**	**0.036**	**0.0386**	
MW-6	7/19/2010	109.08	5.29	--	103.79	**0.21**	**0.91**	--	**0.027**	**0.0014 J**	<0.0005	**0.033**	**0.0438**	
MW-6	10/4/2010	109.08	5.45	--	103.63	**0.19**	**0.29**	--	**0.02**	**0.0011 J**	<0.0005	**0.026**	**0.0724**	
MW-6	4/20/2011	109.08	4.78	--	104.3	**1.7**	--	--	**0.016**	**0.0062**	**0.025**	**0.11**	--	
MW-6	6/7/2011	109.08	5.18	--	103.9	**0.27**	**0.37**	--	**0.027**	**0.0013 J**	**0.0011 J**	**0.029**	**0.0339 J**	
MW-6	9/16/2011	109.08	5.38	--	103.7	**0.18**	**0.74**	--	**0.02**	**0.0011 J**	<0.0005	**0.029**	**0.072**	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-6	10/31/2011	109.08	5.61	--	103.47	--	--	--	--	--	--	--	--	
MW-6	11/1/2011	--	--	--	--	**0.16**	<0.25	--	**0.021**	**0.0012 J**	<0.0005	**0.031**	**0.155**	
MW-6	6/20/2012	109.08	4.34	--	104.74	**0.22**	**0.68**	--	**0.016**	**0.0008 J**	**0.0009 J**	**0.019**	**0.0084 J**	
MW-6	9/19/2012	109.08	3.56	--	105.52	**0.2**	**0.35**	--	**0.017**	**0.0014 J**	**0.0051**	**0.038**	**0.0209**	
MW-6	11/7/2012	109.08	3.95	--	105.13	**0.15**	**0.31**	--	**0.022**	**0.0007 J**	<0.0005	**0.013**	**0.0412**	
MW-6	6/8/2013	109.08	4.08	--	105	--	--	--	--	--	--	--	--	
MW-6	6/10/2013	--	--	--	--	**0.14**	**0.32 J**	--	**0.022**	**0.00024 J**	**0.0014**	**0.0097**	**0.0059 J**	
MW-6	6/10/2013	--	--	--	--	**0.13**	**0.58**	--	**0.021**	**0.00031 J**	<0.00024	**0.007**	<0.0012	collected via hydrasleeve
MW-6	8/18/2013	109.08	4.9	--	104.18	--	--	--	--	--	--	--	--	
MW-6	8/20/2013	--	--	--	--	**0.23**	**0.61**	--	**0.02**	**0.00096 J**	<0.00024	**0.024**	**0.043**	
MW-6	6/5/2014	109.08	4.93	--	104.15	**0.14**	**0.28 J**	--	**0.012**	**0.00056 J**	**0.0011**	**0.017**	**0.0024 J**	
MW-6	9/22/2014	109.08	4.34	--	104.74	**0.21**	**0.27 J**	--	**0.013**	**0.00081 J**	**0.00092 J**	**0.027**	<0.0018	
MW-6	4/30/2015	109.08	5.51	--	103.57	**0.25**	**0.38**	--	**0.02**	**0.001 J**	**0.0012 J**	**0.028**	<0.0047	
MW-6	9/22/2015	109.08	4.96	--	104.12	**0.15**	**0.099 J**	--	**0.012**	**0.0008 J**	<0.0005	**0.022**	<0.0051	
MW-6	11/10/2015	109.08	5.18	--	103.9	**0.13**	**0.47**		**0.013**	**0.0007 J**	<0.0005	**0.019**	<0.0051	
MW-6	6/08/2016	109.08	4.91	--	104.17	**0.51**	**0.64**	--	**0.013**	**0.001**	**0.014**	**0.067**	<0.0051	
MW-6	9/20/2016	109.08	4.79	--	104.29	**0.098 J**	**0.43**	--	**0.008**	<0.0005	**0.0009 J**	**0.016**	<0.0062	
MW-6	6/02/2017	109.08	5.1	--	103.98	**0.04 J**	**0.41**	--	**0.005**	<0.0005	<0.0005	**0.003**	<0.0062	
MW-6	8/18/2017	109.38	4.01	--	105.37	**0.15**	**0.24 J**	--	**0.006**	<0.0005	**0.006**	**0.014**	<0.0060	
MW-6	6/20/2018	109.38	4.18	--	105.2	**0.1**	**0.22 J**	--	**0.009**	<0.0005	<0.0005	**0.012**	**0.0151 J**	
MW-6	11/2/2018	109.38	4.84	--	104.54	**0.11**	**0.26**	--	**0.011**	**0.0005 J**	<0.0002	**0.015**	**0.015**	
MW-6	4/24/2019	109.75	4.78	0.00	104.97	**0.31**	< 0.49B	--	**0.004**	< 0.001B	**0.009**	**0.019**	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-7	12/18/2007	109.79	5.63	--	104.16	**2.97 / 2.95**	**1.16 / 1.1**	<0.41 / 0.465	**0.006 / 0.007**	**0.044 / 0.033**	**0.052 / 0.049**	**0.415 / 0.385**	--	
MW-7	5/27/2009	116.42	5.43	--	110.99	**0.088**	**4.1**	--	**0.0031**	**0.0009**	**0.0032**	**0.016**	**0.0179**	
MW-7	9/24/2009	116.42	6.34	--	110.08	**1.7**	**2.4 J**	--	**0.022**	**0.0043**	**0.026**	**0.12**	**0.118**	
MW-7	11/9/2009	116.42	6.23	--	110.19	**1.4**	**2.1 J**	--	**0.029**	**0.0047**	**0.049**	**0.22**	**0.0862**	
MW-7	3/3/2010	109.71	6.72	--	102.99	**1.1 / 1.1**	**0.66 J / 0.60 J**	--	**0.0094 / 0.0091**	**0.001 J / 0.001 J**	**0.024 / 0.024**	**0.13 / 0.13**	**0.0144 J / 0.0162**	
MW-7	5/7/2010	109.71	5.65	--	104.06	<0.010	**0.6**	--	<0.0005	<0.0005	<0.0005	<0.0015	**0.0129 J**	
MW-7	7/19/2010	109.71	5.94	--	103.77	**0.011 J**	**5.1 J**	--	**0.0023**	**0.0006 J**	<0.0005	<0.0015	**0.0202**	
MW-7	10/4/2010	109.71	5.13	--	104.58	**0.046 J**	**2.3**	--	**0.0036**	<0.0005	**0.0016 J**	**0.0057**	**0.0273**	
MW-7	4/20/2011	109.71	5.62	--	104.09	**0.019 J**	**5.2**	--	<0.0005	<0.0005	<0.0005	<0.0015	<0.0069	
MW-7	6/7/2011	109.71	5.81	--	103.9	**0.57**	**4.4 J**	--	**0.0051**	**0.0008 J**	**0.039**	**0.12**	**0.0173 J**	
MW-7	9/16/2011	109.71	6.06	--	103.65	**0.050 J**	**2.2**	--	**0.0006 J**	<0.0005	**0.0011 J**	**0.0028 J**	**0.0456**	
MW-7	10/31/2011	109.71	6.27	--	103.44	--	--	--	--	--	--	--	--	
MW-7	11/1/2011	--	--	--	--	**0.25**	**2.1**	--	**0.01**	**0.0011 J**	**0.017**	**0.06**	**0.0191**	
MW-7	6/20/2012	109.71	5.01	--	104.7	**0.97**	**2.6**	--	**0.0065**	**0.028**	**0.033**	**0.093**	**0.0061 J**	
MW-7	9/19/2012	109.71	4.41	--	105.3	**1.9**	**1.8**	--	**0.017**	**0.064**	**0.057**	**0.28**	<0.0051	
MW-7	11/7/2012	109.71	4.58	--	105.13	**2.6**	**2.1**	--	**0.021**	**0.05**	**0.077**	**0.32**	**0.0125 J**	
MW-7	6/8/2013	109.71	4.75	--	104.96	--	--	--	--	--	--	--	--	
MW-7	6/10/2013	--	--	--	--	**1.3 J**	**3.3**	--	**0.0059**	**0.011**	**0.044**	**0.2**	<0.0012	
MW-7	6/10/2013	--	--	--	--	**1**	**2.4**	--	**0.0048**	**0.0053**	**0.03**	**0.13**	**0.0025 J**	collected via hydrasleeve
MW-7	8/18/2013	109.71	5.54	--	104.17	--	--	--	--	--	--	--	--	
MW-7	8/20/2013	--	--	--	--	<0.050	**1.2**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.011**	
MW-7	11/4/2013	109.71	5.14	--	104.57	--	--	--	--	--	--	--	--	
MW-7	11/8/2013	--	--	--	--	<0.050	**2.8**	--	**0.00058 J**	<0.00023	<0.00024	<0.00072	**0.0048 J**	
MW-7	6/5/2014	109.71	5.57	--	104.14	**0.25**	**1.3**	--	**0.0045**	**0.018**	**0.011**	**0.047**	**0.0026 J**	
MW-7	9/22/2014	109.71	5.01	--	104.7	**1.6**	**1.2**	--	**0.0074**	**0.014**	**0.05**	**0.25**	**0.0024 J**	
MW-7	4/30/2015	109.71	6.14	--	103.57	**2.5**	**1.4**	--	**0.016**	**0.19**	**0.13**	**0.48**	<0.0047	
MW-7	9/22/2015	109.71	5.54	--	104.17	**0.43**	**0.3**	--	**0.0023**	**0.0009 J**	**0.0062**	**0.082**	<0.0051	
MW-7	11/10/2015	109.71	6.86	--	102.85	**0.12**	**2**		**0.002**	**0.0008 J**	**0.004**	**0.017**	**0.0065 J**	
MW-7	6/7/2016	109.71	5.43	--	104.28	**1.3 / 1.4**	**2.3 / 2.2**	--	**0.006 / 0.007**	**0.012 / 0.012**	**0.047 / 0.049**	**0.23 / 0.24**	<0.0051	
MW-7	9/20/2016	109.71	5.46	--	104.25	**0.14**	**0.73**	--	**0.001**	**0.001**	**0.004**	**0.023**	<0.0062	
MW-7	6/2/2017	109.71	5.74	--	103.97	**0.084 J**	**2.1**	--	**0.001**	<0.0005	**0.003**	**0.009**	<0.0062	
MW-7	8/18/2017	110.06	4.81	--	105.25	**2.3**	**2.0 J**	--	**0.012**	**0.039**	**0.11**	**0.5**	<0.0060	
MW-7	6/19/2018	110.06	4.89	--	105.17	**1.2 / 1.2**	**1.6 J / 1.6 J**	--	**0.005 / 0.005**	**0.002 / 0.002**	**0.039 / 0.036**	**0.16 / 0.14**	<0.0071 / 0.0179 J	
MW-7	11/02/2018	110.06	5.5	--	104.56	**0.23**	**1.3**	--	**0.001**	**0.0007 J**	**0.005**	**0.02**	<0.0071	
MW-7	4/24/2019	110.43	5.45	0.00	104.98	**0.13**	**2.5**	--	**0.002**	**0.006**	**0.006**	**0.026**	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-8	9/24/2009	--	6.42	--	--	**10**	**4.4**	--	**0.066**	**0.075**	**0.29**	**1.5**	**0.0397**	
MW-8	11/9/2009	--	6.33	--	--	**6**	**4.1**	--	**0.11**	**0.035**	**0.087**	**0.51**	**0.0685**	
MW-8	3/3/2010	109.75	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-8	5/7/2010	109.75	5.77	--	103.98	**5.7 / 6.5**	**2.6 / 2.7**	--	**0.091 / 0.090**	**0.099 / 0.097**	**0.14 / 0.14**	**0.66 / 0.65**	**0.0412 / 0.0290**	
MW-8	7/19/2010	109.75	6.06	--	103.69	**7**	**7.1**	--	**0.081**	**0.15**	**0.28**	**1.4**	**0.0666**	
MW-8	10/4/2010	109.75	6.23	--	103.52	**3.3**	**1.1**	--	**0.12**	**0.065**	**0.08**	**0.43**	**0.0154**	
MW-8	4/19/2011	109.75	4.74	--	105.01	--	--	--	--	--	--	--	--	
MW-8	4/20/2011	--	--	--	--	**7.7**	**2.8**	--	**0.03**	**0.091**	**0.27**	**1.2**	**0.0254**	
MW-8	6/7/2011	109.75	5.91	--	103.84	**25**	**5.5**	--	**0.17**	**0.53**	**1.1**	**5.1**	**0.0301 J**	
MW-8	9/16/2011	109.75	6.15	--	103.6	**3.3**	**2.9**	--	**0.1**	**0.13**	**0.21**	**0.96**	**0.0308**	
MW-8	10/31/2011	109.75	6.38	--	103.37	--	--	--	--	--	--	--	--	
MW-8	11/1/2011	--	--	--	--	**3.8 / 2.9**	**0.91 J / 1.7 J**	--	**0.11 / 0.11**	**0.066 J / 0.037 J**	**0.13 J / 0.086 J**	**0.69 J / 0.49 J**	**0.0229 / 0.0242**	
MW-8	6/20/2012	109.75	5.11	--	104.64	**2.5**	**2.2**	--	**0.061**	**0.027**	**0.078**	**0.33**	**0.0061 J**	
MW-8	9/19/2012	109.75	4.55	--	105.2	**1.6**	**2.2**	--	**0.043**	**0.0047**	**0.021**	**0.1**	<0.0051	
MW-8	11/7/2012	109.75	4.65	--	105.1	**2.3**	**0.87**	--	**0.1**	**0.0061**	**0.037**	**0.25**	**0.0076 J**	
MW-8	6/8/2013	109.75	4.85	--	104.9	--	--	--	--	--	--	--	--	
MW-8	6/10/2013	--	--	--	--	**7.4**	**3.1**	--	**0.03**	**0.055**	**0.24**	**1.5**	**0.0036 J**	
MW-8	6/10/2013	--	--	--	--	**8.2**	**2.9**	--	**0.032**	**0.075**	**0.34**	**1.6**	**0.0019 J**	collected via hydrasleeve
MW-8	8/18/2013	109.75	5.66	--	104.09	--	--	--	--	--	--	--	--	
MW-8	8/20/2013	--	--	--	--	**1.9**	**1.9**	--	**0.0013**	**0.0036**	**0.048**	**0.28**	**0.018**	
MW-8	11/4/2013	109.75	5.25	--	104.5	--	--	--	--	--	--	--	--	
MW-8	11/8/2013	--	--	--	--	**1.6**	**1.1**	--	**0.09**	**0.002**	**0.032**	**0.17**	**0.0022 J**	
MW-8	6/5/2014	109.75	5.73	--	104.02	**5.2 J**	**2**	--	**0.026**	**0.025**	**0.2**	**1.1**	**0.0037 J**	
MW-8	9/22/2014	109.75	5.15	--	104.6	**1.5**	**0.76**	--	**0.01**	**0.0013 J**	**0.028**	**0.15**	**0.0026 J**	
MW-8	4/30/2015	109.75	6.2	--	103.61	**6.1**	**1.7**	--	**0.045**	**0.0089**	**0.18**	**0.71**	<0.0047	
MW-8	9/22/2015	109.66	5.68	--	103.98	**3.6**	**1.8**	--	**0.027**	**0.0087**	**0.18**	**0.77**	<0.0051	
MW-8	11/10/2015	109.66	5.85	--	103.81	**4.9**	**2.1**		**0.047**	<0.005	**0.13**	**0.66**	**0.0097 J**	
MW-8	6/8/2016	109.75	5.57	--	104.18	**4.4**	**2.4**	--	**0.013**	**0.007**	**0.1**	**0.5**	<0.0051	
MW-8	9/20/2016	109.75	5.46	--	104.29	**4.5**	**2.8**	--	**0.016**	**0.003 J**	**0.13**	**0.66**	<0.0062	
MW-8	6/02/2017	109.75	5.79	--	103.96	**11**	**1.7 J**	--	**0.031**	**0.016**	**0.33**	**1.8**	**0.0088 J**	
MW-8	8/18/2017	109.98	4.89	--	105.09	**5.3**	**1.4 J**	--	**0.015**	**0.006**	**0.18**	**0.81**	**0.0086 J**	
MW-8	6/19/2018	109.98	4.91	--	105.07	**5.7**	**1.8 J**	--	**0.008**	**0.003 J**	**0.19**	**0.78**	<0.0071	
MW-8	11/2/2018	109.98	5.53	--	104.45	**5.5 / 5.3**	**1.4 / 1.5**	--	**0.045 / 0.046**	**0.003 J / 0.003 J**	**0.19 / 0.18**	**0.85 / 0.83**	**0.0142 J / 0.0159**	
MW-8	4/24/2019	110.39	5.48	0.00	104.91	**0.93**	< 0.45BJ	--	**0.0005 J**	< 0.0002	**0.012**	**0.056**	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-9	9/24/2009	--	5.84	--	--	**31**	**2.6**	--	**0.057**	**0.61**	**1.2**	**8**	**0.0883**	
MW-9	11/9/2009		5.76	--	--	**26 / 30**	**5.1 / 4.7**	--	**0.053 / 0.057**	**0.38 / 0.47**	**0.91 / 1.1**	**6.2 / 8.0**	**0.0817 J / 0.0484 J**	
MW-9	3/3/2010	109.18	--	--	--	--	--	--	--	--	--	--	--	
MW-9	5/7/2010	109.18	5.13	--	104.05	**38**	**2.7**	--	**0.053**	**0.6**	**1.1**	**9**	**0.0221**	
MW-9	7/19/2010	109.18	5.45	--	103.73	**27 / 23**	**7.3 / 5.7**	--	**0.050 / 0.044**	**0.20 / 0.17**	**0.88 / 0.73**	**7.0 / 5.9**	**0.0395 J / 0.0746 J**	
MW-9	10/4/2010	109.18	5.62	--	103.56	**39 / 38**	<2.4 UJ / <2.7 U	--	**0.076 / 0.072**	**0.46 / 0.39**	**1.2 / 1.2**	**8.5 / 8.2**	**0.0112 J / 0.0204 J**	
MW-9	4/20/2011	109.18	4.9	--	104.28	**11 / 9.3**	**2.2 J / 2.2 J**	--	**0.030 / 0.027**	**0.13 J / 0.095 J**	**0.24 / 0.20**	**2.4 / 1.9**	**0.0358 / 0.0378**	
MW-9	6/7/2011	109.18	5.3	--	103.88	**9.5 / 9.9**	**2.8 / 2.8**	--	**0.024 / 0.026**	**0.066 / 0.070**	**0.29 / 0.30**	**2.2 / 2.3**	**0.0751 J / 0.0221 J**	
MW-9	9/16/2011	109.18	5.53	--	103.65	**26 / 21**	**3.4 / 3.7**	--	**0.068 / 0.052**	**0.21 J / 0.12 J**	**1.0 J / 0.66 J**	**7.6 J / 5.2 J**	**0.0405 / 0.0497**	
MW-9	10/31/2011	109.18	5.75	--	103.43	--	--	--	--	--	--	--	--	
MW-9	11/1/2011	--	--	--	--	**18**	**2.0 J**	--	**0.047**	**0.11**	**0.74**	**4.4**	**0.0304**	
MW-9	6/20/2012	109.18	4.47	--	104.71	**19 / 23**	**3.3 / 3.1**	--	**0.042 / 0.049**	**0.11 / 0.14**	**0.51 / 0.60**	**3.9 / 4.7**	**0.0112 J / 0.0067 J**	
MW-9	9/19/2012	109.18	3.65	--	105.53	**7.7 / 8.1**	**2.1 / 1.6**	--	**0.019 / 0.021**	**0.071 / 0.072**	**0.18 / 0.20**	**1.6 / 1.7**	**0.0104 J / 0.0067 J**	
MW-9	11/7/2012	109.18	4.18	--	105	**10 / 9.5**	**1.8 / 1.7**	--	**0.029 / 0.027**	**0.037 / 0.034**	**0.15 / 0.14**	**1.2 / 1.1**	**0.0164 / 0.0244**	
MW-9	6/8/2013	109.18	4.25	--	104.93	--	--	--	--	--	--	--	--	
MW-9	6/9/2013	--	--	--	--	**7.8 / 8.6**	**1.6 / 1.5**	--	**0.014 / 0.013**	**0.051 / 0.057**	**0.15 / 0.15**	**1.2 J / 1.4**	**0.0041 J / 0.0046 J**	
MW-9	6/9/2013	--	--	--	--	**12.1 / 15.7**	**2.0 J / 2.7 J**	--	**0.017 J / 0.0080 J**	**0.14 / 0.15**	**0.33 J / 0.25**	**2.8 J / 2.7**	**0.0062 J / 0.0046 J**	collected via hydrasleeve
MW-9	8/18/2013	109.18	5.07	--	104.11	--	--		--	--	--	--	--	
MW-9	8/20/2013	--	--	--	--	**17.7 J / 8.0 J**	**2.2 / 2.2**		**0.017 / 0.012**	**0.11 J / 0.055 J**	**0.33 J / 0.17 J**	**3.3 J / 1.6 J**	**0.040 / 0.032**	
MW-9	11/4/2013	109.18	4.68	--	104.50	--	--	--	--	--	--	--	--	
MW-9	11/08/2013			--		**17.0 / 11.3**	**1.3 J / 2.2 J**	--	**0.016 / 0.010**	**0.10 J / 0.048 J**	**0.42 J / 0.20 J**	**3.6 J / 1.6 J**	**0.017 / 0.020**	
MW-9	6/5/2014	109.18	5.15	--	104.03	**4.9 J / 5.2**	**1.2 / 1.2**	--	**0.0078 / 0.0080**	**0.031 / 0.028**	**0.13 / 0.12**	**1.0 / 1.0**	**0.0024 J / 0.0025 J**	
MW-9	9/22/2014	109.18	4.52	--	104.66	**7.4 / 7.3**	**1.1 / 1.2**	--	**0.0088 / 0.0084**	**0.036 / 0.034**	**0.17 / 0.16**	**1.4 / 1.3**	**0.0030 J / 0.0029 J**	
MW-9	4/30/2015	109.18	5.62	--	102.98	**7.3 / 8.5**	**2.0 / 2.3**	--	**0.026 / 0.028**	**0.040 / 0.052**	**0.13 / 0.18**	**0.80 J / 1.4 J**	<0.0047 / <0.0047	
MW-9	9/22/2015	109.18	5.01	--	104.17	**7.6 / 7.2**	**1.4 / 1.3**	--	**0.021 / 0.022**	**0.044 / 0.043**	**0.20 / 0.20**	**1.8 / 1.7**	<0.0051 / <0.0051	
MW-9	11/10/2015	109.18	5.37	--	103.81	**4.7 / 4.5**	**1.1 / 1.1**		**0.012 / 0.012**	**0.007 J / 0.007**	**0.065 / 0.068**	**0.49 / 0.51**	<0.0051 / <0.0051	
MW-9	6/8/2016	109.18	4.98	--	104.2	**6.2 / 6.1**	**1.3 / 1.2**		**0.008 J / 0.009 J**	**0.035 / 0.034**	**0.15 / 0.15**	**1.1 / 1.2**	<0.0051 / <0.0051	
MW-9	9/20/2016	109.18	5.09	--	104.09	**10 / 11**	**1.9 / 1.9**		<0.010 / <0.010	**0.035 / 0.037**	**0.21 / 0.21**	**1.9 / 1.9**	<0.0062 / <0.0062	
MW-9	6/02/2017	109.18	5.25	--	103.93	**11 / 10**	**1.7 / 1.3**	--	**0.009 J / 0.008 J**	**0.043 / 0.048**	**0.22 / 0.24**	**2.3 / 2**	<0.0062 / <0.0062	
MW-9	8/18/2017	109.41	4.1	--	105.31	**9.2 / 8.8**	**1.4 J / 1.4 J**	--	**0.003 J / 0.003 J**	**0.025 / 0.023**	**0.20 / 0.19**	**1.7 / 1.6**	<0.0060 / <0.0060	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-9	6/20/2018	109.41	4.27	--	105.14	**4.8 / 4.6**	**0.67 J / 0.63 J**	--	**0.003 J / 0.003 J**	**0.015 / 0.014**	**0.079 / 0.082**	**0.65 / 0.63**	<0.0071 / 0.0144 J	
MW-9	11/1/2018	109.41	4.96	--	104.45	**7.4 / 7.1**	**0.93 / 0.90**	--	**0.004 J / 0.004 J**	**0.019 / 0.019**	**0.14 / 0.14**	**1.2 / 1.2**	<0.0071 / <0.0071	
MW-9	4/24/2019	109.76	4.81	0.00	104.95	**6**	**0.72**	--	**0.004**	**0.022**	**0.12**	**0.72 D**	< 0.0071	DTW taken from Well Survey on 6/3/2019
MW-10	8/18/2017	110.29	6.7	--	103.59	**0.76**	**0.42 J**	--	**0.015**	**0.0005 J**	**0.002**	**0.15**	<0.0060	
MW-10	6/19/2018	110.29	6.07	--	104.22	**0.71**	**0.23 J**	--	**0.009**	<0.0005	**0.003**	**0.092**	<0.0071	
MW-10	11/1/2018	110.29	6.75	--	103.54	**0.7**	**0.35**	--	**0.011**	**0.0004 J**	**0.002**	**0.15**	**0.0080 J**	
MW-10	4/24/2019	110.29	6.65	0.00	103.64	**0.92**	< 0.39B	--	**0.012**	< 0.001B	**0.007**	**0.15**	< 0.0071	
Trip Blank	5/27/2009	--	--	--	--	<0.01	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	9/24/2009	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	9/24/2009	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	11/9/2009	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	3/1/2010	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	5/7/2010	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	7/19/2010	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	10/4/2010	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	4/20/2011	--	--	--	--	<0.010 / <0.010	--	--	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	--	
Trip Blank	6/7/2011	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	9/16/2011	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	11/1/2011	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	6/20/2012	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	9/19/2012	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	11/7/2012	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank-1	6/9/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank-2	6/9/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank-3	6/9/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank-4	6/9/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank	6/10/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank	8/20/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank-1	11/8/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank-2	11/8/2013	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	
Trip Blank	6/5/2014	--	--	--	--	<0.050	--	--	<0.00015	<0.00011	<0.00016	<0.00040	--	
Trip Blank	9/22/2014	--	--	--	--	<0.050	--	--	<0.00015	<0.00011	<0.00016	<0.00040	--	
Trip Blank	4/30/2015	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	9/22/2015	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	6/8/2016	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
Trip Blank	9/20/2016	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	
Trip Blank	6/2/2017	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	
Trip Blank	8/18/2017	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	
Trip Blank	6/20/2018	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	
Trip Blank	11/2/2018	--	--	--	--	<0.014	--	--	<0.0002	<0.0002	<0.0002	**0.0005 U**	--	
Trip Blank	4/24/2019	--	--	--	--	< 0.014	--	--	< 0.0002	< 0.0002	< 0.0004	< 0.001	--	
Per the ADEC, MW-6 from Chevron Facility 9-5414 is included on this table and is down gradient from the site.														
MW-6	6/13/2011	110.61	7.8	--	102.81	**0.012**	**3.7**	--	<0.005	<0.0005	<0.0005	<0.0015	--	
MW-6	9/15/2011	110.61	7.99	--	102.62	**0.01**	**2.8**	--	<0.005	<0.0005	<0.0005	<0.0015	--	
MW-6	3/21/2012						WELL UNDER SNOW PILE							
MW-6	6/20/2012	110.1	7.29	--	103.81	--	**1.5**	--	--	--	--	--	--	
MW-6	7/05/2012	--	--	--	--	<0.010	--	--	<0.005	<0.0005	<0.0005	<0.0015	--	
MW-6	9/19/2012	110.1	6.76	--	104.34	<0.010	**0.81**	--	<0.0005	<0.0005	<0.0005	<0.0015	--	
MW-6	6/9/2013	110.1	6.99	--	104.11	<0.050	**1.4**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.025**	
MW-6	6/9/2013	110.1	6.99	--	104.11	<0.050	**2.1**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.0024 J**	collected via hydrasleeve
MW-6	8/18/2013	110.1	6.61	--	104.49	--	--	--	--	--	--	--	--	
MW-6	8/20/2013	--	--	--	--	<0.050	**2.1**	--	<0.00024	<0.00023	<0.00024	<0.00072	**0.023**	
MW-6	5/12/2014	110.1	7.65	--	103.45	<0.1	**0.89**	--	<0.001	<0.001	<0.001	<0.003	--	
MW-6	5/12/2014	110.1	7.65	--	103.45	<0.1	**1.6**	--	<0.001	<0.001	<0.001	<0.003	--	collected via hydrasleeve
MW-6	9/12/2014	110.1	5.5	--	105.56	<0.1	**0.89**	--	<0.001	<0.001	<0.001	<0.003	--	
MW-6	9/22/2015	110.1	7.62	--	102.48	<0.1	**1.4**	--	<0.001	<0.001	<0.001	<0.001	<0.0150	
MW-6	11/09/2015	110.1	8.31	--	101.79	<0.010	**0.63**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0051	
MW-6	6/7/2016	111.1	7.88	--	103.22	<0.010	**0.0013**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	
MW-6	9/21/2016	111.1	7.44	--	103.66	<0.010	**2.7**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	TOC (ft msl)	DTW (ft btoc)	LNAPL Thickness (ft)	GWE (ft)	TPH-g (mg/L)	TPH-d (mg/L)	TPH-r (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Lead (mg/L)	Comments
ADEC Groundwater Cleanup Levels						**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.015**	
MW-6	6/1/2017	111.1	7.45	--	103.65	<0.010	**3**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
MW-6	8/16/2017	111.1	7.88	--	103.22	<0.010	**1.7 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	
MW-6	6/18/2018	111.1	6.91	--	104.19	<0.010	**2.4 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	
MW-6	10/31/2018	111.1	7.58	--	103.52	<0.014	**2.4 J**	**--**	<0.0002	<0.0002	<0.0002	<0.0005	**--**	

Notes:

ID = Identification
MW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet
GW Elev = Groundwater elevation
mg/L = Milligrams per liter
<0.0002 = Not detected at or above the method detection limit (MDL)
Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level
Bold = Value exceeds MDL
-- = Not Available or Not Analysed
LNAPL = Light Non-Aqueous Phase Liquid
[BD] = Blind Duplicate Sample
NADV88 = North American Vertical Datum of 1988
QA (EQB) = Quality Assurance (Equipment Blank)
QA (TB) = Quality Assurance (Trip Blank)
ADEC = Alaska Department of Environmental Conservation

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to Alaska Series Method AK101
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to Alaska Series Method AK102-SV 4/8/02
TPH-r = Total petroleum hydrocarbons, residual range organics by LUFT GC/MS according to Alaska Series Method AK102-SV 4/8/02
Samples analyzed by USEPA Method 8260C:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
Lead by Mehtod 6010C
Nitrate and Sulfate by Method EPA 300.0
Ferrous Iron by Method B-2011
Total Alkalinity and Pheolpthalien Alakinity by Method B-2011
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
D = The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect
B = Compound considered non-detect at the listed value due to associated blank contamination
R = The sample results are rejected.

Table 3. Historical Groundwater Poly Aromatic Hydrocarbons Analytical Data
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	Acenaphthene mg/L	Acenaphthylene mg/L	Anthracene mg/L	Benzo(a)anthracene mg/L	Benzo(a)pyrene mg/L	Benzo(b)fluoranthene mg/L	Benzo(g,h,i)perylene mg/L	Benzo(k)fluoranthene mg/L	Chrysene mg/L	Dibenz(a,h)anthracene mg/L	Fluoranthene mg/L	Fluorene mg/L	Indeno(1,2,3-cd)pyrene mg/L	Naphthalene mg/L	Phenanthrene mg/L	Pyrene mg/L
ADEC Groundwater Cleanup Levels		**0.53**	**0.26**	**0.043**	**0.00012**	**0.000034**	**0.00034**	**0.00026**	**0.0008**	**0.002**	**0.000034**	**0.26**	**0.29**	**0.00019**	**0.0017**	**0.17**	**0.12**
MW-2	09/19/2016	**0.000014 J**	<0.000011	<0.000011	**0.000041 J**	**0.000069**	**0.00013**	**0.000070**	**0.000053 J**	**0.00015**	**0.000012 J**	**0.000099**	**0.000022 J**	**0.000039 J**	<0.000032	**0.000084**	**0.00018**
MW-6	09/20/2016	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	**0.000015 J**	<0.000010	**0.000011 J**	<0.000010	<0.000010	**0.00064**	<0.000030	<0.000010
MW-7	09/20/2016	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	<0.0000094	**0.00027**	**0.000028**	<0.0000094
MW-8	05/07/2010	**0.000016 J /0.000017 J**	<0.000010 / <0.000010	<0.000010 / <0.000010	<0.000010 / <0.000010	<0.000010 / <0.000010	<0.000010 / **0.000011 J**	<0.000010 / <0.000010	<0.000010 / <0.000010	<0.000010 / <0.000010	<0.000010 / <0.000010	<0.000010 / **0.000012 J**	**0.000037 J /0.000033 J**	<0.000010 / <0.000010	**0.021 J /0.030 J**	**0.000034 J / 0.000031 J**	<0.000010 / **0.000013 J**
MW-8	07/19/2010	**0.000030 J**	<0.000010	**0.000015 J**	**0.000019 J**	**0.000012 J**	**0.000034 J**	**0.000015 J**	**0.000011 J**	**0.000055 J**	<0.000010	**0.000068 J**	**0.000051 J**	<0.000010	**0.013 J**	**0.00014 J**	**0.000051 J**
MW-8	09/20/2016	**0.000035 J**	<0.0000097	<0.0000097	<0.0000097	<0.0000097	<0.0000097	<0.0000097	<0.0000097	<0.0000097	<0.0000097	<0.0000097	**0.000043 J**	<0.0000097	**0.0074**	<0.000029	<0.0000097
MW-9	05/07/2010	**0.000066**	**0.000021 J**	**0.000033 J**	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	**0.000013 J**	<0.000011	**0.000024 J**	**0.00035**	<0.000011	**0.031**	**0.00015**	**0.000025 J**
MW-9	07/19/2010	**0.00012 J / 0.00014 J**	<0.000060 / <0.000010	**0.000074 J / 0.000061 J**	**0.000018 J / 0.000030 J**	**0.000011 J / 0.000017 J**	**0.000029 J / 0.000047 J**	**0.000017 J / 0.000023 J**	<0.000010 / <0.000010	**0.000060 J / 0.000079 J**	<0.000010 / <0.000010	**0.00010 J / 0.00017 J**	**0.00070 J / 0.00095 J**	<0.000010 / <0.000010	**0.026 J / 0.032 J**	**0.00064 J / 0.00071 J**	**0.00012 J / 0.00017 J**
MW-9	09/20/2016	**0.000073 / 0.000062**	**<0.0000097 / 0.000014 J**	**0.000013 J / 0.000012 J**	<0.0000097 / <0.0000097	<0.0000097 / <0.0000097	<0.0000097 / <0.0000097	<0.0000097 / <0.0000097	<0.0000097 / <0.0000097	<0.0000097 / <0.0000097	<0.0000097 / <0.0000097	**0.000010 J** / <0.0000097	0.00023 / 0.00021	<0.0000097 / <0.0000097	**0.020 / 0.020**	**0.00011 / 0.00011**	**0.000012 J / 0.000014 J**

Notes:

ID = Identification
MW = Groundwater monitoring well
mg/L = Milligrams per liter
<0.0002 = Not detected at or above the method detection limit (MDL)
Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level
Bold = Value exceeds MDL
-- = Not Available or Not Analysed
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
ADEC = Alaska Department of Environmental Conservation
PAHs = poly aromatic hydrocarbons by Method SW8270

Table 4. Historical MNA Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
MW-1	12/18/2007	--	--	--	--	--	--	
MW-1	5/26/2009	**0.012**	<0.25	**14.4**	--	**392**	<0.46	
MW-1	9/24/2009	<0.0050	**1.8 J**	**9.1**	--	**529**	<0.46	
MW-1	11/9/2009	--	--	--	--	--	--	
MW-1	3/1/2010	--	--	--	--	--	--	
MW-1	5/7/2010	--	--	--	--	--	--	
MW-1	07/19/2010	--	--	--	--	--	--	
MW-1	10/4/2010	--	--	--	--	--	--	
MW-1	4/19/2011	--	--	--	--	--	--	
MW-1	6/7/2011	--	--	--	--	--	--	
MW-1	9/16/2011	--	--	--	--	--	--	
MW-1	10/31/2011	--	--	--	--	--	--	
MW-1	11/1/2011	--	--	--	--	--	--	
MW-1	6/20/2012	--	--	--	--	--	--	
MW-1	9/19/2012	--	--	--	--	--	--	
MW-1	11/7/2012	--	--	--	--	--	--	
MW-1	6/8/2013	--	--	--	--	--	--	
MW-1	6/9/2013	**0.018**	**0.21 J**	**9.6 J**	--	**326**	--	
MW-1	6/9/2013	<0.0033	**0.33 J**	**7.2 J**	--	**322**	--	collected via hydrasleeve
MW-1	8/18/2013	--	--	--	--	--	--	
MW-1	8/20/2013	**0.0038 J**	<0.050 J	<1.2	--	**387**	--	
MW-1	11/04/2013	--	--	--	--	--	--	
MW-1	6/5/2014	<0.0033	**0.12 J**	<1.2	--	**419**	--	
MW-1	9/22/2014	**0.048**	<0.050 J	<1.2 R	--	**507**	--	
MW-1	4/30/2015	**0.081**	**2.7 J**	**18.7**	--	**372**	<0.70	
MW-1	9/22/2015	--	--	--	--	--	--	
MW-1	11/10/2015	--	--	--	--	--	--	
MW-1	6/07/2016	<0.0030	<0.25J	**9.9**	--	**297**	<1.7	
MW-1	9/19/2016	--	**R**	**15.8**	--	**587**	--	
MW-1	6/02/2017	**0.0086**	**0.71 J**	**10.2**	--	**382**	--	
MW-1	8/17/2017	**0.022 / 0.023**	**R / R**	**9.3 / 9.0**	--	**272 / 283**	--	
MW-1	6/19/2018	**0.018**	**0.49 J**	**15**	--	**305**	--	
MW-1	11/1/2018	**0.04**	**0.67 J**	**10.8**	--	**516**	--	
MW-1	4/24/2019	**0.26**	**0.84 J**	**20.9**	**0.154**	**345**	< 1.7	
MW-2	12/18/2007	--	--	--	--	--	--	
MW-2	5/27/2009	**0.021**	<0.25	**24.6**	--	**318**	<0.46	
MW-2	9/24/2009	**0.64**	<0.040 UJ	**15.9**	--	**399**	<0.46	
MW-2	11/9/2009	--	--	--	--	--	--	
MW-2	3/1/2010	--	--	--	--	--	--	
MW-2	5/7/2010	--	--	--	--	--	--	
MW-2	7/19/2010	--	--	--	--	--	--	
MW-2	10/4/2010	--	--	--	--	--	--	
MW-2	4/19/2011	--	--	--	--	--	--	
MW-2	4/20/2011	--	--	--	--	--	--	
MW-2	6/7/2011	--	--	--	--	--	--	
MW-2	9/16/2011	--	--	--	--	--	--	
MW-2	10/31/2011	--	--	--	--	--	--	
MW-2	11/1/2011	--	--	--	--	--	--	
MW-2	6/20/2012	--	--	--	--	--	--	
MW-2	9/19/2012	--	--	--	--	--	--	
MW-2	11/7/2012	--	<0.25	--	--	--	--	
MW-2	6/8/2013	--	--	--	--	--	--	
MW-2	6/9/2013	**0.25**	<0.050 J	**16.7 J**	--	**236**	--	
MW-2	6/9/2013	**0.049**	**0.22 J**	**14.1 J**	--	**201**	--	collected via hydrasleeve
MW-2	8/18/2013	--	--	--	--	--	--	
MW-2	8/20/2013	<0.0033	**0.70 J**	**3.8 J**	--	**16**	--	
MW-2	11/04/2013	--	--	--	--	--	--	

Table 4. Historical MNA Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
MW-2	11/08/2013	**0.0053 J**	**0.56 J**	**4**	--	**16.6**	--	
MW-2	6/5/2014	<0.0033	<0.050 J	**9.3**	--	**296**	--	
MW-2	9/22/2014	**0.043**	**0.12 J**	**15.6 J**	--	**36.2**	--	
MW-2	4/30/2015	**0.039**	<0.040 J	**64.8**	--	**271**	<0.70	
MW-2	9/22/2015	**0.011**	**0.53**	**3.5 J**	--	**32.8**	<0.70	
MW-2	11/10/2015	**0.0067**	<0.25 J	**5.5**	--	**51**	<0.70	
MW-2	6/07/2016	<0.0030	<0.25J	**7.3**	--	**113**	<1.7	
MW-2	9/19/2016	**0.0078**	**R**	**2.3 J**	--	**20.7**	--	
MW-2	6/02/2017	**0.032**	**R**	**29.9**	--	**239**	--	
MW-2	8/18/2017	**0.045**	**R**	<1.5	--	**51.4**	--	
MW-2	6/19/2018	**0.022**	<0.25 J	**7.5**	--	**224**	--	
MW-2	11/1/2018	**0.24**	**R**	<1.5	--	**225**	--	
MW-2	4/24/2019	< 0.003	**0.75 J**	**25.2**	**0.0255 J**	**171**	< 1.7	
MW-3	5/27/2009	**0.0057**	**3.6**	**36.1**	--	**248**	<0.46	
MW-3	9/24/2009	**0.11**	**0.10 J**	**33**	--	**354**	<0.46	
MW-3	11/9/2009	--	--	--	--	--	--	
MW-3	3/3/2010	--	--	--	--	--	--	
MW-3	5/7/2010	--	--	--	--	--	--	
MW-3	7/19/2010	--	--	--	--	--	--	
MW-3	10/4/2010	--	--	--	--	--	--	
MW-3	4/19/2011	--	--	--	--	--	--	
MW-3	4/20/2011	--	--	--	--	--	--	
MW-3	6/7/2011	--	--	--	--	--	--	
MW-3	9/16/2011	--	--	--	--	--	--	
MW-3	10/31/2011	--	--	--	--	--	--	
MW-3	6/20/2012	--	--	--	--	--	--	
MW-3	9/19/2012	--	--	--	--	--	--	
MW-3	11/7/2012	--	**1.3**	--	--	--	--	
MW-3	6/8/2013	--	--	--	--	--	--	
MW-3	6/9/2013	<0.0033	**0.40 J**	**18.4 J**	--	**263**	--	
MW-3	6/9/2013	<0.0033	**0.43 J**	**20.1 J**	--	**261**	--	collected via hydrasleeve
MW-3	8/18/2013	--	--	--	--	--	--	
MW-3	8/20/2013	<0.0033	**0.17 J**	**24.9 J**	--	**291**	--	
MW-3	11/04/2013	--	--	--	--	--	--	
MW-3	6/5/2014	<0.0033	**1.5 J**	**23.4**	--	**331**	--	
MW-3	9/22/2014	**0.014**	**0.16 J**	**28.8 J**	--	**394**	--	
MW-3	4/30/2015	**0.012**	**1.9**	**24.4**	--	**286**	<0.70	
MW-3	9/22/2015	--	--	--	--	--	--	
MW-3	11/10/2015	--	--	--	--	--	--	
MW-3	6/07/2016	**0.013**	**2.4**	**29.5**	--	**347**	<1.7	
MW-3	9/19/2016	**0.0053**	**0.46 J**	**26**	--	**378**	--	
MW-3	6/02/2017	**0.11**	**2.6 J**	**28.8**	--	**319**	--	
MW-3	8/17/2017	**0.0085**	**0.98 J**	**21.7**	--	**321**	--	
MW-3	6/20/2018	<0.0030	**3.6 J**	**27.9**	--	**300**	--	
MW-3	11/1/2018	<0.0030	**R**	**19**	--	**388**	--	
MW-3	4/24/2019	< 0.003	**1.6 J**	**16.3 J**	**0.116 J**	**273**	< 1.7	
MW-4	12/18/2007	--	--	--	--	--	--	
MW-4	9/24/2009	**4.7 / 4.4**	**0.041 J / 0.047 J**	**7.9 / 7.7**	--	**322 / 319**	<0.46 / <0.46	
MW-4	11/9/2009	--	--	--	--	--	--	
MW-4	3/3/2010	--	--	--	--	--	--	
MW-4	5/7/2010	--	--	--	--	--	--	
MW-4	7/19/2010	--	--	--	--	--	--	
MW-4	10/4/2010	--	--	--	--	--	--	
MW-4	4/19/2011	--	--	--	--	--	--	
MW-4	6/7/2011	--	--	--	--	--	--	
MW-4	9/16/2011	--	--	--	--	--	--	
MW-4	10/31/2011	--	--	--	--	--	--	

Table 4. Historical MNA Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
MW-4	11/1/2011	--	--	--	--	--	--	
MW-4	6/20/2012	--	--	--	--	--	--	
MW-4	9/19/2012	--	--	--	--	--	--	
MW-4	11/7/2012	--	--	--	--	--	--	
MW-4	6/8/2013	--	--	--	--	--	--	
MW-4	6/9/2013	<0.0033	**1.2 J**	**24.0 J**	--	**175**	--	
MW-4	6/9/2013	<0.0033	**1.2 J**	**23.5 J**	--	**174**	--	collected via hydrasleeve
MW-4	8/18/2013	--	--	--	--	--	--	
MW-4	8/20/2013	**0.0059 J**	**0.23 J**	**33.4 J**	--	**252**	--	
MW-4	11/04/2013	--	--	--	--	--	--	
MW-4	6/5/2014	**0.079**	**1.2 J**	**22.3**	--	**264**	--	
MW-4	9/22/2014	<0.0033	**1.4 J**	**25.5 J**	--	**286**	--	
MW-4	4/30/2015	**0.26**	**3.3 J**	**22.1**	--	**246**	<0.70	
MW-4	9/22/2015	--	--	--	--	--	--	
MW-4	11/10/2015	--	--	--	--	--	--	
MW-4	6/07/2016	**0.95**	**0.8**	**11.8**	--	**321**	<1.7	
MW-4	9/20/2016	--	**0.72 J**	**19.5**	--	**320**	--	
MW-4	6/02/2017	**0.11**	**3.5 J**	**24.3**	--	**228**	--	
MW-4	8/18/2017	**0.0095**	**2.8 J**	**27.9**	--	**244**	--	
MW-4	6/20/2018	**0.0084**	**2.8 J**	**28.4**	--	**204**	--	
MW-4	11/1/2018	**0.022**	**1.4 J**	**28.3**	--	**260**	--	
MW-4	4/24/2019	**0.0074**	**0.8**	**8.2**	**1.26**	**216**	< 1.7	
MW-5	12/18/2007	--	--	--	--	--	--	
MW-5	5/27/2009	**1.7**	**1.4**	**14.3**	--	**281**	<0.46	
MW-5	9/24/2009	**4**	<0.040 UJ	**6.9**	--	**310**	<0.46	
MW-5	11/9/2009	--	--	--	--	--	--	
MW-5	3/3/2010	--	--	--	--	--	--	
MW-5	5/7/2010	--	--	--	--	--	--	
MW-5	7/19/2010	--	--	--	--	--	--	
MW-5	4/19/2011							
MW-5	6/7/2011	--	--	--	--	--	--	
MW-5	9/16/2011	--	--	--	--	--	--	
MW-5	10/31/2011	--	--	--	--	--	--	
MW-5	11/1/2011	--	--	--	--	--	--	
MW-5	6/20/2012	--	--	--	--	--	--	
MW-5	9/19/2012	--	--	--	--	--	--	
MW-5	11/7/2012	--	--	--	--	--	--	
MW-5	6/8/2013	--	--	--	--	--	--	
MW-5	6/9/2013	<0.0033	**1.1 J**	**21.1 J**	--	**227**	--	
MW-5	6/9/2013	<0.0033	**1.1 J**	**21.1 J**	--	**220**	--	collected via hydrasleeve
MW-5	8/18/2013	--	--	--	--	--	--	
MW-5	8/20/2013	**0.0044 J**	**0.34 J**	**27.3 J**	--	**303**	--	
MW-5	11/04/2013	--	--	--	--	--	--	
MW-5	6/5/2014	**2.4**	**0.39 J**	**9.4**	--	**314**	--	
MW-5	9/22/2014	**0.62**	**0.80 J**	**23.9 J**	--	**336**	--	
MW-5	4/30/2015	**4.3**	**1.1 J**	**6.2**	--	**297**	<0.70	
MW-5	9/22/2015	--	--	--	--	--	--	
MW-5	11/10/2015	--	--	--	--	--	--	
MW-5	6/07/2016	**4.4**	<0.25	<1.5	--	**331**	<1.7	
MW-5	9/19/2016	--	**0.34 J**	**16.1**	--	**352**	--	
MW-5	6/02/2017	**0.32**	**1.7 J**	**15.8**	--	**276**	--	
MW-5	8/18/2017	**0.24**	**1.9 J**	**26**	--	**284**	--	
MW-5	6/20/2018	**0.0035 J**	**2.9 J**	**29.2**	--	**246**	--	
MW-5	11/1/2018	**0.14**	**1.1 J**	**16.6 J**	--	**324**	--	
MW-5	4/24/2019	**0.13**	**1.5**	**11.2**	**0.672**	**242**	< 1.7	
MW-6	12/18/2007	--	--	--	--	--	--	
MW-6	5/27/2009	**2.8**	<0.25	**2.1**	--	**317**	<0.46	

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Fourth Quarter 2007 to Current
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Anchorage, Alaska

Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
MW-6	9/24/2009	**9.1**	<0.040 UJ	**2.8 J**	--	**313**	<0.46	
MW-6	11/9/2009	--	--	--	--	--	--	
MW-6	3/3/2010	--	--	--	--	--	--	
MW-6	5/7/2010	--	--	--	--	--	--	
MW-6	7/19/2010	--	--	--	--	--	--	
MW-6	10/4/2010	--	--	--	--	--	--	
MW-6	4/20/2011	--	--	--	--	--	--	
MW-6	6/7/2011	--	--	--	--	--	--	
MW-6	9/16/2011	--	--	--	--	--	--	
MW-6	10/31/2011	--	--	--	--	--	--	
MW-6	11/1/2011	--	--	--	--	--	--	
MW-6	6/20/2012	--	--	--	--	--	--	
MW-6	9/19/2012	--	--	--	--	--	--	
MW-6	11/7/2012	--	<0.25	--	--	--	--	
MW-6	6/8/2013	--	--	--	--	--	--	
MW-6	6/10/2013	**5.5**	<0.050 J	<1.2	--	**292**	--	
MW-6	6/10/2013	**5.6**	<0.050 J	<1.2	--	**293**	--	collected via hydrasleeve
MW-6	8/18/2013	--	--	--	--	--	--	
MW-6	8/20/2013	**7.3**	<0.050 J	<1.2	--	**304**	--	
MW-6	6/5/2014	**4.8**	<0.050 J	**2.7**	--	**345**	--	
MW-6	9/22/2014	**6**	<0.050 J	<1.2 R	--	**294**	--	
MW-6	4/30/2015	**8.5**	<0.040	<1.5	--	**315**	<0.70	
MW-6	9/22/2015	**7.4**	<0.25	<1.5	--	**303**	<0.70	
MW-6	11/10/2015	**6.2**	<0.25	<1.5	--	**293**	<0.70	
MW-6	6/08/2016	**4.5**	<0.25	<1.5	--	**264**	<1.7	
MW-6	9/20/2016	**3.5**	<0.25 J	<1.5	--	**328 J**	--	
MW-6	6/02/2017	**0.48**	**R**	<1.5	--	**299**	--	
MW-6	8/18/2017	**5.3**	**R**	**4.7 J**	--	**220**	--	
MW-6	6/20/2018	**8.2 J**	<0.25 J	<1.5	--	**298**	--	
MW-6	11/2/2018	**8**	**R**	<1.5 J	--	**304**	--	
MW-6	4/24/2019	**3.5**	**0.42 J**	**11.3**	**13.9**	**160**	< 1.7	
MW-7	12/18/2007	--	--	--	--	--	--	
MW-7	5/27/2009	**0.39**	**1**	**37.9**	--	**247**	<0.46	
MW-7	9/24/2009	**3.1**	<0.040 UJ	**10**	--	**329**	<0.46	
MW-7	11/9/2009	--	--	--	--	--	--	
MW-7	3/3/2010	--	--	--	--	--	--	
MW-7	5/7/2010	--	--	--	--	--	--	
MW-7	7/19/2010	--	--	--	--	--	--	
MW-7	10/4/2010	--	--	--	--	--	--	
MW-7	4/20/2011	--	--	--	--	--	--	
MW-7	6/7/2011	--	--	--	--	--	--	
MW-7	9/16/2011	--	--	--	--	--	--	
MW-7	10/31/2011	--	--	--	--	--	--	
MW-7	11/1/2011	--	--	--	--	--	--	
MW-7	6/20/2012	--	--	--	--	--	--	
MW-7	9/19/2012	--	--	--	--	--	--	
MW-7	11/7/2012	--	<0.25	--	--	--	--	
MW-7	6/8/2013	--	--	--	--	--	--	
MW-7	6/10/2013	**2.2**	**0.078 J**	**19.2 J**	--	**227**	--	
MW-7	6/10/2013	**1.8**	<0.050 J	**17.6 J**	--	**235**	--	collected via hydrasleeve
MW-7	8/18/2013	--	--	--	--	--	--	
MW-7	8/20/2013	**0.12**	**1.1 J**	**21.7 J**	--	**197**	--	
MW-7	11/4/2013	--	--	--	--	--	--	
MW-7	11/8/2013	<0.0033	**0.36 J**	**21**	--	**248**	--	
MW-7	6/5/2014	**0.48**	**0.22 J**	**17.1**	--	**256**	--	
MW-7	9/22/2014	**2.8**	**0.22 J**	<1.2 R	--	**331**	--	
MW-7	4/30/2015	**5.3**	**0.17**	**9.6**	--	**310**	<0.70	
MW-7	9/22/2015	**1.8**	**2.5**	**19.6**	--	**295**	<0.70	

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Fourth Quarter 2007 to Current
Chevron Site 351860
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Anchorage, Alaska

Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
MW-7	11/10/2015	**0.72**	**0.52 J**	**18.3**	**--**	**261**	<0.70	
MW-7	6/7/2016	**1.8**	<0.25 J	**3.9 J**	**--**	**339**	<1.7	
MW-7	9/20/2016	**0.76**	**1.3 J**	**23.9**	**--**	**315**	**--**	
MW-7	6/2/2017	**0.35**	**1.3 J**	**23.3**	**--**	**285**	**--**	
MW-7	8/18/2017	**2.2**	**R**	<1.5	**--**	**330**	**--**	
MW-7	6/19/2018	**1.3 / 1.4**	<0.25 J / <0.25 J	**3.5 J / 3.5 J**	**--**	**310 / 306**		
MW-7	11/02/2018	**0.71**	**1.7 J**	**26.3 J**	**--**	**260**	**--**	
MW-7	4/24/2019	**0.44**	**1.5**	**20.6**	**0.878**	**253**	< 1.7	
MW-8	9/24/2009	**1.7**	<0.040 UJ	**4.2 J**	**--**	**357**	<0.46	
MW-8	11/9/2009	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	3/3/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	5/7/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	7/19/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	10/4/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	4/19/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	4/20/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	6/7/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	9/16/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	10/31/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	11/1/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	6/20/2012	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	9/19/2012	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	11/7/2012	**--**	<0.25	**--**	**--**	**--**	**--**	
MW-8	6/8/2013	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	6/10/2013	**2.8**	<0.050 J	**13.6**	**--**	**246**	**--**	
MW-8	6/10/2013	**3**	<0.050 J	**12.7**	**--**	**243**	**--**	collected via hydrasleeve
MW-8	8/18/2013	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	8/20/2013	**0.33**	**1.6 J**	**22.9 J**	**--**	**273**	**--**	
MW-8	11/4/2013	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8	11/8/2013	**2**	**0.88 J**	**10.5**	**--**	**263**	**--**	
MW-8	6/5/2014	**1.4**	**0.075 J**	**2.9**	**--**	**316**	**--**	
MW-8	9/22/2014	**0.45**	**2.4 J**	**28.3 J**	**--**	**302**	**--**	
MW-8	4/30/2015	**5.4**	**0.2**	**2.5 J**	**--**	**348**	<0.70	
MW-8	9/22/2015	**1.7**	**3.5**	**18.7**	**--**	**325**	<0.70	
MW-8	11/10/2015	**2.6**	<0.25 J	**3.9 J**	**--**	**371**	<0.70	
MW-8	6/8/2016	**1.9 J**	<0.25	<1.5	**--**	**331**	<1.7	
MW-8	9/20/2016	**3.5**	**2.5 J**	**15.9**	**--**	**371 J**	**--**	
MW-8	6/02/2017	**1**	**0.5 J**	**24**	**--**	**294**	**--**	
MW-8	8/18/2017	**1.8**	**R**	**4.0 J**	**--**	**317**	**--**	
MW-8	6/19/2018	**1.3**	<0.25 J	<1.5	**--**	**300**	**--**	
MW-8	11/2/2018	**2.2 / 2.3**	**R / R**	<1.5 J / <1.5 J	**--**	**339 / 338**	**--**	
MW-8	4/24/2019	**0.022**	**5.5**	**37.3**	**2.73**	**284**	< 1.7	
MW-9	9/24/2009	**6**	<0.040 UJ	**3.0 J**	**--**	**353**	<0.46	
MW-9	11/9/2009	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	3/3/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	5/7/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	7/19/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	10/4/2010	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	4/20/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	6/7/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	9/16/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	10/31/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	11/1/2011	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	6/20/2012	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	9/19/2012	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	11/7/2012	**--**	<0.25 / <0.25	**--**	**--**	**--**	**--**	
MW-9	6/8/2013	**--**	**--**	**--**	**--**	**--**	**--**	

Table 4. Historical MNA Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

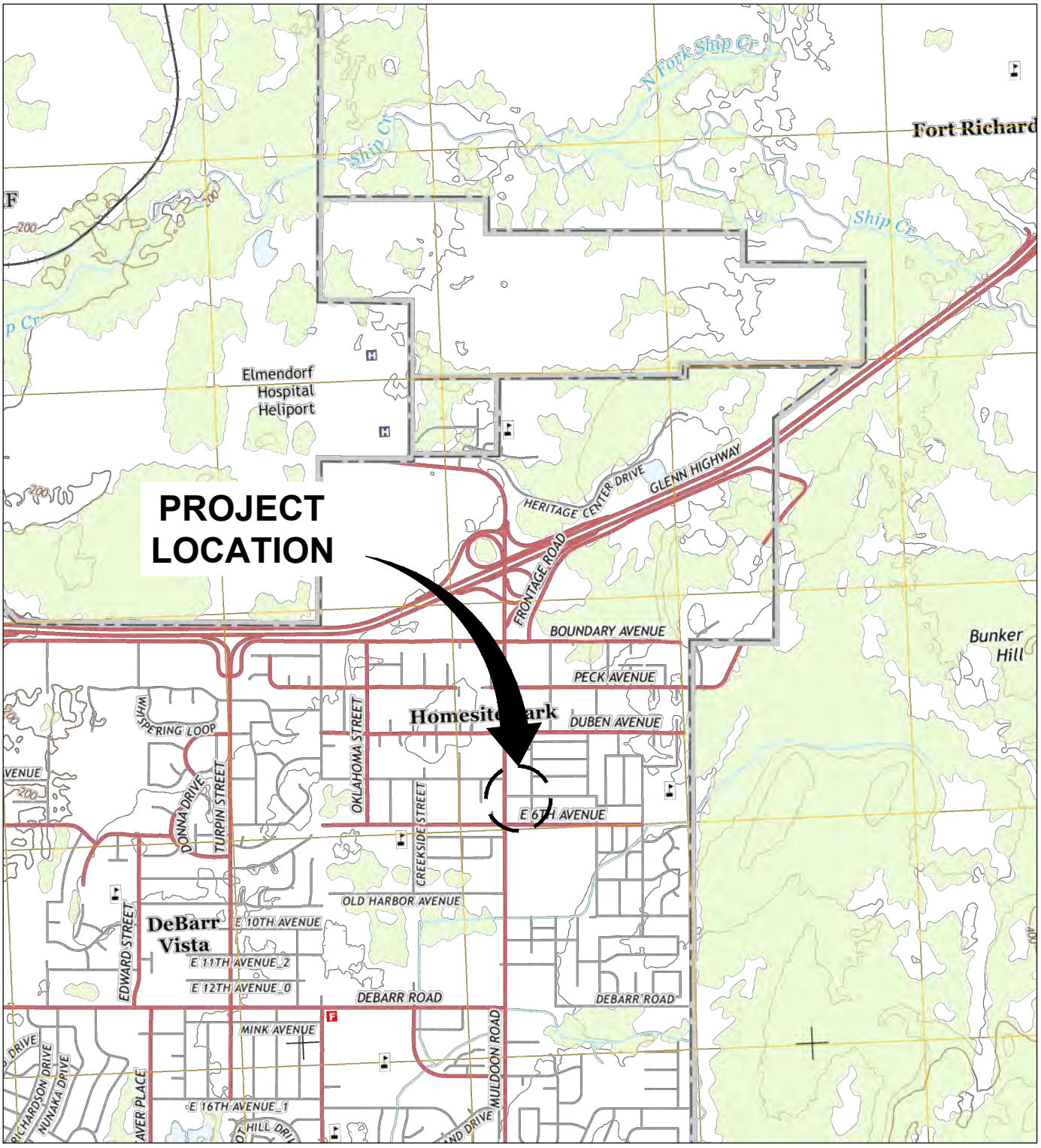
Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
MW-9	6/9/2013	**1.7 / 1.6**	**0.058 J / '--**	**9.4 J / 9.8 J**	**--**	**146 / 153**	**--**	
MW-9	6/9/2013	**1.2 / 1.3**	<0.050 J / <0.050 J	**11.8 J / 12.4 J**	**--**	**124 / 129**	**--**	collected via hydrasleeve
MW-9	8/18/2013	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	8/20/2013	**2.7 / 3.5**	<0.050 J / <0.050 J	**7.4 J / 8.0 J**	**--**	**164 / 165**	**--**	
MW-9	11/4/2013	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	11/08/2013	**1.4 / 1.8**	**0.061 J / 0.057 J**	<1.2 / <1.2	**--**	**180 / 196**	**--**	
MW-9	6/5/2014	**3.9 / 3.8**	<0.050 J / <0.050 J	<1.2 / <1.2	**--**	**221 / 229**	**--**	
MW-9	9/22/2014	**4.4 / 3.7**	**0.15 J / 0.15 J**	**2.1 J / 2.3 J**	**--**	**176 / 177**	**--**	
MW-9	4/30/2015	**5.0 / 4.6**	<0.040 / <0.040	**3.2 J / 3.9 J**	**--**	**210 / 195**	<0.70 / <0.70	
MW-9	9/22/2015	**2.9 / 2.9**	<0.25 / <0.25	<1.5 / <1.5	**--**	**147 / 153**	<0.70 / <0.70	
MW-9	11/10/2015	**5.4 / 5.2**	<0.25 / <0.25	<1.5 / <1.5	**--**	**202 / 202**	<0.70 / <0.70	
MW-9	6/8/2016	**3.4 / 3.6**	<0.25 / <0.25	**5.1 / 4.8 J**	**--**	**143 / 174**	<1.7 / <1.7	
MW-9	9/20/2016	**0.87 / 0.65**	<0.25 J / <0.25 J	**2.8 J / 2.3 J**	**--**	**188 J / 186 J**	**--**	
MW-9	6/02/2017	**2.7 / 2.2**	**R / R**	**7.4 / 6.6**	**--**	**175 / 174**	**--**	
MW-9	8/18/2017	**0.64 / 0.64**	**1.4 J / 1.4 J**	**5.4 / 4.8 J**	**--**	**125 / 126**	**--**	
MW-9	6/20/2018	**1.2 / 1.1**	**0.85 J / 0.85 J**	**8.8 / 9.0**	**--**	**141 / 144**	**--**	
MW-9	11/1/2018	**1.6 / 1.6**	**R / R**	<1.5 J / <1.5 J	**--**	**124 / 128**	**--**	
MW-9	4/24/2019	**0.87**	**0.57**	**6**	**3.11**	**102**	< 1.7	
MW-10	8/18/2017	**2.7**	**R**	**13.2**	**--**	**305**	**--**	
MW-10	6/19/2018	**1.9**	<0.25 J	**16.9**	**--**	**285**	**--**	
MW-10	11/1/2018	**1.5**	**R**	**27**	**--**	**327**	**--**	
MW-10	4/24/2019	**2.4**	**2**	**82.9**	**13.1**	**304**	< 1.7	
QA (TB)	5/27/2009	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/24/2009	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/24/2009	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	11/9/2009	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	3/1/2010	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	5/7/2010	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	7/19/2010	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	10/4/2010	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	4/20/2011	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/7/2011	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/16/2011	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	11/1/2011	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/20/2012	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/19/2012	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	11/7/2012	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB-1)	6/9/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB-2)	6/9/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB-3)	6/9/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB-4)	6/9/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/10/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	8/20/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB-1)	11/8/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB-2)	11/8/2013	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/5/2014	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/22/2014	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	4/30/2015	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/22/2015	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/8/2016	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	9/20/2016	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/2/2017	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	8/18/2017	<0.0030	**--**	**--**	**--**	**--**	**--**	
QA (TB)	6/20/2018	**--**	**--**	**--**	**--**	**--**	**--**	
QA (TB)	11/2/2018	<0.0030	**--**	**--**	**--**	**--**	**--**	
QA (TB)	4/24/2019	**--**	**--**	**--**	**--**	**--**	**--**	

Table 4. Historical MNA Analytical Results
Fourth Quarter 2007 to Current
Chevron Site 351860
5138 Old Seward Highway
Anchorage, Alaska

Well ID	Sample Date	Methane (mg/L)	Nitrogen, Nitrate as N (mg/L)	Sulfate (SO_4) (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg $CaCO_3$/L)	Phenolphthalein Alkalinity (mg/L)	Comments
Per the ADEC, MW-6 from Chevron Facility 9-5414 is included on this table and is down gradient from the site.								
MW-6	6/13/2011	--	--	--	--	--	--	
MW-6	9/15/2011	--	--	--	--	--	--	
MW-6	3/21/2012							
MW-6	6/20/2012	--	--	--	--	--	--	
MW-6	7/05/2012	--	--	--	--	--	--	
MW-6	9/19/2012	--	--	--	--	--	--	
MW-6	6/9/2013	**10**	<0.050 J	**18.7 J**	--	**414**	--	
MW-6	6/9/2013	**6.5**	<0.050 J	**27.0 J**	--	**329**	--	collected via hydrasleeve
MW-6	8/18/2013	--	--	--	--	--	--	
MW-6	8/20/2013	**13.1 J**	<0.050 J	**33.4 J**	--	**338**	--	
MW-6	5/12/2014	--	--	--	--	--	--	
MW-6	5/12/2014	--	--	--	--	--	--	collected via hydrasleeve
MW-6	9/12/2014	--	--	--	--	--	--	
MW-6	9/22/2015	--	--	--	--	--	--	
MW-6	11/09/2015	--	--	--	--	--	--	
MW-6	6/7/2016	--	--	--	--	--	--	
MW-6	9/21/2016	--	--	--	--	--	--	
MW-6	6/1/2017	--	--	--	--	--	--	
MW-6	8/16/2017	--	--	--	--	--	--	
MW-6	6/18/2018	--	--	--	--	--	--	
MW-6	10/31/2018	--	--	--	--	--	--	

Notes:
ID = Identification
MW = Groundwater monitoring well
GW Elev = Groundwater elevation
mg/L = Milligrams per liter
mg $CaCO_3$/L = milligrams of Calcium Carbonate per liter
<0.0002 = Not detected at or above the method detection limit (MDL)
Bold = Value exceeds the MDL
[ ] = Blank Duplicate Sample
QA (EQB) = Quality Assurance (Equipment Blank)
QA (TB) = Quality Assurance (Trip Blank)
ADEC = Alaska Department of Environmental Conservation
Nitrate and Sulfate by Method EPA 300.0
Ferrous Iron by Method B-2011
Total Alkalinity and Pheolpthalien Alakinity by Method B-2011

FIGURES

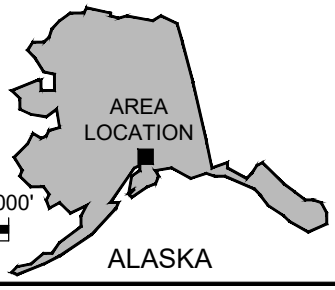


REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., ANCHORAGE A-8 NE, ALASKA, 2019, NAD83.

N

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



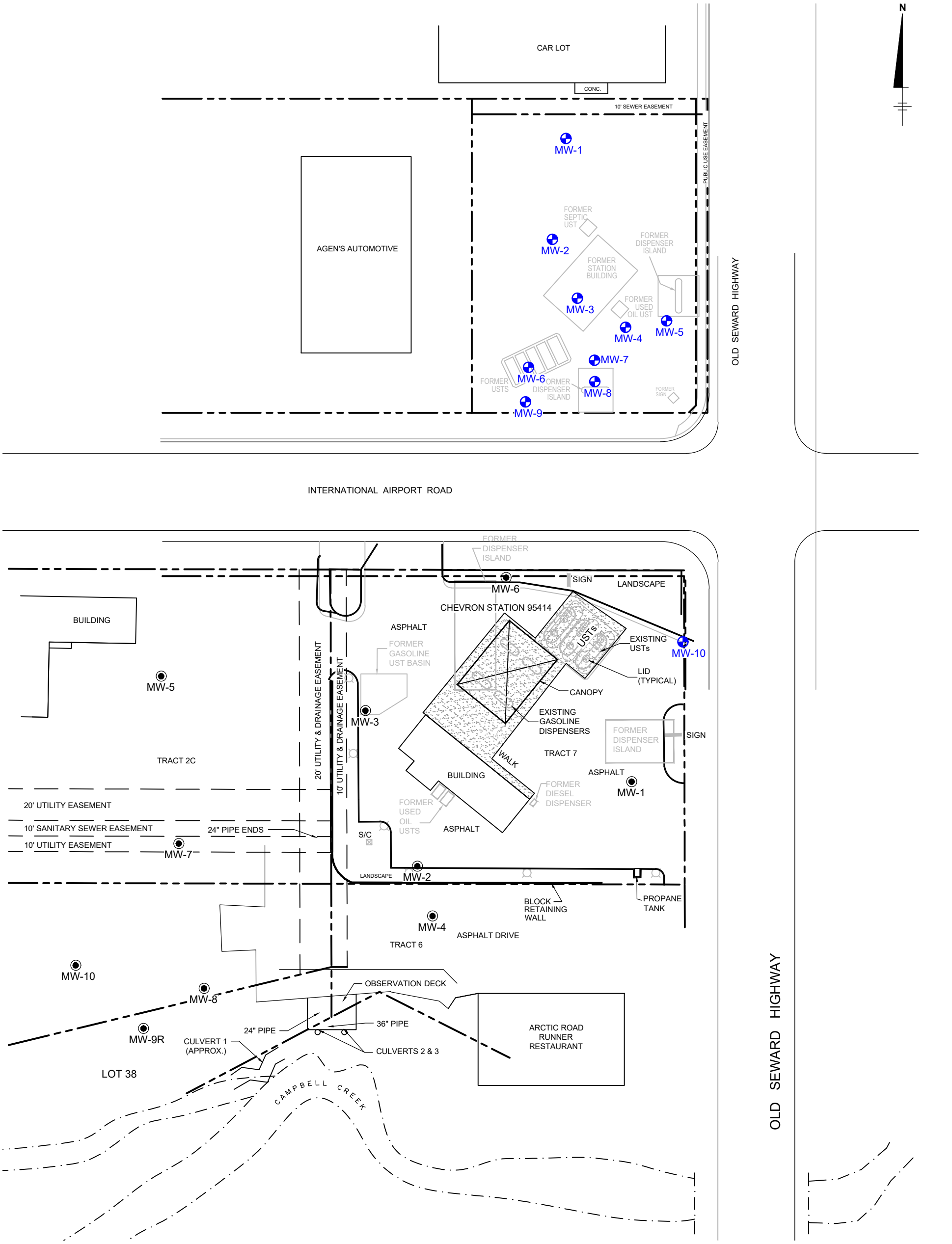
CHEVRON SITE 351860
5138 OLD SEWARD HIGHWAY,
ANCHORAGE, ALASKA

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\dki00653\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\351860 Chevron AK\2019\GWRAK000.1860\01-DWG\GWM-2019-FIG2-SITE PLAN.dwg LAYOUT: 2 SAVED: 8/19/2019 6:11 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 8/20/2019 11:10 AM BY: KAMBLE, DEVESH
XREFS: IMAGES: PROJECTNAME: ----



LEGEND

- MW-3 — GROUNDWATER MONITORING WELL
- MW-4 — GROUNDWATER MONITORING WELL (CHEVRON SITE 95414)
- APPROXIMATE PROPERTY LINE
- EASEMENT
- RETAINING WALL
- CREEK
- LIGHT POLE
- SUMP

NOTE:

1. BASEMAP PROVIDED BY ARCADIS; LOUNSBURY & ASSOCIATES, SURVEY DATED 10/20/2017 & 11/03/2017.

CHEVRON SITE 351860
5138 OLD SEWARD HIGHWAY,
ANCHORAGE, ALASKA

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\emuresa\BIM 360\ARCADIS\ANA - CHEVRON CORPORATION\PROJECT FILES\351860 CHEVRON AK\2019\GWRAK000.1860\01-DWG\GWM-JUNE2019-FIG3-GWE CONTOURS.dwg LAYOUT: 3 SAVED: 12/30/2019 4:30 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ----
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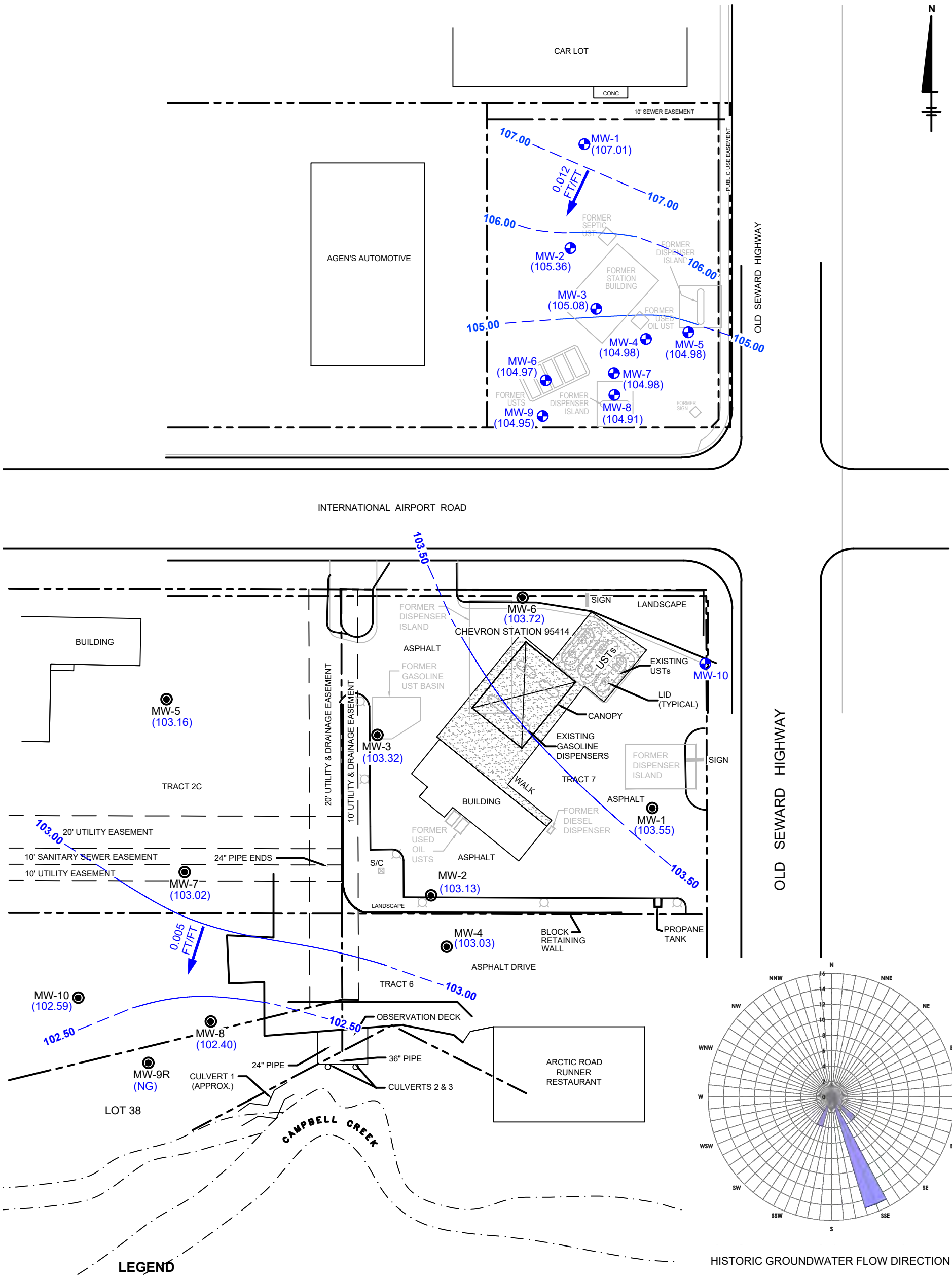

HISTORIC GROUNDWATER FLOW DIRECTION

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-3 — GROUNDWATER MONITORING WELL
- MW-4 — GROUNDWATER MONITORING WELL (CHEVRON SITE 95414)
- 102.50 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- (103.16) — GROUNDWATER ELEVATION (FEET)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- 0.004 FT/FT — APPROXIMATE HYDRAULIC GRADIENT (FEET PER FOOT)
- (NG) — NOT GAUGED

NOTE:

1. BASEMAP PROVIDED BY ARCADIS; LOUNSBURY & ASSOCIATES, SURVEY DATED 10/20/2017 & 11/03/2017.

0 60' 120'

APPROXIMATE SCALE 1 in. = 60 ft.

CHEVRON SITE 351860
5138 OLD SEWARD HIGHWAY,
ANCHORAGE, ALASKA

GROUNDWATER ELEVATION CONTOUR MAP JUNE 3, 2019

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\CTI01012\BIM 360\Arcadis\ANA - CHEVRON CORPORATION\Project Files\351860 Chevron AK\2019\GWRAK000.1860\01-DWG\GWM-2019-FIG4-DATABOX.dwg LAYOUT: 4 SAVED: 11/4/2019 4:34 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 11/4/2019 4:46 PM BY: THORWATH, CHANDRAKANTH
XREFS: IMAGES: PROJECTNAME: ----

MW-7	
TPH-g	**0.13**
TPH-d	**2.5**
B	**0.002**
T	**0.006**
E	**0.006**
X	**0.026**
Lead	< 0.0071

MW-2	
TPH-g	**0.063 J [0.072 J]**
TPH-d	**9.9 [9.5]**
B	< 0.0002 [<0.0002]
T	< 0.0002 [<0.0002]
E	< 0.0004 [<0.0004]
X	< 0.001 [<0.001]
Lead	**0.0074 J** [< 0.0071]

MW-1	
TPH-g	--
TPH-d	--
B	--
T	--
E	--
X	--
Lead	< 0.0071

MW-3	
TPH-g	< 0.014
TPH-d	< 0.37BJ
B	< 0.0002
T	< 0.0002
E	< 0.0004
X	< 0.001
Lead	< 0.0071

MW-6	
TPH-g	**0.31**
TPH-d	< 0.49B
B	**0.004**
T	< 0.001B
E	**0.009**
X	**0.019**
Lead	< 0.0071

MW-4	
TPH-g	--
TPH-d	--
B	--
T	--
E	--
X	--
Lead	< 0.0071

MW-9	
TPH-g	**6**
TPH-d	**0.72**
B	**0.004**
T	**0.022**
E	**0.12**
X	**0.72 D**
Lead	< 0.0071

MW-5	
TPH-g	--
TPH-d	--
B	--
T	--
E	--
X	--
Lead	< 0.0071

MW-8	
TPH-g	**0.93**
TPH-d	< 0.45BJ
B	**0.0005 J**
T	< 0.0002
E	**0.012**
X	**0.056**
Lead	< 0.0071

MW-10	
TPH-g	**0.92**
TPH-d	< 0.39B
B	**0.012**
T	< 0.001B
E	**0.007**
X	**0.15**
Lead	< 0.0071

CAR LOT
AGEN'S AUTOMOTIVE
PUBLIC USE EASEMENT
FORMER SEPTIC UST
FORMER DISPENSER ISLAND
FORMER STATION BUILDING
FORMER USED OIL UST
FORMER USTS
FORMER SIGN
OLD SEWARD HIGHWAY
INTERNATIONAL AIRPORT ROAD
BUILDING
TRACT 2C
20' UTILITY & DRAINAGE EASEMENT
10' UTILITY & DRAINAGE EASEMENT
20' UTILITY EASEMENT
10' SANITARY SEWER EASEMENT
10' UTILITY EASEMENT
24" PIPE ENDS
S/C
LANDSCAPE
ASPHALT
FORMER GASOLINE UST BASIN
CHEVRON STATION 95414
USTs
EXISTING USTs
LID (TYPICAL)
CANOPY
EXISTING GASOLINE DISPENSERS
FORMER DISPENSER ISLAND
SIGN
WALK
TRACT 7
BUILDING
FORMER DIESEL DISPENSER
FORMER USED OIL USTS
BLOCK RETAINING WALL
PROPANE TANK
TRACT 6
ASPHALT DRIVE
OBSERVATION DECK
24" PIPE
36" PIPE
CULVERT 1 (APPROX.)
CULVERTS 2 & 3
ARCTIC ROAD RUNNER RESTAURANT
LOT 38
CAMPBELL CREEK

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-3 — GROUNDWATER MONITORING WELL
- MW-4 — GROUNDWATER MONITORING WELL (CHEVRON SITE 95414)
- TPH-g — TOTAL PETROLEUM HYDROCARBONS, GASOLINE RANGE ORGANICS
- TPH-d — TOTAL PETROLEUM HYDROCARBONS, DIESEL RANGE ORGANICS
- B — BENZENE
- T — TOLUENE
- E — ETHYLBENZENE
- X — TOTAL XYLENES
- **BOLD** — VALUE EXCEEDS MDL
- **BOLD** — VALUE EXCEEDS ADEC GROUNDWATER CLEANUP LEVEL
- <0.0002 — NOT DETECTED AT OR ABOVE THE METHOD DETECTION LIMIT (MDL)
- J — COMPOUND POSITIVLY IDENTIFIED; HOWEVER THE ASSOCIATED VALUE IS AN ESTIMATED CONCETIONATION ONLY
- (NS) — NOT SAMPLED
- B — CONSIDERED NON DETECT DUE TO ASSOCIATED BLANK CONTAMINATION

WELL ID — MW-7 | TPH-g 0.13 | TPH-d 2.5 | B 0.002 | T 0.006 | E 0.006 | X 0.026 | Lead < 0.0071 — CONCENTRATION IN (mg/L) — ANALYTE

NOTE:

1. ALL CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L)
2. BASEMAP PROVIDED BY ARCADIS; LOUNSBURY & ASSOCIATES, SURVEY DATED 10/20/2017 & 11/03/2017.

0 60' 120'

APPROXIMATE SCALE 1 in. = 60 ft.

CHEVRON SITE 351860
5138 OLD SEWARD HIGHWAY,
ANCHORAGE, ALASKA

GROUNDWATER ANALYTICAL RESULT MAP JUNE 3, 2019

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FIGURE 4

APPENDIX A

Site Background and History

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

Appendix A:

Site History and Background

Former Chevron Facility 351860
5138 Old Seward Highway
Anchorage, Alaska
ADEC File No: 2100.38.503
HAZARD ID No: 4692

November 4, 2019

Appendix A: 351860 Site Description and Background

1 351860 SITE BACKGROUND AND HISTORY

1.1 Site Description and Vicinity

Former Chevron Facility 351860 is located at 5138 Old Seward Highway in Anchorage, Alaska. Currently, the site is a paved parking lot with a drive through coffee shop. The surrounding properties are mixed commercial and industrial; the site is bordered to the north, west, and south by former or current ADEC contaminated sites.

Texaco operated a retail service station from 1969 until 1984. The site was decommissioned in 1985, at which time four 4,000 gal. gasoline underground storage tanks (USTs), one 10,000 gal. diesel UST, one used oil UST, two dispenser islands, two service bays, product lines and the station building were removed from the property.

1.2 Site History

In 1985, four 4,000 gal. gasoline underground storage tanks (USTs), one 10,000 gal. diesel UST, one used oil UST, two dispenser islands, two service bays, product lines and the station building were removed from the site. The vent lines and electrical conduits were abandoned and remain in place.

2 SITE CHARACTERIZATIONS

There are currently nine groundwater monitoring wells located onsite (MW-1 through MW-9) and one groundwater monitoring well located offsite to the south (MW-10).

3 CURRENT SITE MONITORING ACTIVITIES

The site currently has a network of ten groundwater monitoring wells which are monitored and sampled semiannually: onsite wells MW-1 through MW-9, and offsite well MW-10. An additional offsite groundwater monitoring well associated with Chevron Site 95414 (MW-6) is located downgradient of the site, and is monitored and sampled concurrently with MW-1 through MW-10. Historically, concentrations of volatile organic compounds (VOCs), gasoline range organics (GRO), diesel range organics (DRO), and lead have exceeded their respective ADEC Method 2 groundwater cleanup levels in several monitoring wells.

4 GEOLOGY AND HYDROGEOLOGY

4.1 Site Hydrogeology

The site is in south central Alaska, south of the Knik Arm and north of the Turnagain Arm of Cook Inlet. From 2007 until present, static groundwater depths at the site have ranged between 3.40 to 7.87 feet below top of casing (ft btoc). Historic ground water flow is to the southeast.

5 REFERENCES

GHD Inc. 2018. First Semiannual 2018 Groundwater Monitoring Report Former Pineapple's Texaco/ Chevron Site 351860, 5138 Old Seward Highway, Anchorage, AK. August 20

APPENDIX B

Field Data Sheets

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Daily Log

Project Name Chevron 351860 Project Number 351860 Page 1 of 2

Site Location 5139 Old Seward Hwy Anchorage AK Date 4/24/19

Field Personnel David Beaudoin Evan Wojcik

Time	Description of Activities
0700	Arrive at office
0800	Load vehicle with equipment, coolers, shipments
0830	Depart office for Fedex to ship previous samples
0845	Depart Fedex for TTT for DI water
0900	Depart TTT for the site
0913	Arrive on site, contact PM for start work, start walk around to find wells
1000	Begin gauging wells
	Well gauging notes

Well ID	PID	DTW	TD	notes
MW-1	0.0	3.71	5.1	need checked, bentonite on probe
MW-2	0.0	4.05	9.1	missing a bolt
MW-3	0.0	5.51	9.1	missing a bolt
MW-4	0.0	5.97	9.7	needs new vault lid
MW-5	0.0	6.06	9.6	needs new vault
MW-6	0.0	4.68	12.5	good
MW-7	0.0	5.40	NM	forgot TD for this well
MW-8	0.0	5.43	14.9	good
MW-9	0.0	4.80	14.4	no monument vault
MW-10	0.0	6.98	15.4	good

1000	Begin sampling MW-2
1045	Decon equipment, move to next well
1030	Sample MW-1
1110	Decon equipment move to next well

ARCADIS Design & Consultancy for natural and built assets

Daily Log

Project Name _____ Project Number _____ Page 2 of 2

Site Location _____ Date _____

Field Personnel _____

Time	Description of Activities
1105	Sample MW-3
1140	Decon equipment move to next well
1155	Sample MW-6
1230	Decon equipment move to next well
1225	Sample MW-5
1250	Decon equipment move to next well
1255	Sample MW-9
1335	Decon equipment move to next well
1330	Sample MW-4
1410	Decon equipment move to next well
1355	Sample MW-8
1430	Decon equipment move to next well
1430	Sample MW-7
1510	Decon equipment move to final well across the road
1540	Sample MW-10
1615	Decon equipment, load vehicle, contact PM for close work
1630	Depart site for office
1645	Arrive at office, unload vehicle, check bottles, finish paperwork

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. Chevron 351500 Well ID MW-2 Date 4/24/19

Project Name/Location 5139 Old Seward Hwy Anchorage AK Weather clear 35°

Measuring Pt. Description Top of Casing Screen Setting (ft-bmp) Well Logs Unavailable Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 4.00 Total Depth (ft-bmp) 9.1 Water Column (ft) 5.1 Gallons in Well 0.816

MP Elevation — Pump Intake (ft-bmp) ~2 Purge Method: Low Flow Centrifugal Submersible Other Bladder Sample Method Low Flow

Pump On/Off 1040 / ~~1630~~ 1045 Volumes Purged ~~0.94~~ 0.75

Sample Time: Label ~~1615~~ 1030 Gallons Purged ~~0.564~~ 1.08

Purge Start 1003

Purge End 1045

Replicate/ Code No.

Sampled by DGB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1003	3	300	4.02	900	7.44	93.4	296.1	9.36	1.5	3.6	cloudy	
1006	6	300	4.01	1800	6.70	345.8	1536	5.13	1.2	53.7	cloudy	
1009	9	300	3.98	2700	6.41	313.7	63.1	3.89	1.2	62.4	clear	
1012	12	300	4.01	3600	6.36	339.9	55.0	2.99	1.2	66.7	clear	
1015	15	300	4.00	4500	6.34	361.8	49.1	2.28	1.2	68.2	clear	
					✓				✓	✓		
Stabilization Calculations (±)					<.1				<3%	<10		
					<.1				<3%	<10		
					<.1				<3%	<10		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
DRO AK 102	250mL Amber	2	HCl
GRO AK 101	40 mL VOA	3	HCl
BTEX 8260	40 mL VOA	3	HCl
Total Pb 6010	250mL Plastic	1	NO_3
Alkalinity 2320B	250 mL Plastic	1	None
Methane RSK 175M	40mL VOA	2	HCl
Nitrate / Sulfate EPA 300	50mL Plastic	1	none
Ferrous Iron	250 mL Amber	1	HCl

Comments BD-1-W-190424 sampled at MW-2, Ferrous Iron hach kit 0.0 mg/L

BD-1-W-190424 sampled for DRO, BTEX, GRO, Total Pb

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: Center of lot, east of center

Condition of Well: missing a bolt

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: —

GW Samp Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-1 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage, AK | Weather Clear 35°

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) Well Logs Unavailable | Casing Diameter (in.) 2" | Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 3.71 | Total Depth (ft-bmp) 5.1 | Water Column (ft) 1.4 | Gallons in Well 0.224

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow | Sample Method Low Flow

Centrifugal ___
Submersible ___
Other Bladder

Pump On/Off 1030/1110 | Volumes Purged 6.15 | Gallons Purged 1.512

Sample Time: Label 1055 | Purge Start 1036 | Purge End 1051

Replicate/ Code No. ______ | Sampled by DGP

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1036	6	300	3.92	1800	6.28	0.747	—	~~4.21~~ 2.26	4.21	76.0	Cloudy	—
1039	9	300	3.91	2700	6.28	0.749	—	1.75	4.26	76.6	Cloudy	—
1042	12	300	3.92	3600	6.27	0.752	—	0.96	4.11	80.4	Clear	—
1045	15	300	3.91	4500	6.29	0.753	—	1.01	4.13	81.0	Clear	—
1048	18	300	3.91	5400	6.29	0.754	—	0.99	4.15	81.4	Clear	—
1051	21	300	3.92	6300	6.27	0.756	—	1.01	4.17	82.0	Clear	—

Stabilization Calculations (±)						
Stabilization Criteria	± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
Total Pb 6010	250 mL Plastic	1	NO_3
Alkalinity 2320B	250 mL Plastic	1	None
Methane by ~~EPA~~ RSK175M	40 ml VOA	2	HCL
Nitrate/Sulfate EPA 300	50 ml Plastic	1	None
Ferrous Iron	250mL Amber	1	HCl

Comments Ferrous Iron Hach Kit = 0.0 mg/L

Well Casing Volumes
Gallons/Foot 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ~50' S. of Harden Deck Bldg. | Well Locked at Arrival: (Yes) / No
Condition of Well: Benchmark on tip of probe after TD measurement | Well Locked at Departure: (Yes) / No
Well Completion: (Flush Mount) / Stick Up | Key Number To Well: 3910

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-3 | Date 4/24/19

Project Name/Location 5138 old Seward Hwy Anchorage AK | Weather clear 35°

Measuring Pt. Description Top of casing | Screen Setting (ft-bmp) well logs unavailable | Casing Diameter (in.) 2 | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 5.51 | Total Depth (ft-bmp) 9.1 | Water Column (ft) 3.6 | Gallons in Well 0.58

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow; Centrifugal; Submersible; Other Bladder | Sample Method Low Flow

Pump On/Off 1105 / 1140 | Volumes Purged 0.67

Sample Time: Label 1120 | Gallons Purged 0.864

Purge Start 1103 | Purge End 1117 | Replicate/ Code No. ___ | Sampled by DCB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1105	3	300	5.48	900	6.98	725	[illegible]	7.38	0.9	81.0	clear	
1111	6	300	5.50	1800	6.81	722	41.9	7.18	0.8	84.6	clear	
1114	9	300	5.51	2700	6.76	720	34.3	7.13	0.8	85.3	clear	
1117	12	300	5.50	3600	6.72	712	20.3	7.40	0.8	88.1	clear	
					/				✓	✓		
Stabilization Calculations (±)					<0.1				<3%	<10		
					<0.1				<3%	<10		
					<0.1				<3%	<10		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
DRO AK 102	250 mL Amber	2	HCl
GRO AK 101	40 mL VOA	3	HCl
BTEX 8260	40 mL VOA	3	HCl
Total Pb 6010	250 mL Plastic	1	NO_3
Alkalinity 2320B	250 mL Plastic	1	none
Methane RSK 175M	40 mL VOA	2	HCl
Nitrate / sulfate EPA 300	50 mL Plastic	1	none
Ferrous Iron	250 mL Amber	1	HCl

Comments MW-3-MS/MSD-W-190424 sampled at MW-3 Ferrous iron test 4.1 0.0 mg/L

MW-3-MS/MSD-W-190424 sampled for DRO, GRO, BTEX, Total Pb

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: Center lot SE of center | Well Locked at Arrival: Yes / No

Condition of Well: missing ~ bolt | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well: —

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-6 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage, AK | Weather clear 35°

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) Well Logs unavailable | Casing Diameter (in.) 2 | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 4.69 | Total Depth (ft-bmp) 12.5 | Water Column (ft) 7.8 | Gallons in Well 1.248

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow Centrifugal Submersible Other Bladder | Sample Method Low Flow

Pump On/Off 1155 / 1230 | Volumes Purged 1.44

Sample Time: Label 1210 | Purge Start 1158 | Purge End 1201 | Gallons Purged 0.864

Replicate/ Code No. ___ | Sampled by DGB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1158	3	300	4.70	900	6.57	768	271.7	0.63	2.9	-23.4	cloudy	
1201	6	300	4.71	1800	6.51	766	245.3	0.51	2.8	-25.7	cloudy	
1204	9	300	4.69	2700	6.50	753	236.2	6.47	2.7	-27.1	cloudy	
1207	12	300	4.67	3600	6.50	715	230.4	0.44	2.7	-27.9	cloudy	
					✓	✓	✓			✓		
Stabilization Calculations (±)					<.1		<10%			<10		
					<.1		<10%			<10		
					<.1		<10%			<10		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
DRO AK 102	250 mL Amber	2	HCl
GRO AK 101	40mL VOA	3	HCl
BTEX 8260	40mL VOA	3	HCl
Total Pb 6010	250mL Plastic	1	NO_3
Alkalinity 2320B	250 mL Plastic	1	None
Methane RSK 175M	40mL VOA	2	HCl
Nitrate / Sulfate EPA 300	50mL Plastic	1	none
Ferrous Iron	250 mL Amber	1	HCl

Comments Ferrous iron hach kit 2.5 mg/L

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: SW corner of lot | Well Locked at Arrival: Yes / No

Condition of Well: Good | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well: ~

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 Well ID MW-5 Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage, AK Weather clear 35°

Measuring Pt. Description Top of Casing Screen Setting (ft-bmp) Well Logs unavailable Casing Diameter (in.) 2 Well Material L PVC SS

Static Water Level (ft-bmp) 6.06 Total Depth (ft-bmp) 9.6 Water Column (ft) 3.5 Gallons in Well 0.56

MP Elevation — Pump Intake (ft-bmp) ~7.5' Purge Method: Low Flow Centrifugal Submersible Other Bladder Sample Method Low Flow

Pump On/Off 12.25/1250 Volumes Purged 0.45

Sample Time: Label 1245 Gallons Purged 1.23

Purge Start 1231

Purge End 1243

Replicate/ Code No. —

Sampled by GB

12.91

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1231	6	300	6.16	1800	7.03	0.760	—	~~6.7~~	2.81	147.3	clear	—
1234	9	300	6.18	2700	6.94	0.759	—	12.37	2.64	143.8	clear	—
1237	12	300	6.16	3600	6.84	0.759	—	12.32	2.61	140.3	clear	—
1240	15	300	6.17	4500	6.82	0.761	—	11.96	2.49	138.4	clear	—
1243	18	300	6.16	5400	6.80	0.761	—	11.09	2.39	130.9	clear	—
Stabilization Calculations (±)												
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
Methane	40 ml VOA	2	HCl
Alkalinity	25 ml HDPE	1	None
Ferrous Iron	250 ml Amber	1	HCl
Total Pb	250 ml HDPE	1	HNO_3
Nitrate / Sulfate	50 ml plastic	1	None

Comments PID Well Head Screen (opening) 0.0 ppm
Hach kit Ferrous Iron = 0.0 mg/L

Well Casing Volumes

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information

Well Location: NE of Coffee Hut ~15'

Condition of Well: Needs New Vault

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 3916

GW Temp Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-9 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage, AK | Weather clear 35°

Measuring Pt. Description Top of casing | Screen Setting (ft-bmp) well logs unavailable | Casing Diameter (in.) 2 | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 4.80 | Total Depth (ft-bmp) 14.4 | Water Column (ft) 9.6 | Gallons in Well 1.54

MP Elevation – | Pump Intake (ft-bmp) ~2 | Purge Method: Low flow Centrifugal Submersible Other Bladder | Sample Method Low flow

Pump On/Off 1255 / 1335 | Volumes Purged 1.78

Sample Time: Label 1315 | Gallons Purged 0.864

Purge Start 1259

Purge End 1307

Replicate/ Code No. ___ | Sampled by DGB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1259	3	300	4.78	900	6.78	450.0	24.2	1.80	2.7	20.0	clear	
1301	6	300	4.78	1800	6.72	431.3	23.0	1.31	2.7	19.8	clear	
1304	9	300	4.81	2700	6.64	414.1	18.6	1.00	2.7	16.6	clear	
1307	12	300	4.80	3600	6.60	409.9	15.0	0.75	2.7	14.2	clear	
					✓				✓	✓		
Stabilization Calculations (±)					<0.1				<3%	<10		
					<0.1				<3%	<10		
					<0.1				<3%	<10		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
DRO AK 102	250 mL Amber	2	HCl
GRO AK 101	40 mL VOA	3	HCl
BTEX 8260	40 mL VOA	3	HCl
Total Pb 6010	250 mL Plastic	1	NO_3
Alkalinity 2320B	250 mL Plastic	1	none
Methane RSK 175M	40 mL VOA	2	HCl
Nitrate / Sulfate EPA 300	50 mL Plastic	1	none
Ferrous Iron	250mL Amber	1	HCl

Comments Ferrous iron hach kit 2-3 mg/L

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location:	SW corner of lot	Well Locked at Arrival:	Yes / No
Condition of Well:	No monument vault	Well Locked at Departure:	Yes / No
Well Completion:	Flush Mount / Stick Up	Key Number To Well:	–

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-4 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage, AK | Weather clear 35°

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) Well log unavailable | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 5.97 | Total Depth (ft-bmp) 9.7 | Water Column (ft) 3.7 | Gallons in Well 0.59

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow; Centrifugal; Submersible; Other Bladder | Sample Method Low Flow

Pump On/Off 1330 / 1410 | Volumes Purged 0.49

Sample Time: Label 1355 | Gallons Purged 1.23

Purge Start 1336

Purge End 1343

Replicate/ Code No. —

Sampled by DGB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1336	6	300	6.11	1800	6.61	0.724	—	8.90	2.65	49.2	Cloudy	—
1339	9	300	6.12	2700	6.60	0.723	—	8.01	2.64	49.8	Cloudy	—
1342	12	300	6.12	3600	6.60	0.723	—	7.92	2.80	50.4	Cloudy	—
1345	15	300	6.11	4500	6.60	0.722	—	7.31	2.81	50.6	Clearer	—
1348	18	300	6.12	5400	6.59	0.723	—	6.97	2.90	49.9	Clear	—
Stabilization Calculations (±)												
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
Total Pb	250 mL HDPE	1	HNO_3
Methane	40 ml VOAs	2	HCl
Nitrate/Sulfate	50 ml Plastic	1	None
Ferrous Iron	250 ml Amber	1	HCl
Alkalinity	250 ml HDPE	1	None

Comments Field test Ferrous Iron = 0.5 mg/L

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ~15' NW of Coffee Hut Window

Condition of Well: Needs new vault lid

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 3910

GW Temp Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-8 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage, AK | Weather clear 35°

Measuring Pt. Description Top of casing | Screen Setting (ft-bmp) Well Logs Unavailable | Casing Diameter (in.) 2 | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 5.43 | Total Depth (ft-bmp) 14.9 | Water Column (ft) 9.5 | Gallons in Well 1.52

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow Centrifugal Submersible Other Bladder | Sample Method Low Flow

Pump On/Off 1355 / 1430 | Volumes Purged 1.76

Sample Time: Label 1415 | Gallons Purged 0.864

Purge Start 1355

Purge End 1407

Replicate/ Code No. —

Sampled by DGB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1358	3	300	5.40	900	6.37	1837	273.6	6.79	2.9	48.3	cloudy	
1401	6	300	5.42	1800	6.40	1855	288.0	6.27	2.6	52.7	cloudy	
1404	9	300	5.41	2700	6.41	1861	259.1	6.11	2.6	55.3	cloudy	
1407	12	300	4.41	3600	6.40	1968	245.4	5.94	2.6	59.4	cloudy	
					✓	✓			✓	✓		
Stabilization Calculations (±)					<.1				<3%	<10		
					<.1				<3%	<10		
					<.1				<3%	<10		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
DRO AK102	250mL Amber	2	HCl
GRO AK 101	40 mL VOA	3	HCl
BTEX 8260	40mL VOA	3	HCl
Total Pb 6010	250mL Plastic	1	NO_3
Alkalinity 2320B	250 mL Plastic	1	none
Methane RSK 175M	40 mL VOA	2	HCl
Nitrate / sulfate EPA300	50mL Plastic	1	none
Ferrous Iron	250 mL Amber	1	HCl

Comments Ferrous iron hach kit - 3.0 mg/L

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location:	SE corner of lot by coffee shop	Well Locked at Arrival:	Yes / No
Condition of Well:	good	Well Locked at Departure:	Yes / No
Well Completion:	Flush Mount / Stick Up	Key Number To Well:	—

GW Form Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. Chevron 351860 | Well ID MW-7 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage AK | Weather clear 35°

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) well logs unavailable | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 5.70 | Total Depth (ft-bmp) NM | Water Column (ft) NM | Gallons in Well —

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow Centrifugal Submersible Other Bladder | Sample Method Low Flow

Pump On/Off 1430 / 1511 | Volumes Purged —

Sample Time: Label 1455 | Gallons Purged 1.51

Purge Start 1436

Purge End 1451

Replicate/ Code No. —

Sampled by DCB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1436	6	300	5.57	1800	6.51	1.085	—	6.59	3.12	102.4	Clear	—
1439	9	300	5.56	2700	6.50	1.056	—	5.69	2.87	104.4	Clear	—
1442	12	300	5.57	3600	6.49	1.034	—	5.00	2.73	105.6	Clear	—
1445	15	300	5.57	4500	6.47	1.023	—	4.58	2.70	105.9	Clear	—
1448	18	300	5.56	5400	6.48	1.008	—	4.37	2.72	106.0	Clear	—
1451	21	300	5.57	6300	6.47	1.001	—	3.99	2.68	105.8	Clear	—
Stabilization Calculations (±)												
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
BTEX	40 mL VOA	3	HCl
GRO	40 mL VOA	3	HCl
DRO	250 mL Amber	2	HCl
Total Pb	250 mL HDPE	1	NO_3
Alkalinity	250 mL HDPE	1	None
Methane	40 mL VOA	2	HCl
Ferrous Iron	250 mL Amber	1	HCl
Nitrate/Sulfate	50 mL Plastic	1	None

Comments Ferrous Iron Hach kit = 1.0 mg/L

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location: ~12 ft. W of SW corner of Collins Ct

Condition of Well:

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 3900

GW Samp Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. Chevron 351866 | Well ID MW-10 | Date 4/24/19

Project Name/Location 5138 Old Seward Hwy Anchorage AK | Weather clear 35°

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) Well Logs unavailable | Casing Diameter (in.) 2 | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 6.98 | Total Depth (ft-bmp) 15.4 | Water Column (ft) 8.4 | Gallons in Well 1.34

MP Elevation — | Pump Intake (ft-bmp) ~2 | Purge Method: Low Flow | Sample Method Low Flow

Pump On/Off 1540 / ~~1615~~ 1615 | Volumes Purged 1.56 | Centrifugal / Submersible / Other Bladder

Sample Time: Label ~~1600~~ 1600 | Gallons Purged 0.964

Purge Start ~~1545~~ 1543

Purge End ~~1552~~ 1552

Replicate/ Code No. ___ | Sampled by DGB

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged (mL)	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ±3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1543	3	300	6.95	900	6.51	2.701		2.38	4.84	14.1	cloudy	
1546	6	300	6.98	1800	6.49	2.570		2.04	4.22	14.7	cloudy	
1549	9	300	7.00	2700	6.51	2.324		1.71	3.95	13.8	cloudy	
1552	12	300	7.01	3600	6.50	2.272		1.22	3.81	13.3	cloudy	
					✓	✓				✓		
Stabilization Calculations (±)					<0.1	<3%				<10		
					<0.1	<3%				<10		
					<0.1	<3%				<10		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
DRO AK 102	250 mL Amber	2	HCl
GRO AK 101	40 mL VOA	3	HCl
BTEX 8260	40 mL VOA	3	HCl
Total Pb 6010	250mL Plastic	1	HNO_3
Alkalinity 2320B	250 mL Plastic	1	~~HCl~~ None
Methane RSK 175M	40mL VOA	2	HCl
Nitrate / sulfate EPA 300	500mL Plastic	1	none
Ferrous Iron	250 mL Amber	1	HCl

Comments Head Space of Well Measured w/ PID = 0.0ppm, Ferrous Iron Hach kit 3.5mg/L

Well Casing Volumes

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: Across street from site, next to landscaping

Condition of Well: good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 3510

GW Samp Form

10/15/2018

Chevron Generic Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only
Acct. # _____ Group # _____ Sample # _____

SCR #: _____

Client Information

Facility # 351860 WBS 07.09 Groundwater Sampling - Monitoring
Site Address 5138 Old Seward Hwy, Anchorage, AK
Chevron PM Eric Hedrick
Lead Consultant Arcadis
Consultant/Office 111 SW Columbia St, Ste 670, Portland OR 97201
Consultant Project Mgr. Nicole Monroe
Sampler David Beaudoin
State where samples were collected: Alaska
For Compliance: Yes ☒ No ☐

Preservation Codes

H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 P = H_3PO_4
F = Field Filtered O = Other

☐ Results in Dry Weight
☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix: Soil	Matrix: Water	Matrix: Oil	Total Number of Containers	BTEX + MTBE + 8021	8260 full scan	Oxygenates	TPH-GRO AK 101 8015	TPH-DRO without Silica Gel Cleanup AK 102	TPH-DRO with Silica Gel Cleanup	VPH	EPH	Lead Total Method 6010	Lead Diss. Method	Methane RSK 175M	Alkalinity 2320B	Ferrous Iron	Sulfate / Nitrate
EQB-1-W-190424	4.24.19	1000	✓			✓		9	X			X	X				X		X	X	X	X
MW-2-W-190424	4.24.19	1030	✓			✓		14	X			X	X				X		X	X	X	X
MW-1-W-190424	4.24.19	1055	✓			✓		6									X		X	X	X	X
MW-3-W-190424	4.24.19	1120	✓			✓		14	X			X	X				X		X	X	X	X
MW-3-MS/MSD-W-190424	4.24.19	1120	✓			✓		14	X			X	X				X		X	X	X	X
MW-6-W-190424	4.24.19	1210	✓			✓		14	X			X	X				X		X	X	X	X
MW-5-W-190424	4.24.19	1245	✓			✓		6									X		X	X	X	X
MW-9-W-190424	4.24.19	1315	✓			✓		14	X			X	X				X		X	X	X	X
MW-4-W-190424	4.24.19	1355	✓			✓		6									X		X	X	X	X
MW-8-W-190424	4.24.19	1415	✓			✓		14	X			X	X				X		X	X	X	X

Remarks

Turnaround Time Requested (TAT) (please circle)
Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

Data Package (circle if required)
Type I - Full | Type III | Type VI (Raw Data)

EDD (circle if required)
CVX-RTBU-FI_05 (default) | Other: _____

Relinquished by	Date	Time	Received by	Date	Time
	4.24.19	1730	Arcadis Cold Storage		
Relinquished by Commercial Carrier: UPS ____ FedEx ✓ Other ____					

Temperature Upon Receipt _____ °C
Custody Seals Intact? Yes No

Chevron Generic Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only
Acct. # _____ Group # _____ Sample # _____

Client Information

Facility # 351860 WBS 07.09 Groundwater Sampling - Monitoring
Site Address 5738 Old Seward Hwy, Anchorage, AK
Chevron PM Eric Hetrick
Lead Consultant Arcadis
Consultant/Office 111 SW Columbia St. Ste 670, Portland, OR 97201
Consultant Project Mgr. Nicole Monroe
Sampler Evan Wujcik, David Beaudoin
State where samples were collected: Alaska
For Compliance: Yes ☒ No ☐

Matrix

Sediment ☐ Ground ☒ Surface ☐
Soil ☐ Potable ☐ NPDES ☐ Air ☐ Oil ☐

Analyses Requested

Preservation and Filtration Codes

SCR #: _____

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total Number of Containers	BTEX + MTBE 8260 ☐ 8021 ☐ Naphth ☒ (H)	8260 full scan	Oxygenates ____	TPH-GRO 8015 ☐ 8260 ☐ AK101	TPH-DRO without Silica Gel Cleanup ☐ AK102	TPH-DRO with Silica Gel Cleanup ☐	VPH ☐ EPH ☐ Method ____	Lead Total ☒ Diss. ☐ Method 6010 (N)	Methane RSK 175M (H)	Alkalinity 2320B	Ferrous Iron	Nitrate/Sulfate
MW-7-W-190424	4.24.19	1455	X		14	X			X	X			X	X	X	X	X
MW-10-W-190424	4.24.19	1600	X		14	X			X	X			X	X	X	X	X
BD+W-190424	4.24.19	—	X		9	X			X	X			X				

Preservation Codes

H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 P = H_3PO_4
F = Field Filtered O = Other

☐ Results in Dry Weight
☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

Remarks

Turnaround Time Requested (TAT) (please circle)
Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

Data Package (circle if required)
Type I - Full | Type III | Type VI (Raw Data)

EDD (circle if required)
CVX-RTBU-FI_05 (default) | Other: _____

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4.24.19	1730	Arcadis Cold Storage		
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commercial Carrier: UPS ____ FedEx ✓ Other ____			Received by	Date	Time

Temperature Upon Receipt _____ °C
Custody Seals Intact? Yes No

ARCADIS | Design & Consultancy for natural and built assets

Daily Log

Project Name Chevron 351860 Project Number 351860 Page 1 of 1

Site Location 5210 old Seward Hwy Anchorage Ak Date 6/3/19

Field Personnel Dave Beaudoin, Evan Wyeth, mclane Survey

Time	Description of Activities
1330	Arrive on site, Contact PM, perform tailgate meeting
1400	Gauge wells
	Well gauging
	Well ID / DTW / notes
	MW-1 4.17
	mw-2 5.56
	mw-3 5.43
	mw-4 5.81
	mw-5 6.05
	mw-6 4.78
	mw-7 5.45
	MW-8 5.48
	mw-9 4.81
	mw-10 6.65
1515	Depart site

APPENDIX C

Laboratory Analytical Reports

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2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

Type III Data Package

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Project: 351860
Groundwater and Water Samples
Collected on 04/24/19

SDG# LSV49

GROUP	SAMPLE NUMBERS
2040850	1043306-1043321

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-18-27
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman **Date:** **05/24/2019**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Loran Carter at (717) 556-7252.

2425 New Holland Pike, Lancaster, PA 17601 | 717-656-2300 | Fax: 717-656-2681 | www.LancasterLabs.com

Table of Contents for SDG# LSV49

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Sample Reference List for SDG Number LSV49 with a Data Package Type of III

11964 - Chevron

Project: 351860

Lab Sample Number	Client Sample ID	Collection Date	Date Received
1043306	QA-O-190424	04/24/2019 10:00	04/26/2019 10:15
1043307	MW-2-W-190424	04/24/2019 10:30	04/26/2019 10:15
1043308	MW-1-W-190424	04/24/2019 10:55	04/26/2019 10:15
1043309	MW-3-W-190424	04/24/2019 11:20	04/26/2019 10:15
1043310	MW-3-W-190424 MS	04/24/2019 11:20	04/26/2019 10:15
1043311	MW-3-W-190424 MSD	04/24/2019 11:20	04/26/2019 10:15
1043312	MW-3-W-190424 DUP	04/24/2019 11:20	04/26/2019 10:15
1043313	MW-6-W-190424	04/24/2019 12:10	04/26/2019 10:15
1043314	MW-5-W-190424	04/24/2019 12:45	04/26/2019 10:15
1043315	MW-9-W-190424	04/24/2019 13:15	04/26/2019 10:15
1043316	MW-4-W-190424	04/24/2019 13:55	04/26/2019 10:15
1043317	MW-8-W-190424	04/24/2019 14:15	04/26/2019 10:15
1043318	MW-7-W-190424	04/24/2019 14:55	04/26/2019 10:15
1043319	MW-10-W-190424	04/24/2019 16:00	04/26/2019 10:15
1043320	BD-1-WD-190424	04/24/2019 00:00	04/26/2019 10:15
1043321	QA-T-190419	04/19/2019 00:00	04/26/2019 10:15

eurofins | Lancaster Laboratories

Sample pH Log

SDG: LSV49

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee
1043306	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:34:19AM	1201
1043306	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:11:43AM	25804
1043306	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:12:40AM	25804
1043306	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 10:20:29AM	7818
1043307	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:48:23AM	1201
1043307	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:14:08AM	25804
1043307	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:13:46AM	25804
1043307	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 10:20:30AM	7818
1043307	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:19PM	9051
1043307	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:23:41AM	25804
1043307	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:23:41AM	25804
1043308	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:54:08AM	1201
1043308	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:19PM	9051
1043308	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:24:26AM	25804
1043308	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:24:26AM	25804
1043309	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:51:13AM	1201
1043309	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:14:47AM	25804
1043309	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:13:24AM	25804
1043309	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043309	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:19PM	9051
1043309	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:21:55AM	25804
1043309	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:21:55AM	25804
1043310	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:55:23AM	1201
1043310	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:30:45AM	25804
1043310	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043311	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:12:22AM	25804
1043311	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043313	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:53:00AM	1201
1043313	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:14:30AM	25804
1043313	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:12:04AM	25804
1043313	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 10:20:30AM	7818
1043313	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:20PM	9051
1043313	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:25:07AM	25804
1043313	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:25:07AM	25804
1043314	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 1:01:25AM	1201
1043314	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:20PM	9051
1043314	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:19:56AM	25804
1043314	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:19:56AM	25804

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee
1043315	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:54:41AM	1201
1043315	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:29:53AM	25804
1043315	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:10:24AM	25804
1043315	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043315	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/8/2019 10:03:24AM	7818
1043315	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:20PM	9051
1043315	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:20:36AM	25804
1043315	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:20:36AM	25804
1043316	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:52:18AM	1201
1043316	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:20PM	9051
1043316	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:21:17AM	25804
1043316	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:21:17AM	25804
1043317	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 1:03:08AM	1201
1043317	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:11:01AM	25804
1043317	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:10:41AM	25804
1043317	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043317	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:20PM	9051
1043317	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:15:09AM	25804
1043317	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:15:09AM	25804
1043318	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 1:00:58AM	1201
1043318	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:29:35AM	25804
1043318	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:11:19AM	25804
1043318	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043318	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:20PM	9051
1043318	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:26:29AM	25804
1043318	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:26:29AM	25804
1043319	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 1:02:26AM	1201
1043319	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:30:29AM	25804
1043319	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:31:23AM	25804
1043319	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:25PM	7820
1043319	057A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2019 12:29:21PM	9051
1043319	070A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:25:54AM	25804
1043319	332A	7	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:25:54AM	25804
1043320	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 12:47:35AM	1201
1043320	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:30:13AM	25804
1043320	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/27/2019 9:31:04AM	25804
1043320	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 9:36:26PM	7820
1043321	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/3/2019 10:20:30AM	7818

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee

*pH Check Code Key
PK = Original container checked - pH is within the correct range. (No preservative was added)
PA = Original container checked - pH adjusted to correct range. (Preservative was added)
PV = Volatile container checked
PC = pH checked (unpreserved container)
SPK = Subsampled from an original container. Original container checked - pH is within correct range
SPA = Subsampled from an original container. Subsample container checked - pH adjusted to correct range.
SPC = Subsampled from an original container. pH checked (unpreserved container).
SUP = Subsampled from original container. Unable to be preserved due to the matrix of the sample.
UP = Unable to preserve due to matrix of the sample.
NA = Not applicable

**Chlorine Present Code Key
NA = Chlorine Not Checked
Y = Chlorine Present
N = Chlorine Not Present

Batchlog Summary 19119B20A

QC	ID	Sample Code	Amt	SS/IS S	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	SW	DF		BC	Comments
1043310MS	AA	ANC03MS	1.00	SS1834025A	0.0002	MS1910625A	0.548478	1		1.00	cr	104A	
1043311MSD	AA	ANC03MS	1.00	SS1834025A	0.0002	MS1910625A	0.548478	1		1.00	cr	104A	
BLANKA	AA	BLKQ9	1.00	SS1834025A	0.0002			1		1.00			
LCSA	AA	LCSD9	1.00	SS1834025A	0.0002	MS1910625A	0.548478	1		1.00			Reagent 4/29/19

Sample#	ID	Sample Code	Amt	SS/IS Std.	Amt (mL)	FV (mL)	SW	DF	PH	BC	HS	Due Date	Hold Date	P	Analyses/Comments
1043306	AA	ANCEB	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043307	AA	ANC02	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043309	AA	ANC03	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043313	AA	ANC06	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043315	AA	ANC09	1.00	SS1834025A	0.0010	1		5.00	cr	104A	□	**5/7**	5/8	N	01438
1043317	AA	ANC08	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043318	AA	ANC07	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043319	AA	ANC10	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043320	AA	ANCFD	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	**5/7**	5/8	N	01438
1043321	AA	ANCTB	1.00	SS1834025A	0.0002	1		1.00	cr	104A	□	5/7	**5/3**	N	01438

Spike Solutions:

MS1910625A	Waters GRO Spike
SS1834025A	#20 TFT Surrogate Soln.

A = wt. does not meet requirements B = vial leaked C# where # = volume of MeOH added in mL due to sample not covered/matrix (lot #)
D = sampler not full E = effervescence observed F = pH >= 2 G = headspace in container
Dilution factors in BOLD indicate moisture volume correction was performed.

Comments

Analyst: JHorn Verifier: MK8358

Date: 4/30/19 Date: 4/30/19

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01163 GC/MS VOA Water Prep
01146 GC VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

13130 VOCs- 5ml Water by 8260C/D UST

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

14044 ICP-WW, 3005A (tot rec) - U345

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

07055 Lead

The solution resulting from the metals digestion is analyzed by Trace ICP.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

01438 TPH-GRO AK water C6-C10

The volatile compounds are extracted by bubbling an inert gas through the sample and collecting them on a sorbent trap. The trap is thermally desorbed onto a capillary column and analysis is performed using gas chromatography with a flame ionization detector (FID) and, optionally, a photoionization detector (PID) in series. Quantitation for Gasoline Range Organics (GRO) is performed using the total peak area detected within the hydrocarbon range defined in the method.

Reference: Method AK101 for the Determination of Gasoline Range Organics, April 8, 2002

14855 Ferrous Iron

An acidified sample is treated with 1,10-phenanthroline. Three molecules of phenanthroline chelate each atom of ferrous iron to form an orange-red colored complex. The absorbance is read at 510 nm and compared to a standard curve.

Reference: Standards Methods for the Examination of Water and Wastewater, Method 3500-Fe B 2011.

00368 Nitrate Nitrogen
00228 Sulfate

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

12707 Phenolphthalein Alk. to pH 8.3

Alkalinity is determined by titrating the sample with standardized sulfuric acid to pH of 8.3 for the phenolphthalein alkalinity.

Reference: Standard Methods for the Examination of Water and Wastewater, Method 2320 B-2011

12150 Total Alkalinity to pH 4.5

Alkalinity is determined by titrating the sample with standardized sulfuric acid to a pH of 4.5 for the total alkalinity.

Reference: Standard Methods for the Examination of Water and Wastewater, Method 2320 B-2011

13025 AK 102-SV DRO

Sample extracts in methylene chloride are analyzed by capillary chromatography using flame ionization detection. Quantitation is performed using the total peak area detected within the hydrocarbon ranges defined in the method.

Reference: AK 102-SV, Alaska ADEC Diesel Range Organics, Small Volume, Version 4/8/02.

13027 Mini-Ext. AK 102-SV DRO

A measured volume of water is serially liquid/liquid extracted with methylene chloride in a separatory funnel. The serial extracts are combined, dried and concentrated.

Reference: Alaska Method 102/103 for Determination of Diesel Range Organics, April 8, 2002.

07105 Volatile Headspace Hydrocarbon

An aliquot of sample is place in a headspace vial and warmed to 35C. A portion of the headspace is analyzed on a gas chromatograph with megabore column and flame ionization detection.

Reference: Sample Preparation and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, Rev. 5, Oct. 2010, modified

Analysis Reports / Field Chain of Custody

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Report Date: May 15, 2019 10:17

Project: 351860

Account #: 11964
Group Number: 2040850
SDG: LSV49
PO Number: 0015310373
Release Number: HETRICK
State of Sample Origin: AK

Electronic Copy To	Arcadis	Attn: Melissa Blanchette
Electronic Copy To	Arcadis	Attn: Arti Patel
Electronic Copy To	Arcadis	Attn: Nicole Monroe

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
QA-O-190424 Grab Water	04/24/2019 10:00	1043306
MW-2-W-190424 Grab Groundwater	04/24/2019 10:30	1043307
MW-1-W-190424 Grab Groundwater	04/24/2019 10:55	1043308
MW-3-W-190424 Grab Groundwater	04/24/2019 11:20	1043309
MW-3-W-190424 MS Grab Groundwater	04/24/2019 11:20	1043310
MW-3-W-190424 MSD Grab Groundwater	04/24/2019 11:20	1043311
MW-3-W-190424 DUP Grab Groundwater	04/24/2019 11:20	1043312
MW-6-W-190424 Grab Groundwater	04/24/2019 12:10	1043313
MW-5-W-190424 Grab Groundwater	04/24/2019 12:45	1043314
MW-9-W-190424 Grab Groundwater	04/24/2019 13:15	1043315
MW-4-W-190424 Grab Groundwater	04/24/2019 13:55	1043316
MW-8-W-190424 Grab Groundwater	04/24/2019 14:15	1043317
MW-7-W-190424 Grab Groundwater	04/24/2019 14:55	1043318
MW-10-W-190424 Grab Groundwater	04/24/2019 16:00	1043319
BD-1-WD-190424 Grab Groundwater	04/24/2019	1043320
QA-T-190419 NA Water	04/19/2019	1043321

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: **QA-O-190424 Grab Water**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Chevron
ELLE Sample #: GW 1043306
ELLE Group #: 2040850
Matrix: Water

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 10:00
SDG#: LSV49-01EB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Toluene	108-88-3	1	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.14 J	0.051	0.26	1
	Target analytes were detected in the method blank associated with the samples as noted on the QC summary. The observed sample pattern in the method blank is not typical of #2 fuel/diesel. The reported result in the method blank is due to an individual peak(s) eluting in the DRO range.					
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191222AA	05/02/2019 18:08	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191222AA	05/02/2019 18:07	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/29/2019 22:05	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/29/2019 22:04	Jeremy C Giffin	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191200032A	05/03/2019 04:55	Heather E Williams	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191200032A	05/01/2019 09:00	Logan M Brosemer	1
07055	Lead	SW-846 6010C	1	191191404407	05/05/2019 05:39	Kevin Litwa	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404407	04/30/2019 06:16	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-2-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 10:30
SDG#: LSV49-02

Chevron
ELLE Sample #: GW 1043307
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	0.063 J	0.014	0.10	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	9.9	0.11	0.55	2
	Target analytes were detected in the method blank associated with the samples as noted on the QC summary. The observed sample pattern in the method blank is not typical of #2 fuel/diesel. The reported result in the method blank is due to an individual peak(s) eluting in the DRO range.					
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	0.0074 J	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.75	0.25	0.50	5
	The holding time was not met.					
00228	Sulfate	14808-79-8	25.2	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	0.0255 J	0.0150	0.100	1
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	171	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

*=This limit was used in the evaluation of the final result

Sample Description: **MW-2-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 10:30
SDG#: LSV49-02

Chevron
ELLE Sample #: GW 1043307
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191222AA	05/02/2019 18:30	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191222AA	05/02/2019 18:29	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/29/2019 22:33	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/29/2019 22:32	Jeremy C Giffin	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 11:39	Johanna C Kennedy	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191200032A	05/10/2019 03:18	Nicholas R Rossi	2
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191200032A	05/01/2019 09:00	Logan M Brosemer	1
07055	Lead	SW-846 6010C	1	191191404407	05/05/2019 05:36	Kevin Litwa	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404407	04/30/2019 06:16	James L Mertz	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 17:51	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 17:51	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127101A	05/04/2019 15:01	Samuel J Weaver	1
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:48	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:48	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-1-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 10:55
SDG#: LSV49-03

Chevron
ELLE Sample #: GW 1043308
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	260	3.0	5.0	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.84	0.25	0.50	5
	The holding time was not met.					
00228	Sulfate	14808-79-8	20.9	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	0.154	0.0150	0.100	1
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	345	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 11:57	Johanna C Kennedy	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:46	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 18:08	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 18:08	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127101A	05/04/2019 15:01	Samuel J Weaver	1
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:13	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:13	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-3-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 11:20
SDG#: LSV49-04BKG

Chevron
ELLE Sample #: GW 1043309
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	N.D.	3.0	5.0	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.37	0.054	0.27	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	1.6	0.25	0.50	5
	The holding time was not met.					
00228	Sulfate	14808-79-8	16.3	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	0.116	0.0150	0.100	1
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	273	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 13:59	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 13:58	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/29/2019 23:00	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/29/2019 22:59	Jeremy C Giffin	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-3-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 11:20
SDG#: LSV49-04BKG

Chevron
ELLE Sample #: GW 1043309
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 12:33	Johanna C Kennedy	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 08:59	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:22	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117B	04/26/2019 18:26	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117B	04/26/2019 18:26	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127102A	05/04/2019 15:02	Samuel J Weaver	1
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 20:02	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 20:02	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-3-W-190424 MS Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 11:20
SDG#: LSV49-04MS

Chevron
ELLE Sample #: GW 1043310
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	24	0.2	1	1
13130	Ethylbenzene	100-41-4	22	0.4	1	1
13130	Toluene	108-88-3	23	0.2	1	1
13130	Xylene (Total)	1330-20-7	66	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	1.2	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	3.9	0.053	0.27	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	0.163	0.0071	0.0150	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 14:21	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 14:20	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/29/2019 23:28	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/29/2019 23:27	Jeremy C Giffin	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 08:02	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:32	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-3-W-190424 MSD Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Chevron
ELLE Sample #: GW 1043311
ELLE Group #: 2040850
Matrix: Groundwater

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 11:20
SDG#: LSV49-04MSD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	24	0.2	1	1
13130	Ethylbenzene	100-41-4	22	0.4	1	1
13130	Toluene	108-88-3	23	0.2	1	1
13130	Xylene (Total)	1330-20-7	65	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	1.2	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	3.4	0.053	0.26	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	0.158	0.0071	0.0150	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 14:43	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 14:42	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/29/2019 23:55	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/29/2019 23:54	Jeremy C Giffin	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 08:31	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:35	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-3-W-190424 DUP Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 11:20
SDG#: LSV49-04DUP

Chevron
ELLE Sample #: GW 1043312
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:29	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-6-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 12:10
SDG#: LSV49-05

Chevron
ELLE Sample #: GW 1043313
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	4	0.2	1	1
13130	Ethylbenzene	100-41-4	9	0.4	1	1
13130	Toluene	108-88-3	0.5 J	0.2	1	1
13130	Xylene (Total)	1330-20-7	19	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	0.31	0.014	0.10	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	3,500	60	100	20
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.49	0.053	0.27	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.42 J	0.25	0.50	5
	The holding time was not met.					
00228	Sulfate	14808-79-8	11.3	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	13.9	0.150	1.00	10
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	160	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191222AA	05/02/2019 18:52	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191222AA	05/02/2019 18:51	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/30/2019 00:23	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/30/2019 00:22	Jeremy C Giffin	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-6-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 12:10
SDG#: LSV49-05

Chevron
ELLE Sample #: GW 1043313
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/30/2019 02:09	Johanna C Kennedy	20
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 09:26	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:56	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 18:43	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 18:43	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127101A	05/04/2019 15:26	Samuel J Weaver	10
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:20	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:20	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-5-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 12:45
SDG#: LSV49-06

Chevron
ELLE Sample #: GW 1043314
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	130	3.0	5.0	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	1.5	0.25	0.50	5
00228	Sulfate	14808-79-8	11.2	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	0.672	0.0150	0.100	1
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	242	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 13:10	Johanna C Kennedy	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 17:06	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 15:35	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 15:35	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127101A	05/04/2019 15:01	Samuel J Weaver	1
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:42	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:42	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-9-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Chevron
ELLE Sample #: GW 1043315
ELLE Group #: 2040850
Matrix: Groundwater

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 13:15
SDG#: LSV49-07

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	4	0.2	1	1
13130	Ethylbenzene	100-41-4	120	0.4	1	1
13130	Toluene	108-88-3	22	0.2	1	1
13130	Xylene (Total)	1330-20-7	720	10	50	10
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	6.0	0.070	0.50	5
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	870	15	25	5
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.72	0.053	0.26	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.57	0.25	0.50	5
00228	Sulfate	14808-79-8	6.0	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	3.11	0.0750	0.500	5
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	102	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 15:05	Alexander D Sechrist	1
13130	BTEX 8260C	SW-846 8260C	1	F191272AA	05/07/2019 17:29	Alexander D Sechrist	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 15:04	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	F191272AA	05/07/2019 17:28	Alexander D Sechrist	10
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/30/2019 02:40	Jeremy C Giffin	5

*=This limit was used in the evaluation of the final result

Sample Description: **MW-9-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 13:15
SDG#: LSV49-07

Chevron
ELLE Sample #: GW 1043315
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/30/2019 02:39	Jeremy C Giffin	5
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/30/2019 02:27	Johanna C Kennedy	5
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 09:55	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:42	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 15:52	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 15:52	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127102A	05/04/2019 15:16	Samuel J Weaver	5
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 18:54	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 18:54	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-4-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 13:55
SDG#: LSV49-08

Chevron
ELLE Sample #: GW 1043316
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	7.4	3.0	5.0	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.80	0.25	0.50	5
00228	Sulfate	14808-79-8	8.2	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	1.26	0.0150	0.100	1
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	216	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 13:47	Johanna C Kennedy	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 16:59	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 16:09	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 16:09	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127102A	05/04/2019 15:04	Samuel J Weaver	1
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:07	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:07	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-8-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 14:15
SDG#: LSV49-09

Chevron
ELLE Sample #: GW 1043317
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	0.5 J	0.2	1	1
13130	Ethylbenzene	100-41-4	12	0.4	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	56	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	0.93	0.014	0.10	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	22	3.0	5.0	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.45	0.053	0.26	1
	The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.					
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	5.5	0.25	0.50	5
00228	Sulfate	14808-79-8	37.3	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	2.73	0.0750	0.500	5
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	284	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 15:27	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 15:26	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/30/2019 00:50	Jeremy C Giffin	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-8-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 14:15
SDG#: LSV49-09

Chevron
ELLE Sample #: GW 1043317
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/30/2019 00:49	Jeremy C Giffin	1
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 14:05	Johanna C Kennedy	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 10:22	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 17:09	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 16:26	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 16:26	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127102A	05/04/2019 15:17	Samuel J Weaver	5
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:01	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:01	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-7-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 14:55
SDG#: LSV49-10

Chevron
ELLE Sample #: GW 1043318
ELLE Group #: 2040850
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	2	0.2	1	1
13130	Ethylbenzene	100-41-4	6	0.4	1	1
13130	Toluene	108-88-3	6	0.2	1	1
13130	Xylene (Total)	1330-20-7	26	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	0.13	0.014	0.10	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	440	3.0	5.0	1
	The container used for the testing had headspace at the time of analysis.					
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	2.5	0.056	0.28	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	1.5	0.25	0.50	5
00228	Sulfate	14808-79-8	20.6	1.5	5.0	5
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	0.878	0.0150	0.100	1
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	253	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 15:49	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 15:48	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/30/2019 01:18	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/30/2019 01:17	Jeremy C Giffin	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-7-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 14:55
SDG#: LSV49-10

Chevron
ELLE Sample #: GW 1043318
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/29/2019 14:28	Johanna C Kennedy	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 10:50	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 17:02	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 16:43	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 16:43	Clinton M Wilson	5
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127102A	05/04/2019 15:05	Samuel J Weaver	1
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:26	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:26	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-10-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Chevron
ELLE Sample #: GW 1043319
ELLE Group #: 2040850
Matrix: Groundwater

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 16:00
SDG#: LSV49-11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	12	0.2	1	1
13130	Ethylbenzene	100-41-4	7	0.4	1	1
13130	Toluene	108-88-3	1	0.2	1	1
13130	Xylene (Total)	1330-20-7	150	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	0.92	0.014	0.10	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**	**ug/l**	**ug/l**	
07105	Methane	74-82-8	2,400	30	50	10
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.39	0.052	0.26	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1
Wet Chemistry	**EPA 300.0**		**mg/l**	**mg/l**	**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	2.0	0.25	0.50	5
00228	Sulfate	14808-79-8	82.9	3.0	10.0	10
	SM 3500-Fe B-2011		**mg/l**	**mg/l**	**mg/l**	
14855	Ferrous Iron	n.a.	13.1	0.150	1.00	10
	SM 2320 B-2011		**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**	
12150	Total Alkalinity to pH 4.5	n.a.	304	1.7	5.0	1
12707	Phenolphthalein Alk. to pH 8.3	n.a.	N.D.	1.7	5.0	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 16:11	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 16:10	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/30/2019 01:45	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/30/2019 01:44	Jeremy C Giffin	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-10-W-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019 16:00
SDG#: LSV49-11

Chevron
ELLE Sample #: GW 1043319
ELLE Group #: 2040850
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	Volatile Headspace Hydrocarbon	RSKSOP-175 modified	1	191190003A	04/30/2019 02:45	Johanna C Kennedy	10
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 11:19	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404402	04/30/2019 17:13	Elaine F Stoltzfus	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404402	04/29/2019 16:00	Barbara A Kane	1
00368	Nitrate Nitrogen	EPA 300.0	1	19116987117A	04/26/2019 17:00	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	19116987117A	04/26/2019 22:14	Clinton M Wilson	10
14855	Ferrous Iron	SM 3500-Fe B-2011	1	19124127102A	05/04/2019 15:29	Samuel J Weaver	10
12150	Total Alkalinity to pH 4.5	SM 2320 B-2011	1	19120005202A	04/30/2019 19:55	Jeremy L Bolf	1
12707	Phenolphthalein Alk. to pH 8.3	SM 2320 B-2011	1	19120005202A	04/30/2019 19:55	Jeremy L Bolf	1

*=This limit was used in the evaluation of the final result

Sample Description: **BD-1-WD-190424 Grab Groundwater**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Chevron
ELLE Sample #: GW 1043320
ELLE Group #: 2040850
Matrix: Groundwater

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/24/2019
SDG#: LSV49-12FD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	0.072 J	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	9.5	0.057	0.28	1
Metals	**SW-846 6010C**		**mg/l**	**mg/l**	**mg/l**	
07055	Lead	7439-92-1	N.D.	0.0071	0.0150	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191232AA	05/03/2019 16:33	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191232AA	05/03/2019 16:32	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/30/2019 02:13	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/30/2019 02:12	Jeremy C Giffin	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191220016A	05/08/2019 11:46	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191220016A	05/02/2019 21:51	Osvaldo R Sanchez	1
07055	Lead	SW-846 6010C	1	191191404407	05/05/2019 05:49	Kevin Litwa	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	191191404407	04/30/2019 06:16	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **QA-T-190419 NA Water**
Facility# 351860
5138 Old Seward Highway - Anchorage, AK

Chevron
ELLE Sample #: GW 1043321
ELLE Group #: 2040850
Matrix: Water

Project Name: **351860**

Submittal Date/Time: 04/26/2019 10:15
Collection Date/Time: 04/19/2019
SDG#: LSV49-13TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
	The container used for this analysis was submitted with headspace.					
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F191222AA	05/02/2019 12:15	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191222AA	05/02/2019 12:14	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19119B20A	04/29/2019 21:38	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19119B20A	04/29/2019 21:37	Jeremy C Giffin	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Chevron
Group Number: 2040850
Reported: 05/15/2019 10:17

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: F191222AA	Sample number(s): 1043306-1043307,1043313,1043321		
Benzene	N.D.	0.2	1
Ethylbenzene	N.D.	0.4	1
Toluene	N.D.	0.2	1
Xylene (Total)	N.D.	1	5
Batch number: F191232AA	Sample number(s): 1043309-1043311,1043315,1043317-1043320		
Benzene	N.D.	0.2	1
Ethylbenzene	N.D.	0.4	1
Toluene	N.D.	0.2	1
Xylene (Total)	N.D.	1	5
Batch number: F191272AA	Sample number(s): 1043315		
Xylene (Total)	N.D.	1	5
	mg/l	mg/l	mg/l
Batch number: 19119B20A	Sample number(s): 1043306-1043307,1043309-1043311,1043313,1043315,1043317-1043321		
TPH-GRO AK water C6-C10	N.D.	0.014	0.10
	ug/l	ug/l	ug/l
Batch number: 191190003A	Sample number(s): 1043307-1043309,1043313-1043319		
Methane	N.D.	3.0	5.0
	mg/l	mg/l	mg/l
Batch number: 191200032A	Sample number(s): 1043306-1043307		
DRO C10-C25	0.14 J	0.050	0.25
Batch number: 191220016A	Sample number(s): 1043309-1043311,1043313,1043315,1043317-1043320		
DRO C10-C25	N.D.	0.050	0.25
Batch number: 191191404402	Sample number(s): 1043308-1043319		
Lead	N.D.	0.0071	0.0150
Batch number: 191191404407	Sample number(s): 1043306-1043307,1043320		
Lead	N.D.	0.0071	0.0150
Batch number: 19116987117A	Sample number(s): 1043307-1043308,1043313-1043319		
Nitrate Nitrogen	N.D.	0.050	0.10
Sulfate	N.D.	0.30	1.0
Batch number: 19116987117B	Sample number(s): 1043309		
Nitrate Nitrogen	N.D.	0.050	0.10
Sulfate	N.D.	0.30	1.0

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/15/2019 10:17

Group Number: 2040850

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/l	mg/l	mg/l
Batch number: 19124127101A	Sample number(s): 1043307-1043308,1043313-1043314		
Ferrous Iron	N.D.	0.0150	0.100
Batch number: 19124127102A	Sample number(s): 1043309,1043315-1043319		
Ferrous Iron	N.D.	0.0150	0.100
	mg/l as CaCO3	mg/l as CaCO3	mg/l as CaCO3
Batch number: 19120005202A	Sample number(s): 1043307-1043309,1043313-1043319		
Total Alkalinity to pH 4.5	N.D.	1.7	5.0

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: F191222AA	Sample number(s): 1043306-1043307,1043313,1043321								
Benzene	20	20.86	20	20.63	104	103	80-120	1	30
Ethylbenzene	20	20.18	20	19.33	101	97	80-120	4	30
Toluene	20	20.78	20	20.15	104	101	80-120	3	30
Xylene (Total)	60	61.23	60	59.21	102	99	80-120	3	30
Batch number: F191232AA	Sample number(s): 1043309-1043311,1043315,1043317-1043320								
Benzene	20	21.24			106		80-120		
Ethylbenzene	20	19.27			96		80-120		
Toluene	20	20.32			102		80-120		
Xylene (Total)	60	59.18			99		80-120		
Batch number: F191272AA	Sample number(s): 1043315								
Xylene (Total)	60	59.71	60	59.33	100	99	80-120	1	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 19119B20A	Sample number(s): 1043306-1043307,1043309-1043311,1043313,1043315,1043317-1043321								
TPH-GRO AK water C6-C10	1.10	1.15			105		60-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 191190003A	Sample number(s): 1043307-1043309,1043313-1043319								
Methane	59.83	62.85	59.83	65.93	105	110	85-115	5	20
	mg/l	mg/l	mg/l	mg/l					
Batch number: 191200032A	Sample number(s): 1043306-1043307								
DRO C10-C25	4.01	4.52			113		75-125		
Batch number: 191220016A	Sample number(s): 1043309-1043311,1043313,1043315,1043317-1043320								

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/15/2019 10:17

Group Number: 2040850

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
DRO C10-C25	4.01	3.53			88		75-125		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 191191404402	Sample number(s): 1043308-1043319								
Lead	0.150	0.153			102		87-113		
Batch number: 191191404407	Sample number(s): 1043306-1043307,1043320								
Lead	0.150	0.156			104		87-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 19116987117A	Sample number(s): 1043307-1043308,1043313-1043319								
Nitrate Nitrogen	0.750	0.744			99		90-110		
Sulfate	7.50	7.44			99		90-110		
Batch number: 19116987117B	Sample number(s): 1043309								
Nitrate Nitrogen	0.750	0.744			99		90-110		
Sulfate	7.50	7.44			99		90-110		
Batch number: 19124127101A	Sample number(s): 1043307-1043308,1043313-1043314								
Ferrous Iron	1.00	1.08			108		90-110		
Batch number: 19124127102A	Sample number(s): 1043309,1043315-1043319								
Ferrous Iron	1.00	1.10			110		90-110		
	mg/l as CaCO3	**mg/l as CaCO3**	**mg/l as CaCO3**	**mg/l as CaCO3**					
Batch number: 19120005202A	Sample number(s): 1043307-1043309,1043313-1043319								
Total Alkalinity to pH 4.5	188	177.87			95		77-109		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: F191232AA	Sample number(s): 1043309-1043311,1043315,1043317-1043320 UNSPK: 1043309									
Benzene	N.D.	20	23.65	20	23.78	118	119	80-120	1	30
Ethylbenzene	N.D.	20	22.03	20	21.65	110	108	80-120	2	30
Toluene	N.D.	20	22.92	20	22.61	115	113	80-120	1	30
Xylene (Total)	N.D.	60	65.89	60	65.24	110	109	80-120	1	30
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/15/2019 10:17

Group Number: 2040850

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 19119B20A	Sample number(s): 1043306-1043307,1043309-1043311,1043313,1043315,1043317-1043321 UNSPK: 1043309									
TPH-GRO AK water C6-C10	N.D.	1.10	1.22	1.10	1.20	111	110	60-120	1	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 191220016A	Sample number(s): 1043309-1043311,1043313,1043315,1043317-1043320 UNSPK: 1043309									
DRO C10-C25	0.374	4.28	3.90	4.23	3.42	82	72*	75-125	13	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 191191404402	Sample number(s): 1043308-1043319 UNSPK: 1043309									
Lead	N.D.	0.150	0.163	0.150	0.158	109	105	75-125	3	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 19116987117A	Sample number(s): 1043307-1043308,1043313-1043319 UNSPK: 1043314									
Nitrate Nitrogen	1.48	2.50	4.01			101		90-110		
Sulfate	11.25	25	37.06			103		90-110		
Batch number: 19116987117B	Sample number(s): 1043309 UNSPK: 1043309									
Nitrate Nitrogen	1.60	2.50	3.65			82*		90-110		
Sulfate	16.29	25	38.16			87*		90-110		
Batch number: 19124127102A	Sample number(s): 1043309,1043315-1043319 UNSPK: 1043309									
Ferrous Iron	0.116	1.00	1.24	1.00	1.22	113*	110	90-110	2	10

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 191191404402	Sample number(s): 1043308-1043319 BKG: 1043309			
Lead	N.D.	N.D.	0 (1)	20
	mg/l	mg/l		
Batch number: 19116987117A	Sample number(s): 1043307-1043308,1043313-1043319 BKG: 1043314			
Nitrate Nitrogen	1.48	1.47	0 (1)	15
Sulfate	11.25	11.38	1 (1)	15
Batch number: 19116987117B	Sample number(s): 1043309 BKG: 1043309			
Nitrate Nitrogen	1.60	1.58	1 (1)	15

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/15/2019 10:17

Group Number: 2040850

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Sulfate	16.29	16.36	0 (1)	15
Batch number: 19124127102A	Sample number(s): 1043309,1043315-1043319 BKG: 1043309			
Ferrous Iron	0.116	0.124	7 (1)	10

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C
Batch number: F191222AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1043306	97	99	99	97
1043307	95	98	97	98
1043313	93	97	98	97
1043321	95	97	99	97
Blank	109	98	100	98
LCS	93	99	100	99
LCSD	95	99	101	98
Limits:	80-120	80-120	80-120	80-120

Analysis Name: BTEX 8260C
Batch number: F191232AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1043309	95	96	99	98
1043310	96	99	101	99
1043311	96	102	100	99
1043315	93	96	99	98
1043317	93	96	99	100
1043318	95	98	99	98
1043319	95	96	99	98
1043320	96	97	99	99
Blank	96	99	99	98
LCS	94	100	98	99
MS	96	99	101	99
MSD	96	102	100	99
Limits:	80-120	80-120	80-120	80-120

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/15/2019 10:17

Group Number: 2040850

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH-GRO AK water C6-C10
Batch number: 19119B20A

	Trifluorotoluene-F
1043306	71
1043307	68
1043309	74
1043310	92
1043311	92
1043313	85
1043315	89
1043317	78
1043318	85
1043319	87
1043320	88
1043321	72
Blank	81
LCS	96
MS	92
MSD	92
Limits:	60-120

Analysis Name: Volatile Headspace Hydrocarbon
Batch number: 191190003A

	Propene
1043307	59
1043308	52
1043309	66
1043313	88
1043314	58
1043315	82
1043316	56
1043317	55
1043318	57
1043319	92
Blank	104
LCS	99
LCSD	94
Limits:	46-135

Analysis Name: AK 102-SV DRO
Batch number: 191200032A

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/15/2019 10:17

Group Number: 2040850

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: AK 102-SV DRO
Batch number: 191200032A

	Orthoterphenyl
1043306	104
1043307	75
Limits:	50-150

	Orthoterphenyl
Blank	103
LCS	108
Limits:	60-120

Analysis Name: AK 102-SV DRO
Batch number: 191220016A

	Orthoterphenyl
1043309	89
1043310	80
1043311	70
1043313	93
1043315	97
1043317	43*
1043318	81
1043319	102
1043320	64
MS	80
MSD	70
Limits:	50-150

	Orthoterphenyl
Blank	100
LCS	109
Limits:	60-120

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 11964 For Eurofins Lancaster Laboratories Environmental use only Group # 240850 Sample # 143306-21

Client Information

Facility # 351860 WBS 07.09 Groundwater Sampling - Monitoring

Site Address 5138 Old Seward Hwy, Anchorage, AK

Chevron PM Eric Hedrick

Lead Consultant Arcadis

Consultant/Office 111 SW Columbia St, Ste 670, Portland OR 97201

Consultant Project Mgr. Nicole Monroe

Sampler David Beaudoin

State where samples were collected: Alaska

For Compliance: Yes ☒ No ☐

SCR #: _____

Matrix

Sediment ☐ Ground ☒ Surface ☐

Soil ☐ Potable ☐ NPDES ☐ Air ☐ Oil ☐

Analyses Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE + Naphth 8021 ☐ 8260 ☒	8260 full scan	Oxygenates	TPH-GRO 8015 ☐ 8260 ☐ AK 101	TPH-DRO without Silica Gel Cleanup ☐ AK 102	TPH-DRO with Silica Gel Cleanup ☐	VPH ☐ EPH ☐ Method	Lead Total ☒ Diss. ☐ Method 6010	Methane RSK175M	Alkalinity 2320B	Ferrous Iron	Nitrate/Sulfate
EQB-1-W-190424	4.24.19	1000	/			✓		9	X			X	X			X	X	X	X	X
MW-2-W-190424	4.24.19	1030	/			✓		14	X			X	X			X	X	X	X	X
MW-1-W-190424	4.24.19	1055	/			✓		6								X	X	X	X	X
MW-3-W-190424	4.24.19	1120	/			✓		14	X			X	X			X	X	X	X	X
MW-3-MS/MSD-W-190424	4.24.19	1120	/			✓	9	14	X			X	X			X	X	X	X	X
MW-6-W-190424	4.24.19	1210	/			✓		14	X			X	X			X	X	X	X	X
MW-5-W-190424	4.24.19	1245	/			✓		6								X	X	X	X	X
MW-9-W-190424	4.24.19	1315	/			✓		14	X			X	X			X	X	X	X	X
MW-4-W-190424	4.24.19	1355	/			✓		6								X	X	X	X	X
MW-8-W-190424	4.24.19	1415	/			✓		14	X			X	X			X	X	X	X	X

Preservation Codes

H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 P = H_3PO_4
F = Field Filtered O = Other

☐ Results in Dry Weight

☐ J value reporting needed

☐ Must meet lowest detection limits possible for 8260 compounds

Remarks

No MNA parameters for EQB-1 & MW-3-MS/MSD DAB 4/24/19

Turnaround Time Requested (TAT) (please circle)

Standard 5 day 4 day
72 hour 48 hour 24 hour

Data Package (circle if required)

Type I - Full Type III Type VI (Raw Data)

EDD (circle if required)

CVX-RTBU-FI_05 (default) Other: _____

Relinquished by	Date	Time	Received by	Date	Time
	4.24.19	1730	Arcadis Cold Storage		
	4.25.19	0900	FedEX		
Relinquished by Commercial Carrier: UPS ____ FedEx ✓ Other ____					
Temperature Upon Receipt 0.4/0.2 °C			Custody Seals Intact?	Yes	No

Chevron Generic Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 11964 For Eurofins Lancaster Laboratories Environmental use only: 204850 Group # _____ Sample # 443306-21

Client Information

Facility # 351860 WBS 07.09 Groundwater Sampling - Monitoring

Site Address: 5738 Old Seward Hwy, Anchorage, AK

Chevron PM: Eric Hetrick

Lead Consultant: Arcadis

Consultant/Office: 111 SW Columbia St., Ste 670, Portland, OR 97201

Consultant Project Mgr.: Nicole Monroe

Sampler: Evan Wujcik, David Beaudoin

State where samples were collected: Alaska

For Compliance: Yes ☒ No ☐

SCR #: _____

Matrix

Soil ☐ Sediment ☐ Water ☒ Ground ☐ Potable ☐ NPDES ☐ Surface ☐ Soil ☐ Oil ☐ Air ☐

Analyses Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total Number of Containers	BTEX + MTBE 8021 ☐ 8260 ☒ Naphth ☐ (H)	8260 full scan	Oxygenates ____	TPH-GRO 8015 ☐ 8260 ☐ AK101 (H)	TPH-DRO without Silica Gel Cleanup ☐ AK102 (H)	TPH-DRO with Silica Gel Cleanup ☐	VPH ☐ EPH ☐ Method ____	Lead Total ☐ Diss. ☒ Method 6010 (N)	Methane RSK 175M (H)	Alkalinity 2320B	Ferrous Iron	Nitrate/Nitrite
MW-7-W-190424	4.24.19	1455	X		14	X			X	X			X	X	X	X	X
MW-10-W-190424	4.24.19	1600	X		14	X			X	X			X	X	X	X	X
BD+W-190424	4.24.19	—	X		9	X			X	X			X		X		
Trip Blank	4.19.19				9												

Preservation Codes

H = HCl; T = Thiosulfate; N = HNO_3; B = NaOH; S = H_2SO_4; P = H_3PO_4; F = Field Filtered; O = Other

☐ Results in Dry Weight

☐ J value reporting needed

☐ Must meet lowest detection limits possible for 8260 compounds

Remarks

Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

Data Package (circle if required)

Type I - Full | Type III | Type VI (Raw Data)

EDD (circle if required)

CVX-RTBU-FI_05 (default) | Other: _____

Relinquished by	Date	Time	Received by	Date	Time
	4.24.19	1730	Arcadis Cold Storage		
	4.25.19	0700	Fed EX		

Relinquished by Commercial Carrier: UPS ____ FedEx ✓ Other ____

Received by: Date 4/26/19 Time 1015

Temperature Upon Receipt 0.4/0.2 °C

Custody Seals Intact? Yes No

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 247377

Group Number(s): 2040850

Client: Chevron

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	04/26/2019 10:15
Number of Packages:	2	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	9
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Leah Foreman (12616) at 11:20 on 04/26/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.4	DT	Wet	Y	Bagged	N
2	DT42-01	0.2	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17601-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Volatiles by GC/MS Data

Case Narrative/Conformance Summary

Volatiles by GC/MS

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1043306	QA-O-190424	X		1	Equipment Blank
1043307	MW-2-W-190424	X		1	
1043309	MW-3-W-190424	X		1	Unspiked
1043310	MW-3-W-190424 MS	X		1	Matrix Spike
1043311	MW-3-W-190424 MSD	X		1	Matrix Spike Duplicate
1043313	MW-6-W-190424	X		1	
1043315	MW-9-W-190424	X		1; 10	
1043317	MW-8-W-190424	X		1	
1043318	MW-7-W-190424	X		1	
1043319	MW-10-W-190424	X		1	
1043320	BD-1-WD-190424	X		1	Field Duplicate Sample
1043321	QA-T-190419	X		1	Trip Blank

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

SAMPLE ANALYSIS:

(Sample number(s): 1043321: Analysis: 13130)
The container used for this analysis was submitted with headspace.

No additional problems were encountered with the analysis of the samples.

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Volatiles by GC/MS

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Quality Control Reference List
GC/MS Volatiles

CLIENT: Chevron
SDG: LSV49

Fraction: Volatiles by GC/MS

Analysis	Batch Number	Sample Number	Analysis Date
BTEX 8260C	F191222AA	VBLKF93	05/02/2019 10:10
		LCSF93	05/02/2019 10:33
		LCDF93	05/02/2019 10:55
		1043306	05/02/2019 18:08
		1043307	05/02/2019 18:30
		1043313	05/02/2019 18:52
		1043321	05/02/2019 12:15
BTEX 8260C	F191232AA	VBLKF97	05/03/2019 12:33
		LCSF97	05/03/2019 12:55
		1043309 UNSPK	05/03/2019 13:59
		1043310 MS	05/03/2019 14:21
		1043311 MSD	05/03/2019 14:43
		1043315	05/03/2019 15:05
		1043317	05/03/2019 15:27
		1043318	05/03/2019 15:49
		1043319	05/03/2019 16:11
		1043320	05/03/2019 16:33
BTEX 8260C	F191272AA	VBLKF10	05/07/2019 11:21
		LCSF10	05/07/2019 11:43
		LCDF10	05/07/2019 12:05
		1043315	05/07/2019 17:29

Quality Control Summary
Method Blank
GC/MS Volatiles
SDG: LSV49
Matrix: LIQUID

Fraction: Volatiles by GC/MS

F191222AA / VBLKF93 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Benzene	05/02/19	N.D.	ug/l	0.2	1
Toluene	05/02/19	N.D.	ug/l	0.2	1
Ethylbenzene	05/02/19	N.D.	ug/l	0.4	1
Xylene (Total)	05/02/19	N.D.	ug/l	1	5

F191232AA / VBLKF97 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Benzene	05/03/19	N.D.	ug/l	0.2	1
Toluene	05/03/19	N.D.	ug/l	0.2	1
Ethylbenzene	05/03/19	N.D.	ug/l	0.4	1
Xylene (Total)	05/03/19	N.D.	ug/l	1	5

F191272AA / VBLKF10 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Xylene (Total)	05/07/19	N.D.	ug/l	1	5

Quality Control Summary
Surrogates
GC/MS Volatiles
SDG: LSV49
Matrix: LIQUID

Fraction: Volatiles by GC/MS

F191222AA	1,2-Dichloroethane-d4		4-Bromofluorobenzene		Dibromofluoromethane		Toluene-d8	
	Spike Added	50 ug/l	Spike Added	50 ug/l	Spike Added	50 ug/l	Spike Added	50 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
VBLKF93	98	80 - 120	98	80 - 120	109	80 - 120	100	80 - 120
LCSF93	99	80 - 120	99	80 - 120	93	80 - 120	100	80 - 120
LCDF93	99	80 - 120	98	80 - 120	95	80 - 120	101	80 - 120
1043306	99	80 - 120	97	80 - 120	97	80 - 120	99	80 - 120
1043307	98	80 - 120	98	80 - 120	95	80 - 120	97	80 - 120
1043313	97	80 - 120	97	80 - 120	93	80 - 120	98	80 - 120
1043321	97	80 - 120	97	80 - 120	95	80 - 120	99	80 - 120

F191232AA	1,2-Dichloroethane-d4		4-Bromofluorobenzene		Dibromofluoromethane		Toluene-d8	
	Spike Added	50 ug/l	Spike Added	50 ug/l	Spike Added	50 ug/l	Spike Added	50 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
VBLKF97	99	80 - 120	98	80 - 120	96	80 - 120	99	80 - 120
LCSF97	100	80 - 120	99	80 - 120	94	80 - 120	98	80 - 120
1043309 UNSPK	96	80 - 120	98	80 - 120	95	80 - 120	99	80 - 120
1043310 MS	99	80 - 120	99	80 - 120	96	80 - 120	101	80 - 120
1043311 MSD	102	80 - 120	99	80 - 120	96	80 - 120	100	80 - 120
1043315	96	80 - 120	98	80 - 120	93	80 - 120	99	80 - 120
1043317	96	80 - 120	100	80 - 120	93	80 - 120	99	80 - 120
1043318	98	80 - 120	98	80 - 120	95	80 - 120	99	80 - 120
1043319	96	80 - 120	98	80 - 120	95	80 - 120	99	80 - 120
1043320	97	80 - 120	99	80 - 120	96	80 - 120	99	80 - 120

GC/MS Volatiles

Fraction: Volatiles by GC/MS

UNSPK: 1043309 MS: 1043310 MSD: 1043311 **Analyte**	Batch: **F191232AA** (Sample number(s): 1043309-1043311, 1043315, 1043317-1043320)								
	Spike Added ug/l	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Benzene	20	N.D.	23.65	23.78	118	119	80-120	1	30
Toluene	20	N.D.	22.92	22.61	115	113	80-120	1	30
Ethylbenzene	20	N.D.	22.03	21.65	110	108	80-120	2	30
Xylene (Total)	60	N.D.	65.89	65.24	110	109	80-120	1	30

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: LSV49
Matrix: LIQUID

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCSF93 LCSD: LCDF93	Batch: **F191222AA** (Sample number(s): 1043306-1043307, 1043313, 1043321)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Benzene	20	20.86	20.63	104	103	80-120	1	30
Toluene	20	20.78	20.15	104	101	80-120	3	30
Ethylbenzene	20	20.18	19.33	101	97	80-120	4	30
Xylene (Total)	60	61.23	59.21	102	99	80-120	3	30

LCS: LCSF97	Batch: **F191232AA** (Sample number(s): 1043309-1043311, 1043315, 1043317-1043320)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Benzene	20	21.24	NA	106	NA	80-120	NA	NA
Toluene	20	20.32	NA	102	NA	80-120	NA	NA
Ethylbenzene	20	19.27	NA	96	NA	80-120	NA	NA
Xylene (Total)	60	59.18	NA	99	NA	80-120	NA	NA

LCS: LCSF10 LCSD: LCDF10	Batch: **F191272AA** (Sample number(s): 1043315)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Xylene (Total)	60	59.71	59.33	100	99	80-120	1	30

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LOQ/MDL Summary
GC/MS Volatiles

SDG: LSV49

Fraction: Volatiles by GC/MS

13130: BTEX 8260C Analyte Name	Default MDL	Default LOQ	Units
Benzene	0.2	1	ug/l
Toluene	0.2	1	ug/l
Ethylbenzene	0.4	1	ug/l
Xylene (Total)	1	5	ug/l

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fa09t51.d BFB Injection Date: 04/09/19

Instrument ID: HP15830 BFB Injection Time: 20:41

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.21
75	30.0 - 60.0% of mass 95	47.07
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.35
173	Less than 2.0% of mass 174	0.62 (0.78)1
174	Greater than 50.0% of mass 95	78.69
175	5.0 - 9.0% of mass 174	5.71 (7.26)1
176	Greater than 95.0%, but less than 101.0% of mass 174	75.65 (96.13)1
177	5.0 - 9.0% of mass 176	5.03 (6.65)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD200	fa09i51.d	04/09/19	21:37
02	VSTD200	fa09i52.d	04/09/19	21:46
03	VSTD100	fa09i53.d	04/09/19	21:59
04	VSTD100	fa09i54.d	04/09/19	22:08
05	VSTD50	fa09i55.d	04/09/19	22:21
06	VSTD50	fa09i56.d	04/09/19	22:31
07	VSTD20	fa09i57.d	04/09/19	22:43
08	VSTD20	fa09i58.d	04/09/19	22:53
09	VSTD10	fa09i59.d	04/09/19	23:05
10	VSTD10	fa09i60.d	04/09/19	23:15
11	VSTD2	fa09i61.d	04/09/19	23:27
12	VSTD2	fa09i62.d	04/09/19	23:37
13	VSTD1	fa09i63.d	04/09/19	23:49
14	VSTD1	fa09i64.d	04/09/19	23:59
15	ICVF03	fa09v51.d	04/10/19	00:55
16	ICVF04	fa09v52.d	04/10/19	01:05

FORM V VOA

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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fa15t02.d BFB Injection Date: 04/15/19

Instrument ID: HP15830 BFB Injection Time: 17:25

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.04
75	30.0 - 60.0% of mass 95	45.90
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.68
173	Less than 2.0% of mass 174	0.56 (0.72)1
174	Greater than 50.0% of mass 95	77.23
175	5.0 - 9.0% of mass 174	5.58 (7.22)1
176	Greater than 95.0%, but less than 101.0% of mass 174	75.50 (97.75)1
177	5.0 - 9.0% of mass 176	4.90 (6.50)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD4400	fa15g01.d	04/15/19	18:49
02	VSTD4400	fa15g02.d	04/15/19	18:58
03	VSTD2200	fa15g03.d	04/15/19	19:11
04	VSTD2200	fa15g04.d	04/15/19	19:20
05	VSTD1100	fa15g05.d	04/15/19	19:33
06	VSTD1100	fa15g06.d	04/15/19	19:42
07	VSTD550	fa15g07.d	04/15/19	19:55
08	VSTD550	fa15g08.d	04/15/19	20:04
09	VSTD110	fa15g09.d	04/15/19	20:17
10	VSTD110	fa15g10.d	04/15/19	20:26
11	VSTD44	fa15g11.d	04/15/19	20:39
12	VSTD44	fa15g12.d	04/15/19	20:48
13	ICVF01	fa15v01.d	04/15/19	21:23
14	ICVF02	fa15v02.d	04/15/19	21:32

FORM V VOA

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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy02t01.d BFB Injection Date: 05/02/19

Instrument ID: HP15830 BFB Injection Time: 08:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.46
75	30.0 - 60.0% of mass 95	45.06
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.73
173	Less than 2.0% of mass 174	0.16 (0.20)1
174	Greater than 50.0% of mass 95	79.86
175	5.0 - 9.0% of mass 174	5.58 (6.99)1
176	Greater than 95.0%, but less than 101.0% of mass 174	76.51 (95.81)1
177	5.0 - 9.0% of mass 176	5.21 (6.81)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	fy02c01.d	05/02/19	09:17
02	VSTD50	fy02c02.d	05/02/19	09:26
03	VSTD1100	fy02c04.d	05/02/19	09:48
04	VBLKF90	fy02b01.d	05/02/19	10:01
05	VBLKF93	fy02b02.d	05/02/19	10:10
06	LCSF90	fy02s01.d	05/02/19	10:23
07	LCSF93	fy02s02.d	05/02/19	10:33
08	LCDF90	fy02s03.d	05/02/19	10:45
09	LCDF93	fy02s04.d	05/02/19	10:55
10	LCSF95	fy02s06.d	05/02/19	11:17
11	LCDF95	fy02s08.d	05/02/19	11:39
12	1044250	fy02s09.d	05/02/19	12:05
13	1043321	fy02s10.d	05/02/19	12:15
14	1044254	fy02s11.d	05/02/19	12:27
15	1042397	fy02s12.d	05/02/19	12:37
16	1044254MS	fy02s13.d	05/02/19	12:49
17	1042398MS	fy02s14.d	05/02/19	12:58
18	1044254MSD	fy02s15.d	05/02/19	13:11
19	1042399MSD	fy02s16.d	05/02/19	13:20
20	1044255	fy02s17.d	05/02/19	13:33
21	1044712	fy02s18.d	05/02/19	13:42
22	1044717	fy02s20.d	05/02/19	14:04

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy02t01.d BFB Injection Date: 05/02/19

Instrument ID: HP15830 BFB Injection Time: 08:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.46
75	30.0 - 60.0% of mass 95	45.06
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.73
173	Less than 2.0% of mass 174	0.16 (0.20)1
174	Greater than 50.0% of mass 95	79.86
175	5.0 - 9.0% of mass 174	5.58 (6.99)1
176	Greater than 95.0%, but less than 101.0% of mass 174	76.51 (95.81)1
177	5.0 - 9.0% of mass 176	5.21 (6.81)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
23	1044257	fy02s21.d	05/02/19	14:17
24	1044718	fy02s22.d	05/02/19	14:27
25	1044884	fy02s23.d	05/02/19	14:39
26	1044719	fy02s24.d	05/02/19	14:49
27	1044885	fy02s25.d	05/02/19	15:01
28	1044720	fy02s26.d	05/02/19	15:11
29	1044886	fy02s27.d	05/02/19	15:24
30	1044721	fy02s28.d	05/02/19	15:33
31	1044887	fy02s29.d	05/02/19	15:46
32	1044722	fy02s30.d	05/02/19	15:55
33	1044888	fy02s31.d	05/02/19	16:08
34	1044723	fy02s32.d	05/02/19	16:17
35	1044889	fy02s33.d	05/02/19	16:30
36	1043562DL	fy02s34.d	05/02/19	16:39
37	1044891	fy02s35.d	05/02/19	16:52
38	1042734	fy02s36.d	05/02/19	17:01
39	1044892	fy02s37.d	05/02/19	17:14
40	1042735DL	fy02s38.d	05/02/19	17:23
41	1044893	fy02s39.d	05/02/19	17:36
42	1042736	fy02s40.d	05/02/19	17:46
43	1044894	fy02s41.d	05/02/19	17:58
44	1043306	fy02s42.d	05/02/19	18:08

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy02t01.d BFB Injection Date: 05/02/19

Instrument ID: HP15830 BFB Injection Time: 08:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.46
75	30.0 - 60.0% of mass 95	45.06
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.73
173	Less than 2.0% of mass 174	0.16 (0.20)1
174	Greater than 50.0% of mass 95	79.86
175	5.0 - 9.0% of mass 174	5.58 (6.99)1
176	Greater than 95.0%, but less than 101.0% of mass 174	76.51 (95.81)1
177	5.0 - 9.0% of mass 176	5.21 (6.81)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
45	1044895	fy02s43.d	05/02/19	18:20
46	1043307	fy02s44.d	05/02/19	18:30
47	1046759	fy02s45.d	05/02/19	18:42
48	1043313	fy02s46.d	05/02/19	18:52

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy03t02.d BFB Injection Date: 05/03/19

Instrument ID: HP15830 BFB Injection Time: 11:02

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.20
75	30.0 - 60.0% of mass 95	44.67
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.59
173	Less than 2.0% of mass 174	0.66 (0.82)1
174	Greater than 50.0% of mass 95	79.80
175	5.0 - 9.0% of mass 174	5.87 (7.36)1
176	Greater than 95.0%, but less than 101.0% of mass 174	77.02 (96.52)1
177	5.0 - 9.0% of mass 176	5.01 (6.50)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	fy03c01.d	05/03/19	11:40
02	VSTD50	fy03c02.d	05/03/19	11:50
03	VBLKF96	fy03b01.d	05/03/19	12:24
04	VBLKF97	fy03b02.d	05/03/19	12:33
05	LCSF96	fy03s01.d	05/03/19	12:46
06	LCSF97	fy03s02.d	05/03/19	12:55
07	1044256	fy03s03.d	05/03/19	13:28
08	1044758	fy03s04.d	05/03/19	13:37
09	1044989	fy03s05.d	05/03/19	13:50
10	1043309	fy03s06.d	05/03/19	13:59
11	1044990	fy03s07.d	05/03/19	14:12
12	1043310MS	fy03s08.d	05/03/19	14:21
13	1044990MS	fy03s09.d	05/03/19	14:34
14	1043311MSD	fy03s10.d	05/03/19	14:43
15	1044990MSD	fy03s11.d	05/03/19	14:56
16	1043315	fy03s12.d	05/03/19	15:05
17	1044991	fy03s13.d	05/03/19	15:18
18	1043317	fy03s14.d	05/03/19	15:27
19	1044992	fy03s15.d	05/03/19	15:40
20	1043318	fy03s16.d	05/03/19	15:49
21	1046237	fy03s17.d	05/03/19	16:02
22	1043319	fy03s18.d	05/03/19	16:11

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy03t02.d BFB Injection Date: 05/03/19

Instrument ID: HP15830 BFB Injection Time: 11:02

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.20
75	30.0 - 60.0% of mass 95	44.67
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.59
173	Less than 2.0% of mass 174	0.66 (0.82)1
174	Greater than 50.0% of mass 95	79.80
175	5.0 - 9.0% of mass 174	5.87 (7.36)1
176	Greater than 95.0%, but less than 101.0% of mass 174	77.02 (96.52)1
177	5.0 - 9.0% of mass 176	5.01 (6.50)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
23	1046238	fy03s19.d	05/03/19	16:24
24	1043320	fy03s20.d	05/03/19	16:33
25	1046239	fy03s21.d	05/03/19	16:46
26	1042734DL	fy03s22.d	05/03/19	16:56
27	1046240	fy03s23.d	05/03/19	17:08
28	1042735	fy03s24.d	05/03/19	17:18
29	1046759DL	fy03s25.d	05/03/19	17:31
30	1044888DL	fy03s27.d	05/03/19	17:53
31	1044753	fy03s28.d	05/03/19	18:02
32	1044890	fy03s29.d	05/03/19	18:15
33	1044754	fy03s30.d	05/03/19	18:25
34	1044993	fy03s31.d	05/03/19	18:37
35	1044755	fy03s32.d	05/03/19	18:47
36	1044994	fy03s33.d	05/03/19	18:59
37	1044756	fy03s34.d	05/03/19	19:09
38	1044995	fy03s35.d	05/03/19	19:21
39	1044757	fy03s36.d	05/03/19	19:31
40	1044996	fy03s37.d	05/03/19	19:43
41	1044803	fy03s38.d	05/03/19	19:53
42	1044997	fy03s39.d	05/03/19	20:05
43	1044804	fy03s40.d	05/03/19	20:15
44	1046228	fy03s41.d	05/03/19	20:28

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy03t02.d BFB Injection Date: 05/03/19

Instrument ID: HP15830 BFB Injection Time: 11:02

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.20
75	30.0 - 60.0% of mass 95	44.67
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.59
173	Less than 2.0% of mass 174	0.66 (0.82)1
174	Greater than 50.0% of mass 95	79.80
175	5.0 - 9.0% of mass 174	5.87 (7.36)1
176	Greater than 95.0%, but less than 101.0% of mass 174	77.02 (96.52)1
177	5.0 - 9.0% of mass 176	5.01 (6.50)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
45	1044805	fy03s42.d	05/03/19	20:37
46	1046229	fy03s43.d	05/03/19	20:50
47	1044805DL	fy03s44.d	05/03/19	20:59
48	1046230	fy03s45.d	05/03/19	21:12
49	1044806	fy03s46.d	05/03/19	21:21

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy07t03.d BFB Injection Date: 05/07/19

Instrument ID: HP15830 BFB Injection Time: 09:48

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.30
75	30.0 - 60.0% of mass 95	45.50
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.66
173	Less than 2.0% of mass 174	0.25 (0.34)1
174	Greater than 50.0% of mass 95	74.50
175	5.0 - 9.0% of mass 174	5.50 (7.38)1
176	Greater than 95.0%, but less than 101.0% of mass 174	72.37 (97.13)1
177	5.0 - 9.0% of mass 176	4.77 (6.59)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	fy07c02.d	05/07/19	10:37
02	VSTD1100	fy07c04.d	05/07/19	10:59
03	VSTD50	fy07c03.d	05/07/19	11:11
04	VBLKF10	fy07b02.d	05/07/19	11:21
05	LCSF09	fy07s01.d	05/07/19	11:33
06	LCSF10	fy07s02.d	05/07/19	11:43
07	LCDF09	fy07s03.d	05/07/19	11:55
08	LCDF10	fy07s04.d	05/07/19	12:05
09	VBLKF09	fy07b01.d	05/07/19	12:17
10	LCSF14	fy07s06.d	05/07/19	12:27
11	LCDF14	fy07s08.d	05/07/19	12:49
12	1049006	fy07s09.d	05/07/19	13:19
13	1044726RE	fy07s10.d	05/07/19	13:28
14	1048748	fy07s11.d	05/07/19	13:41
15	1048748MS	fy07s13.d	05/07/19	14:03
16	1046011	fy07s14.d	05/07/19	14:12
17	1048748MSD	fy07s15.d	05/07/19	14:25
18	1046011DL	fy07s16.d	05/07/19	14:35
19	1048749	fy07s17.d	05/07/19	14:47
20	1046012	fy07s18.d	05/07/19	14:57
21	1047200DL	fy07s19.d	05/07/19	15:09
22	1046013	fy07s20.d	05/07/19	15:19

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: fy07t03.d BFB Injection Date: 05/07/19

Instrument ID: HP15830 BFB Injection Time: 09:48

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.30
75	30.0 - 60.0% of mass 95	45.50
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.66
173	Less than 2.0% of mass 174	0.25 (0.34)1
174	Greater than 50.0% of mass 95	74.50
175	5.0 - 9.0% of mass 174	5.50 (7.38)1
176	Greater than 95.0%, but less than 101.0% of mass 174	72.37 (97.13)1
177	5.0 - 9.0% of mass 176	4.77 (6.59)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
23	1046014	fy07s22.d	05/07/19	15:41
24	1046015	fy07s24.d	05/07/19	16:02
25	1046015DL	fy07s26.d	05/07/19	16:24
26	1046016	fy07s28.d	05/07/19	16:46
27	1043315DL	fy07s32.d	05/07/19	17:29
28	1045938	fy07s34.d	05/07/19	17:51
29	1045939DL	fy07s36.d	05/07/19	18:13
30	1045972	fy07s38.d	05/07/19	18:35
31	1045974	fy07s40.d	05/07/19	18:57
32	1045976	fy07s42.d	05/07/19	19:19

FORM V VOA

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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP15830 Calibration Date(s): 04/09/19 04/09/19

Heated Purge: (Y/N) Y Calibration Times: 21:46 23:59

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rtx-VRXID: .18

LAB FILE ID: RRF 1 = fa09i64.d RRF 2 = fa09i62.d RRF 10= fa09i60.d
RRF 20= fa09i58.d RRF 50= fa09i56.d RRF100= fa09i54.d RRF200= fa09i52.d

COMPOUND	RRF 1	RRF 2	RRF 10	RRF 20	RRF 50	RRF100	RRF200	RRF	% RSD	CAL. METHOD
Ethanol	0.1045	0.1022	0.1040	0.1054	0.1023	0.1049	0.1079	0.1045	2	AVG
t-Butyl alcohol		1.0018	1.1013	1.0278	1.2119	1.5278	1.2923	1.1938	17	AVG
Methyl Tertiary Butyl Ether#	0.7982	0.8424	0.8869	0.8505	0.9155	0.8919	0.8658	0.8644	4	AVG #
di-Isopropyl ether	0.8465	0.8321	0.9136	0.9034	0.9727	0.8963	0.9224	0.8982	5	AVG
Ethyl t-butyl ether	0.8499	0.8414	0.9235	0.9237	0.9951	0.9288	0.9571	0.9171	6	AVG
1,2-Dichloroethane#	0.4308	0.4003	0.4085	0.4117	0.4265	0.3922	0.4030	0.4104	3	AVG #
Benzene#	1.1457	1.1749	1.2781	1.2503	1.3391	1.2232	1.2583	1.2385	5	AVG #
t-Amyl methyl ether	0.1817	0.2083	0.2289	0.2270	0.2480	0.2367	0.2420	0.2246	10	AVG
Toluene#	1.0011	1.0409	1.0760	1.0898	1.1455	1.0739	1.1030	1.0757	4	AVG #
1,2-Dibromoethane#	0.3587	0.3468	0.3800	0.3740	0.4145	0.4150	0.4053	0.3849	7	AVG #
Ethylbenzene#	1.8944	1.9536	2.0996	2.0273	2.2305	2.2103	1.2629	2.0826	6	AVG #
m+p-Xylene#	0.7602	0.7947	0.8356	0.8074	0.8903	0.8887	0.8620	0.8341	6	AVG #
o-Xylene#	0.7329	0.7330	0.8016	0.7673	0.8639	0.8664	0.8411	0.8009	7	AVG #
Isopropylbenzene#	1.9444	1.9030	2.0985	1.9637	2.2589	2.3131	2.2047	2.0981	8	AVG #
1,3,5-Trimethylbenzene	2.7757	2.7764	3.1079	2.8619	3.3586	3.5120	3.2922	3.0978	10	AVG
1,2,4-Trimethylbenzene	2.9272	2.9232	3.1062	2.9133	3.4688	3.6415	3.3715	3.1931	9	AVG
Naphthalene	3.3829	3.3917	3.3702	3.1144	3.8641	4.3671	3.8586	3.6213	12	AVG
Dibromofluoromethane	0.2349	0.2364	0.2346	0.2358	0.2359	0.2306	0.2326	0.2344	1	AVG
Dibromofluoromethane(2)	0.2405	0.2416	0.2404	0.2401	0.2405	0.2358	0.2383	0.2396	1	AVG
1,2-Dichloroethane-d4	0.0646	0.0656	0.0651	0.0668	0.0674	0.0687	0.0697	0.0669	3	AVG
1,2-Dichloroethane-d4(2)	0.2819	0.2796	0.2829	0.2855	0.2814	0.2872	0.3013	0.2857	3	AVG
1,2-Dichloroethane-d4(3)	0.0416	0.0405	0.0405	0.0419	0.0415	0.0401	0.0410	0.0410	2	AVG
Toluene-d8	1.2968	1.2771	1.2897	1.3084	1.2820	1.2944	1.3057	1.2934	1	AVG
Toluene-d8(2)	0.8640	0.8558	0.8490	0.8700	0.8589	0.8629	0.8727	0.8619	1	AVG
4-Bromofluorobenzene	0.5050	0.5066	0.5041	0.5139	0.5094	0.5144	0.5194	0.5104	1	AVG
4-Bromofluorobenzene(2)	0.4331	0.4208	0.4255	0.4330	0.4234	0.4259	0.4277	0.4270	1	AVG

Average %RSD 5

Minimum RRF for SPCC(#) = 0.10
(0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %RSD for CCC(*) = 30%

FORM VI VOA

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Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP15830.i/19apr09z.b/fa09i52.d	VSTD200
/chem/HP15830.i/19apr09z.b/fa09i54.d	VSTD100
/chem/HP15830.i/19apr09z.b/fa09i56.d	VSTD050
/chem/HP15830.i/19apr09z.b/fa09i58.d	VSTD020
/chem/HP15830.i/19apr09z.b/fa09i60.d	VSTD010
/chem/HP15830.i/19apr09z.b/fa09i62.d	VSTD002
/chem/HP15830.i/19apr09z.b/fa09i64.d	VSTD001

Area Summary

File ID:

Internal Standard Name	fa09i52.d	fa09i54.d	fa09i56.d	fa09i58.d	fa09i60.d	fa09i62.d	fa09i64.d	Avg. Area	%RSD	In Spec
t-Butyl alcohol-d10	159329	159716	160949	161100	156065	158796	157662	159088	1	Yes
Fluorobenzene	523689	522492	516173	517579	498117	508191	512083	514046	2	Yes
Chlorobenzene-d5	403563	401635	404584	398960	391350	400536	396618	399607	1	Yes
1,4-Dichlorobenzene-d4	226754	223708	223580	223014	216792	219785	221185	222117	1	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

Internal Standard Name	fa09i52.d	fa09i54.d	fa09i56.d	fa09i58.d	fa09i60.d	fa09i62.d	fa09i64.d	Avg. RT
t-Butyl alcohol-d10	1.952	1.940	1.946	1.946	1.940	1.946	1.946	1.946
Fluorobenzene	3.544	3.538	3.544	3.544	3.538	3.544	3.544	3.542
Chlorobenzene-d5	4.879	4.879	4.885	4.885	4.879	4.885	4.885	4.882
1,4-Dichlorobenzene-d4	5.830	5.830	5.830	5.830	5.830	5.830	5.830	5.830

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/10/2019 at 10:56.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP15830 ICV Date: 04/10/19 Time: 01:05

Lab File ID: fa09v52.d Init. Calib. Date(s): 04/09/19 04/09/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rtx-VRXID: .18

			ACTUAL	TRUE	%	
COMPOUND	$\overline{RRF}$	RRF	CONC.	CONC.	DRIFT	
Ethanol	0.1045	0.1151	550.80	500	10	
t-Butyl alcohol	1.1938	1.2324	206.47	200	3	
# Methyl Tertiary Butyl Ether	0.8644	0.9187	21.25	20	6	#
di-Isopropyl ether	0.8982	0.9579	21.33	20	7	
Ethyl t-butyl ether	0.9171	0.9597	20.93	20	5	
# 1,2-Dichloroethane	0.4104	0.4240	20.66	20	3	#
# Benzene	1.2385	1.3088	21.14	20	6	#
t-Amyl methyl ether	0.2246	0.2412	21.47	20	7	
# Toluene	1.0757	1.1199	20.82	20	4	#
# 1,2-Dibromoethane	0.3849	0.4093	21.27	20	6	#
# Ethylbenzene	2.0826	2.1690	20.83	20	4	#
# m+p-Xylene	0.8341	0.8760	42.01	40	5	#
# o-Xylene	0.8009	0.8360	20.88	20	4	#
# Isopropylbenzene	2.0981	2.2226	21.19	20	6	#
1,3,5-Trimethylbenzene	3.0978	3.2197	20.79	20	4	
1,2,4-Trimethylbenzene	3.1931	3.3651	21.08	20	5	
Naphthalene	3.6213	3.5950	19.85	20	-1	
			Average %Drift		5	

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

page 1 of 1 FORM VII VOA

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Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP15830.i/19apr09z.b/fa09i64.d
/chem/HP15830.i/19apr09z.b/fa09i62.d
/chem/HP15830.i/19apr09z.b/fa09i60.d
/chem/HP15830.i/19apr09z.b/fa09i58.d
/chem/HP15830.i/19apr09z.b/fa09i56.d
/chem/HP15830.i/19apr09z.b/fa09i54.d
/chem/HP15830.i/19apr09z.b/fa09i52.d

File /chem/HP15830.i/19apr09z.b/fa09i56.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP15830.i/19may02a.b/fy02c02.d

RT Summary

Internal Standard Name	File ID: fy02c02.d	ICAL RT	In Spec
t-Butyl alcohol-d10	1.916	1.946	Yes
Fluorobenzene	3.507	3.544	Yes
Chlorobenzene-d5	4.861	4.885	Yes
1,4-Dichlorobenzene-d4	5.805	5.830	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: fy02c02.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl alcohol-d10	124584	160949	80474	321898	Yes
Fluorobenzene	369018	516173	258086	1032346	Yes
Chlorobenzene-d5	282958	404584	202292	809168	Yes
1,4-Dichlorobenzene-d4	148127	223580	111790	447160	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP15830.i/19apr15i.b/fa15g12.d
/chem/HP15830.i/19apr15i.b/fa15g10.d
/chem/HP15830.i/19apr15i.b/fa15g08.d
/chem/HP15830.i/19apr15i.b/fa15g06.d
/chem/HP15830.i/19apr15i.b/fa15g04.d
/chem/HP15830.i/19apr15i.b/fa15g02.d

File /chem/HP15830.i/19apr15i.b/fa15g06.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP15830.i/19may02a.b/fy02c04.d

RT Summary

Internal Standard Name	File ID: fy02c04.d	ICAL RT	In Spec
Fluorobenzene	3.507	3.513	Yes

A "No" indicates the retention time is greater than 30 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: fy02c04.d	ICAL Area	Low Limit	High Limit	In Spec
Fluorobenzene	370325	537469	268734	1074938	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP15830 Calibration Date: 05/02/19 Time: 09:26

Lab File ID: fy02c02.d Init. Calib. Date(s): 04/09/19 04/09/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rtx-VRXID: .18

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF50	CONC.	CONC.	DRIFT	
Ethanol	0.1045	0.1117	1336.99	1250	7	
t-Butyl alcohol	1.1938	1.3334	279.23	250	12	
# Methyl Tertiary Butyl Ether	0.8644	0.8584	198.60	200	-1	#
di-Isopropyl ether	0.8982	0.9524	53.02	50	6	
Ethyl t-butyl ether	0.9171	0.9538	52.00	50	4	
# 1,2-Dichloroethane	0.4104	0.3769	45.91	50	-8	#
# Benzene	1.2385	1.3116	52.95	50	6	#
t-Amyl methyl ether	0.2246	0.2306	51.32	50	3	
# Toluene	1.0757	1.1550	53.68	50	7	#
# 1,2-Dibromoethane	0.3849	0.4064	52.79	50	6	#
# Ethylbenzene	2.0826	2.2144	53.16	50	6	#
# m+p-Xylene	0.8341	0.8873	106.37	100	6	#
# o-Xylene	0.8009	0.8447	52.74	50	5	#
# Isopropylbenzene	2.0981	2.2273	53.08	50	6	#
1,3,5-Trimethylbenzene	3.0978	3.5457	57.23	50	14	
1,2,4-Trimethylbenzene	3.1931	3.6097	56.52	50	13	
Naphthalene	3.6213	3.9003	53.85	50	8	
Dibromofluoromethane	0.2344	0.2191	46.74	50	-7	
Dibromofluoromethane(2)	0.2396	0.2257	47.10	50	-6	
1,2-Dichloroethane-d4	0.0669	0.0692	51.72	50	3	
1,2-Dichloroethane-d4(2)	0.2857	0.2682	46.94	50	-6	
1,2-Dichloroethane-d4(3)	0.0410	0.0413	50.29	50	1	
Toluene-d8	1.2934	1.2854	49.69	50	-1	
Toluene-d8(2)	0.8619	0.8724	50.61	50	1	
4-Bromofluorobenzene	0.5104	0.4956	48.55	50	-3	
4-Bromofluorobenzene(2)	0.4270	0.4106	48.07	50	-4	

Average %Drift 6

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP15830.i/19apr09z.b/fa09i64.d
/chem/HP15830.i/19apr09z.b/fa09i62.d
/chem/HP15830.i/19apr09z.b/fa09i60.d
/chem/HP15830.i/19apr09z.b/fa09i58.d
/chem/HP15830.i/19apr09z.b/fa09i56.d
/chem/HP15830.i/19apr09z.b/fa09i54.d
/chem/HP15830.i/19apr09z.b/fa09i52.d

File /chem/HP15830.i/19apr09z.b/fa09i56.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP15830.i/19may03a.b/fy03c02.d

RT Summary

File ID:

Internal Standard Name	fy03c02.d	ICAL RT	In Spec
t-Butyl alcohol-d10	1.904	1.946	Yes
Fluorobenzene	3.507	3.544	Yes
Chlorobenzene-d5	4.860	4.885	Yes
1,4-Dichlorobenzene-d4	5.805	5.830	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

File ID:

Internal Standard Name	fy03c02.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl alcohol-d10	123602	160949	80474	321898	Yes
Fluorobenzene	350899	516173	258086	1032346	Yes
Chlorobenzene-d5	272462	404584	202292	809168	Yes
1,4-Dichlorobenzene-d4	146347	223580	111790	447160	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 05/03/2019 at 13:33

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP15830 Calibration Date: 05/03/19 Time: 11:50

Lab File ID: fy03c02.d Init. Calib. Date(s): 04/09/19 04/09/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rtx-VRXID: .18

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF50	CONC.	CONC.	DRIFT	
Ethanol	0.1045	0.1099	1314.56	1250	5	
t-Butyl alcohol	1.1938	1.4706	307.95	250	23	
# Methyl Tertiary Butyl Ether	0.8644	0.9279	214.68	200	7	#
di-Isopropyl ether	0.8982	0.9911	55.18	50	10	
Ethyl t-butyl ether	0.9171	0.9830	53.60	50	7	
# 1,2-Dichloroethane	0.4104	0.3916	47.70	50	-5	#
# Benzene	1.2385	1.3722	55.40	50	11	#
t-Amyl methyl ether	0.2246	0.2409	53.61	50	7	
# Toluene	1.0757	1.2068	56.09	50	12	#
# 1,2-Dibromoethane	0.3849	0.4333	56.29	50	13	#
# Ethylbenzene	2.0826	2.3639	56.75	50	14	#
# m+p-Xylene	0.8341	0.9378	112.42	100	12	#
# o-Xylene	0.8009	0.9104	56.84	50	14	#
# Isopropylbenzene	2.0981	2.4242	57.77	50	16	#
1,3,5-Trimethylbenzene	3.0978	3.7188	60.02	50	20	
1,2,4-Trimethylbenzene	3.1931	3.8616	60.47	50	21	
Naphthalene	3.6213	4.3999	60.75	50	22	
Dibromofluoromethane	0.2344	0.2212	47.18	50	-6	
Dibromofluoromethane(2)	0.2396	0.2265	47.28	50	-5	
1,2-Dichloroethane-d4	0.0669	0.0696	52.04	50	4	
1,2-Dichloroethane-d4(2)	0.2857	0.2670	46.72	50	-7	
1,2-Dichloroethane-d4(3)	0.0410	0.0398	48.55	50	-3	
Toluene-d8	1.2934	1.2869	49.75	50	-1	
Toluene-d8(2)	0.8619	0.8626	50.04	50	0	
4-Bromofluorobenzene	0.5104	0.4980	48.79	50	-2	
4-Bromofluorobenzene(2)	0.4270	0.4156	48.66	50	-3	

Average %Drift 10

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP15830.i/19apr09z.b/fa09i64.d
/chem/HP15830.i/19apr09z.b/fa09i62.d
/chem/HP15830.i/19apr09z.b/fa09i60.d
/chem/HP15830.i/19apr09z.b/fa09i58.d
/chem/HP15830.i/19apr09z.b/fa09i56.d
/chem/HP15830.i/19apr09z.b/fa09i54.d
/chem/HP15830.i/19apr09z.b/fa09i52.d

File /chem/HP15830.i/19apr09z.b/fa09i56.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP15830.i/19may07a.b/fy07c02.d

RT Summary

File ID:

Internal Standard Name	fy07c02.d	ICAL RT	In Spec
t-Butyl alcohol-d10	1.910	1.946	Yes
Fluorobenzene	3.507	3.544	Yes
Chlorobenzene-d5	4.860	4.885	Yes
1,4-Dichlorobenzene-d4	5.811	5.830	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

File ID:

Internal Standard Name	fy07c02.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl alcohol-d10	105058	160949	80474	321898	Yes
Fluorobenzene	335833	516173	258086	1032346	Yes
Chlorobenzene-d5	246884	404584	202292	809168	Yes
1,4-Dichlorobenzene-d4	124611	223580	111790	447160	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

Lancaster Laboratories
Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem/HP15830.i/19apr15i.b/fa15g12.d
/chem/HP15830.i/19apr15i.b/fa15g10.d
/chem/HP15830.i/19apr15i.b/fa15g08.d
/chem/HP15830.i/19apr15i.b/fa15g06.d
/chem/HP15830.i/19apr15i.b/fa15g04.d
/chem/HP15830.i/19apr15i.b/fa15g02.d

File /chem/HP15830.i/19apr15i.b/fa15g06.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem/HP15830.i/19may07a.b/fy07c04.d

RT Summary

Internal Standard Name	File ID: fy07c04.d	ICAL RT	In Spec
Fluorobenzene	3.507	3.513	Yes

A "No" indicates the retention time is greater than 30 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: fy07c04.d	ICAL Area	Low Limit	High Limit	In Spec
Fluorobenzene	338725	537469	268734	1074938	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

_____

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP15830 Calibration Date: 05/07/19 Time: 10:37

Lab File ID: fy07c02.d Init. Calib. Date(s): 04/09/19 04/09/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rtx-VRXID: .18

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF50	CONC.	CONC.	DRIFT	
Ethanol	0.1045	0.0997	1192.86	1250	-5	
t-Butyl alcohol	1.1938	1.3102	274.37	250	10	
# Methyl Tertiary Butyl Ether	0.8644	0.8013	185.39	200	-7	#
di-Isopropyl ether	0.8982	0.7588	42.24	50	-16	
Ethyl t-butyl ether	0.9171	0.7722	42.10	50	-16	
# 1,2-Dichloroethane	0.4104	0.3065	37.34	50	-25	#<-
# Benzene	1.2385	1.0635	42.94	50	-14	#
t-Amyl methyl ether	0.2246	0.1875	41.73	50	-17	
# Toluene	1.0757	0.9832	45.70	50	-9	#
# 1,2-Dibromoethane	0.3849	0.3601	46.78	50	-6	#
# Ethylbenzene	2.0826	1.9268	46.26	50	-7	#
# m+p-Xylene	0.8341	0.7655	91.77	100	-8	#
# o-Xylene	0.8009	0.7362	45.96	50	-8	#
# Isopropylbenzene	2.0981	1.9069	45.44	50	-9	#
1,3,5-Trimethylbenzene	3.0978	3.2309	52.15	50	4	
1,2,4-Trimethylbenzene	3.1931	3.2891	51.50	50	3	
Naphthalene	3.6213	3.8115	52.63	50	5	
Dibromofluoromethane	0.2344	0.2106	44.93	50	-10	
Dibromofluoromethane(2)	0.2396	0.2189	45.67	50	-9	
1,2-Dichloroethane-d4	0.0669	0.0675	50.50	50	1	
1,2-Dichloroethane-d4(2)	0.2857	0.2629	46.00	50	-8	
1,2-Dichloroethane-d4(3)	0.0410	0.0406	49.51	50	-1	
Toluene-d8	1.2934	1.3300	51.41	50	3	
Toluene-d8(2)	0.8619	0.8881	51.52	50	3	
4-Bromofluorobenzene	0.5104	0.5021	49.19	50	-2	
4-Bromofluorobenzene(2)	0.4270	0.3831	44.85	50	-10	

Average %Drift 8

Minimum RRF for SPCC(#)=0.10 (0.30 for Chlorobenzene, 1,1,2,2-Tetrachloroethane)
Maximum %Drift for CCC(*)=20%

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy02c02.d Date Analyzed: 05/02/19

Instrument ID: HP15830 Time Analyzed: 09:26

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

		IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	124584	1.916	369018	3.507	282958	4.860	148127	5.805
	UPPER LIMIT	249168	2.416	738036	4.007	565916	5.360	296254	6.305
	LOWER LIMIT	62292	1.416	184509	3.007	141479	4.360	74064	5.305
	LAB SAMPLE ID								
01	VBLKF90	155573	1.934	373959	3.513	287666	4.860	153433	5.811
02	VBLKF93	126428	1.916	363326	3.513	279947	4.860	151017	5.805
03	LCSF90	151010	1.916	368950	3.513	281723	4.860	149745	5.811
04	LCSF93	124713	1.916	366185	3.513	277135	4.860	149091	5.805
05	LCDF90	154711	1.928	364569	3.513	277037	4.860	150349	5.805
06	LCDF93	129173	1.904	363179	3.507	279328	4.860	150171	5.805
07	LCSF95	128213	1.916	358445	3.513	273956	4.860	148857	5.805
08	LCDF95	127268	1.910	357253	3.513	276133	4.860	147082	5.805
09	1044250	120389	1.934	347796	3.513	268737	4.860	144198	5.805
10	1043321	126287	1.910	369119	3.507	285908	4.860	150489	5.805
11	1044254	127224	1.934	352938	3.513	272553	4.860	147149	5.805
12	1042397	122301	1.916	358465	3.507	275877	4.860	150294	5.805
13	1044254MS	156761	1.928	355601	3.513	273440	4.860	144960	5.805
14	1042398MS	126753	1.910	368732	3.507	284190	4.860	151901	5.805
15	1044254MSD	159472	1.934	416562	3.513	281800	4.860	149811	5.811
16	1042399MSD	124599	1.910	368773	3.507	283698	4.860	154618	5.805
17	1044255	140904	1.916	356173	3.513	273538	4.860	149713	5.812
18	1044712	126032	1.904	366189	3.507	285608	4.860	152031	5.805
19	1044717	116519	1.904	359084	3.513	276718	4.860	147707	5.805
20	1044257	149440	1.922	354868	3.513	272127	4.860	146298	5.805
21	1044718	125847	1.910	361492	3.513	279717	4.860	151211	5.805
22	1044884	150239	1.928	389133	3.513	269715	4.860	147057	5.811

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy02c02.d Date Analyzed: 05/02/19

Instrument ID: HP15830 Time Analyzed: 09:26

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	124584	1.916	369018	3.507	282958	4.860	148127	5.805
UPPER LIMIT	249168	2.416	738036	4.007	565916	5.360	296254	6.305
LOWER LIMIT	62292	1.416	184509	3.007	141479	4.360	74064	5.305
LAB SAMPLE ID								
23 1044719	112613	1.910	349517	3.513	274725	4.860	144570	5.811
24 1044885	159575	1.922	353234	3.513	270605	4.860	149129	5.811
25 1044720	122836	1.910	358214	3.513	278340	4.860	148182	5.805
26 1044886	151737	1.928	351675	3.513	271875	4.860	145533	5.805
27 1044721	119901	1.922	350641	3.513	273494	4.860	145881	5.805
28 1044887	150483	1.922	348483	3.513	269558	4.860	144866	5.812
29 1044722	120533	1.910	353102	3.513	275365	4.860	145778	5.805
30 1044888	169056	1.922	355135	3.513	269821	4.860	145408	5.811
31 1044723	114713	1.916	346325	3.513	272030	4.860	145412	5.805
32 1044889	149442	1.922	348071	3.513	271717	4.860	145101	5.812
33 1043562DL	122844	1.904	354202	3.507	275807	4.860	148342	5.805
34 1044891	147049	1.934	352846	3.513	275607	4.860	145650	5.811
35 1042734	118491	1.898	352736	3.507	277205	4.860	148502	5.805
36 1044892	153429	1.916	348333	3.513	272678	4.860	144933	5.811
37 1042735DL	121463	1.904	354623	3.507	278238	4.860	149019	5.805
38 1044893	154495	1.928	350864	3.519	273208	4.860	148795	5.805
39 1042736	114657	1.910	348354	3.513	270603	4.860	145665	5.805
40 1044894	153332	1.922	349948	3.513	273406	4.860	146136	5.811
41 1043306	115304	1.910	346415	3.513	271914	4.860	145906	5.805
42 1044895	145458	1.916	350948	3.513	274439	4.860	147607	5.811
43 1043307	114658	1.916	348058	3.513	276324	4.860	147876	5.805
44 1046759	156835	1.928	357902	3.513	274661	4.860	143929	5.812

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy02c02.d Date Analyzed: 05/02/19

Instrument ID: HP15830 Time Analyzed: 09:26

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	124584	1.916	369018	3.507	282958	4.860	148127	5.805
UPPER LIMIT	249168	2.416	738036	4.007	565916	5.360	296254	6.305
LOWER LIMIT	62292	1.416	184509	3.007	141479	4.360	74064	5.305
LAB SAMPLE ID								
45 1043313	115418	1.910	356571	3.513	277872	4.860	149810	5.805

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM VIII VOA

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8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy03c02.d Date Analyzed: 05/03/19

Instrument ID: HP15830 Time Analyzed: 11:50

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	123602	1.904	350899	3.507	272462	4.860	146347	5.805
UPPER LIMIT	247204	2.404	701798	4.007	544924	5.360	292694	6.305
LOWER LIMIT	61801	1.404	175450	3.007	136231	4.360	73174	5.305
LAB SAMPLE ID								
01 VBLKF96	150571	1.922	351959	3.513	273397	4.860	146688	5.811
02 VBLKF97	119925	1.904	345720	3.507	271353	4.860	145654	5.805
03 LCSF96	138621	1.928	401380	3.513	306857	4.860	163436	5.812
04 LCSF97	123625	1.916	355661	3.513	278838	4.860	150649	5.805
05 1044256	147866	1.922	345101	3.513	268330	4.860	144422	5.812
06 1044758	127720	1.910	357721	3.513	280168	4.860	152361	5.811
07 1044989	159407	1.922	343826	3.513	268742	4.860	144465	5.811
08 1043309	111349	1.898	348911	3.507	271366	4.860	146348	5.805
09 1044990	159310	1.928	346803	3.513	271986	4.860	144151	5.811
10 1043310MS	119232	1.910	351192	3.513	269406	4.860	145900	5.805
11 1044990MS	159223	1.928	354367	3.513	275014	4.860	147779	5.812
12 1043311MSD	123944	1.904	347014	3.507	270959	4.860	147920	5.805
13 1044990MSD	155460	1.922	347564	3.513	268282	4.860	147157	5.811
14 1043315	123891	1.898	355549	3.507	279589	4.860	144578	5.805
15 1044991	149345	1.928	346836	3.513	271786	4.860	149888	5.811
16 1043317	115392	1.910	349341	3.507	272916	4.860	148593	5.805
17 1044992	166541	1.916	353956	3.513	277414	4.860	150686	5.805
18 1043318	115032	1.910	349193	3.507	274046	4.860	149075	5.805
19 1046237	164310	1.928	353727	3.513	278833	4.860	151776	5.811
20 1043319	120322	1.910	349830	3.513	273078	4.860	147517	5.805
21 1046238	148645	1.922	347144	3.513	273773	4.860	150421	5.811
22 1043320	117002	1.904	341445	3.507	273960	4.860	149494	5.805

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy03c02.d Date Analyzed: 05/03/19

Instrument ID: HP15830 Time Analyzed: 11:50

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	123602	1.904	350899	3.507	272462	4.860	146347	5.805
UPPER LIMIT	247204	2.404	701798	4.007	544924	5.360	292694	6.305
LOWER LIMIT	61801	1.404	175450	3.007	136231	4.360	73174	5.305
LAB SAMPLE ID								
23 1046239	144957	1.928	346150	3.513	273348	4.860	148405	5.811
24 1042734DL	126020	1.910	357101	3.513	276969	4.860	150675	5.805
25 1046240	140518	1.928	347174	3.513	270329	4.860	146587	5.805
26 1042735	124660	1.904	357731	3.507	280361	4.860	150123	5.805
27 1046759DL	156144	1.928	350856	3.513	276109	4.860	148699	5.811
28 1044888DL	165677	1.928	354886	3.513	277770	4.860	151048	5.811
29 1044753	123089	1.904	347947	3.507	271741	4.860	147261	5.805
30 1044890	158946	1.934	352971	3.513	279133	4.860	149654	5.811
31 1044754	125187	1.892	352884	3.507	278294	4.854	151636	5.805
32 1044993	155146	1.934	348561	3.513	276592	4.860	148138	5.812
33 1044755	126208	1.910	347567	3.507	269692	4.860	148302	5.805
34 1044994	146368	1.934	355617	3.513	278139	4.860	150111	5.811
35 1044756	123783	1.898	349801	3.507	274272	4.860	145434	5.805
36 1044995	150731	1.928	344616	3.513	273270	4.860	146592	5.811
37 1044757	124506	1.916	341904	3.513	269538	4.860	145139	5.811
38 1044996	148418	1.928	344219	3.513	272955	4.860	147096	5.811
39 1044803	121786	1.904	349440	3.507	272352	4.860	148030	5.805
40 1044997	152320	1.934	345332	3.513	273358	4.860	146523	5.812
41 1044804	121036	1.910	347457	3.507	273719	4.860	148839	5.805
42 1046228	140400	1.928	341994	3.513	271406	4.860	145978	5.811
43 1044805	119938	1.910	344975	3.507	272679	4.860	143672	5.811
44 1046229	148899	1.922	340645	3.513	272235	4.860	147188	5.805

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM VIII VOA

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy03c02.d Date Analyzed: 05/03/19

Instrument ID: HP15830 Time Analyzed: 11:50

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	123602	1.904	350899	3.507	272462	4.860	146347	5.805
UPPER LIMIT	247204	2.404	701798	4.007	544924	5.360	292694	6.305
LOWER LIMIT	61801	1.404	175450	3.007	136231	4.360	73174	5.305
LAB SAMPLE ID								
45 1044805DL	113988	1.916	351827	3.513	274982	4.860	146690	5.805
46 1046230	148730	1.922	348769	3.513	274298	4.860	147441	5.811
47 1044806	121172	1.904	345767	3.507	273046	4.860	148940	5.805

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

page 3 of 3

FORM VIII VOA

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8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy07c02.d Date Analyzed: 05/07/19

Instrument ID: HP15830 Time Analyzed: 10:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	105058	1.910	335833	3.507	246884	4.860	124611	5.811
UPPER LIMIT	210116	2.410	671666	4.007	493768	5.360	249222	6.311
LOWER LIMIT	52529	1.410	167916	3.007	123442	4.360	62306	5.311
LAB SAMPLE ID								
01 VBLKF10	100203	1.904	320720	3.507	238337	4.860	120869	5.811
02 LCSF09	135345	1.934	331523	3.513	244650	4.860	122388	5.811
03 LCSF10	109028	1.891	324908	3.507	237285	4.860	121039	5.811
04 LCDF09	131033	1.922	322888	3.513	234717	4.860	119911	5.811
05 LCDF10	107856	1.916	323092	3.513	234711	4.860	120606	5.811
06 VBLKF09	131045	1.922	323728	3.513	236475	4.860	118524	5.812
07 LCSF14	95423	1.904	321619	3.507	233617	4.860	119302	5.812
08 LCDF14	110661	1.916	320921	3.513	234882	4.860	118645	5.812
09 1049006	138384	1.940	325583	3.513	237601	4.860	119403	5.812
10 1044726RE	113728	1.904	326320	3.507	241468	4.860	124228	5.811
11 1048748	114747	1.922	316163	3.513	233503	4.860	117530	5.812
12 1048748MS	140467	1.928	321140	3.513	236102	4.860	119706	5.811
13 1046011	101950	1.916	300587	3.507	222509	4.860	113166	5.811
14 1048748MSD	126802	1.922	305365	3.513	223115	4.860	115312	5.811
15 1046011DL	100180	1.898	302127	3.507	223537	4.860	115067	5.811
16 1048749	133908	1.928	305494	3.513	224162	4.860	114680	5.811
17 1046012	100715	1.910	308170	3.513	230047	4.860	114958	5.812
18 1047200DL	127336	1.940	307418	3.519	227772	4.860	116866	5.812
19 1046013	94031	1.910	304829	3.507	225614	4.860	115019	5.811
20 1046014	98193	1.910	301179	3.507	220258	4.860	112731	5.812
21 1046015	105337	1.904	301999	3.507	225374	4.860	113587	5.806
22 1046015DL	100333	1.910	305908	3.507	222988	4.860	113620	5.812

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): fy07c02.d Date Analyzed: 05/07/19

Instrument ID: HP15830 Time Analyzed: 10:37

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	105058	1.910	335833	3.507	246884	4.860	124611	5.811
UPPER LIMIT	210116	2.410	671666	4.007	493768	5.360	249222	6.311
LOWER LIMIT	52529	1.410	167916	3.007	123442	4.360	62306	5.311
LAB SAMPLE ID								
23 1046016	102766	1.897	311563	3.507	229062	4.860	116326	5.811
24 1043315DL	108037	1.910	318562	3.507	232374	4.860	117342	5.811
25 1045938	101696	1.910	313677	3.507	227873	4.860	114235	5.811
26 1045939DL	84981	1.910	305045	3.507	223320	4.860	113407	5.811
27 1045972	99529	1.898	303622	3.507	222125	4.854	113389	5.812
28 1045974	100925	1.910	300579	3.507	224198	4.860	112357	5.811
29 1045976	102871	1.910	301703	3.507	218555	4.854	111887	5.812

IS1 (TBA)=t-Butyl alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM VIII VOA

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Sample Data

Volatiles by GC/MS

ANCEB

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

1043306

Data file: /chem/HP15830.i/19may02a.b/fy02s42.d
Data file Sample Info. Line: ANCEB;1043306;1;0;;LSV49;;;fy02b02;
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Injection date and time: **02-MAY-2019 18:08**
Instrument ID: **HP15830.i** Batch: **F191222AA**

Blank Data file reference: **/chem/HP15830.i/19may02a.b/fy02b02.d**

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 02-MAY-2019 09:33
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may02a.b/fy02c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910	(0.006)	176	65	115304	(-7)	250.00	
14) Fluorobenzene	3.513	(-0.006)	439	96	346415	(-6)	50.00	
19) Chlorobenzene-d5	4.860	(0.000)	660	117	271914	(-4)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	145906	(-1)	50.00	

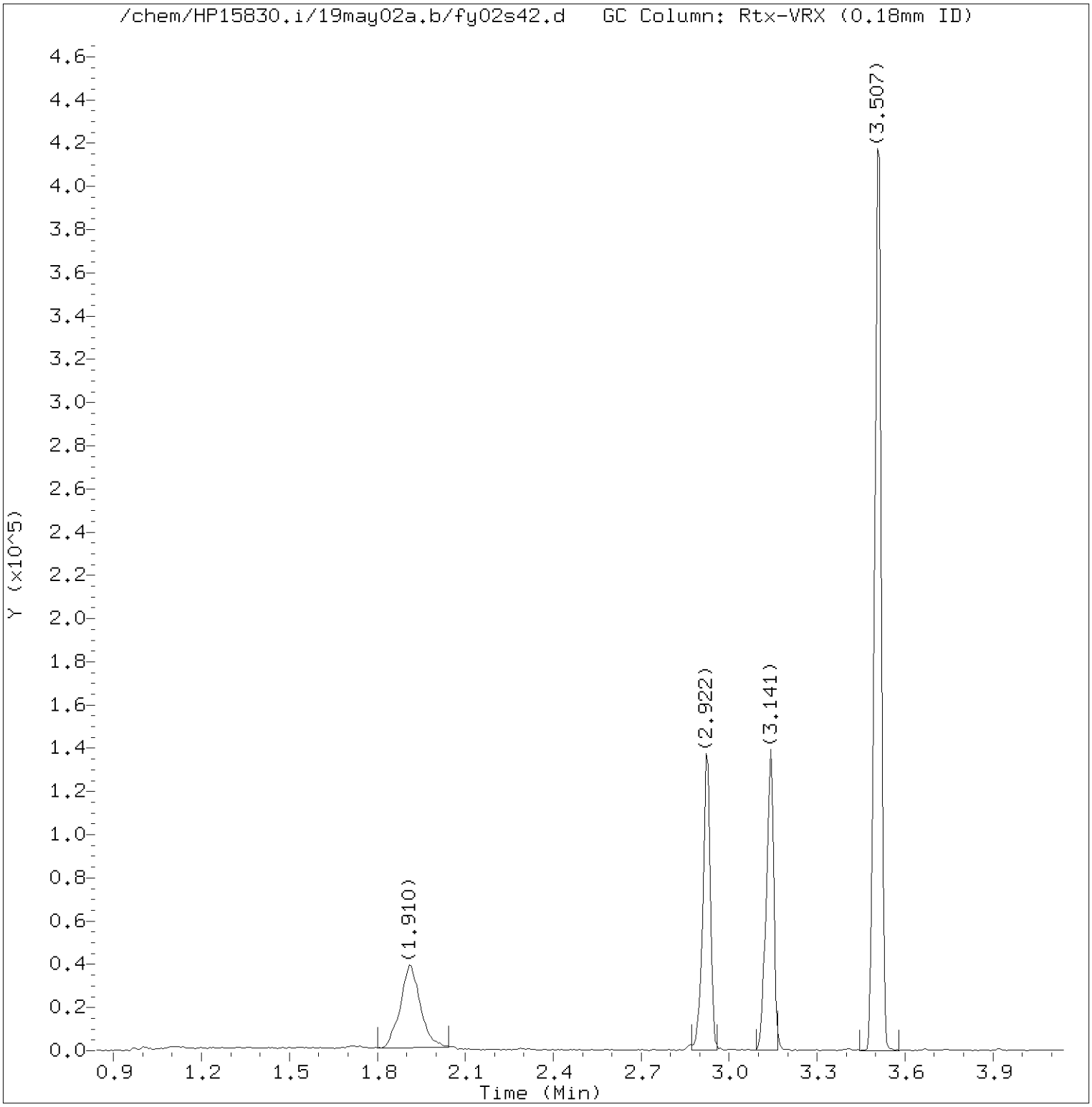
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.001)	113	78379	48.261	97%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.002)	102	22945	49.528	99%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	346534	49.265	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.324	(0.000)	95	133987	48.271	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)				Not Detected					0.2	1
16) Toluene	(3)	4.312	(0.001)	92	6695	1.145	1.14			0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5

Total number of targets = 6

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:51. Target 3.5 esignature user ID: ads07818

Secondary review performed and digitally signed by Richard Samson on 05/03/2019 at 11:06. PARALLAX ID: rs08358



Total Ion Chromatogram (TIC)

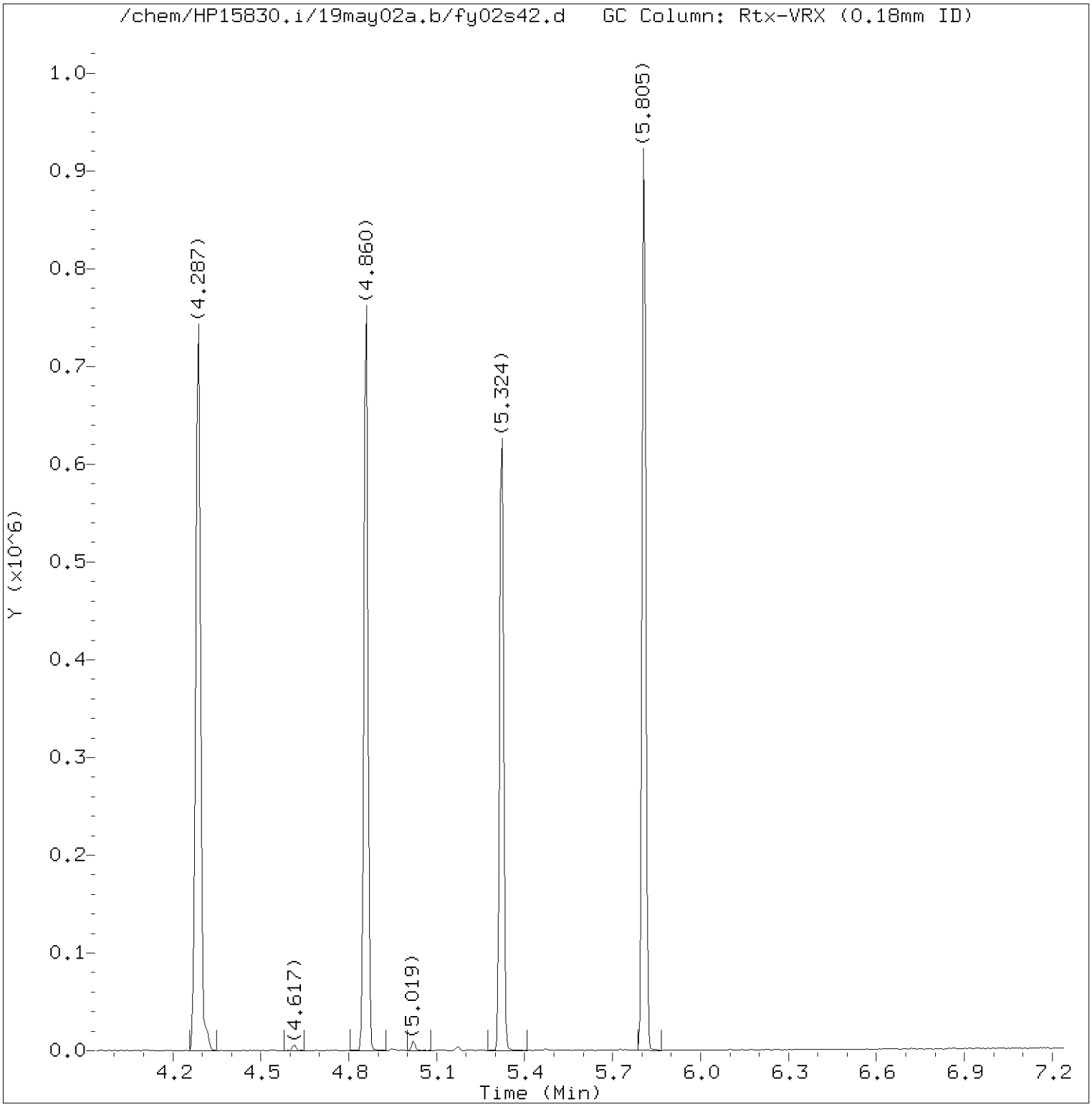
Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s42.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:08 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANCEB Lab Sample ID: 1043306

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s42.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:08 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANCEB Lab Sample ID: 1043306

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s42.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:08 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

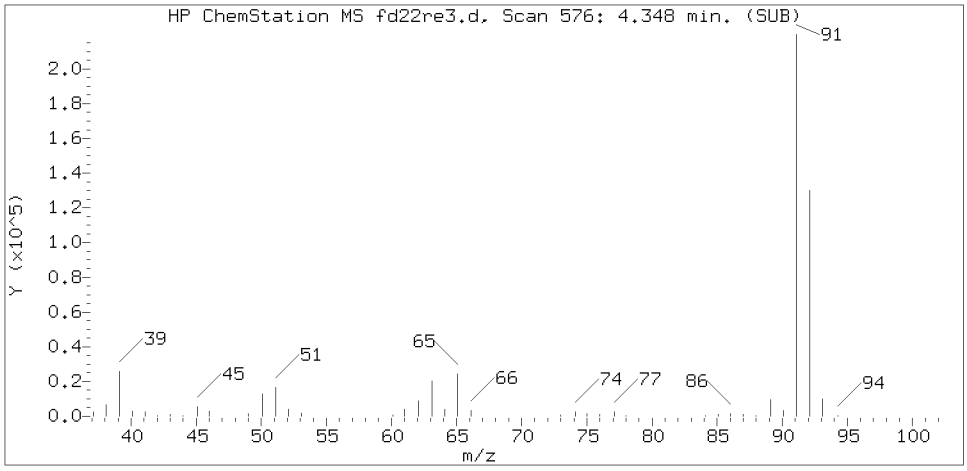
Sample Name: ANCEB Lab Sample ID: 1043306

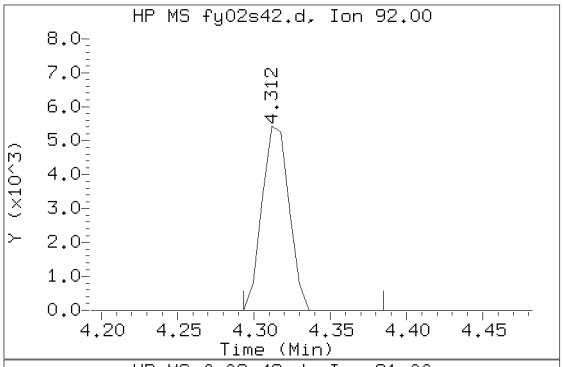
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	115304	250.000
7)$Dibromofluoromethane	(2)	2.922	113	78379	48.261
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22945	49.528
14)*Fluorobenzene	(2)	3.513	96	346415	50.000
15)$Toluene-d8	(3)	4.287	98	346534	49.265
16) Toluene	(3)	4.312	92	6695	1.145
19)*Chlorobenzene-d5	(3)	4.860	117	271914	50.000
25)$4-Bromofluorobenzene	(3)	5.324	95	133987	48.271
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	145906	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

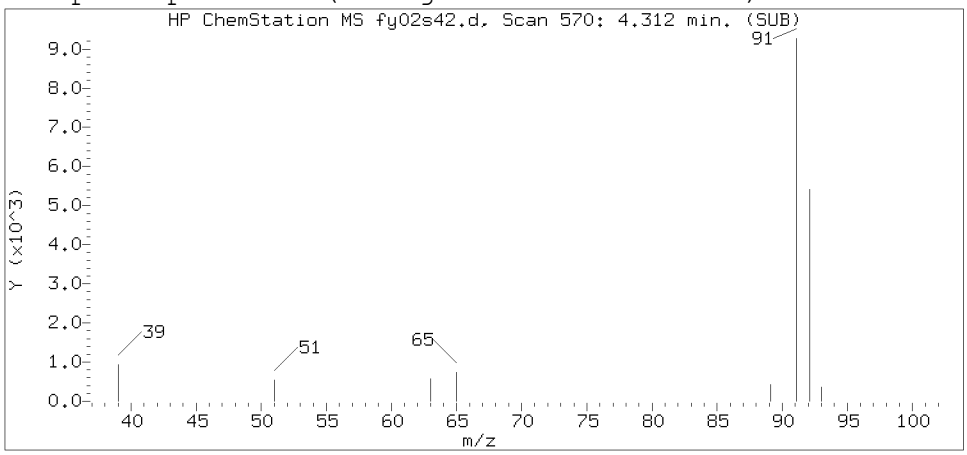
Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818

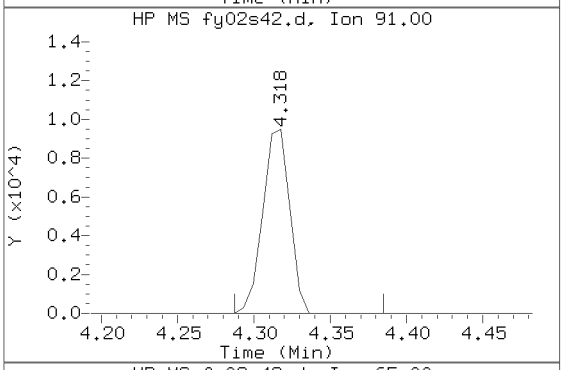
Reference Standard Spectrum for Toluene

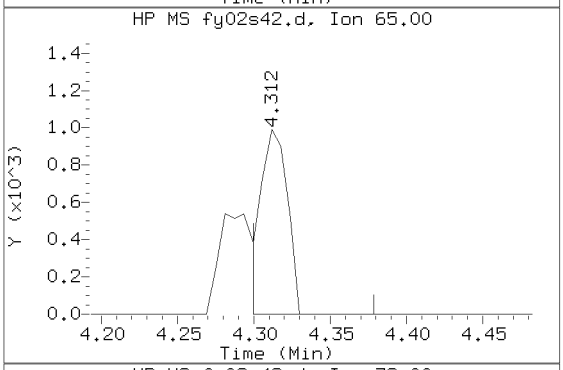




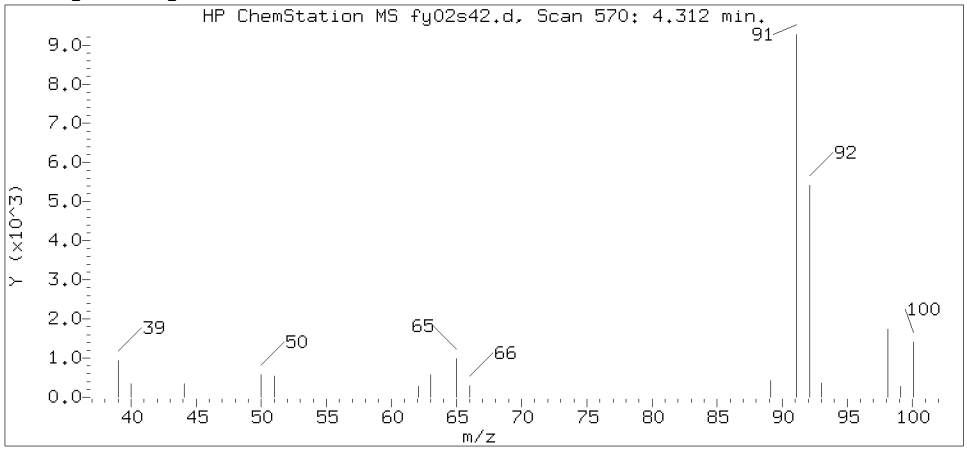
Sample Spectrum (Background Subtracted)

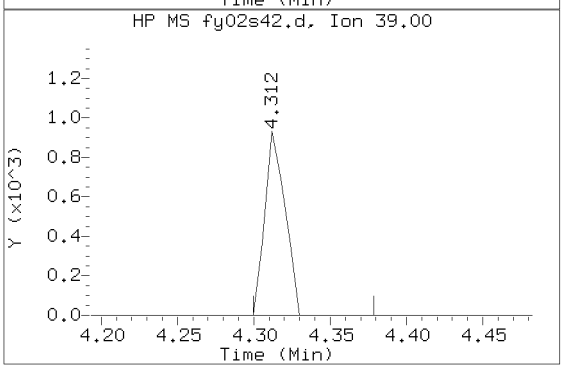






Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may02a.b/fy02s42.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:08 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANCEB Lab Sample ID: 1043306

Compound Number	: 16
Compound Name	: Toluene
Scan Number	: 570
Retention Time (minutes)	: 4.312
Relative Retention Time	: 0.00126
Quant Ion	: 92.00
Area (flag)	: 6695
On-Column Amount (ng)	: 1.1446

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818

ANC02 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043307

Data file: /chem/HP15830.i/19may02a.b/fy02s44.d Injection date and time: **02-MAY-2019 18:30**
Data file Sample Info. Line: ANC02;1043307;1;0;;LSV49;;;fy02b02; Instrument ID: **HP15830.i** Batch: **F191222AA**
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Blank Data file reference: **/chem/HP15830.i/19may02a.b/fy02b02.d**

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 02-MAY-2019 09:33
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may02a.b/fy02c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.916	(0.000)	177	65	114658	(-8)	250.00	
14) Fluorobenzene	3.513	(-0.006)	439	96	348058	(-6)	50.00	
19) Chlorobenzene-d5	4.860	(0.000)	660	117	276324	(-2)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	147876	(0)	50.00	

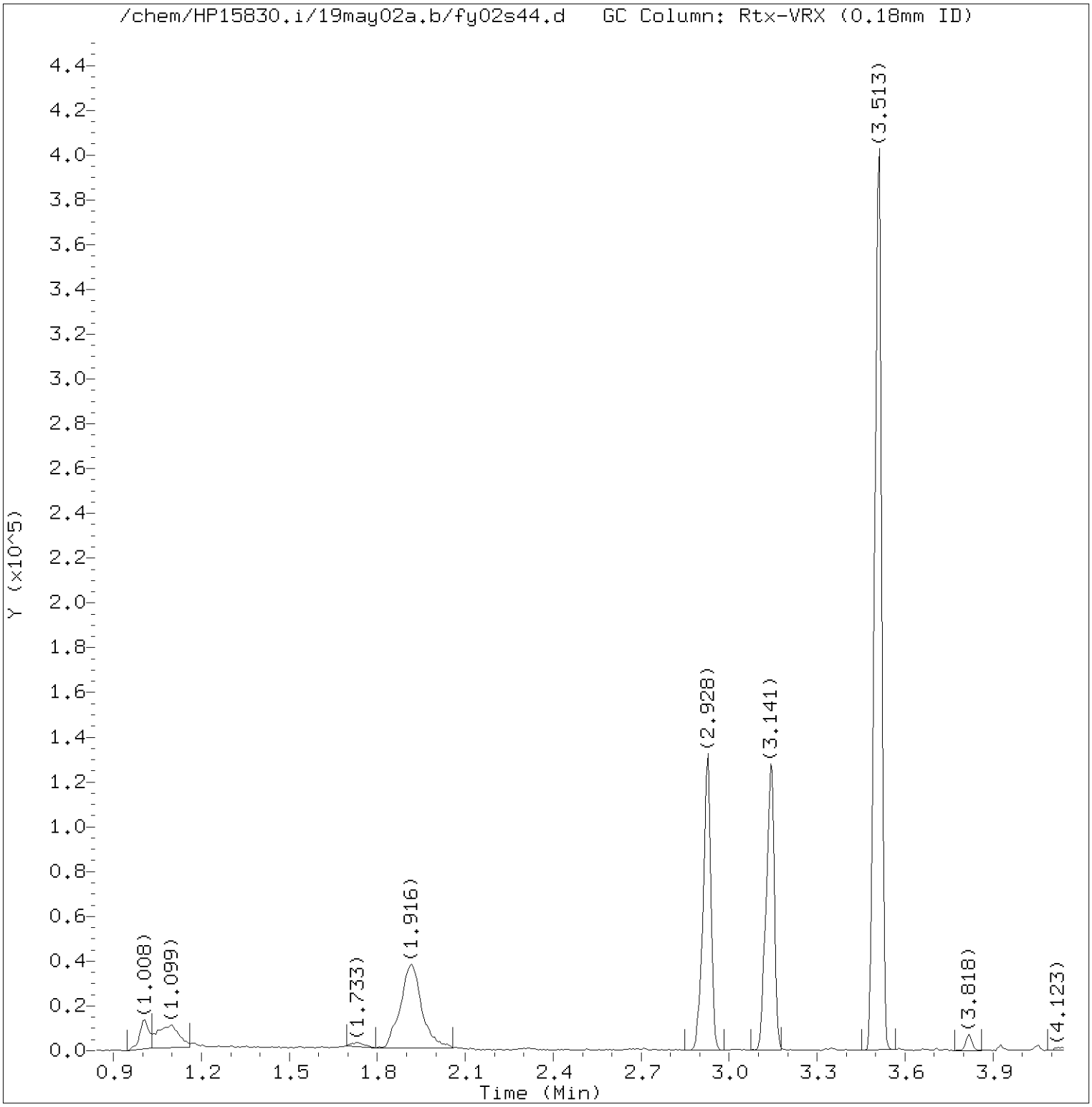
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.928	(0.000)	113	77623	47.570	95%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.147	(0.000)	102	22770	48.920	98%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	346768	48.511	97%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.324	(0.000)	95	138618	49.143	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)				Not Detected					0.2	1
16) Toluene	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5

Total number of targets = 6

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:51. Target 3.5 esignature user ID: ads07818

Secondary review performed and digitally signed by Richard Samson on 05/03/2019 at 11:06. PARALLAX ID: rs08358



Total Ion Chromatogram (TIC)

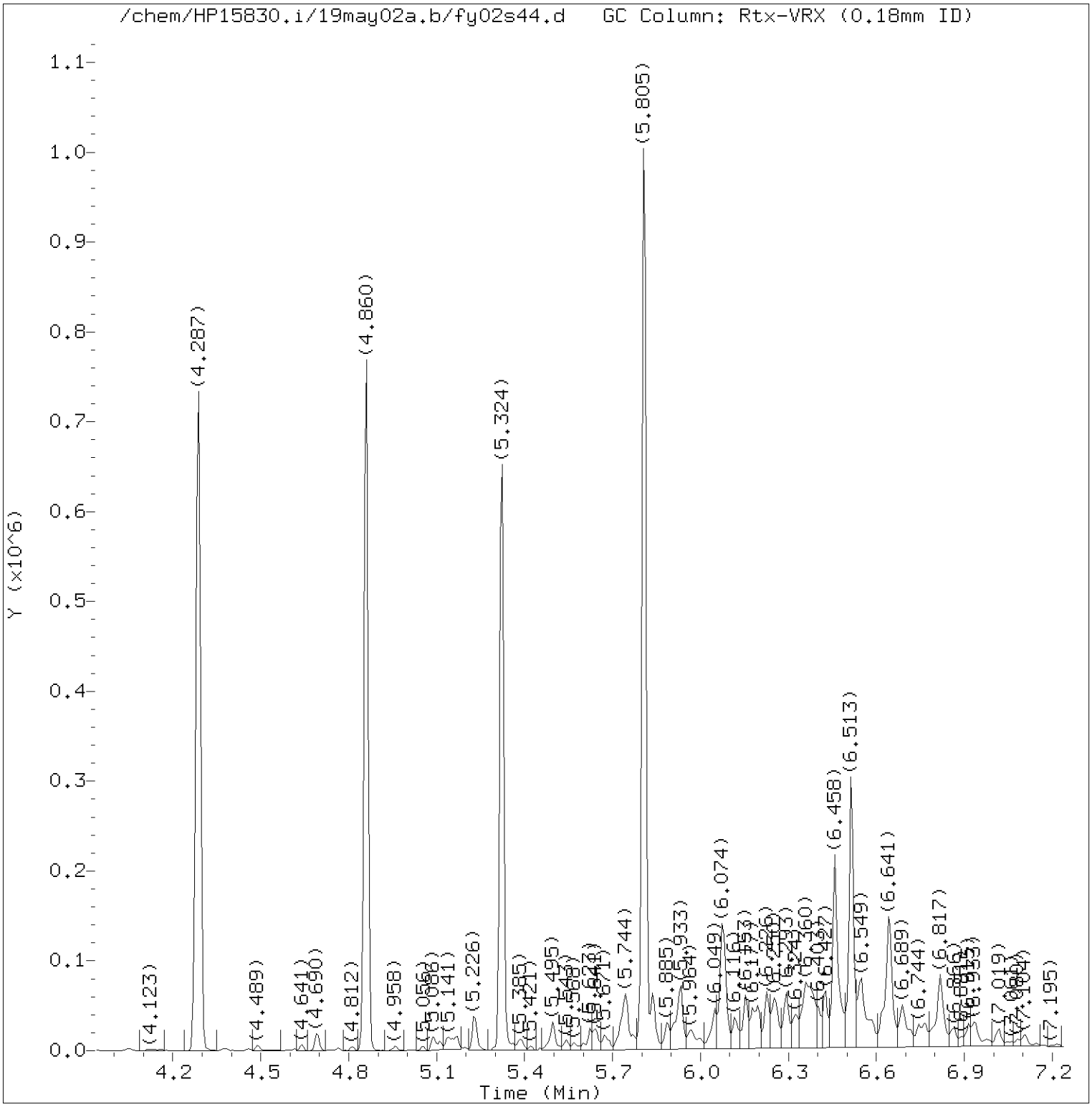
Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s44.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:30 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC02 Lab Sample ID: 1043307

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s44.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:30 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC02 Lab Sample ID: 1043307

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s44.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:30 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC02 Lab Sample ID: 1043307

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.916	65	114658	250.000
7)$Dibromofluoromethane	(2)	2.928	113	77623	47.570
10)$1,2-Dichloroethane-d4	(2)	3.147	102	22770	48.920
14)*Fluorobenzene	(2)	3.513	96	348058	50.000
15)$Toluene-d8	(3)	4.287	98	346768	48.511
19)*Chlorobenzene-d5	(3)	4.860	117	276324	50.000
25)$4-Bromofluorobenzene	(3)	5.324	95	138618	49.143
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	147876	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:51.
Target 3.5 esignature user ID: ads07818

ANC03 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043309

Data file: /chem/HP15830.i/19may03a.b/fy03s06.d Injection date and time: **03-MAY-2019 13:59**
Data file Sample Info. Line: ANC03;1043309;1;0;;LSV49;;;fy03b02; Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 21:00 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.898	(0.006)	174	65	111349	(-10)	250.00	
14) Fluorobenzene	3.507	(0.000)	438	96	348911	(-1)	50.00	
19) Chlorobenzene-d5	4.860	(0.000)	660	117	271366	(0)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	146348	(0)	50.00	

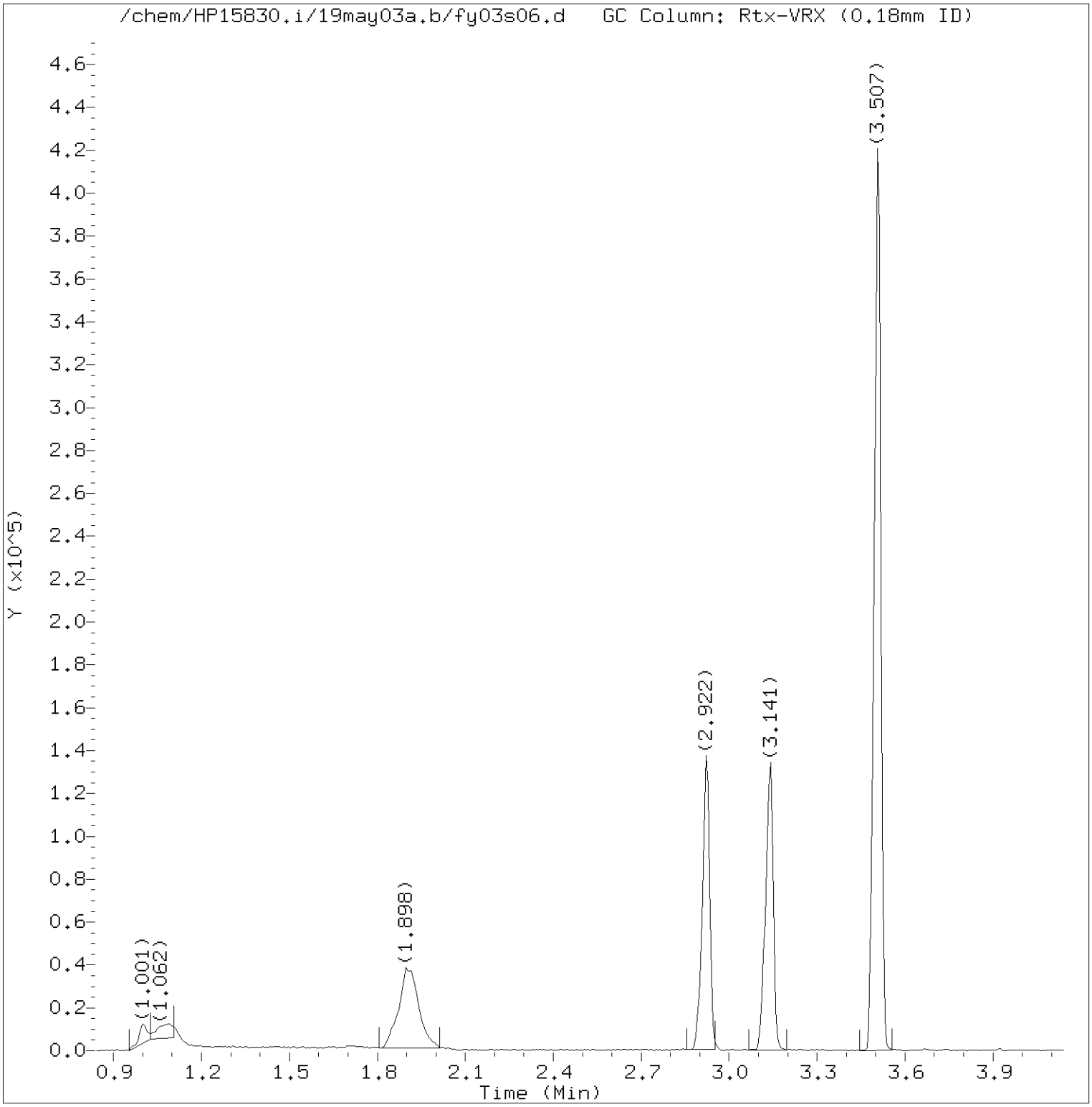
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.000)	113	78027	47.700	95%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.000)	102	22499	48.217	96%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	346445	49.352	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318	(0.000)	95	135722	48.995	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)				Not Detected					0.2	1
16) Toluene	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5

Total number of targets = 6

Digitally signed by Hu Yang on 05/03/2019 at 21:00. Target 3.5 esignature user ID: hy07820

Secondary review performed and digitally signed by Kari Becker on 05/04/2019 at 11:54. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

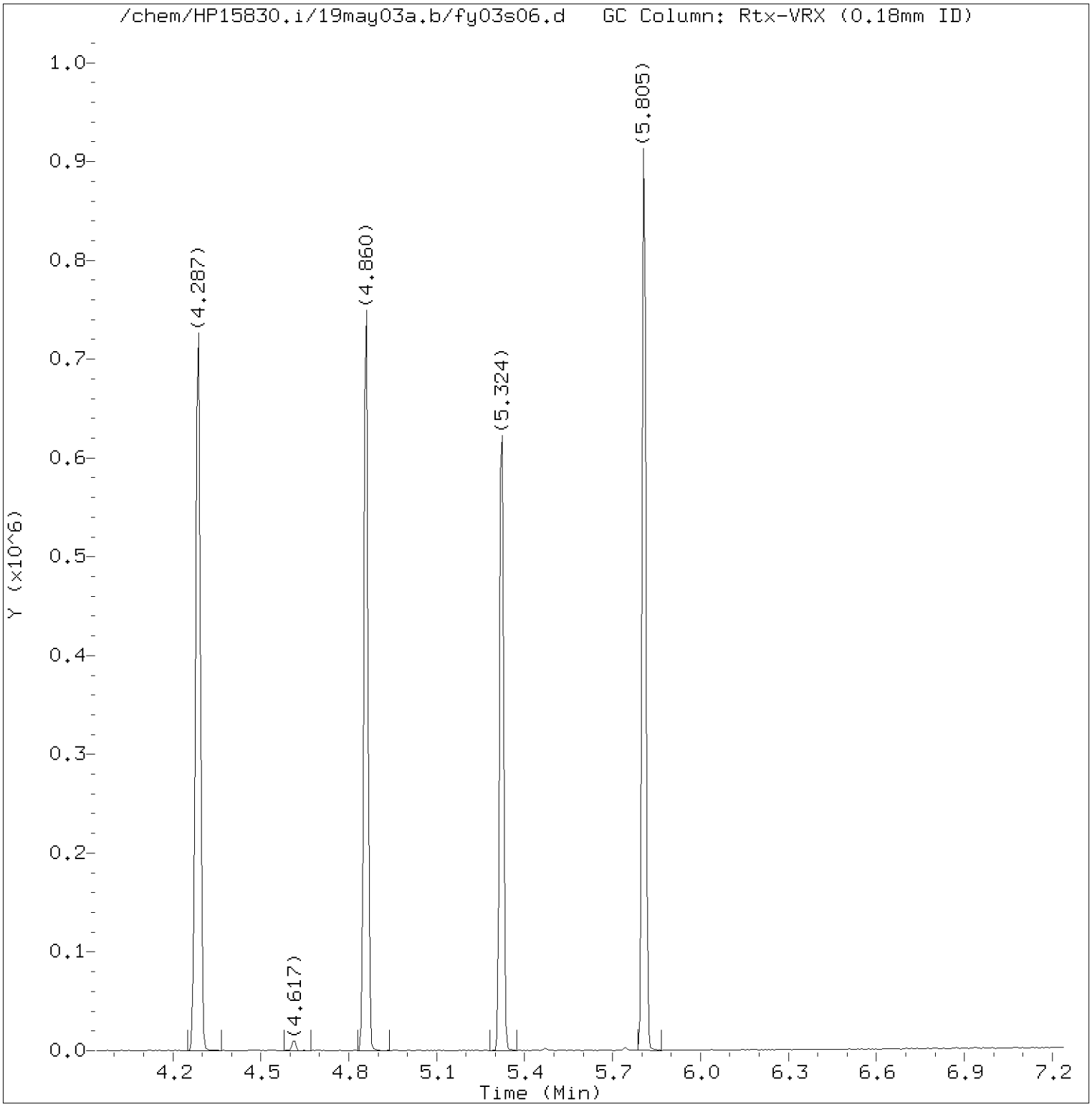
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s06.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 13:59 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 21:00 hy07820

Sample Name: ANC03 Lab Sample ID: 1043309

Digitally signed by Hu Yang
on 05/03/2019 at 21:00.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s06.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 13:59 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 21:00 hy07820

Sample Name: ANC03 Lab Sample ID: 1043309

Digitally signed by Hu Yang
on 05/03/2019 at 21:00.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s06.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 13:59 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 21:00 hy07820

Sample Name: ANC03 Lab Sample ID: 1043309

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.898	65	111349	250.000
7)$Dibromofluoromethane	(2)	2.922	113	78027	47.700
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22499	48.217
14)*Fluorobenzene	(2)	3.507	96	348911	50.000
15)$Toluene-d8	(3)	4.287	98	346445	49.352
19)*Chlorobenzene-d5	(3)	4.860	117	271366	50.000
25)$4-Bromofluorobenzene	(3)	5.318	95	135722	48.995
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	146348	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Hu Yang
on 05/03/2019 at 21:00.
Target 3.5 esignature user ID: hy07820

ANC06 Lancaster Laboratories 1043313
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP15830.i/19may02a.b/fy02s46.d Injection date and time: **02-MAY-2019 18:52**
Data file Sample Info. Line: ANC06;1043313;1;0;;LSV49;;;fy02b02; Instrument ID: **HP15830.i** Batch: **F191222AA**
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Blank Data file reference: **/chem/HP15830.i/19may02a.b/fy02b02.d**

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 02-MAY-2019 09:33
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may02a.b/fy02c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910	(0.006)	176	65	115418	(-7)	250.00	
14) Fluorobenzene	3.513	(-0.006)	439	96	356571	(-3)	50.00	
19) Chlorobenzene-d5	4.860	(0.000)	660	117	277872	(-2)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	149810	(1)	50.00	

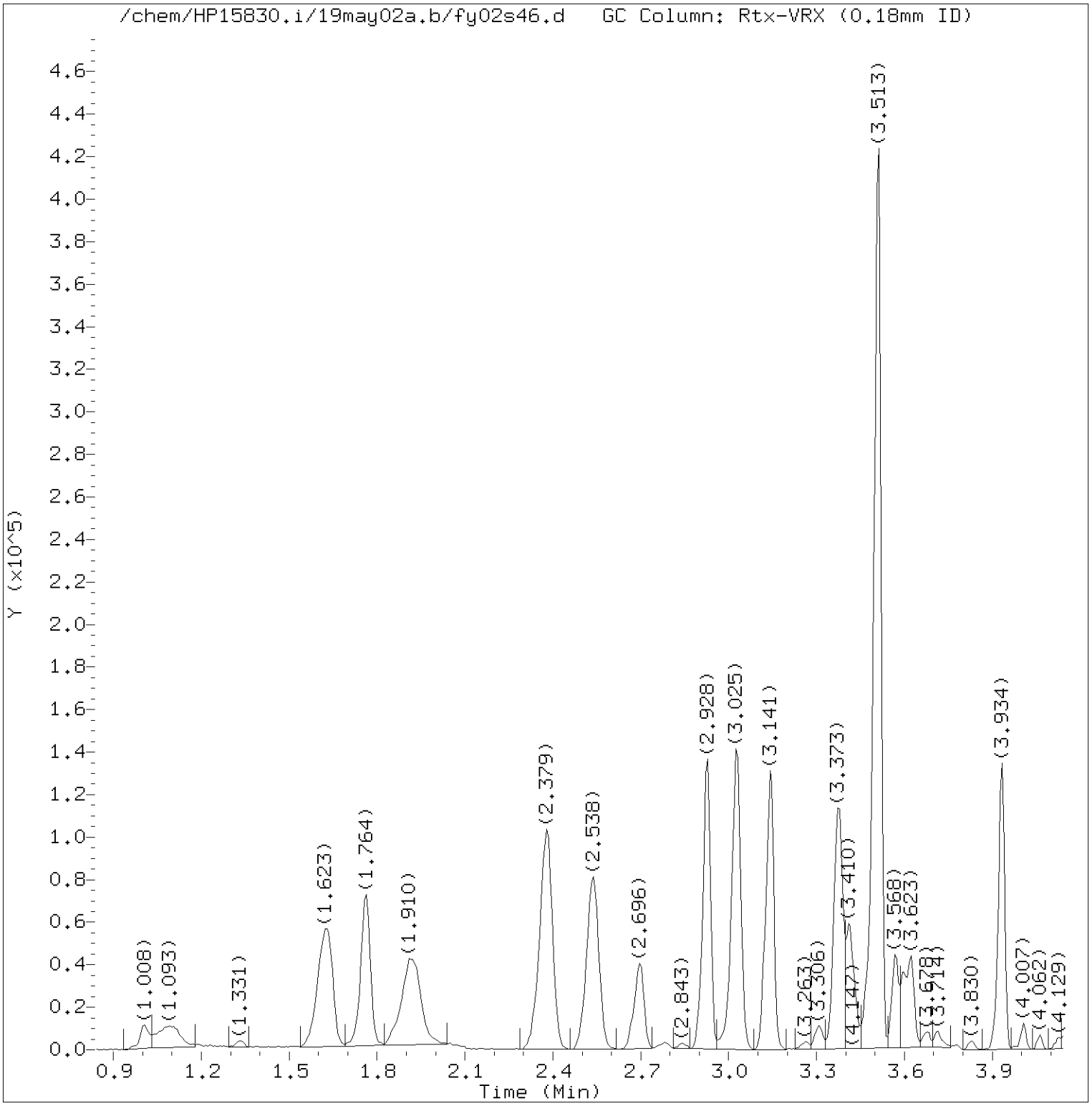
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.928	(0.000)	113	77926	46.615	93%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.147	(0.000)	102	23028	48.291	97%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	353821	49.222	98%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.324	(0.000)	95	138273	48.747	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)	3.410	(0.001)	78	39404	4.461	4.46			0.2	1
16) Toluene	(3)	4.318	(0.000)	92	3011	0.504	0.50		J	0.2	1
20) Ethylbenzene	(3)	4.946	(-0.000)	91	98688	8.527	8.53			0.4	1
21) m+p-Xylene	(3)	5.025	(-0.000)	106	85826	18.514	18.51			1	5
22) o-Xylene	(3)	5.171	(-0.000)	106	3982	0.895	0.89		J	0.4	1
23) Xylene (Total)	(3)			106	89808	19.409	19.41			1	5

Total number of targets = 6

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:52. Target 3.5 esignature user ID: ads07818

Secondary review performed and digitally signed by Richard Samson on 05/03/2019 at 11:06. PARALLAX ID: rs08358



Total Ion Chromatogram (TIC)

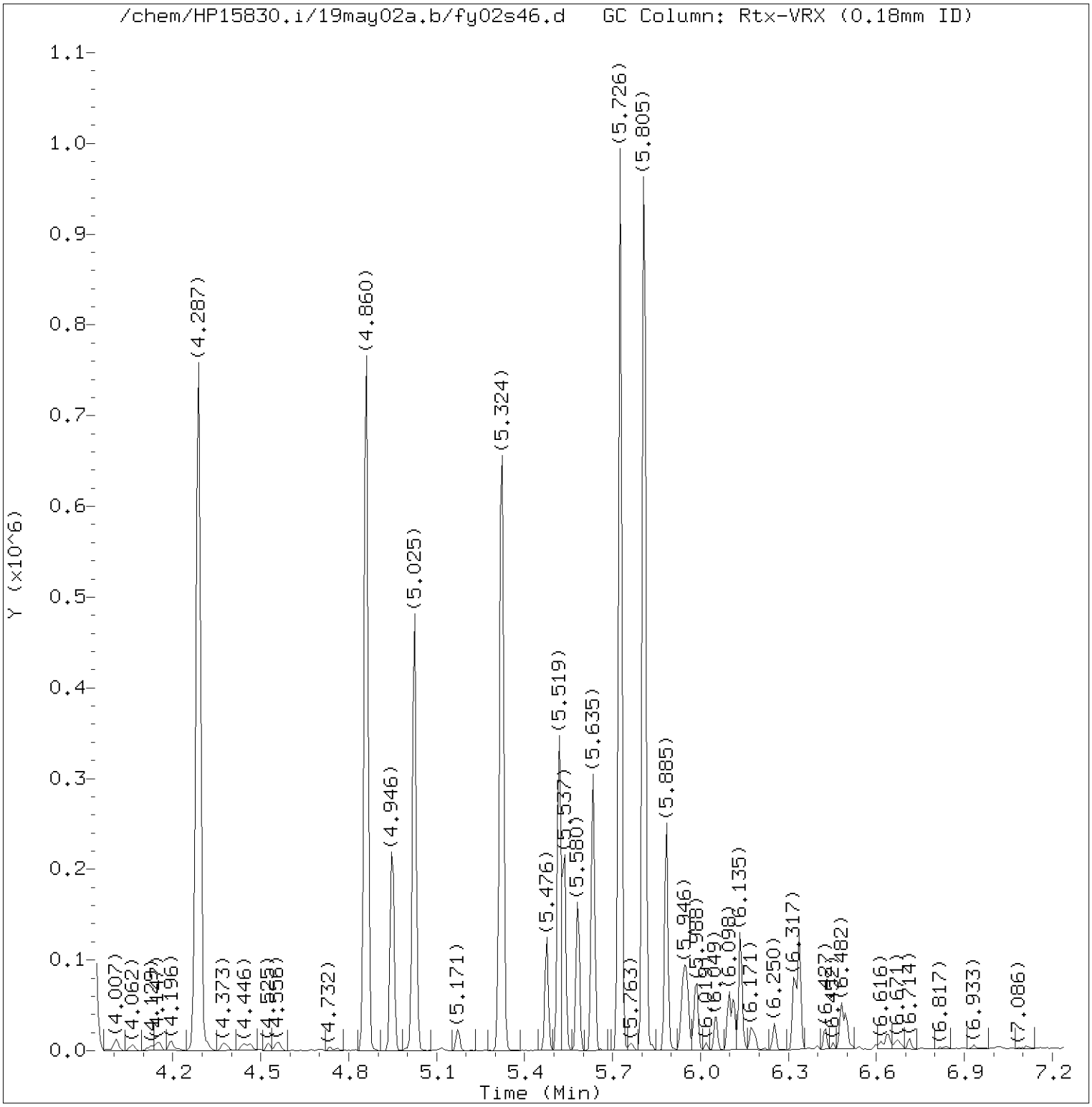
Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

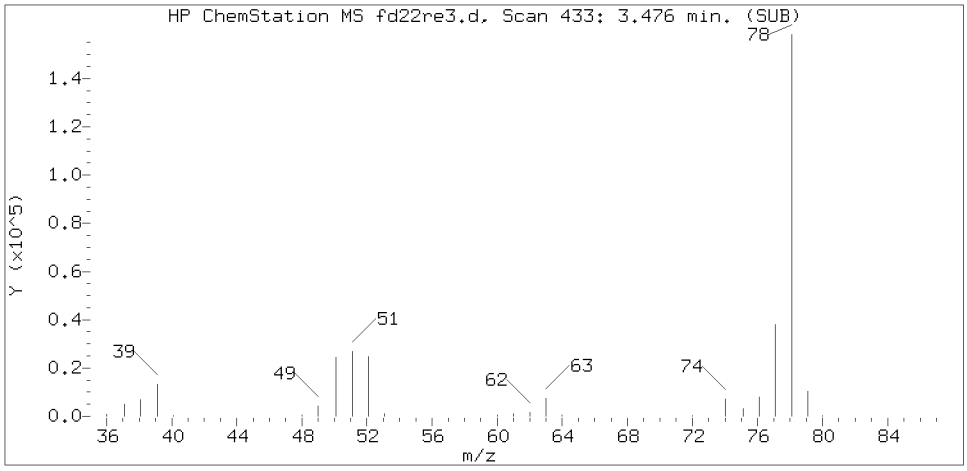
Sample Name: ANC06 Lab Sample ID: 1043313

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	115418	250.000
7)$Dibromofluoromethane	(2)	2.928	113	77926	46.615
10)$1,2-Dichloroethane-d4	(2)	3.147	102	23028	48.291
12) Benzene	(2)	3.410	78	39404	4.461
14)*Fluorobenzene	(2)	3.513	96	356571	50.000
15)$Toluene-d8	(3)	4.287	98	353821	49.222
16) Toluene	(3)	4.318	92	3011	0.504
19)*Chlorobenzene-d5	(3)	4.860	117	277872	50.000
20) Ethylbenzene	(3)	4.946	91	98688	8.527
21) m+p-Xylene	(3)	5.025	106	85826	18.514
22) o-Xylene	(3)	5.171	106	3982	0.895
25)$4-Bromofluorobenzene	(3)	5.324	95	138273	48.747
23) Xylene (Total)	(3)		106	89808	19.409
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	149810	50.000

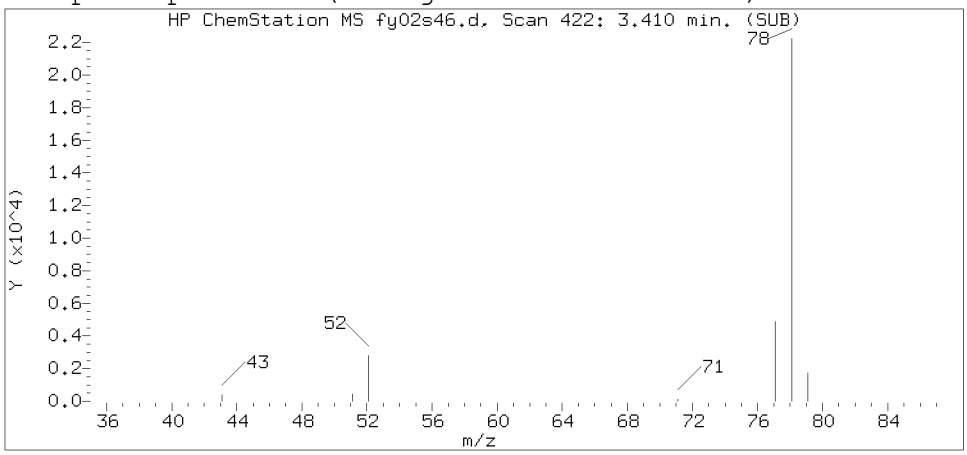
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818

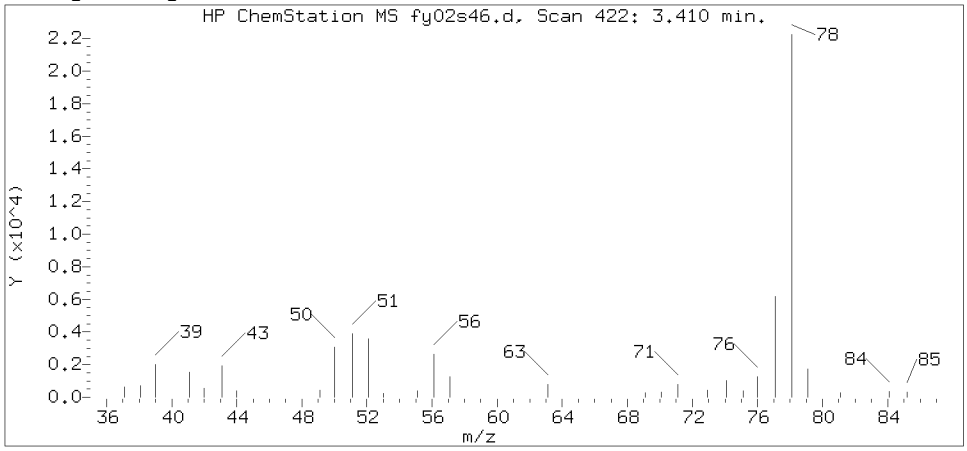
Reference Standard Spectrum for Benzene

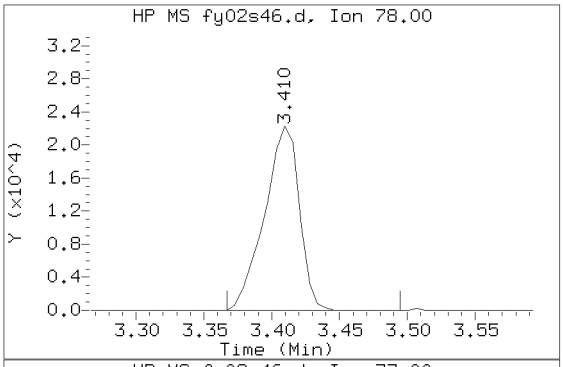


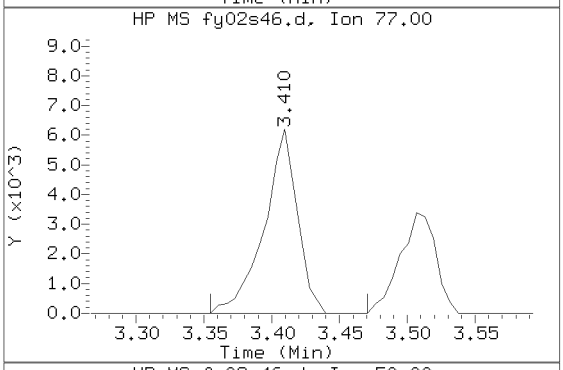
Sample Spectrum (Background Subtracted)

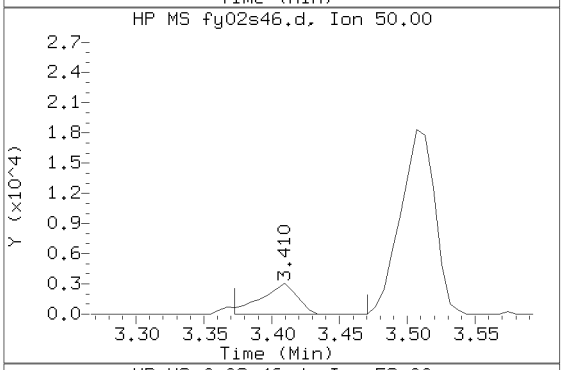


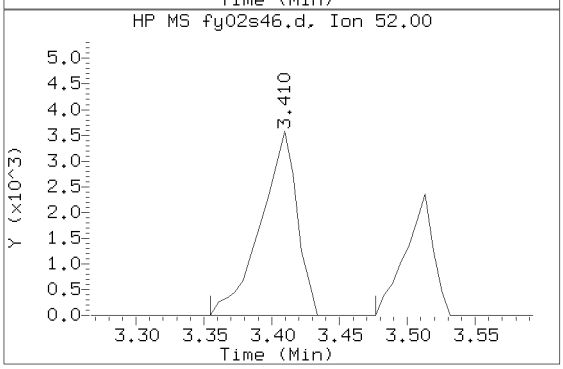
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

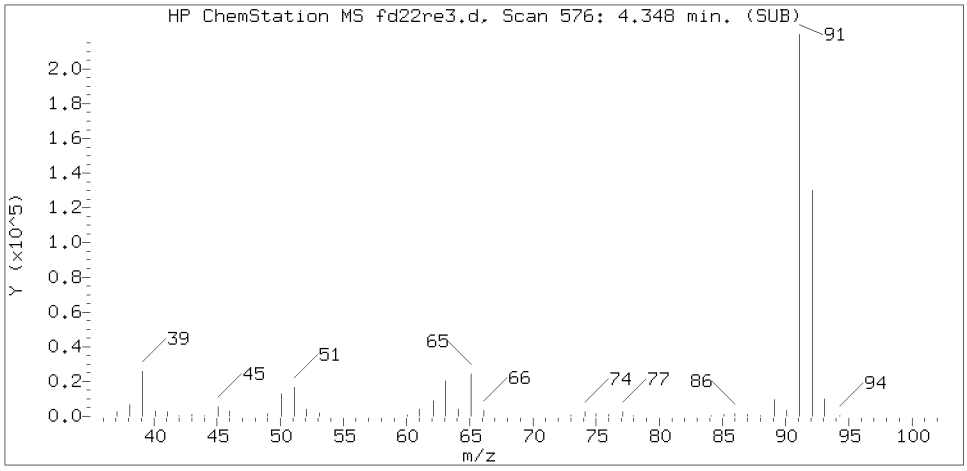
Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

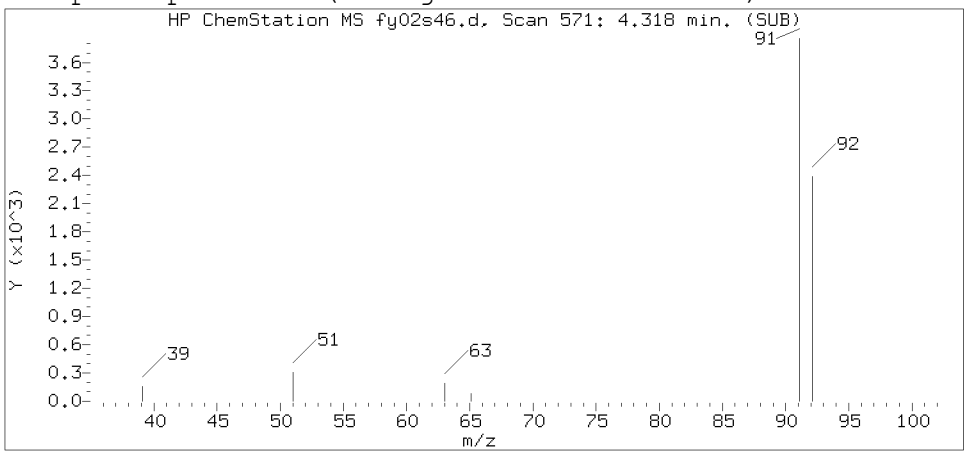
Compound Number	: 12
Compound Name	: Benzene
Scan Number	: 422
Retention Time (minutes)	: 3.410
Relative Retention Time	: 0.00168
Quant Ion	: 78.00
Area (flag)	: 39404
On-Column Amount (ng)	: 4.4613

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818

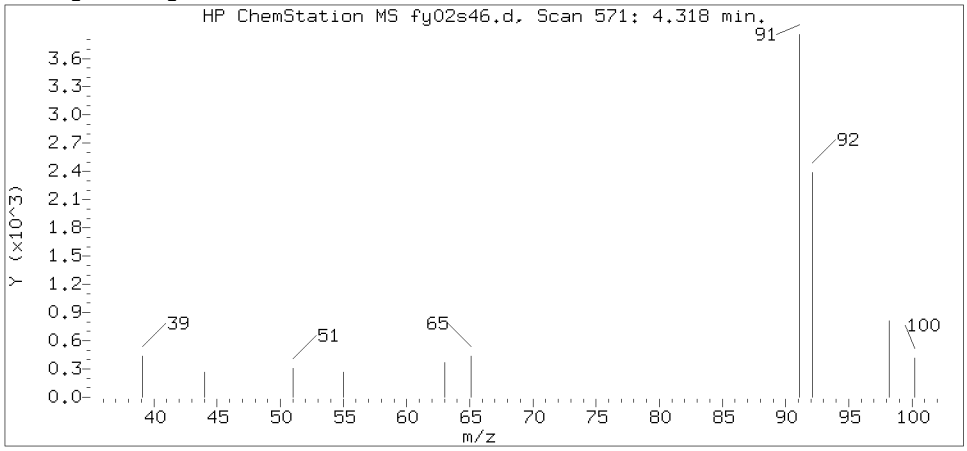
Reference Standard Spectrum for Toluene

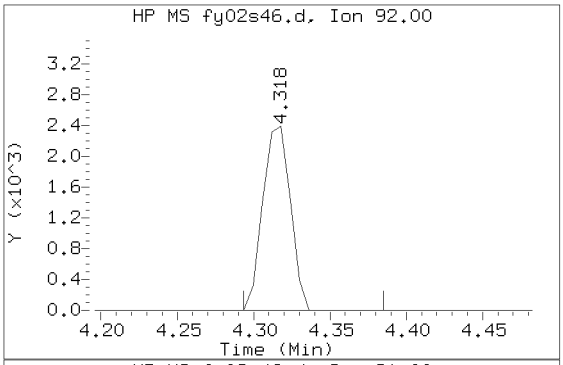


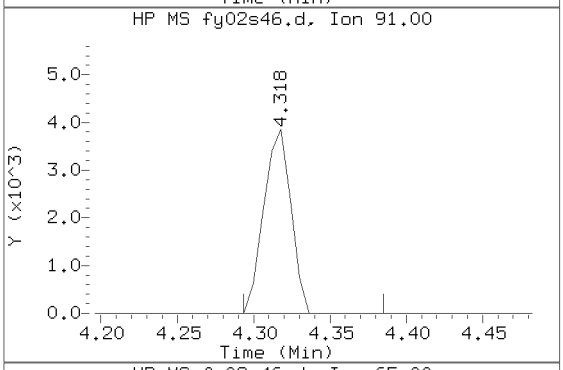
Sample Spectrum (Background Subtracted)

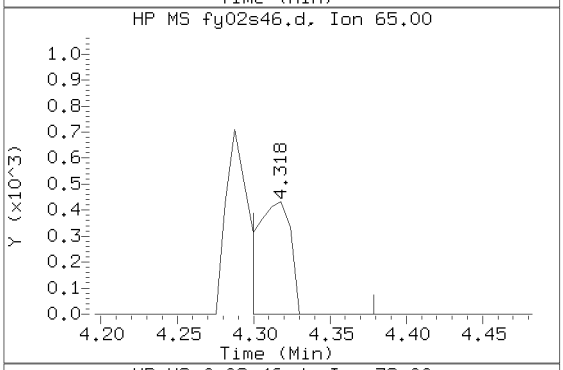


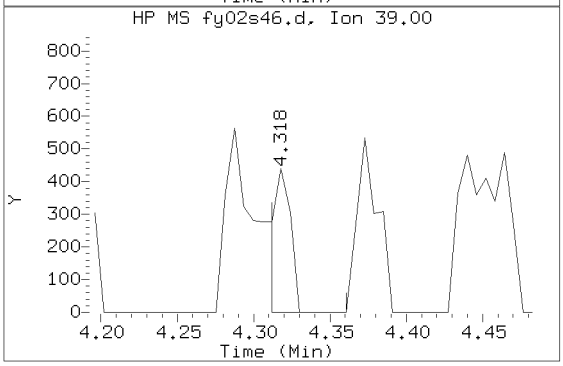
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

Compound Number	: 16
Compound Name	: Toluene
Scan Number	: 571
Retention Time (minutes)	: 4.318
Relative Retention Time	: 0.00000
Quant Ion	: 92.00
Area (flag)	: 3011
On-Column Amount (ng)	: 0.5038

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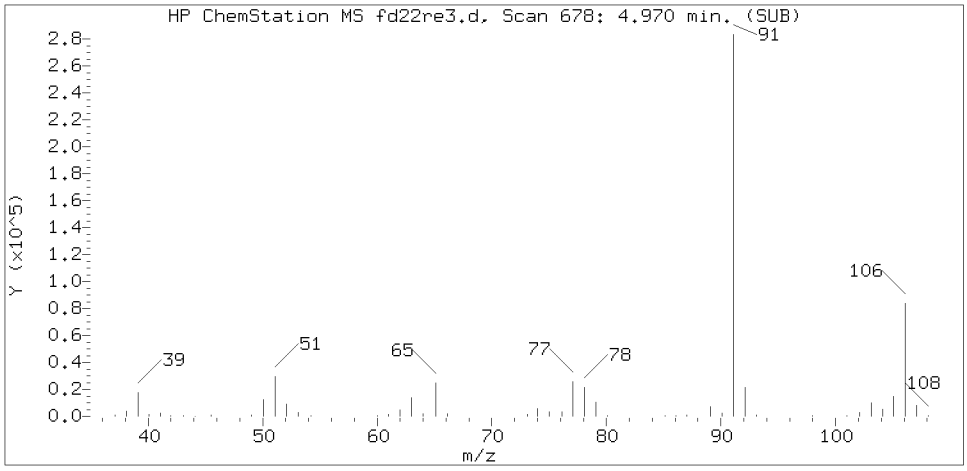
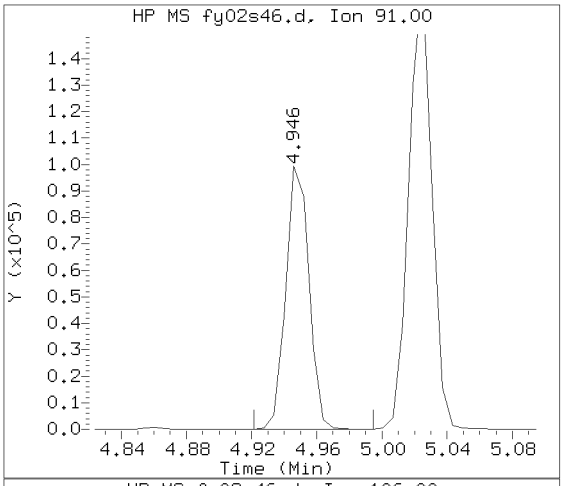
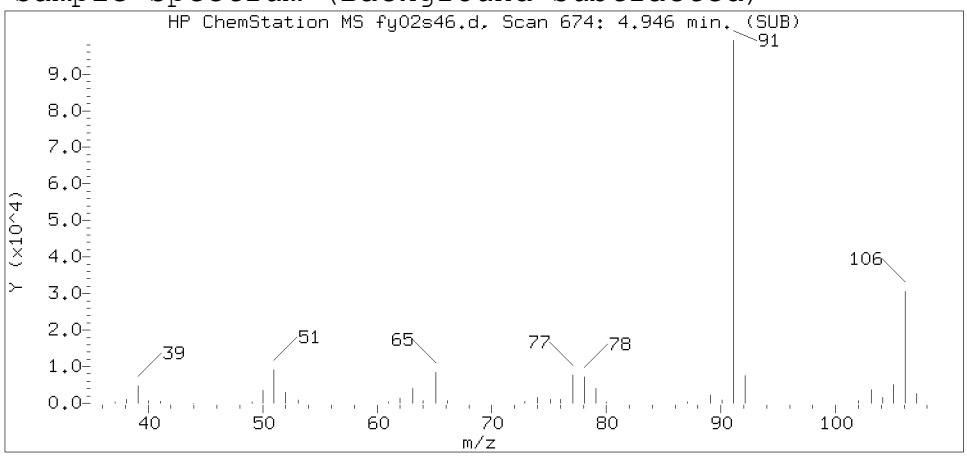
Target 3.5 esignature user ID: ads07818

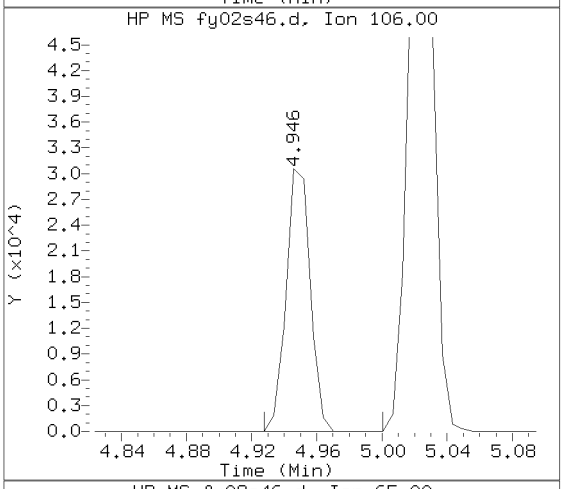
Reference Standard Spectrum for Ethylbenzene



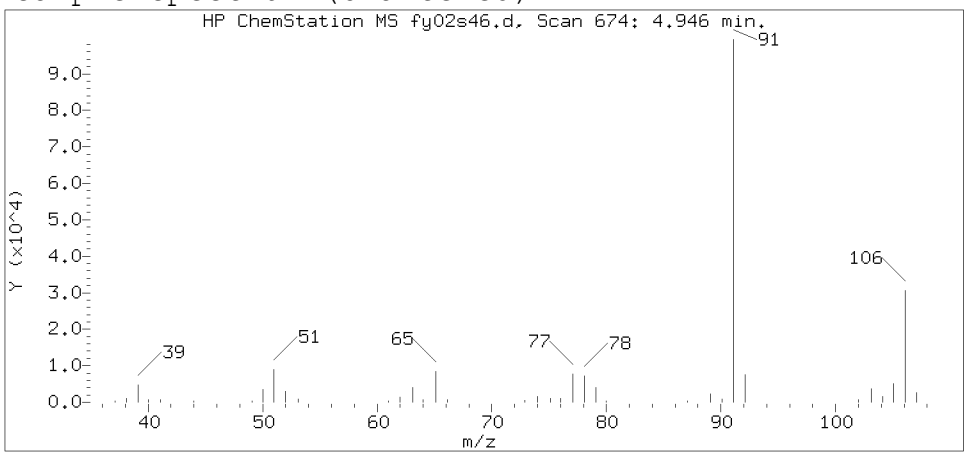


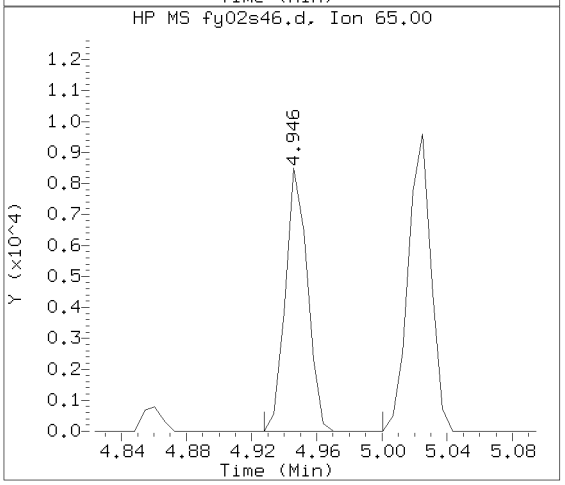
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

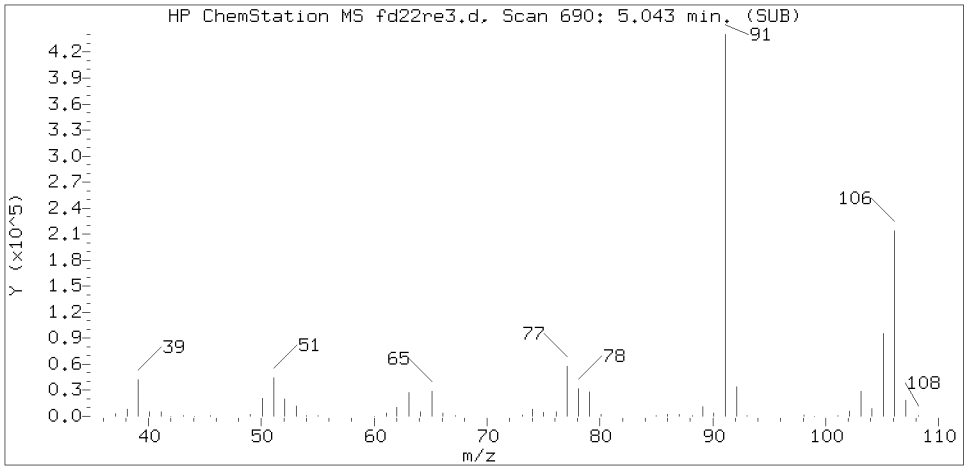
Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

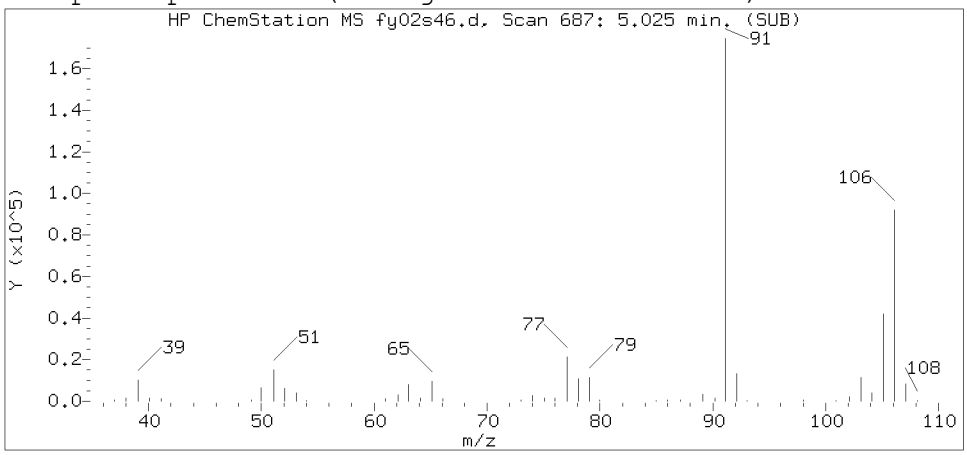
Compound Number : 20
Compound Name : Ethylbenzene
Scan Number : 674
Retention Time (minutes): 4.946
Relative Retention Time :-0.00000
Quant Ion : 91.00
Area (flag) : 98688
On-Column Amount (ng) : 8.5266

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818

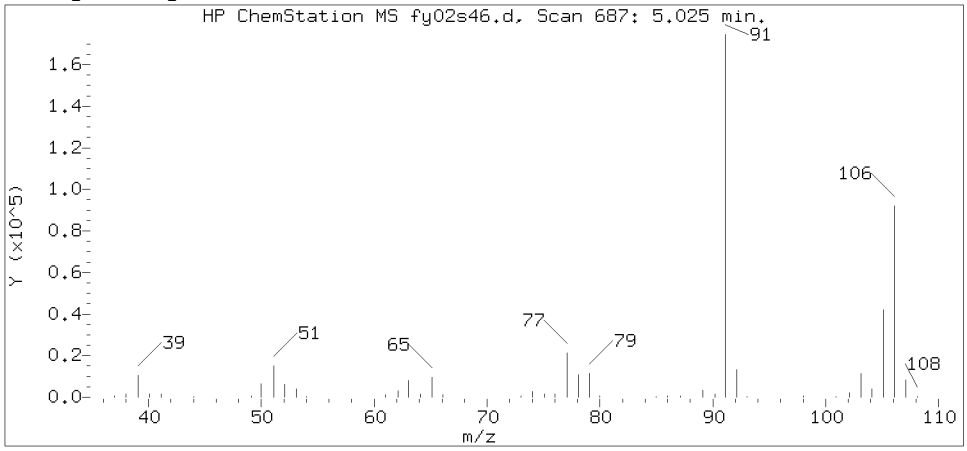
Reference Standard Spectrum for m+p-Xylene

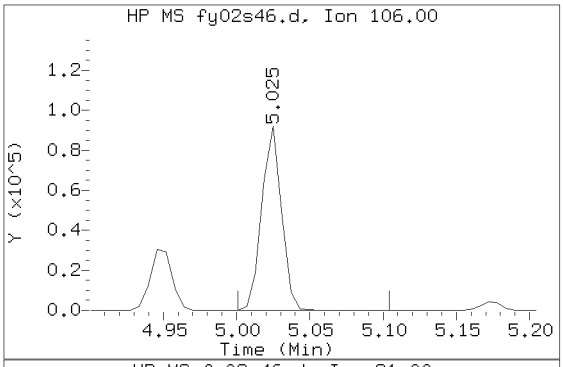


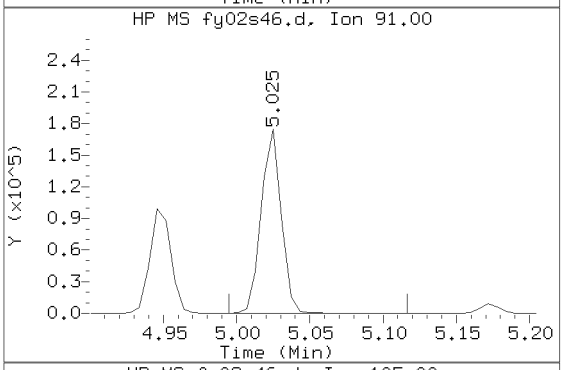
Sample Spectrum (Background Subtracted)

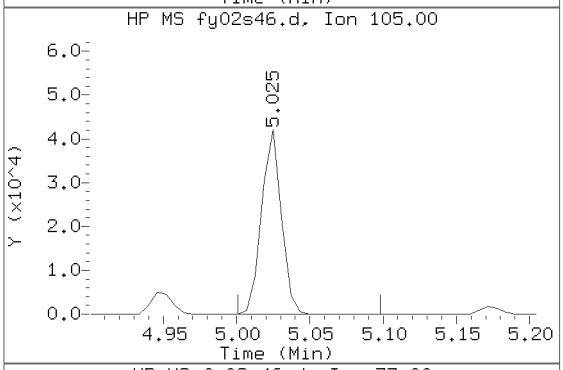


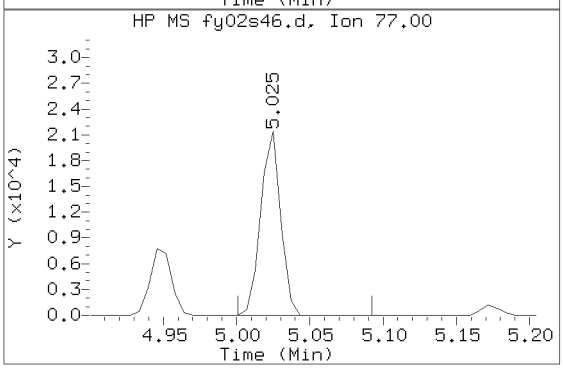
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

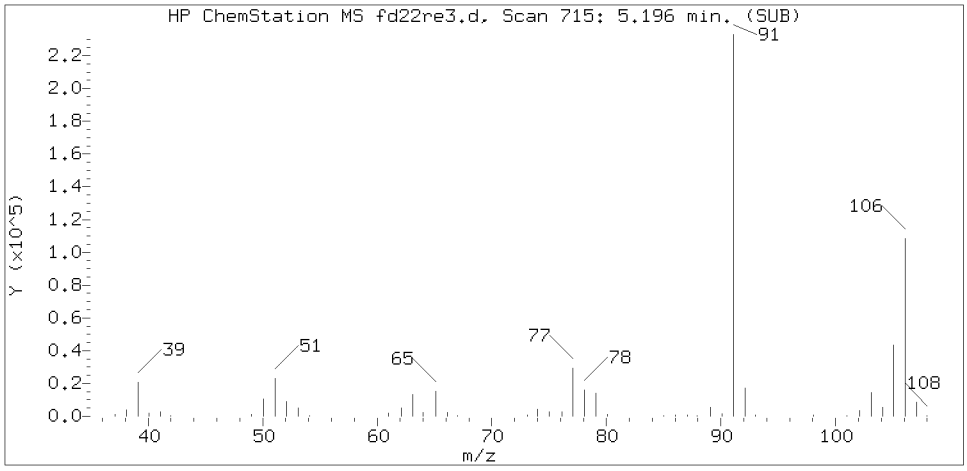
Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

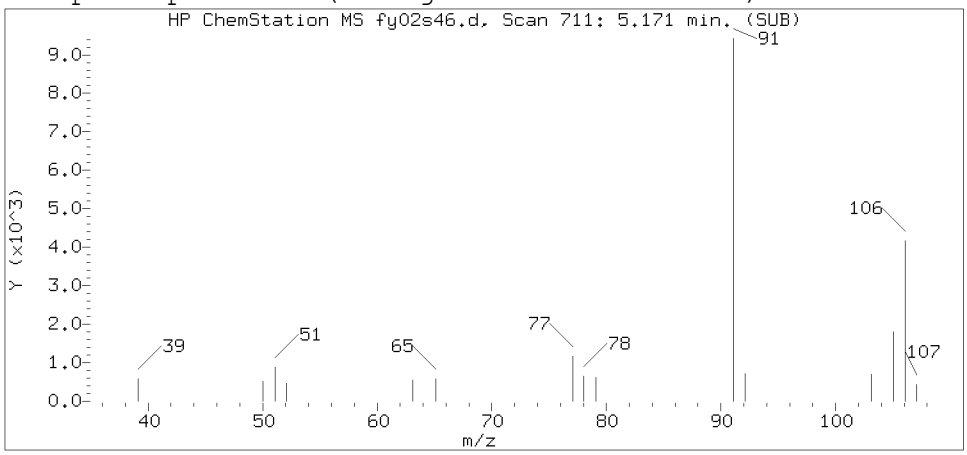
Compound Number : 21
Compound Name : m+p-Xylene
Scan Number : 687
Retention Time (minutes): 5.025
Relative Retention Time :-0.00000
Quant Ion : 106.00
Area (flag) : 85826
On-Column Amount (ng) : 18.5141

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818

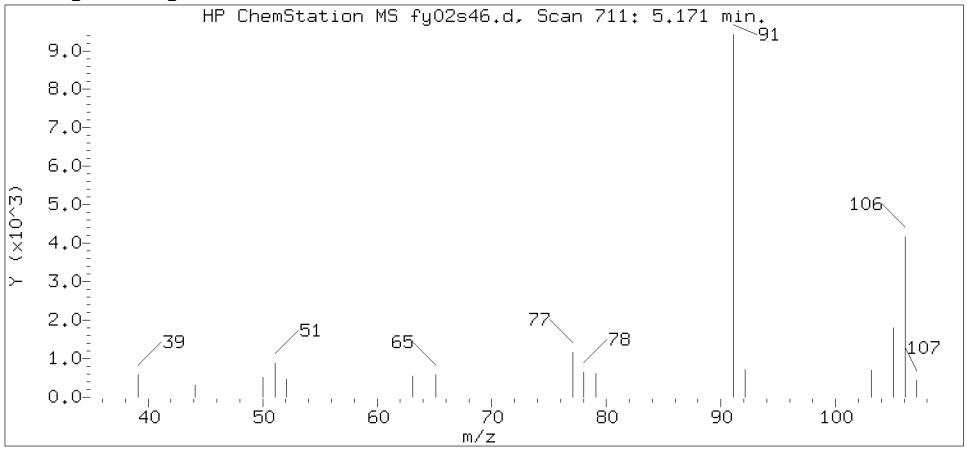
Reference Standard Spectrum for o-Xylene

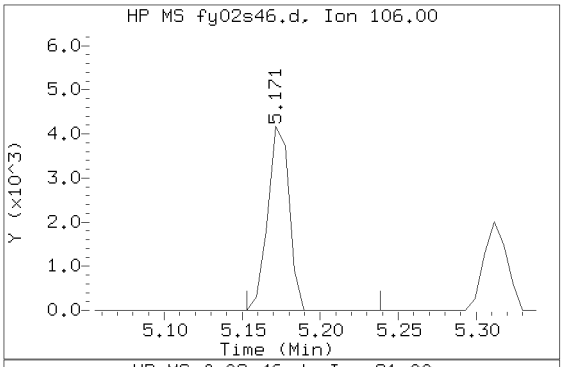


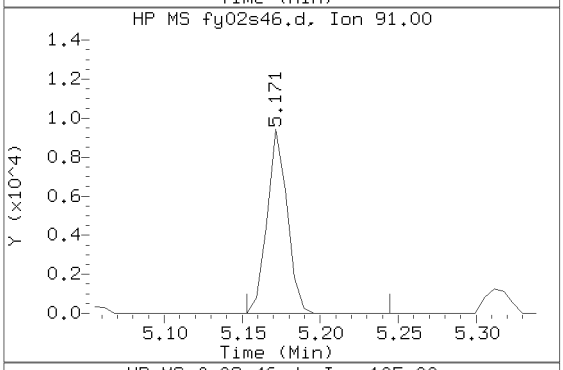
Sample Spectrum (Background Subtracted)

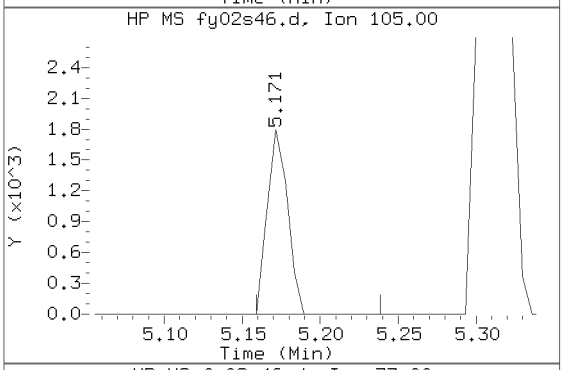


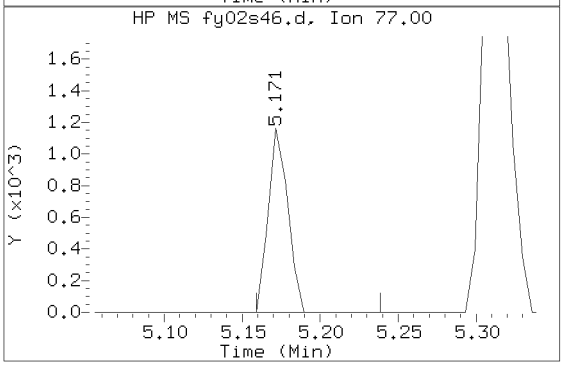
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may02a.b/fy02s46.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 18:52 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:40 ads07818

Sample Name: ANC06 Lab Sample ID: 1043313

Compound Number	: 22
Compound Name	: o-Xylene
Scan Number	: 711
Retention Time (minutes)	: 5.171
Relative Retention Time	:-0.00000
Quant Ion	: 106.00
Area (flag)	: 3982
On-Column Amount (ng)	: 0.8948

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:52.
Target 3.5 esignature user ID: ads07818

ANC09 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043315

Data file: /chem/HP15830.i/19may03a.b/fy03s12.d Injection date and time: **03-MAY-2019 15:05**
Data file Sample Info. Line: ANC09;1043315;1;0;;LSV49;;;fy03b02; Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.898	(0.006)	174	65	123891	(0)	250.00	
14) Fluorobenzene	3.507	(0.000)	438	96	355549	(1)	50.00	
19) Chlorobenzene-d5	4.861	(0.000)	660	117	279589	(3)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	144578	(-1)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.916	(0.002)	113	77515	46.503	93%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.135	(0.002)	102	22899	48.158	96%		80 - 120
15) Toluene-d8	(3)	4.281	(0.001)	98	356221	49.252	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318	(0.000)	95	140000	49.053	98%		80 - 120

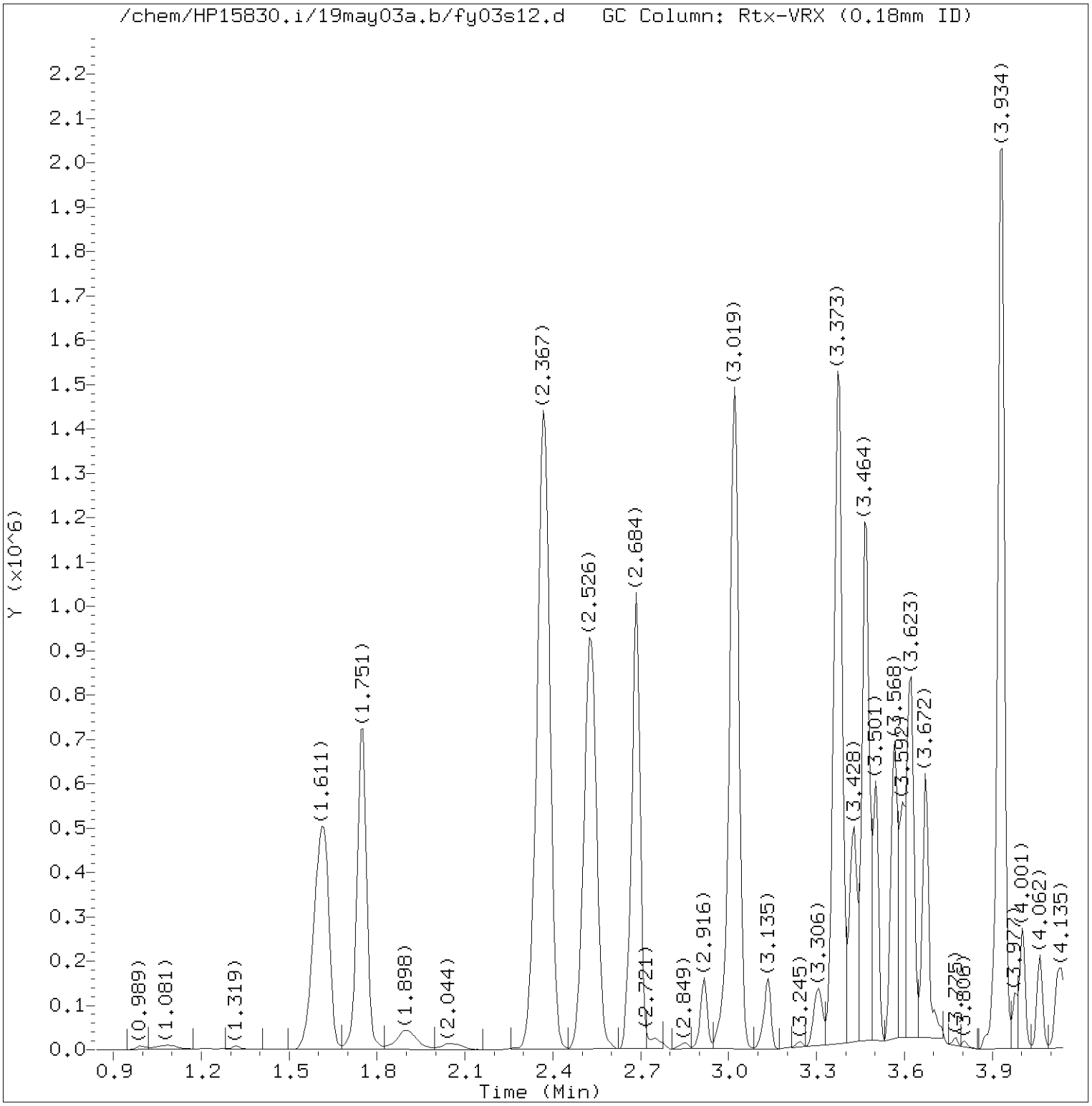
Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)	3.403	(0.001)	78	32468	3.687	3.69			0.2	1
16) Toluene	(3)	4.312	(-0.000)	92	134264	22.320	22.32			0.2	1
20) Ethylbenzene	(3)	4.946	(0.000)	91	1394904	119.779	119.78			0.4	1
21) m+p-Xylene	(3)	5.019	(0.000)	106	2875638	616.513	616.51		E	1	5
22) o-Xylene	(3)	5.171	(0.000)	106	888634	198.430	198.43			0.4	1
23) Xylene (Total)	(3)			106	3764272	814.943	814.94		E	1	5

E = Compound concentration above calibration range.

Total number of targets = 6

Digitally signed by Hu Yang on 05/03/2019 at 21:09. Target 3.5 esignature user ID: hy07820

Secondary review performed and digitally signed by Kari Becker on 05/04/2019 at 11:54. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

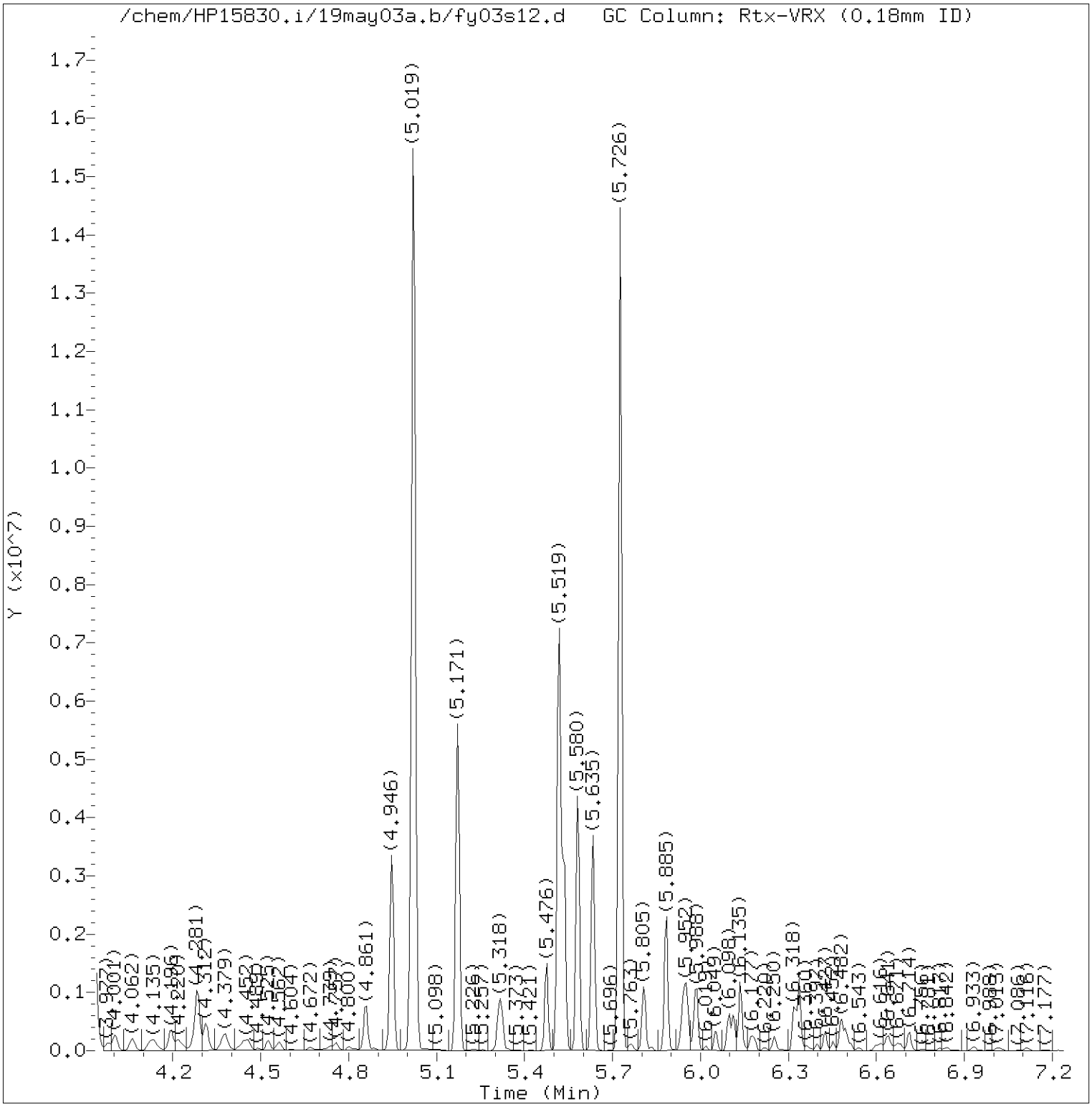
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

Digitally signed by Hu Yang
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

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on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.898	65	123891	250.000
7)$Dibromofluoromethane	(2)	2.916	113	77515	46.503
10)$1,2-Dichloroethane-d4	(2)	3.135	102	22899	48.158
12) Benzene	(2)	3.403	78	32468	3.687
14)*Fluorobenzene	(2)	3.507	96	355549	50.000
15)$Toluene-d8	(3)	4.281	98	356221	49.252
16) Toluene	(3)	4.312	92	134264	22.320
19)*Chlorobenzene-d5	(3)	4.861	117	279589	50.000
20) Ethylbenzene	(3)	4.946	91	1394904	119.779
21) m+p-Xylene	(3)	5.019	106	2875638	616.513
22) o-Xylene	(3)	5.171	106	888634	198.430
25)$4-Bromofluorobenzene	(3)	5.318	95	140000	49.053
23) Xylene (Total)	(3)		106	3764272	814.943
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	144578	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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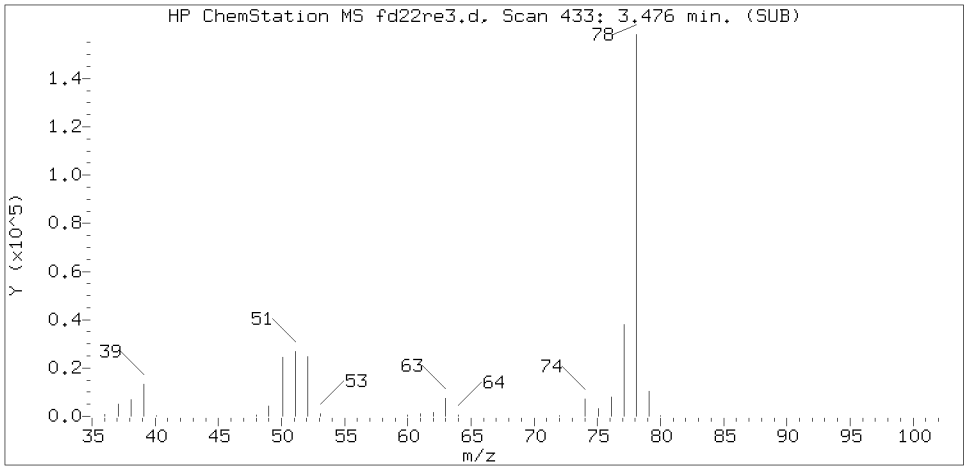
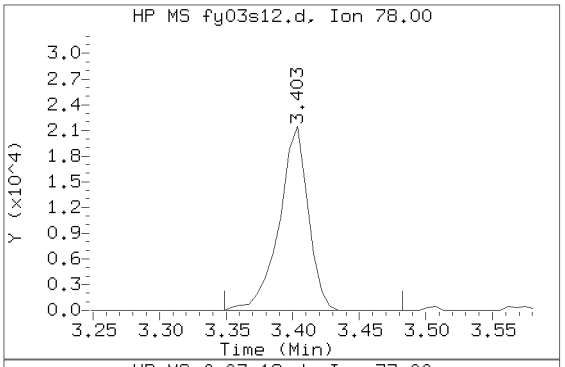
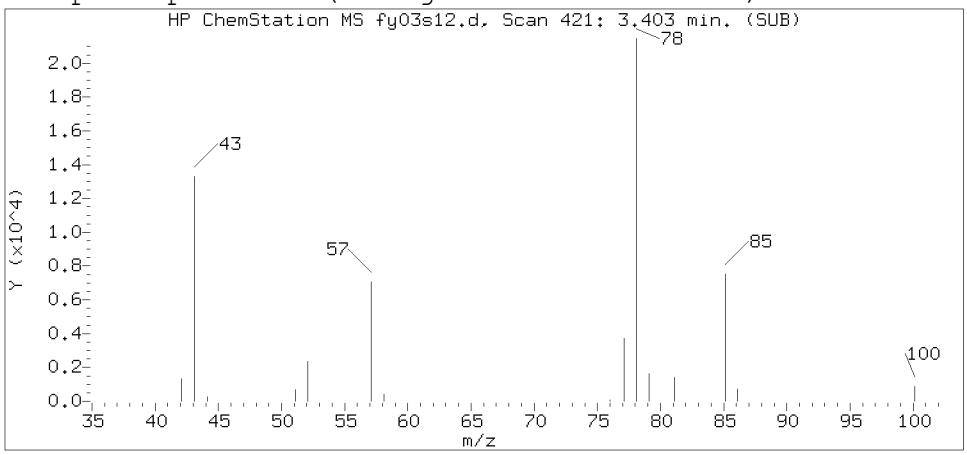
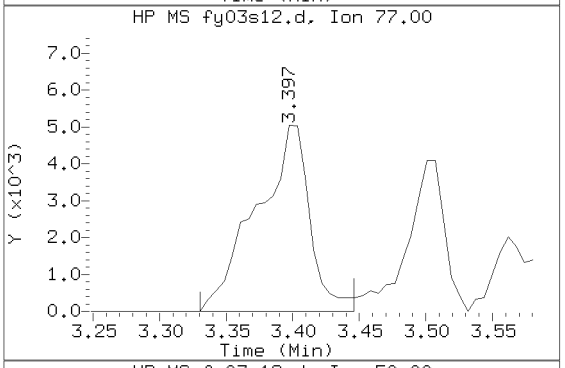
Reference Standard Spectrum for Benzene

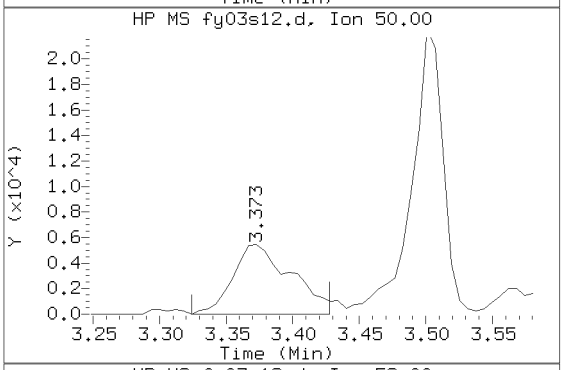




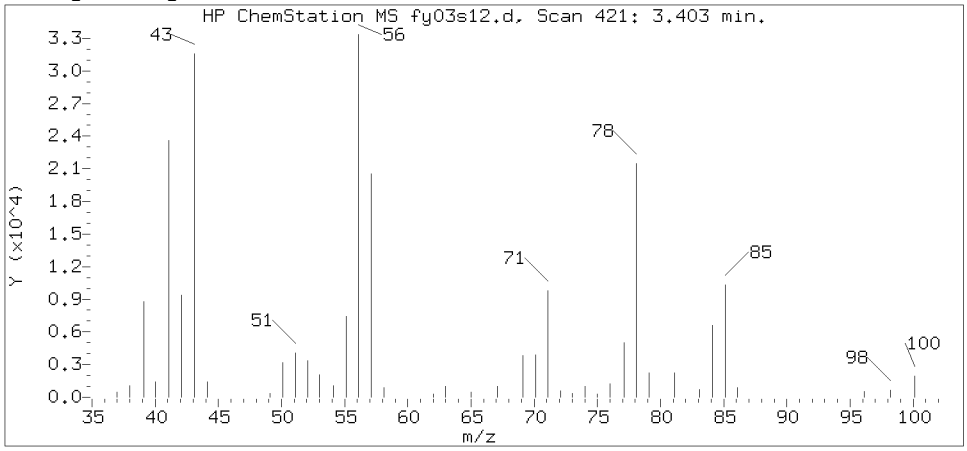
Sample Spectrum (Background Subtracted)

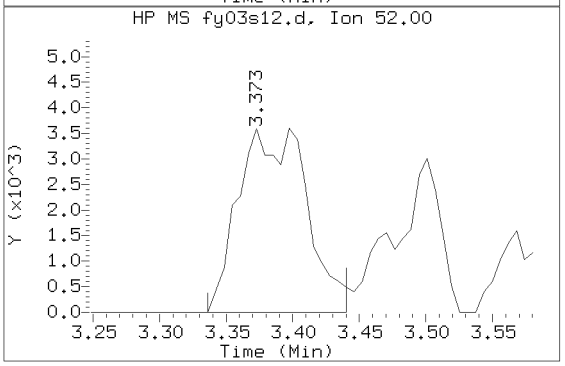






Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

Compound Number	: 12
Compound Name	: Benzene
Scan Number	: 421
Retention Time (minutes)	: 3.403
Relative Retention Time	: 0.00174
Quant Ion	: 78.00
Area (flag)	: 32468
On-Column Amount (ng)	: 3.6866

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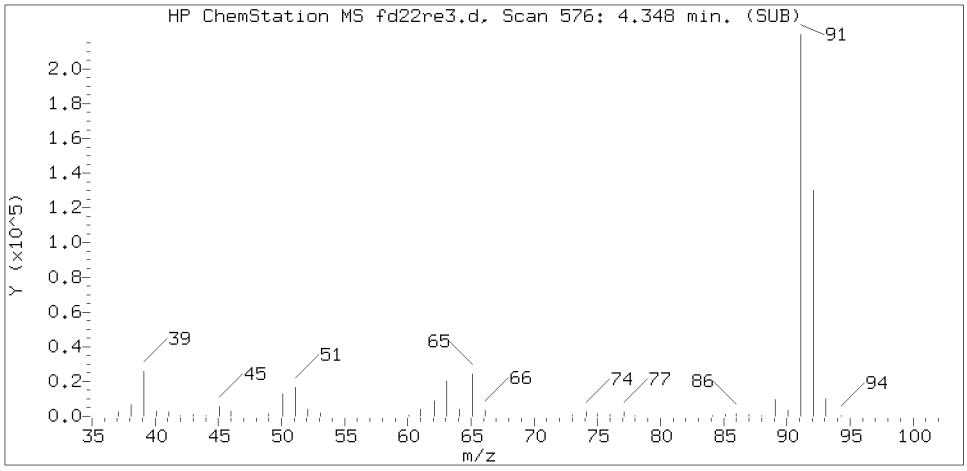
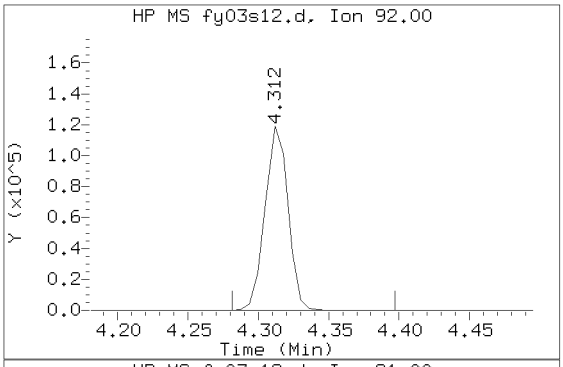
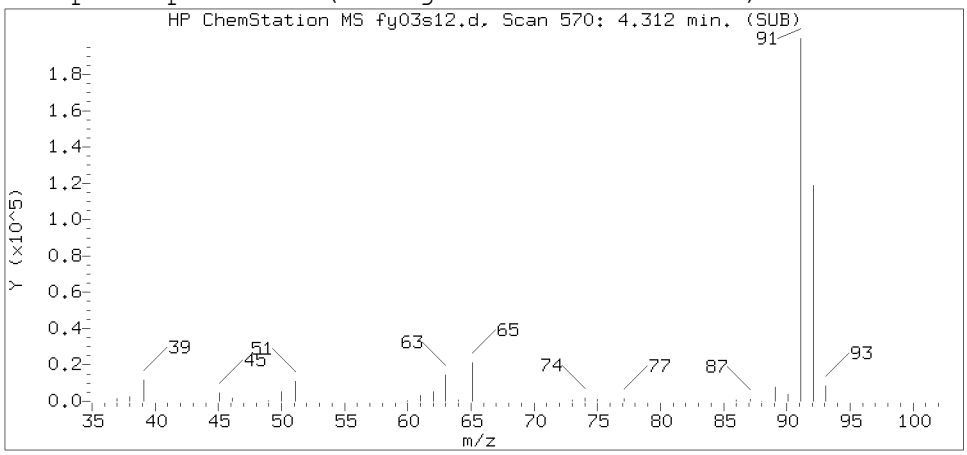
Target 3.5 esignature user ID: hy07820

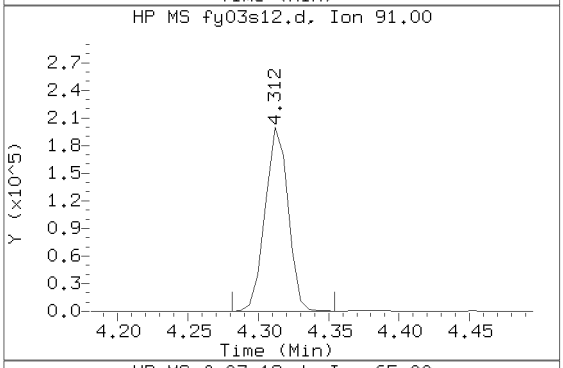
Reference Standard Spectrum for Toluene

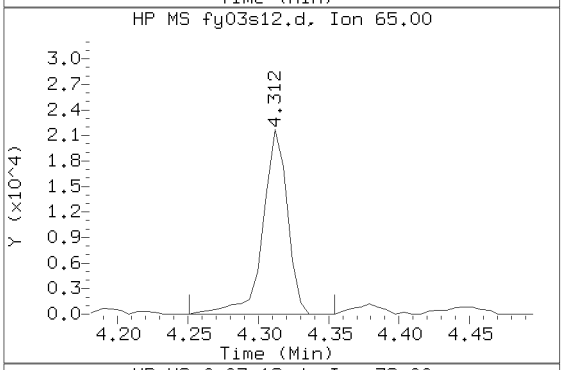




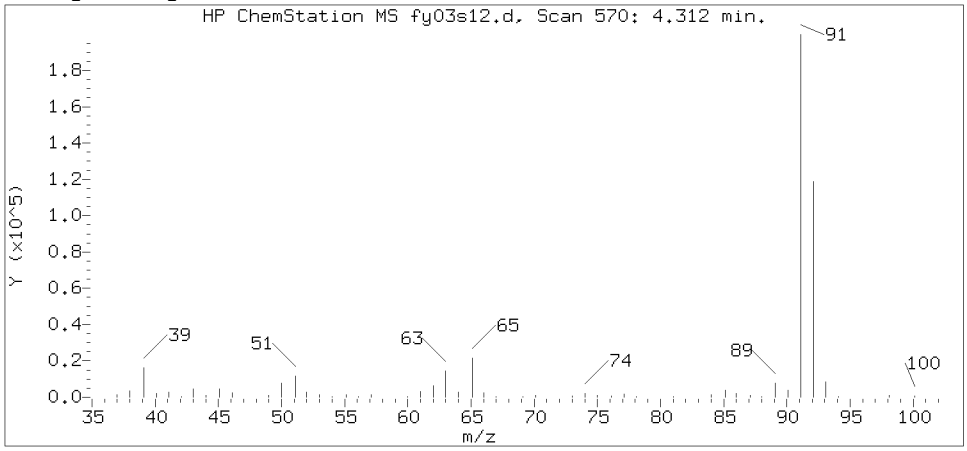
Sample Spectrum (Background Subtracted)

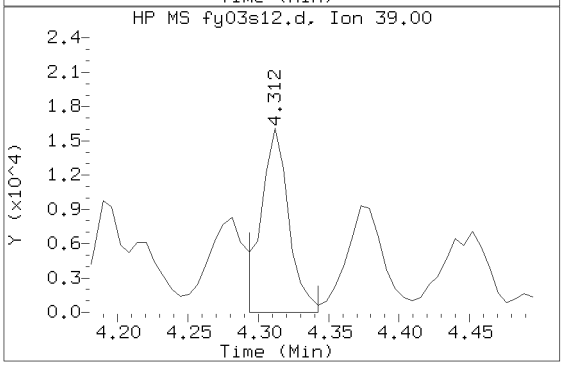






Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

Compound Number	: 16
Compound Name	: Toluene
Scan Number	: 570
Retention Time (minutes)	: 4.312
Relative Retention Time	:-0.00000
Quant Ion	: 92.00
Area (flag)	: 134264
On-Column Amount (ng)	: 22.3202

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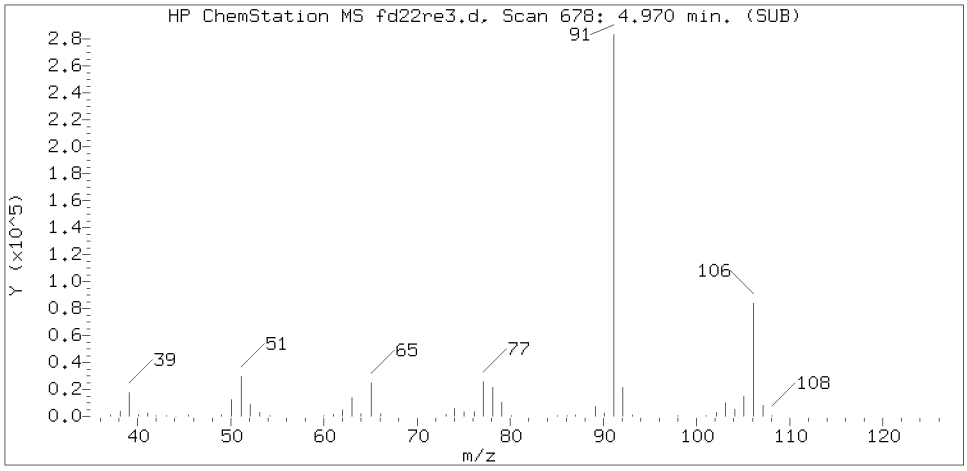
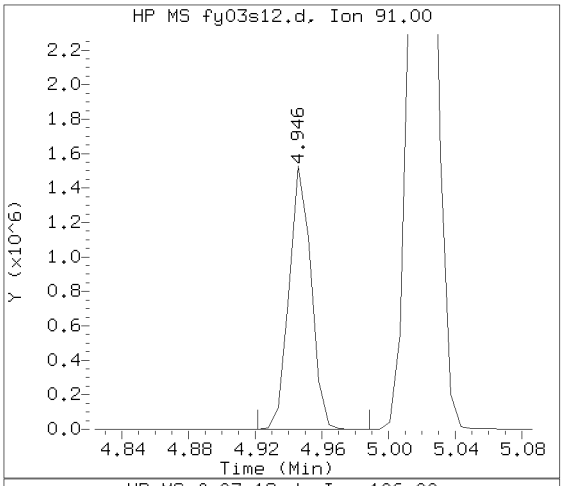
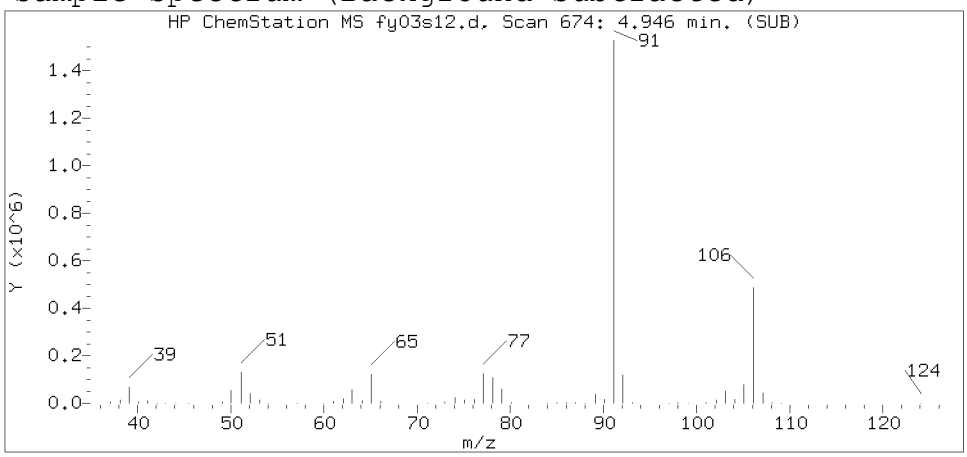
Target 3.5 esignature user ID: hy07820

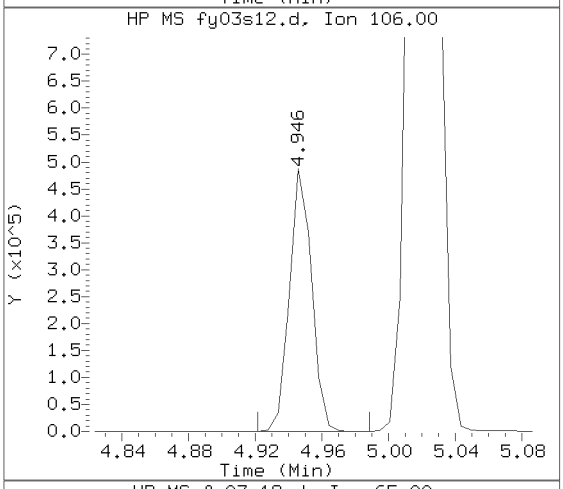
Reference Standard Spectrum for Ethylbenzene



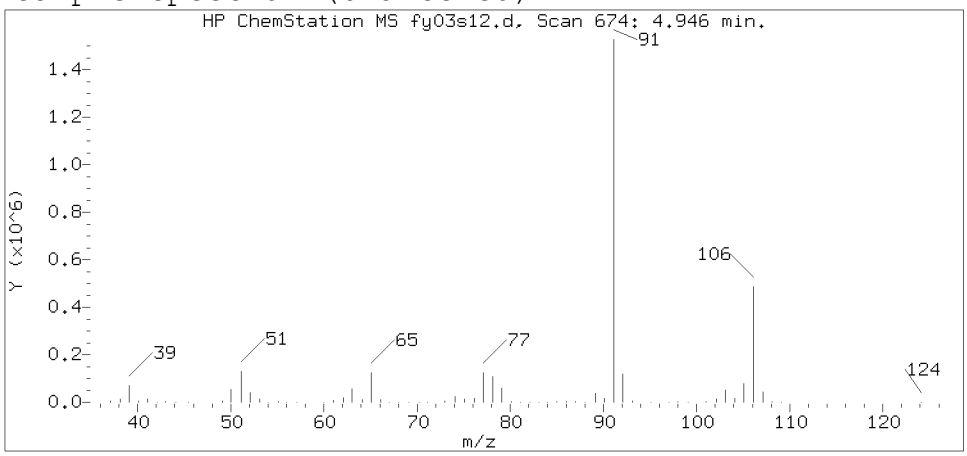


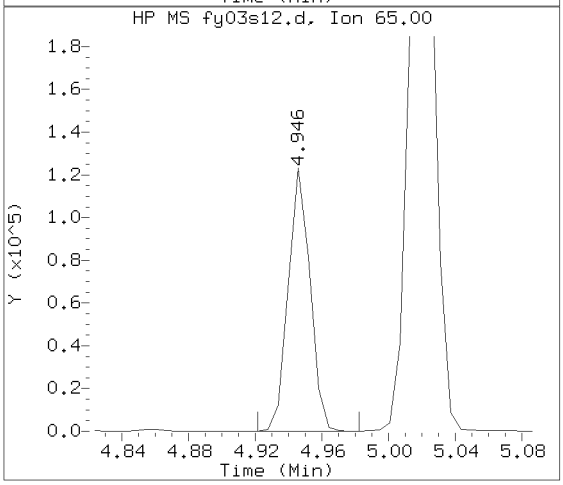
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

Compound Number	: 20
Compound Name	: Ethylbenzene
Scan Number	: 674
Retention Time (minutes)	: 4.946
Relative Retention Time	: 0.00000
Quant Ion	: 91.00
Area (flag)	: 1394904
On-Column Amount (ng)	: 119.7788

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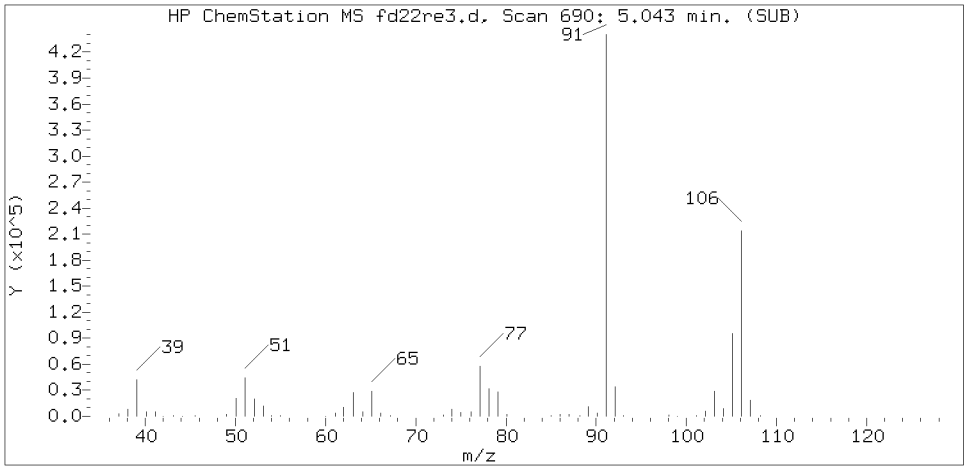
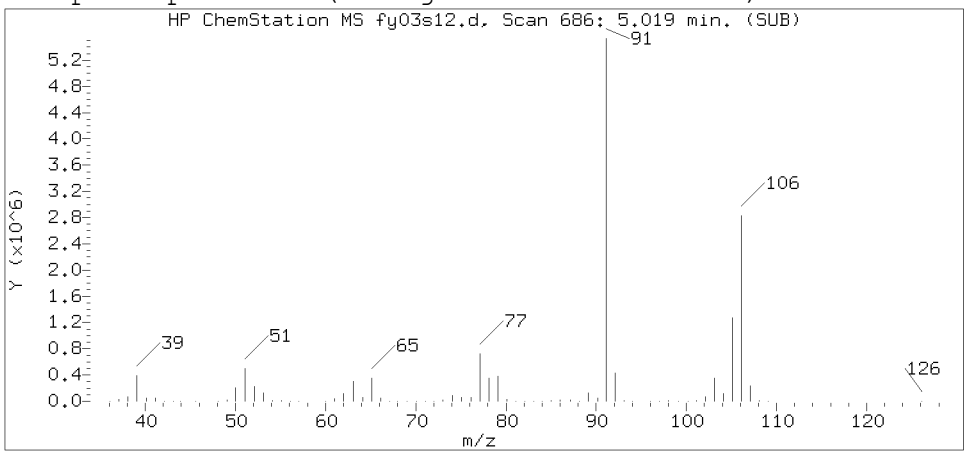
Target 3.5 esignature user ID: hy07820

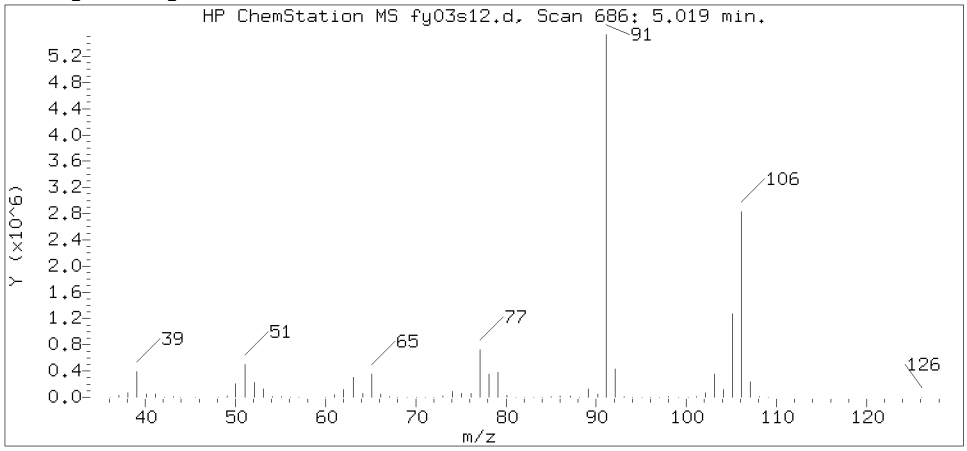
Reference Standard Spectrum for m+p-Xylene

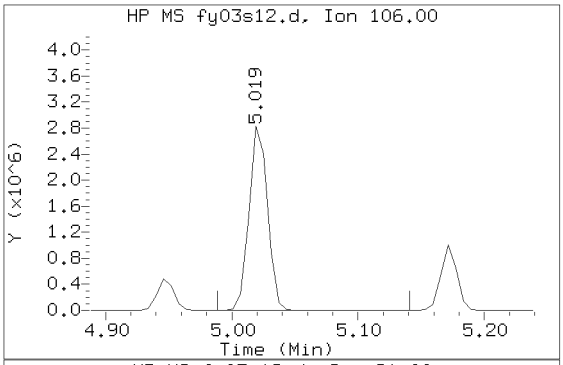


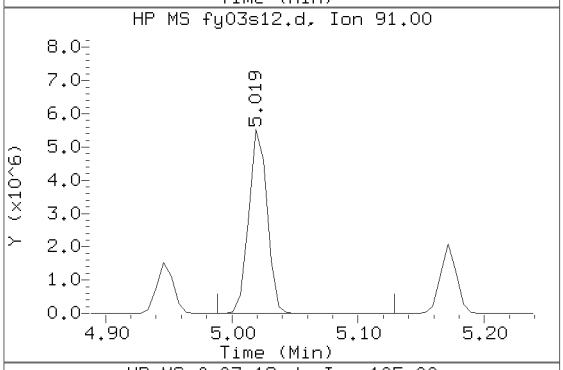
Sample Spectrum (Background Subtracted)

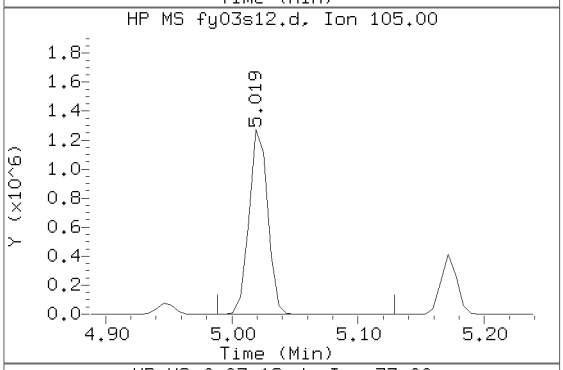


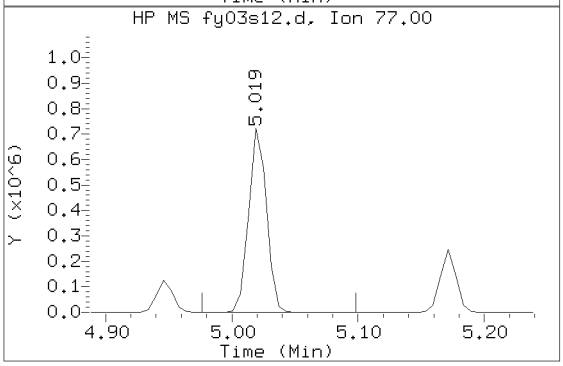
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

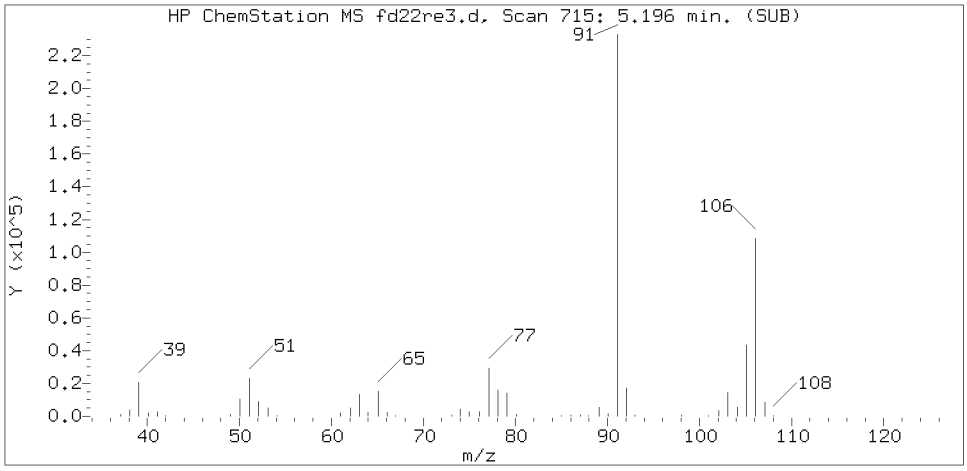
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

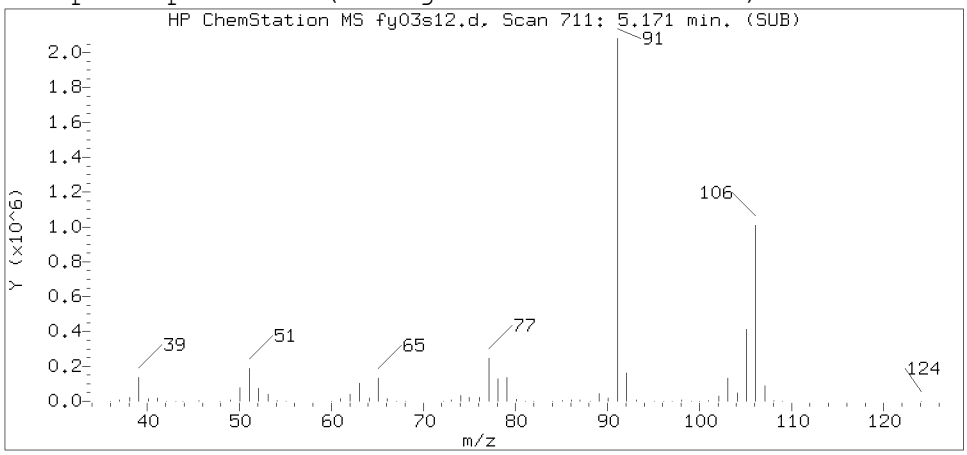
Compound Number	: 21
Compound Name	: m+p-Xylene
Scan Number	: 686
Retention Time (minutes)	: 5.019
Relative Retention Time	: 0.00000
Quant Ion	: 106.00
Area (flag)	: 2875638
On-Column Amount (ng)	: 616.5134

Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

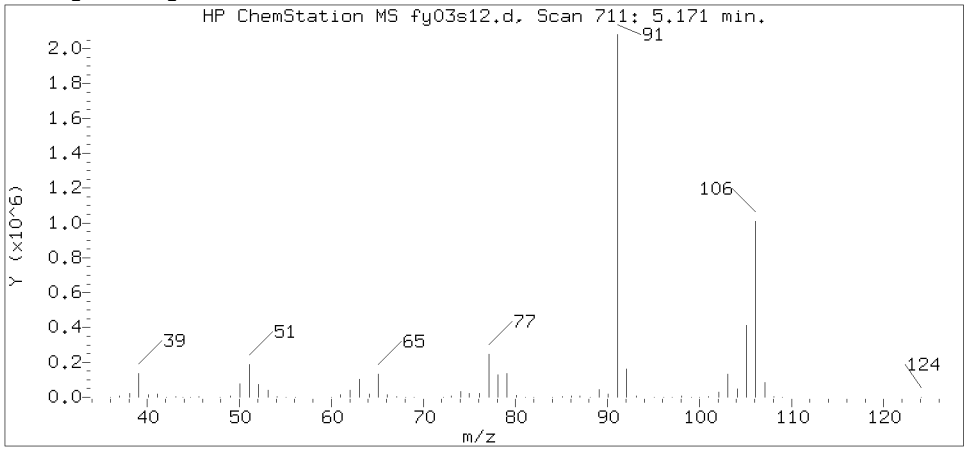
Reference Standard Spectrum for o-Xylene

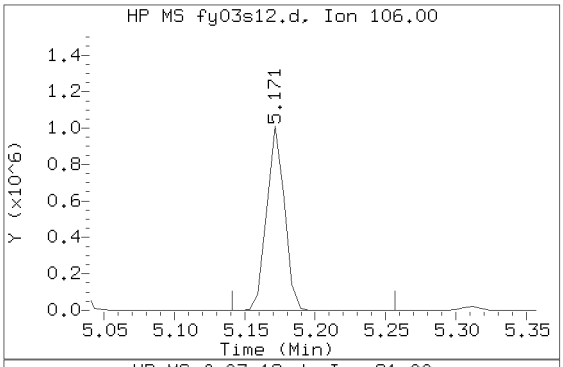


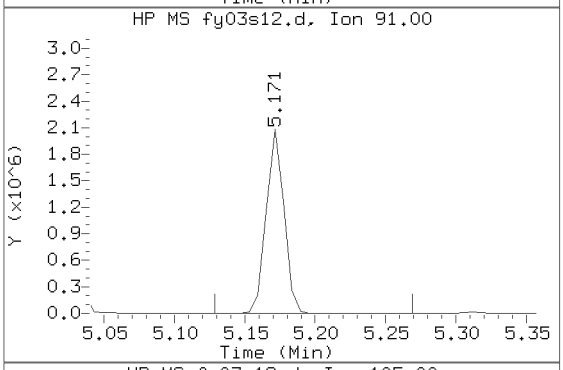
Sample Spectrum (Background Subtracted)

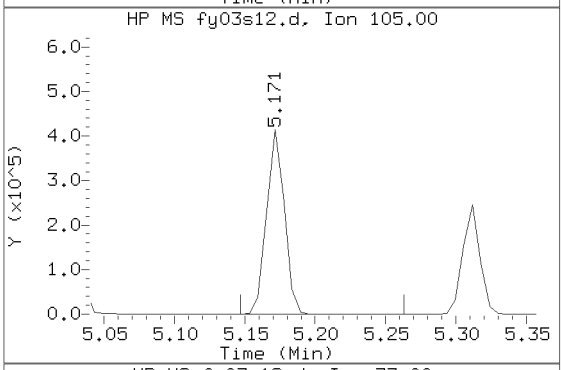


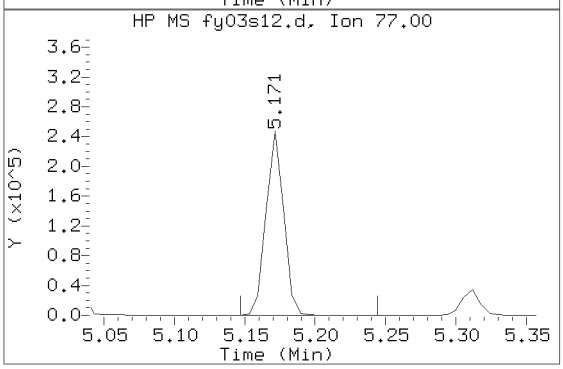
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s12.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:05 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC09 Lab Sample ID: 1043315

Compound Number	: 22
Compound Name	: o-Xylene
Scan Number	: 711
Retention Time (minutes)	: 5.171
Relative Retention Time	: 0.00000
Quant Ion	: 106.00
Area (flag)	: 888634
On-Column Amount (ng)	: 198.4296

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Target 3.5 esignature user ID: hy07820

ANC09DL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

1043315DL

Data file: /chem/HP15830.i/19may07a.b/fy07s32.d Injection date and time: **07-MAY-2019 17:29**
Data file Sample Info. Line: ANC09DL;1043315DL;1;0;;LSV49;;;fy07b02; Instrument ID: **HP15830.i** Batch: **F191272AA**
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Blank Data file reference: **/chem/HP15830.i/19may07a.b/fy07b02.d**

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 07-MAY-2019 13:35
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19apr09b.b/fa09i06.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **10.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 0.5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910	(0.037)	176	65	108037	(-33)	250.00	
14) Fluorobenzene	3.507	(0.037)	438	96	318562	(-38)	50.00	
19) Chlorobenzene-d5	4.860	(0.024)	660	117	232374	(-43)	50.00	
28) 1,4-Dichlorobenzene-d4	5.811	(0.018)	816	152	117342	(-48)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.002)	113	66656	44.671	89%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.001)	102	20553	48.237	96%		80 - 120
15) Toluene-d8	(3)	4.281	(0.002)	98	306813	51.158	102%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318	(0.000)	95	116311	49.101	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
12) Benzene	(2)	3.403	(0.000)	78	2394	0.304	3.04		J	2	10
16) Toluene	(3)	4.312	(0.001)	92	8786	1.767	17.67			2	10
20) Ethylbenzene	(3)	4.946	(-0.000)	91	93136	9.689	96.89			4	10
21) m+p-Xylene	(3)	5.019	(-0.000)	106	209790	54.497	544.97			10	50
22) o-Xylene	(3)	5.171	(-0.000)	106	65788	17.867	178.67			4	10
23) Xylene (Total)	(3)			106	275578	72.364	723.64			10	50

Total number of targets = 6

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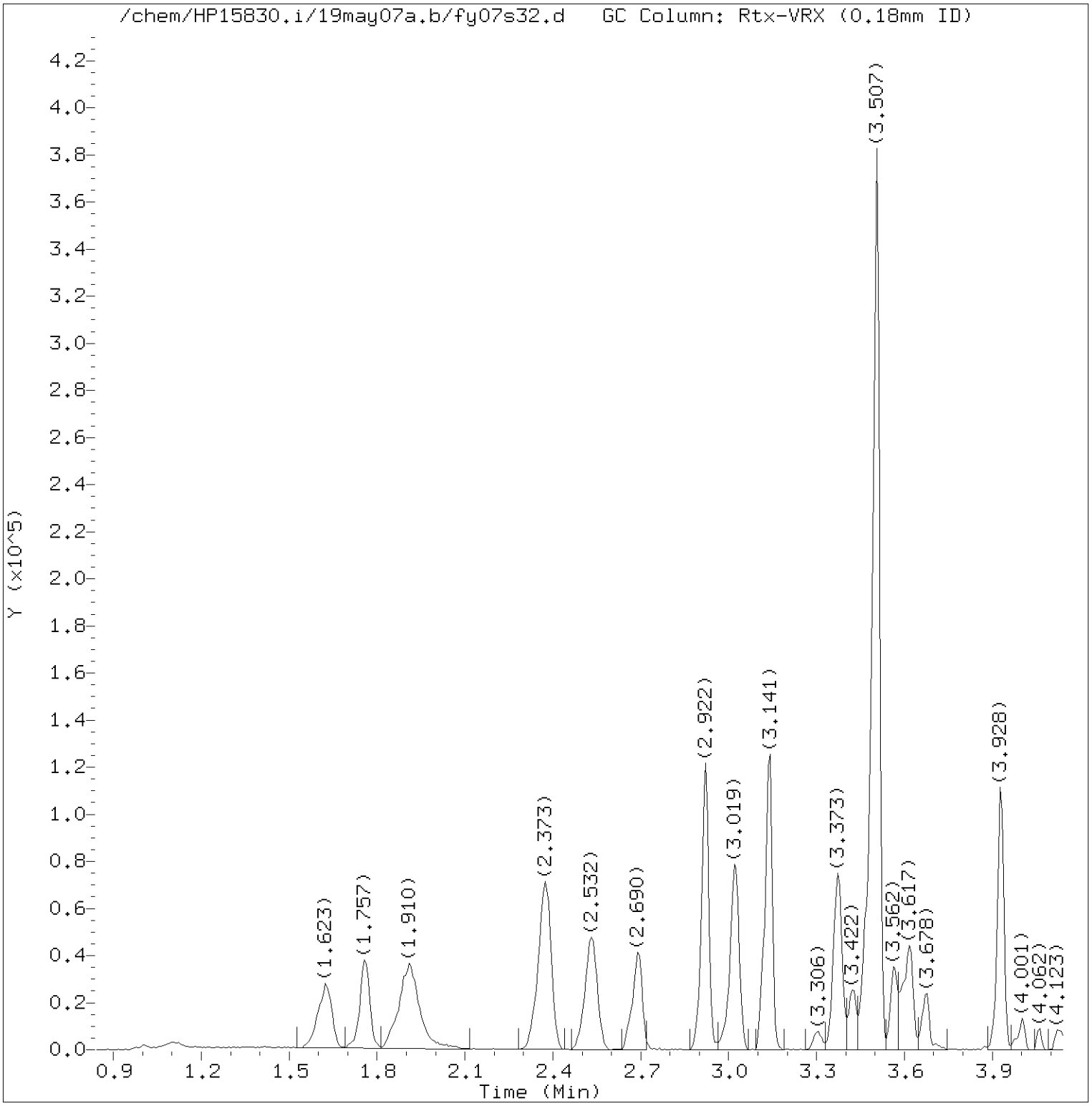
Secondary review performed and digitally signed by Richard Samson on 05/08/2019 at 11:58. PARALLAX ID: rs08358



Total Ion Chromatogram (TIC)

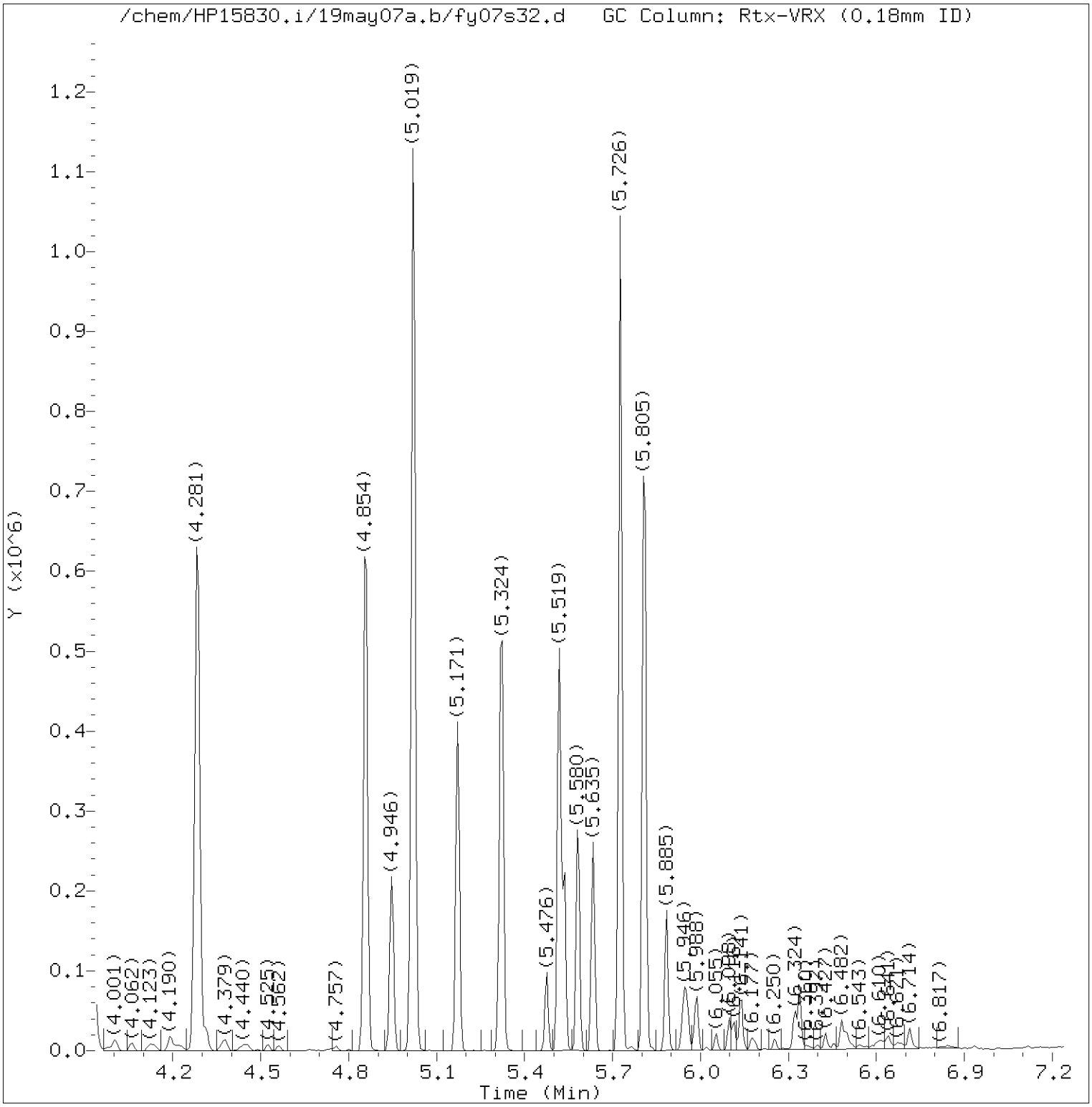
Target Revision 3.5

Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Digitally signed by Alexander D. Sechrist
on 05/08/2019 at 09:07.
Target 3.5 esignature user ID: ads07818



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Digitally signed by Alexander D. Sechrist
on 05/08/2019 at 09:07.
Target 3.5 esignature user ID: ads07818

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	108037	250.000
7)$Dibromofluoromethane	(2)	2.922	113	66656	44.671
10)$1,2-Dichloroethane-d4	(2)	3.141	102	20553	48.237
12) Benzene	(2)	3.403	78	2394	0.304
14)*Fluorobenzene	(2)	3.507	96	318562	50.000
15)$Toluene-d8	(3)	4.281	98	306813	51.158
16) Toluene	(3)	4.312	92	8786	1.767
19)*Chlorobenzene-d5	(3)	4.860	117	232374	50.000
20) Ethylbenzene	(3)	4.946	91	93136	9.689
21) m+p-Xylene	(3)	5.019	106	209790	54.497
22) o-Xylene	(3)	5.171	106	65788	17.867
25)$4-Bromofluorobenzene	(3)	5.318	95	116311	49.101
23) Xylene (Total)	(3)		106	275578	72.364
28)*1,4-Dichlorobenzene-d4	(4)	5.811	152	117342	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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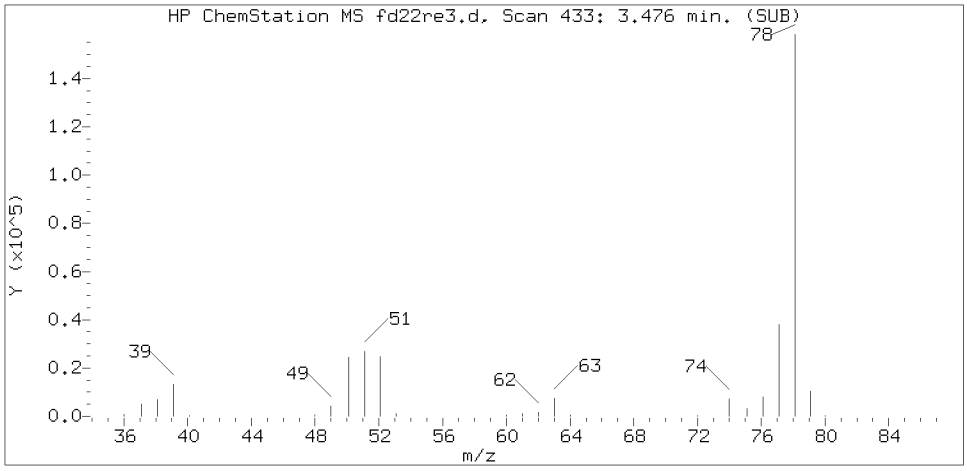
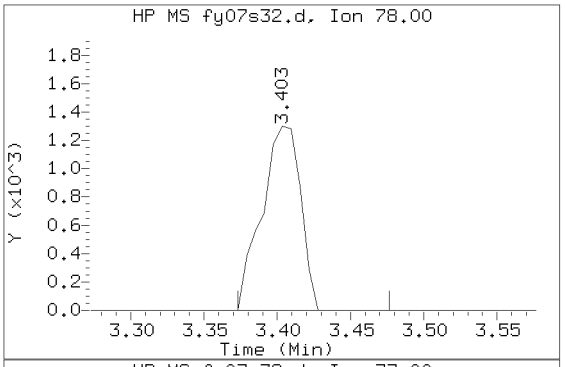
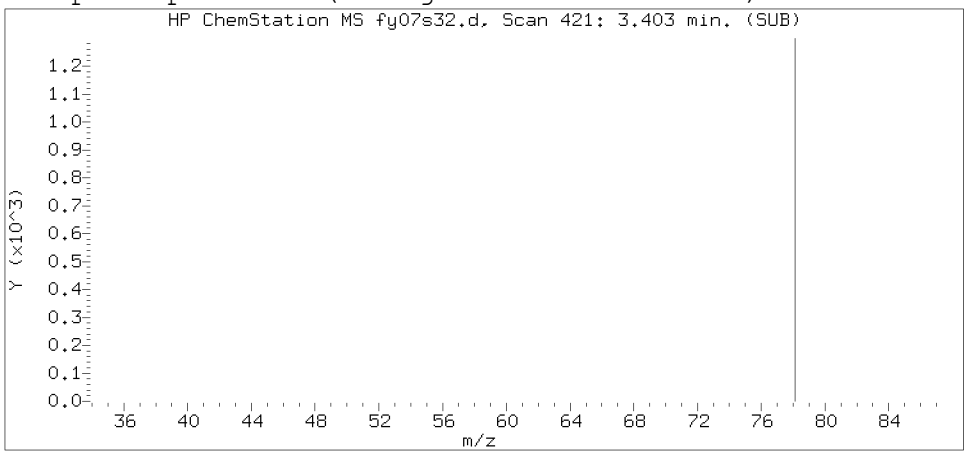
on 05/08/2019 at 09:07.
Target 3.5 esignature user ID: ads07818

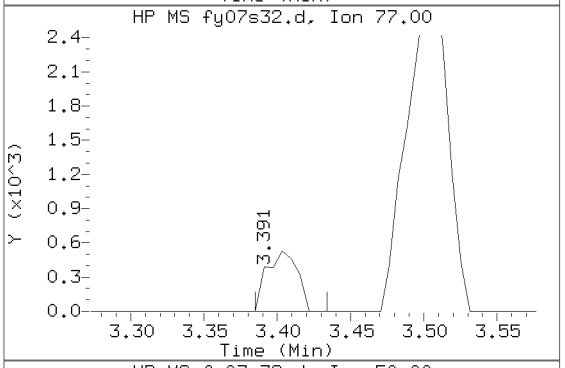
Reference Standard Spectrum for Benzene

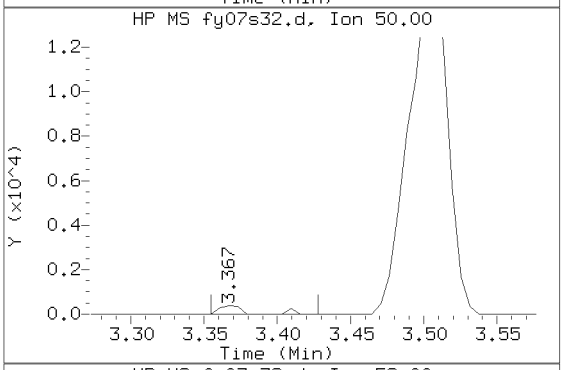




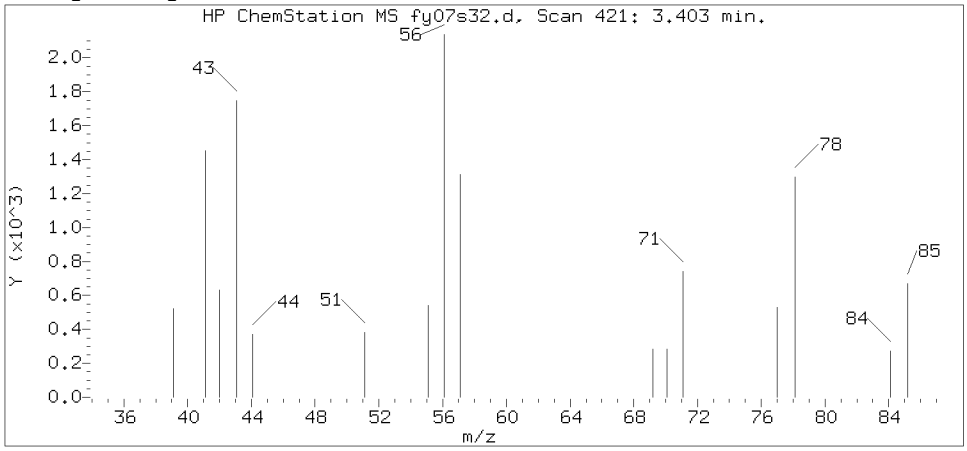
Sample Spectrum (Background Subtracted)

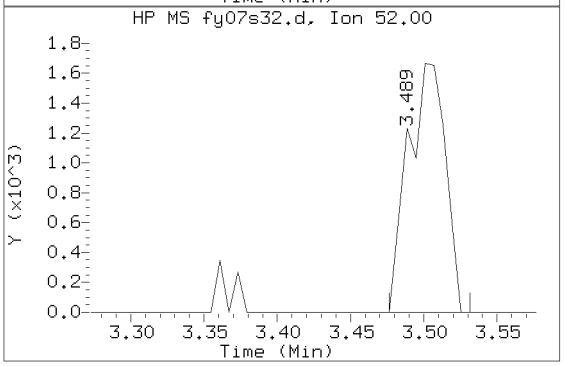






Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Compound Number	: 12
Compound Name	: Benzene
Scan Number	: 421
Retention Time (minutes)	: 3.403
Relative Retention Time	: 0.00030
Quant Ion	: 78.00
Area (flag)	: 2394
On-Column Amount (ng)	: 0.3038

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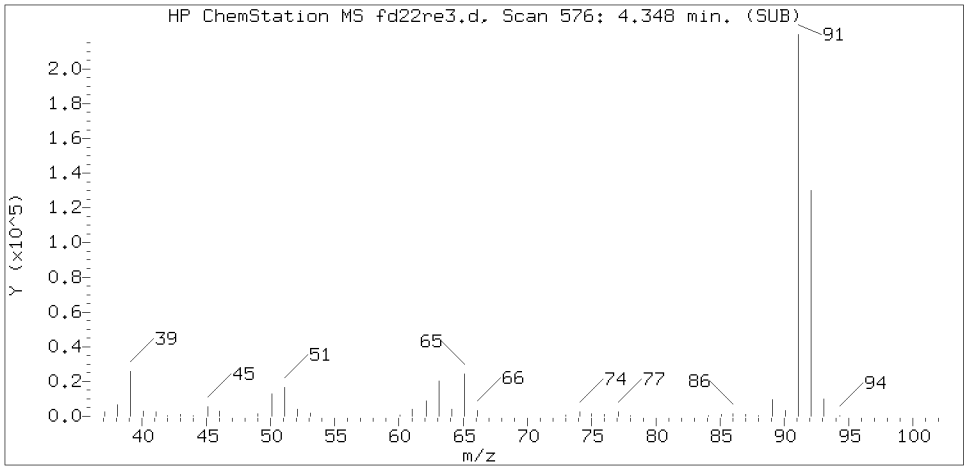
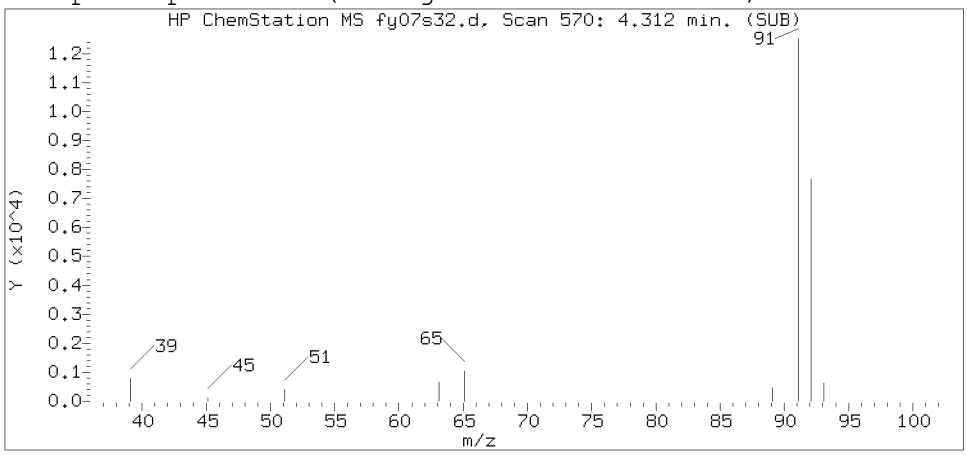
Target 3.5 esignature user ID: ads07818

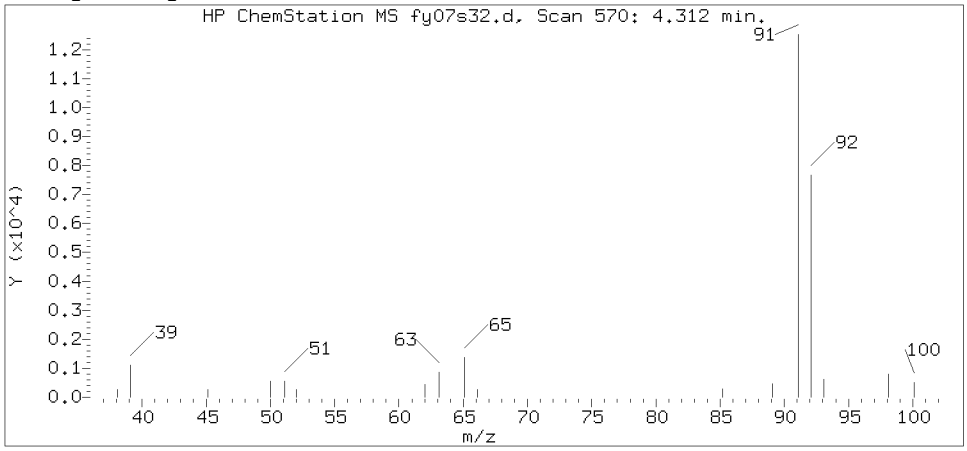
Reference Standard Spectrum for Toluene

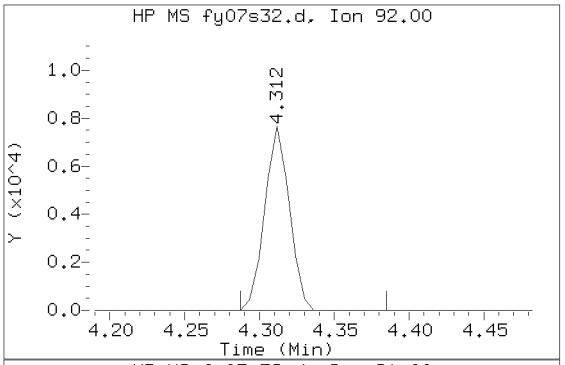


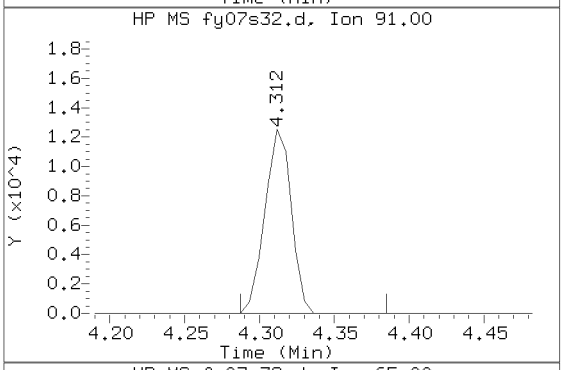
Sample Spectrum (Background Subtracted)

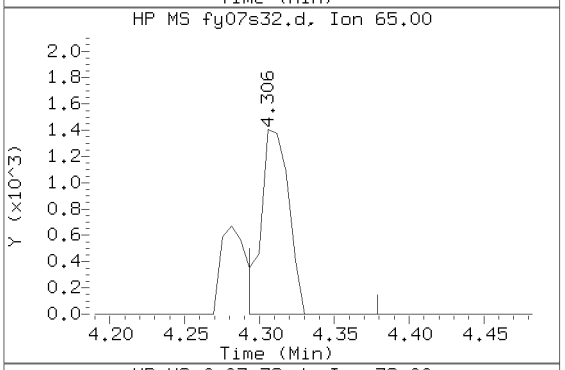


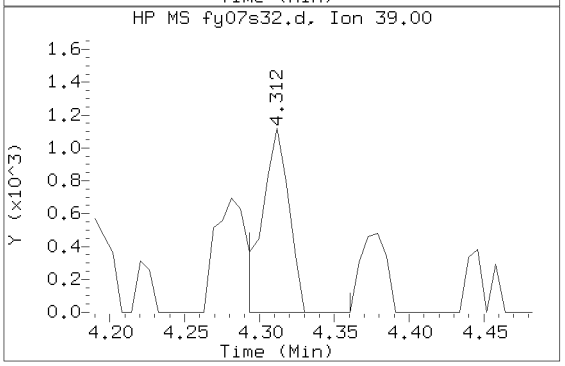
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Compound Number	: 16
Compound Name	: Toluene
Scan Number	: 570
Retention Time (minutes)	: 4.312
Relative Retention Time	: 0.00181
Quant Ion	: 92.00
Area (flag)	: 8786
On-Column Amount (ng)	: 1.7672

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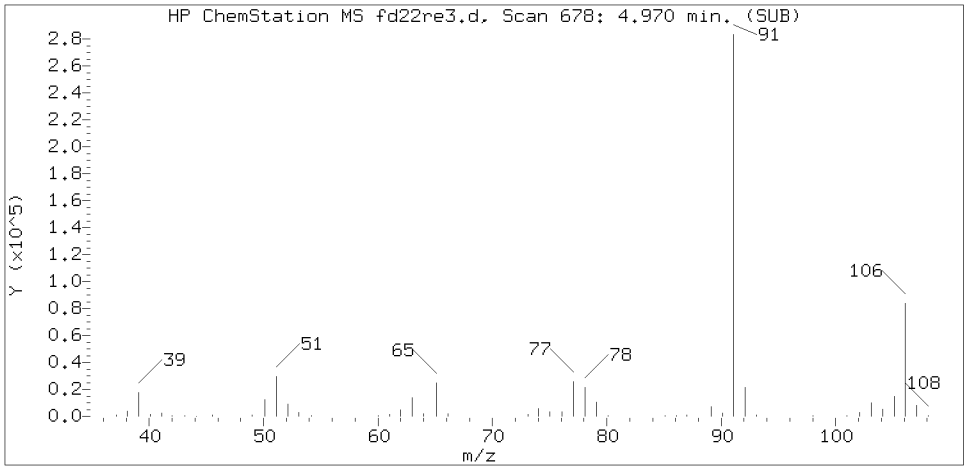
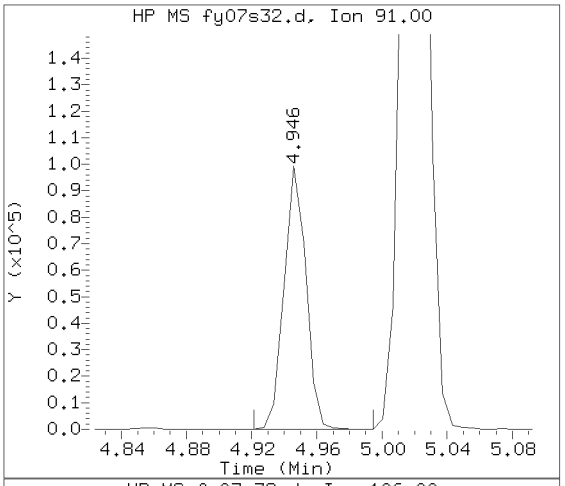
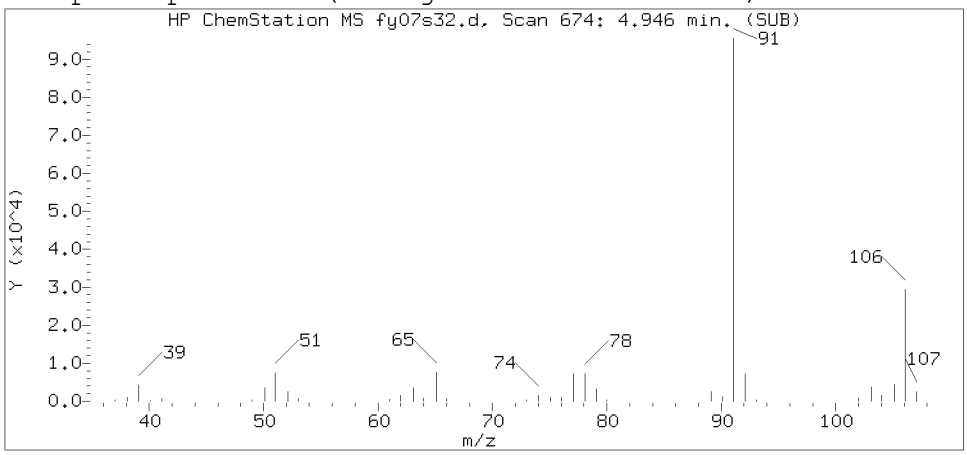
Target 3.5 esignature user ID: ads07818

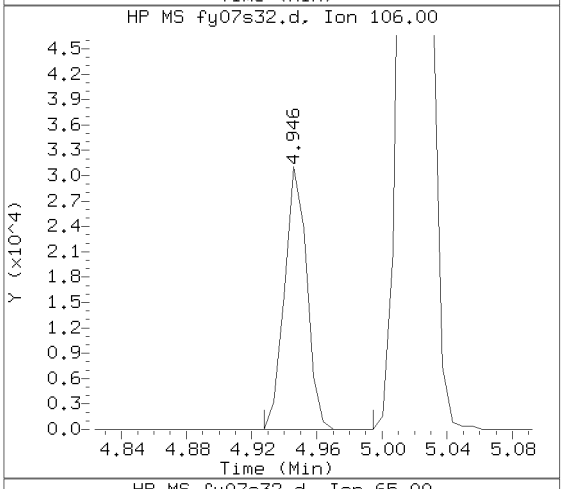
Reference Standard Spectrum for Ethylbenzene



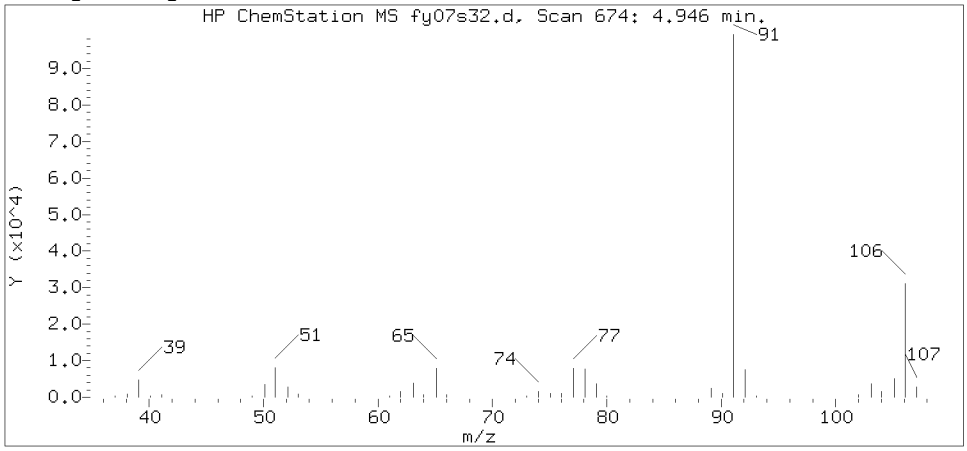


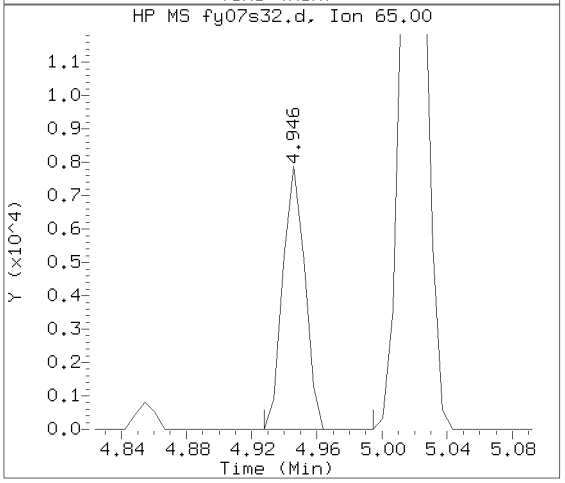
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Compound Number : 20
Compound Name : Ethylbenzene
Scan Number : 674
Retention Time (minutes): 4.946
Relative Retention Time :-0.00009
Quant Ion : 91.00
Area (flag) : 93136
On-Column Amount (ng) : 9.6890

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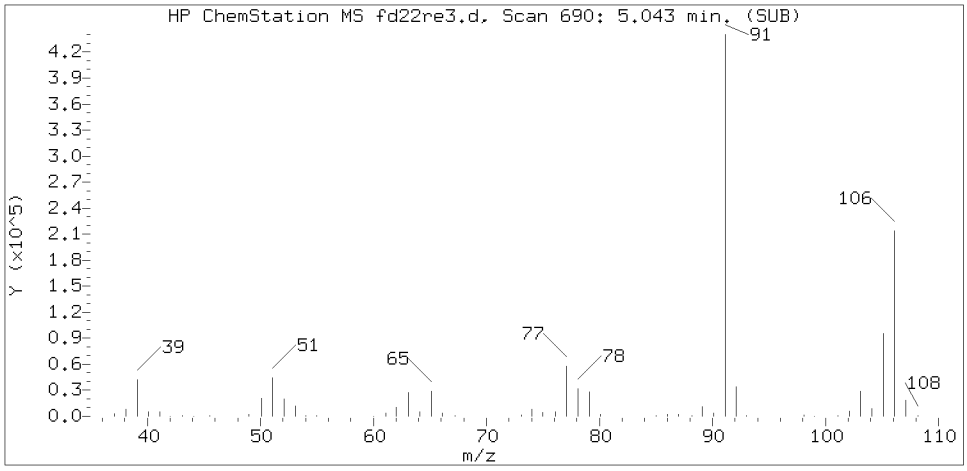
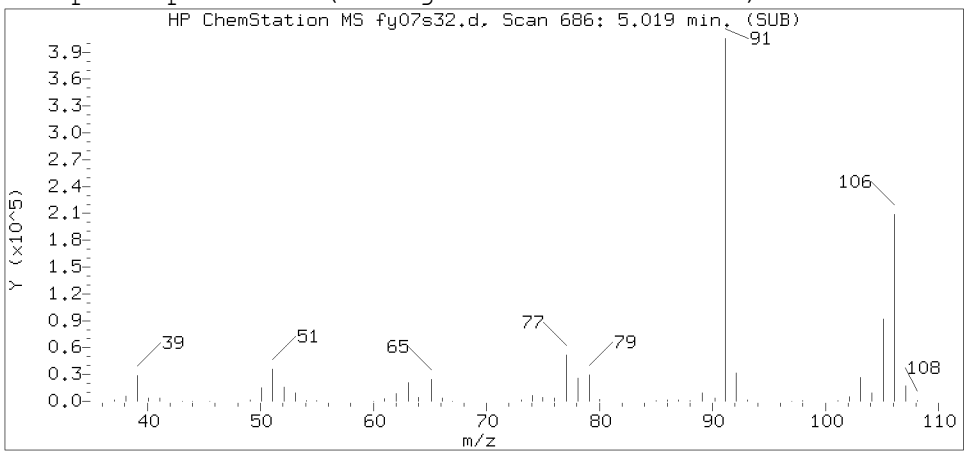
Target 3.5 esignature user ID: ads07818

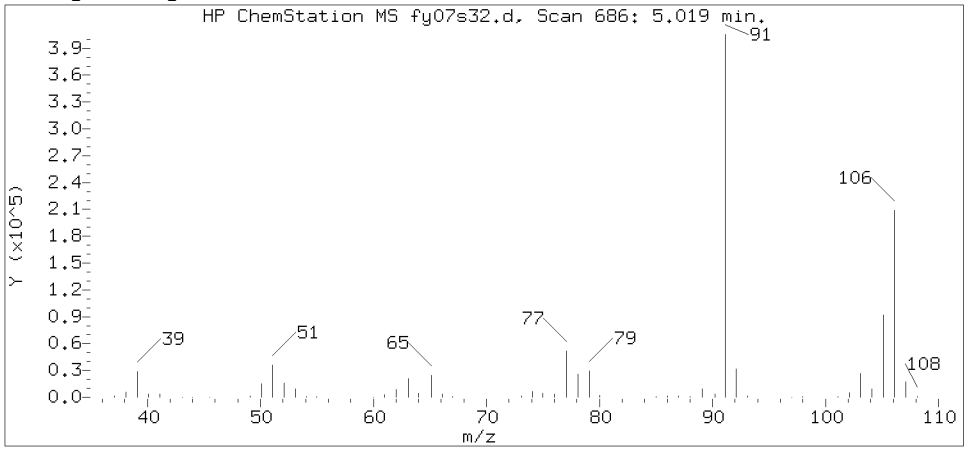
Reference Standard Spectrum for m+p-Xylene

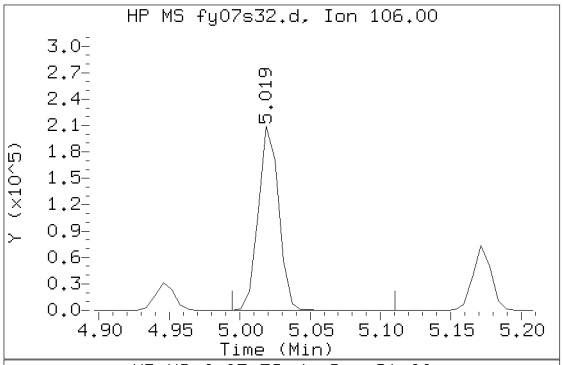


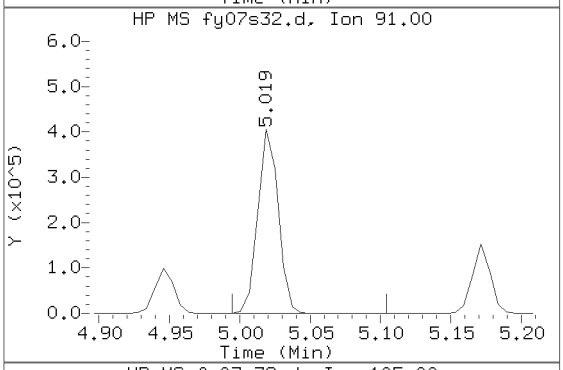
Sample Spectrum (Background Subtracted)

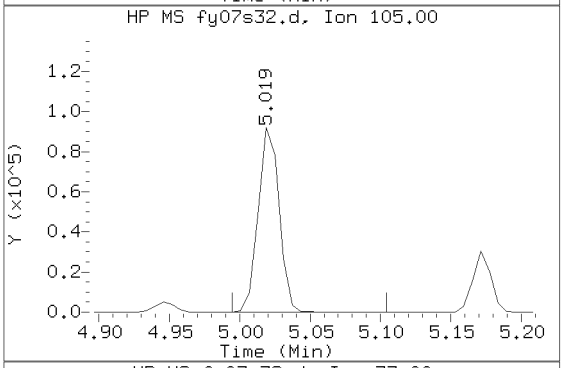


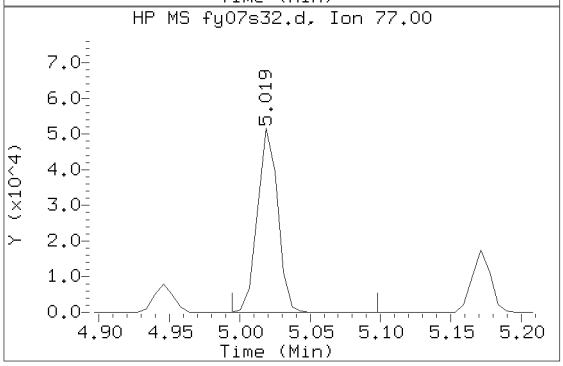
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Compound Number	: 21
Compound Name	: m+p-Xylene
Scan Number	: 686
Retention Time (minutes)	: 5.019
Relative Retention Time	:-0.00016
Quant Ion	: 106.00
Area (flag)	: 209790
On-Column Amount (ng)	: 54.4972

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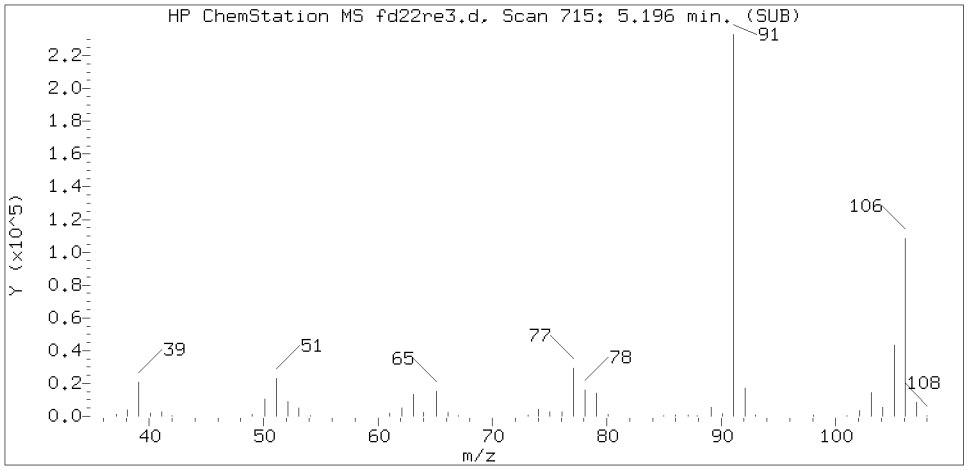
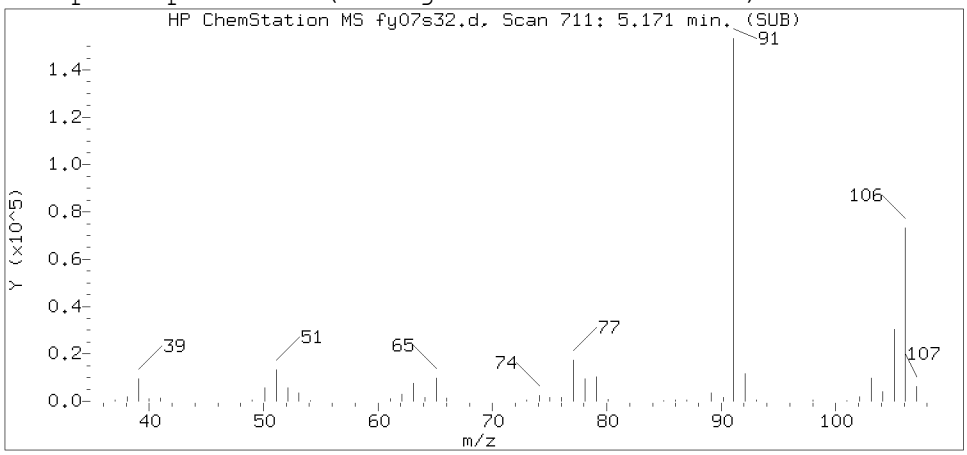
Target 3.5 esignature user ID: ads07818

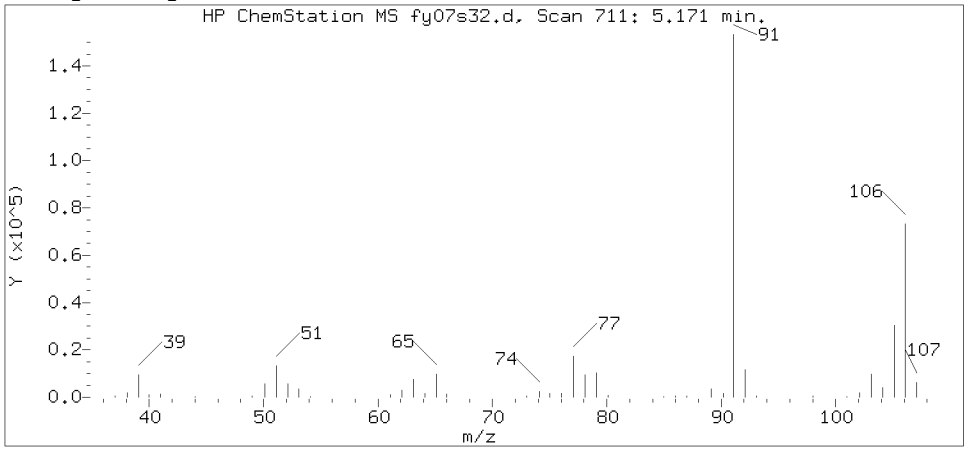
Reference Standard Spectrum for o-Xylene

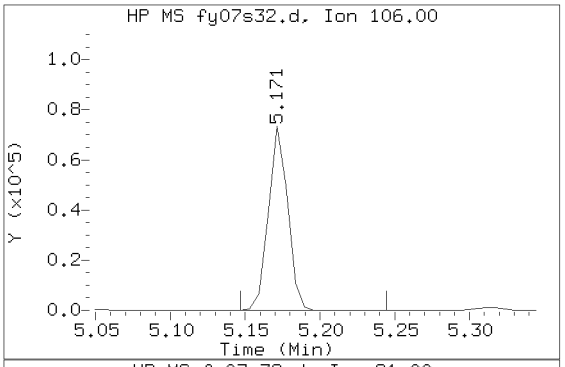


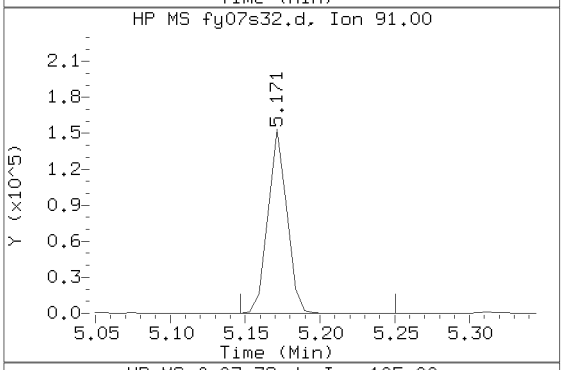
Sample Spectrum (Background Subtracted)

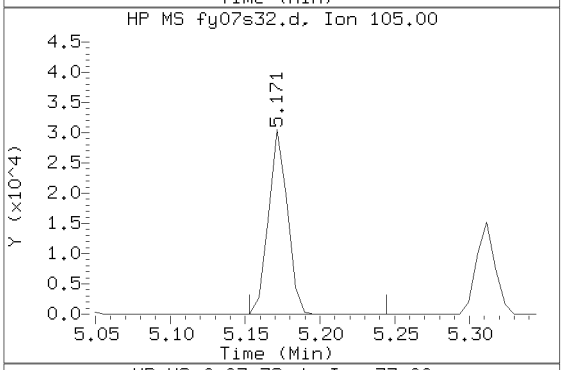


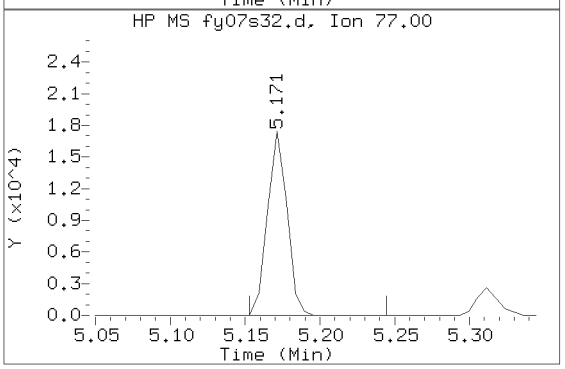
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may07a.b/fy07s32.d Instrument ID: HP15830.i
Injection date and time: 07-MAY-2019 17:29 Analyst ID: ads07818

Method used: /chem/HP15830.i/19may07a.b/UST-PT2.m Sublist used: 12790
Calibration date and time: 07-MAY-2019 13:35
Date, time and analyst ID of latest file update: 07-May-2019 17:36 Automation

Sample Name: ANC09DL Lab Sample ID: 1043315DL

Compound Number	: 22
Compound Name	: o-Xylene
Scan Number	: 711
Retention Time (minutes)	: 5.171
Relative Retention Time	:-0.00032
Quant Ion	: 106.00
Area (flag)	: 65788
On-Column Amount (ng)	: 17.8670

Digitally signed by Alexander D. Sechrist on 05/08/2019 at 09:07.
Target 3.5 esignature user ID: ads07818

ANC08 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043317

Data file: /chem/HP15830.i/19may03a.b/fy03s14.d Injection date and time: **03-MAY-2019 15:27**
Data file Sample Info. Line: ANC08;1043317;1;0;;LSV49;;;fy03b02; Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910	(-0.006)	176	65	115392	(-7)	250.00	
14) Fluorobenzene	3.507	(0.000)	438	96	349341	(0)	50.00	
19) Chlorobenzene-d5	4.861	(0.000)	660	117	272916	(0)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	148593	(2)	50.00	

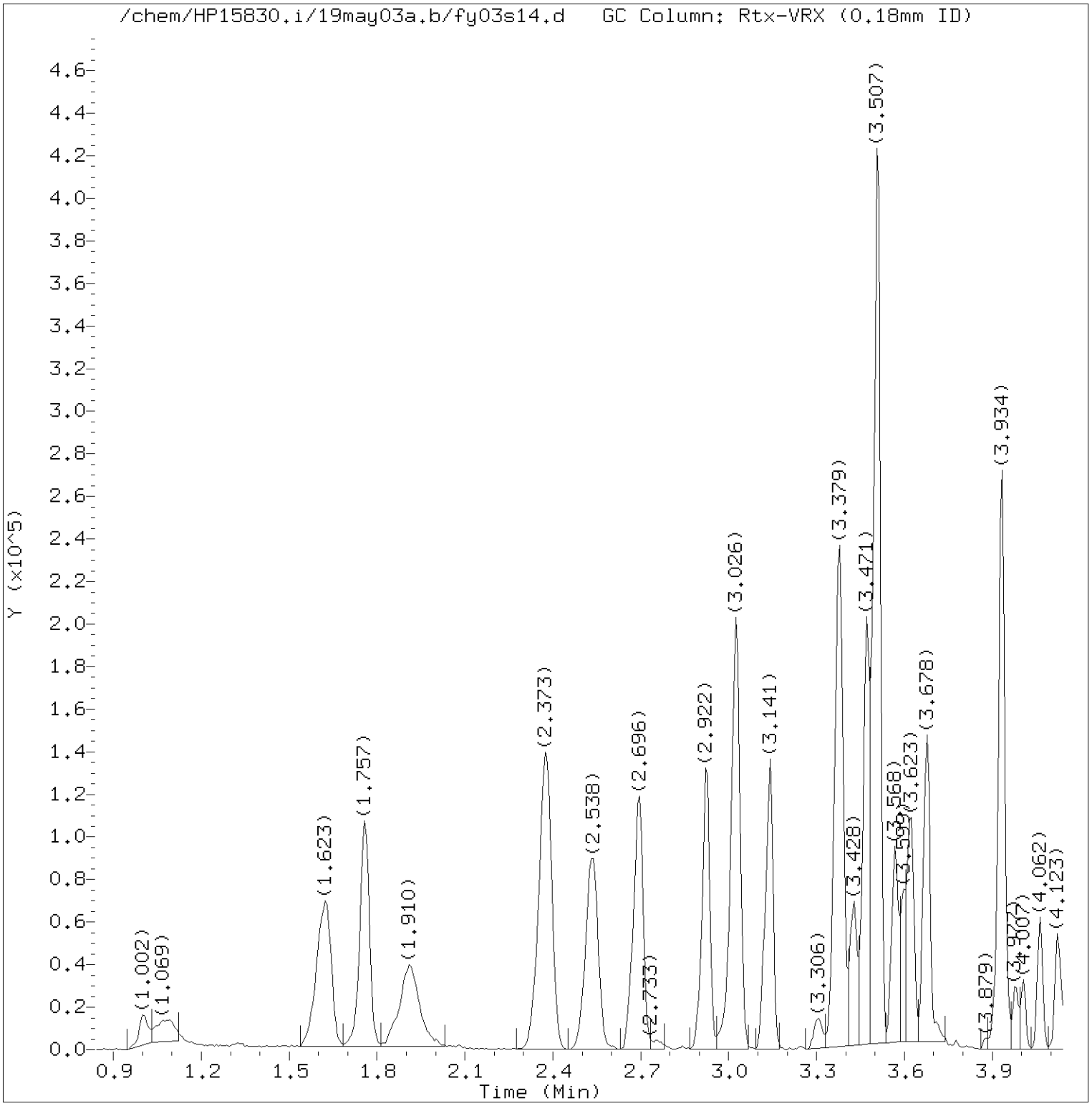
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.000)	113	76537	46.732	93%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.000)	102	22318	47.770	96%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	350659	49.668	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.324	(-0.001)	95	139215	49.970	100%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)	3.410	(0.000)	78	4661	0.539	0.54		J	0.2	1
16) Toluene	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)	4.946	(0.000)	91	136171	11.979	11.98			0.4	1
21) m+p-Xylene	(3)	5.019	(0.000)	106	197619	43.404	43.40			1	5
22) o-Xylene	(3)	5.171	(0.000)	106	56955	13.029	13.03			0.4	1
23) Xylene (Total)	(3)			106	254574	56.433	56.43			1	5

Total number of targets = 6

Digitally signed by Hu Yang on 05/03/2019 at 21:09. Target 3.5 esignature user ID: hy07820

Secondary review performed and digitally signed by Kari Becker on 05/04/2019 at 11:54. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

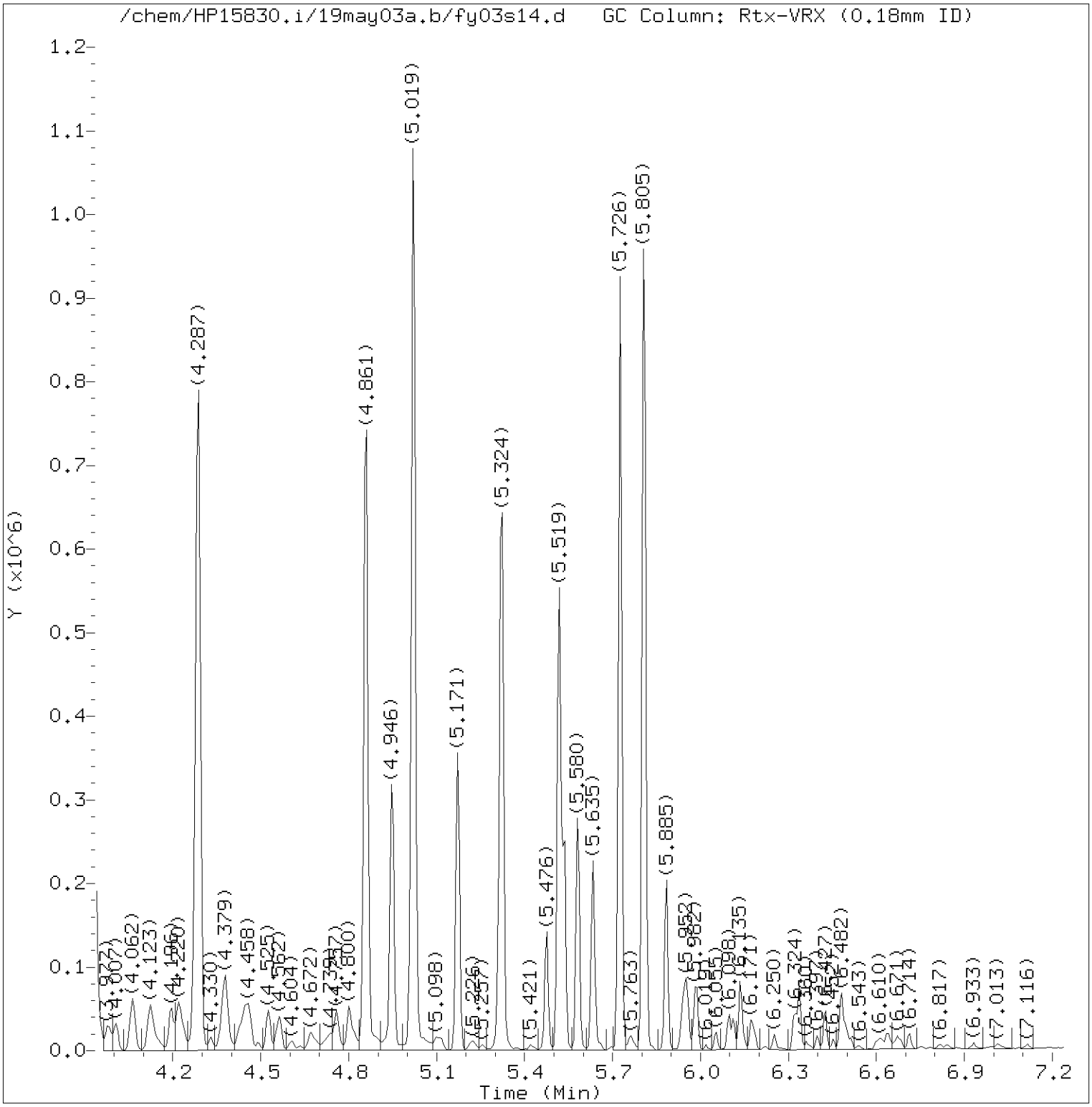
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC08 Lab Sample ID: 1043317

Digitally signed by Hu Yang
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC08 Lab Sample ID: 1043317

Digitally signed by Hu Yang
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

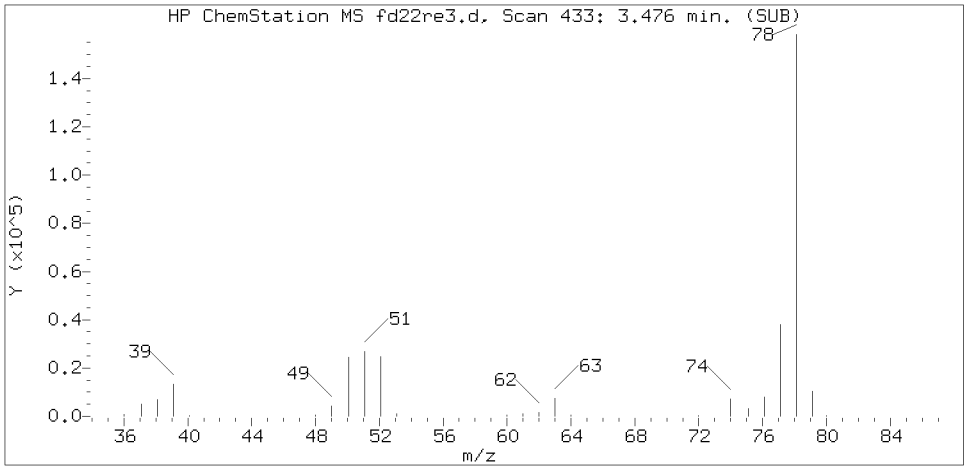
Sample Name: ANC08 Lab Sample ID: 1043317

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	115392	250.000
7)$Dibromofluoromethane	(2)	2.922	113	76537	46.732
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22318	47.770
12) Benzene	(2)	3.410	78	4661	0.539
14)*Fluorobenzene	(2)	3.507	96	349341	50.000
15)$Toluene-d8	(3)	4.287	98	350659	49.668
19)*Chlorobenzene-d5	(3)	4.861	117	272916	50.000
20) Ethylbenzene	(3)	4.946	91	136171	11.979
21) m+p-Xylene	(3)	5.019	106	197619	43.404
22) o-Xylene	(3)	5.171	106	56955	13.029
25)$4-Bromofluorobenzene	(3)	5.324	95	139215	49.970
23) Xylene (Total)	(3)		106	254574	56.433
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	148593	50.000

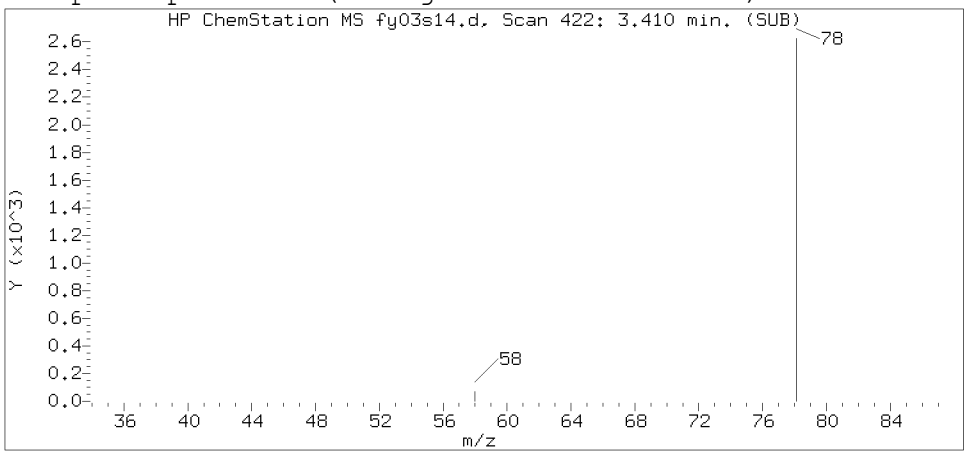
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Hu Yang
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

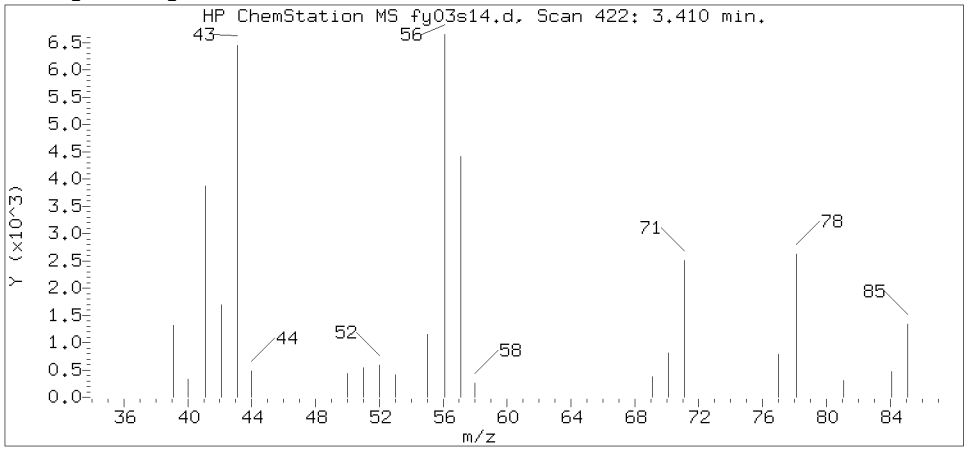
Reference Standard Spectrum for Benzene

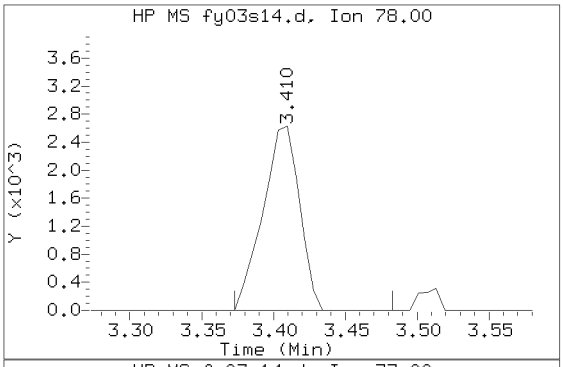


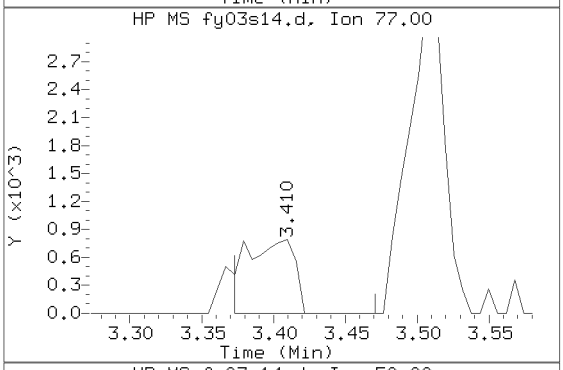
Sample Spectrum (Background Subtracted)

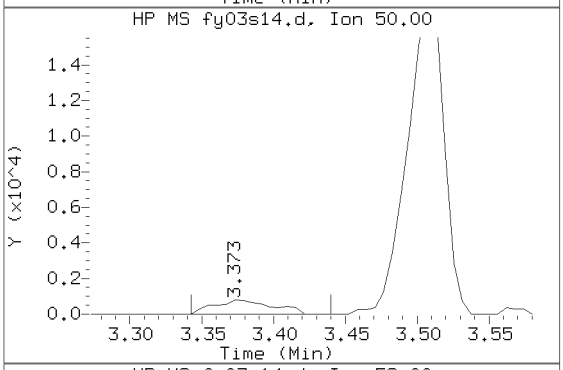


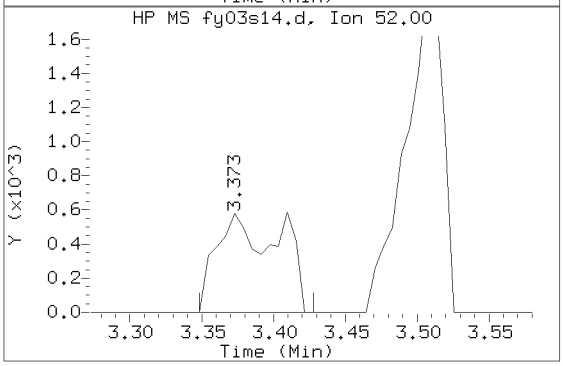
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

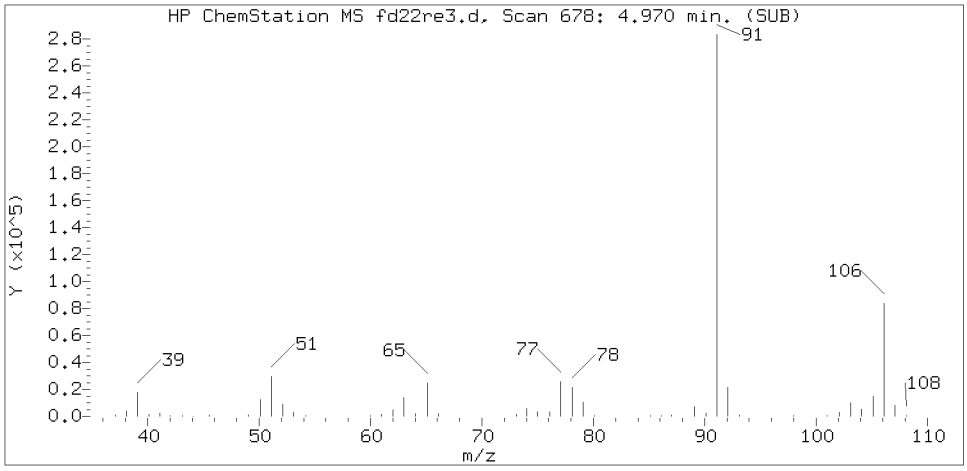
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

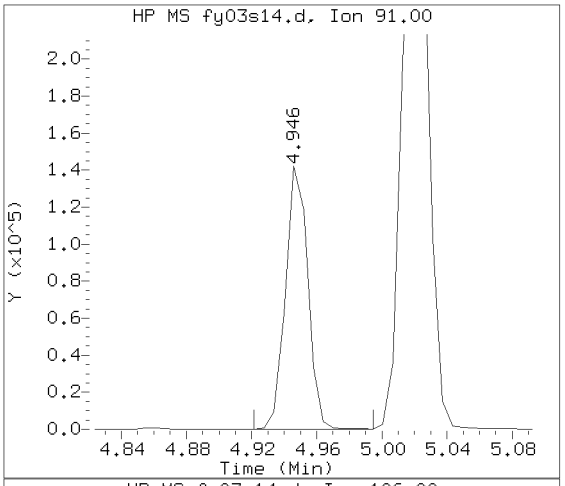
Sample Name: ANC08 Lab Sample ID: 1043317

Compound Number	: 12
Compound Name	: Benzene
Scan Number	: 422
Retention Time (minutes)	: 3.410
Relative Retention Time	: 0.00000
Quant Ion	: 78.00
Area (flag)	: 4661
On-Column Amount (ng)	: 0.5386

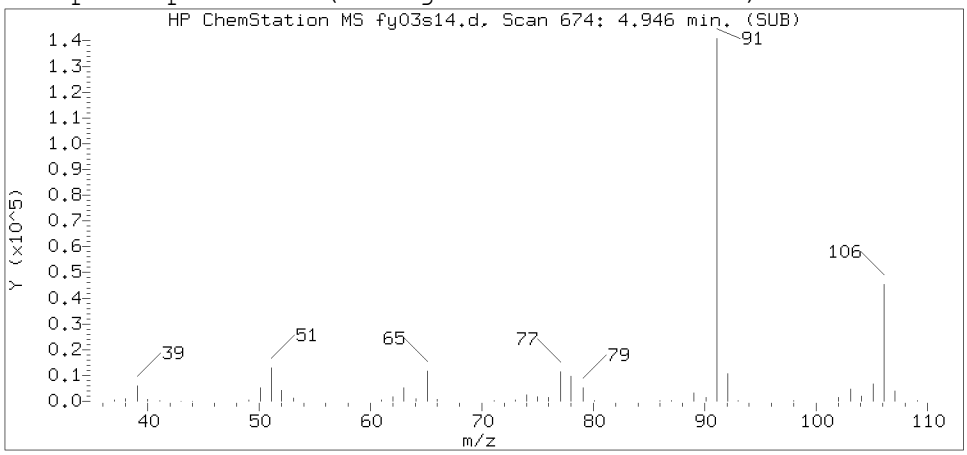
Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

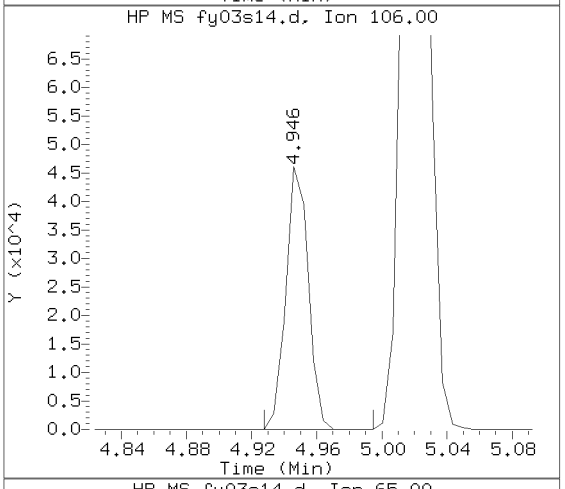
Reference Standard Spectrum for Ethylbenzene



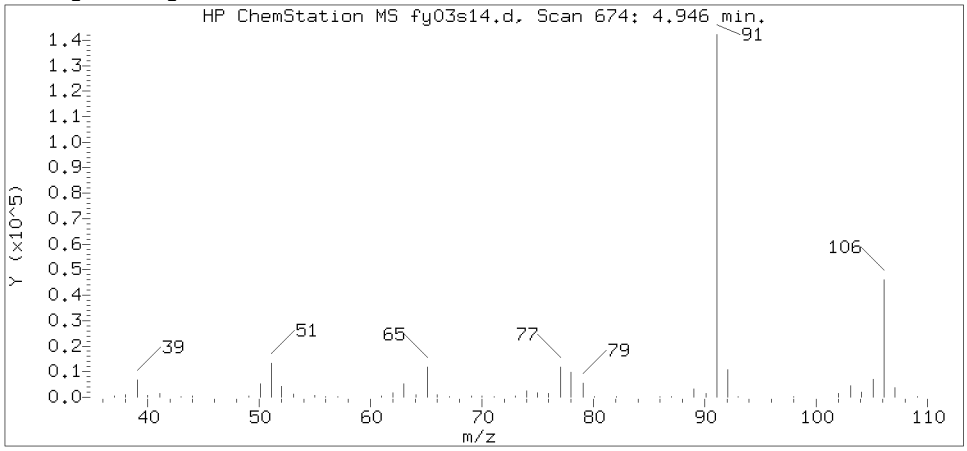


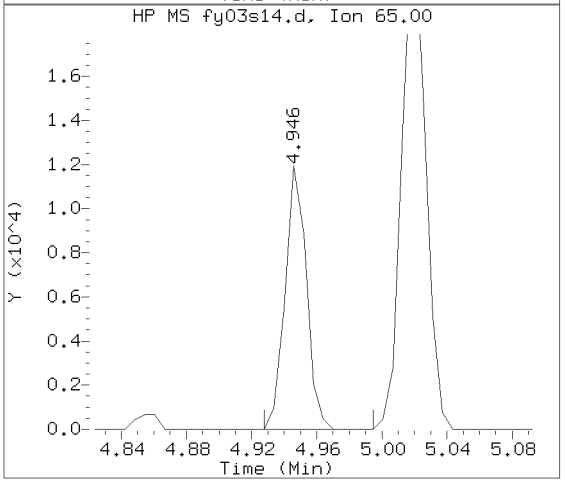
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

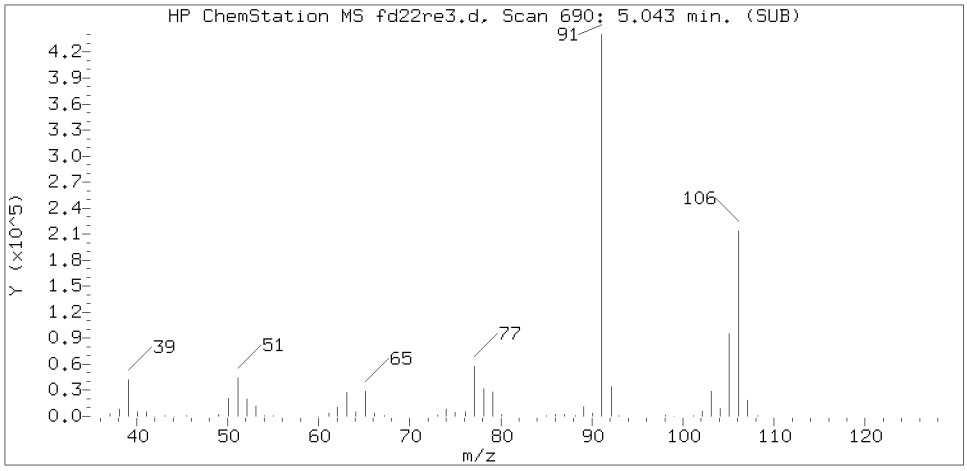
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC08 Lab Sample ID: 1043317

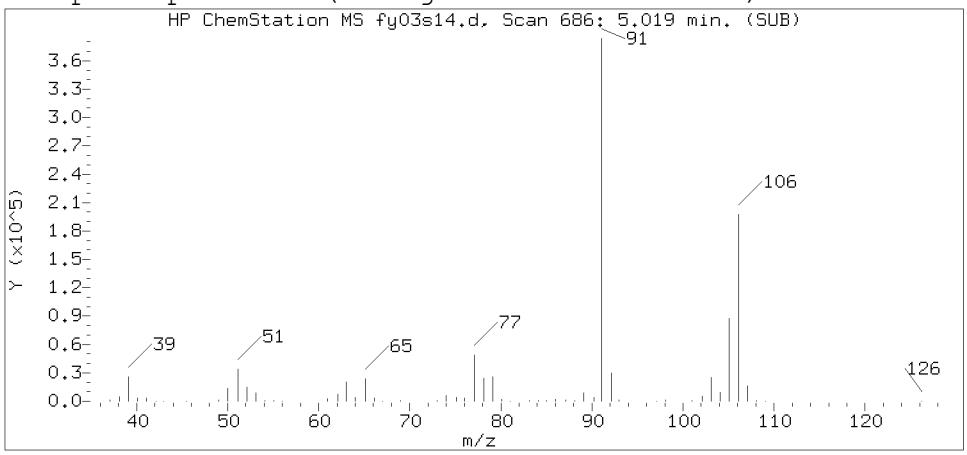
Compound Number : 20
Compound Name : Ethylbenzene
Scan Number : 674
Retention Time (minutes): 4.946
Relative Retention Time : 0.00000
Quant Ion : 91.00
Area (flag) : 136171
On-Column Amount (ng) : 11.9787

Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

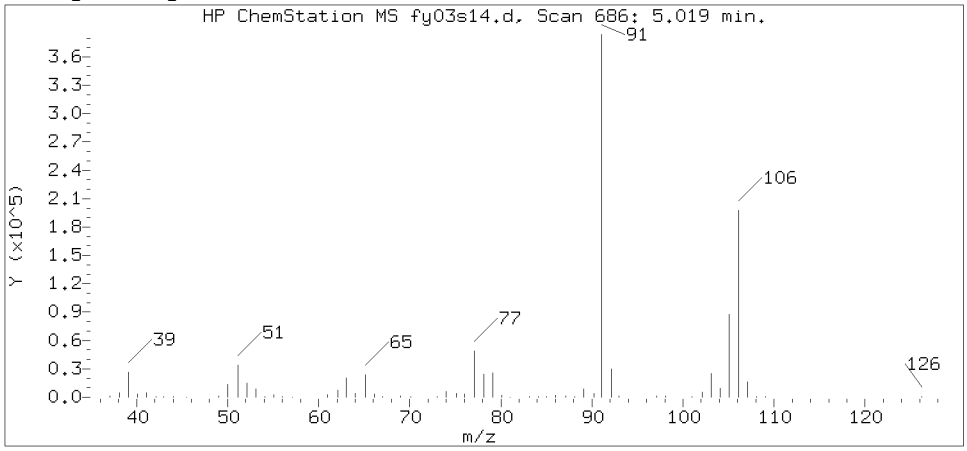
Reference Standard Spectrum for m+p-Xylene

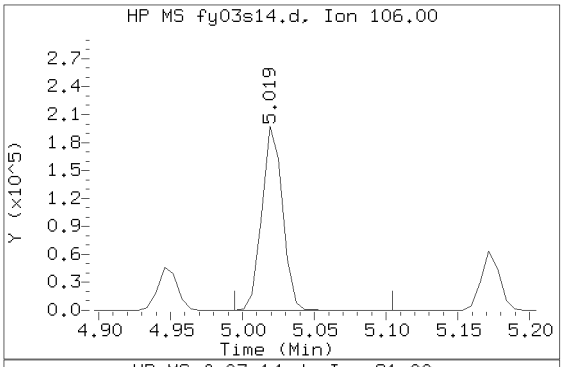


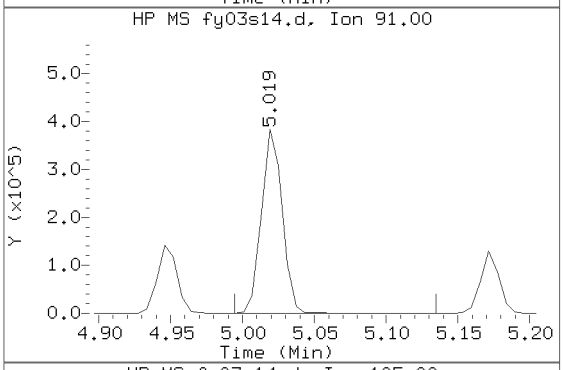
Sample Spectrum (Background Subtracted)

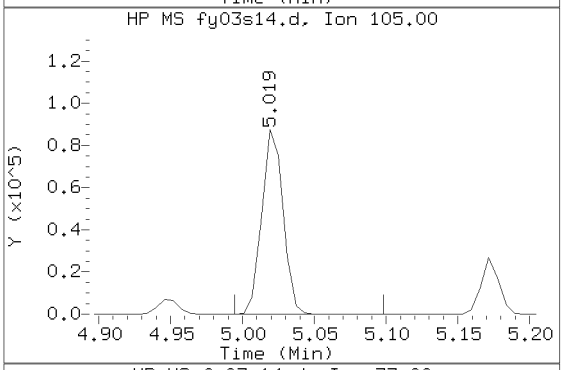


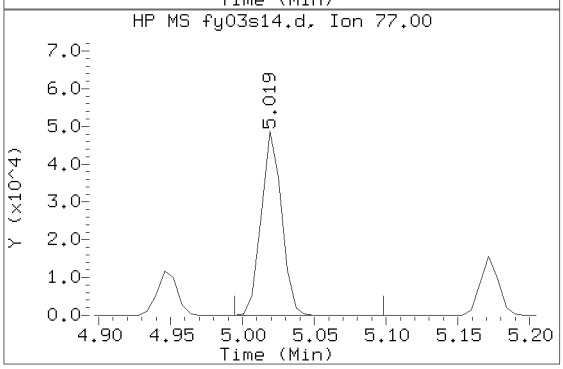
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

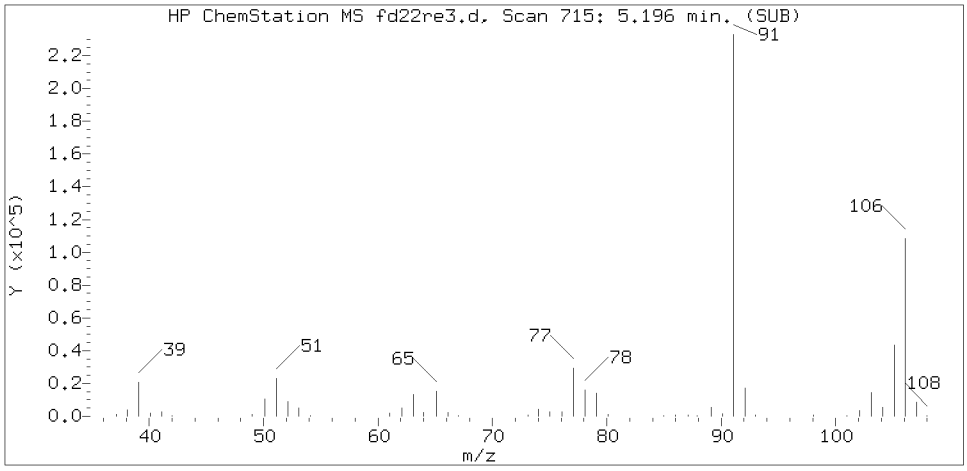
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

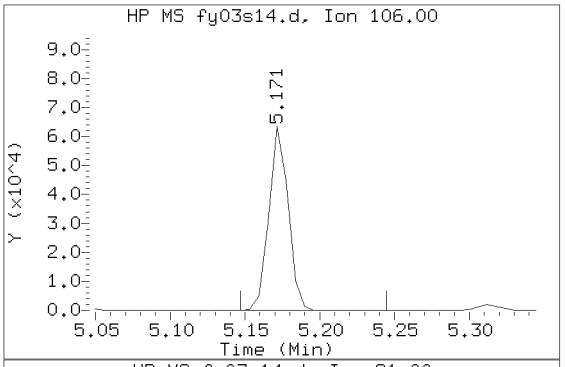
Sample Name: ANC08 Lab Sample ID: 1043317

Compound Number : 21
Compound Name : m+p-Xylene
Scan Number : 686
Retention Time (minutes): 5.019
Relative Retention Time : 0.00000
Quant Ion : 106.00
Area (flag) : 197619
On-Column Amount (ng) : 43.4038

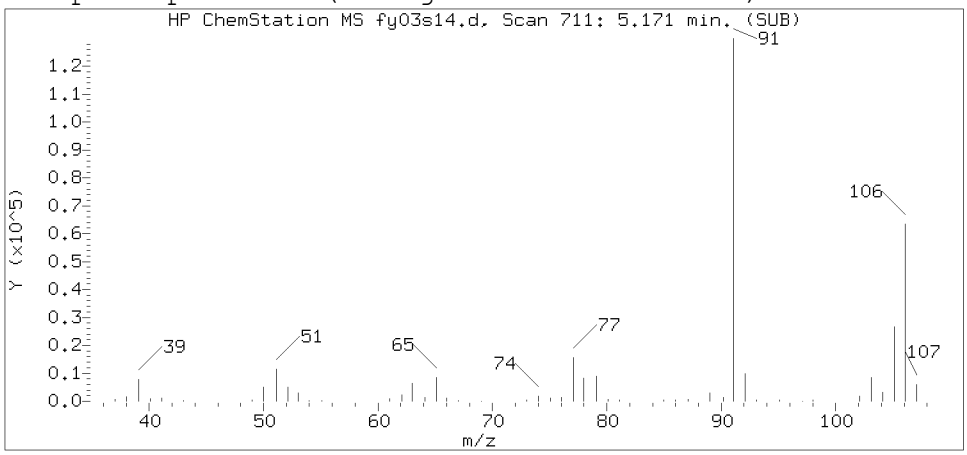
Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

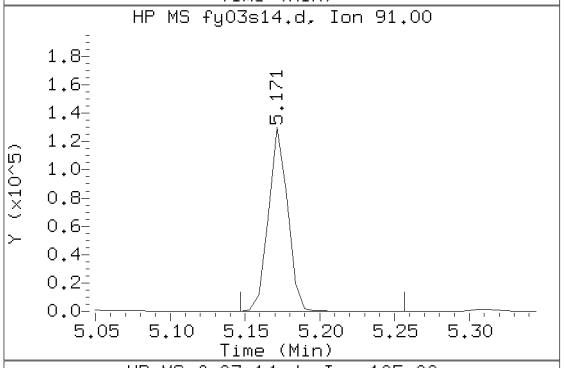
Reference Standard Spectrum for o-Xylene

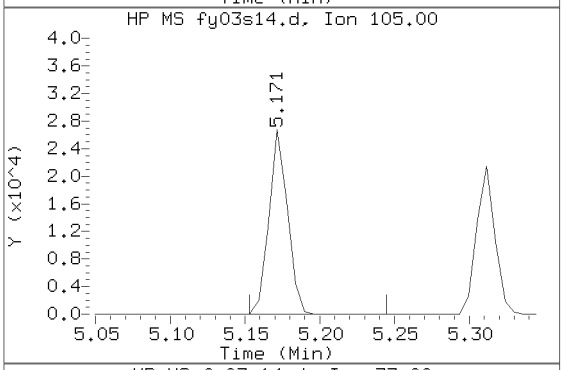




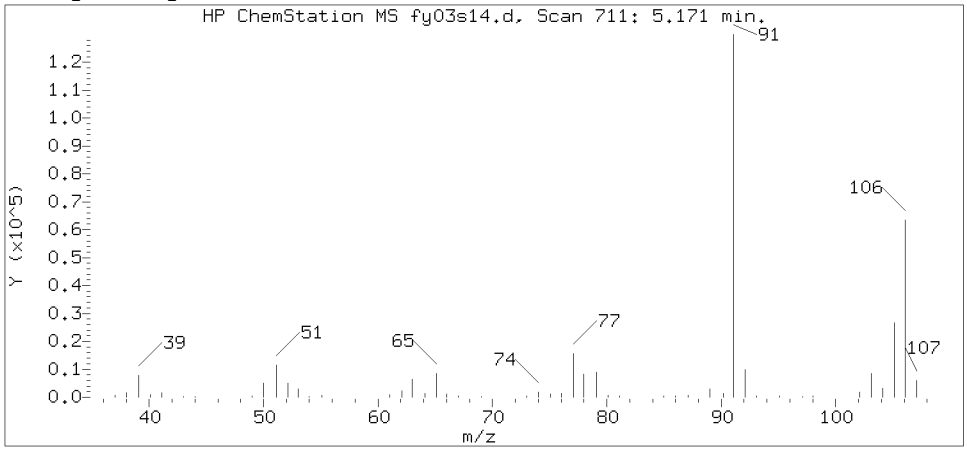
Sample Spectrum (Background Subtracted)

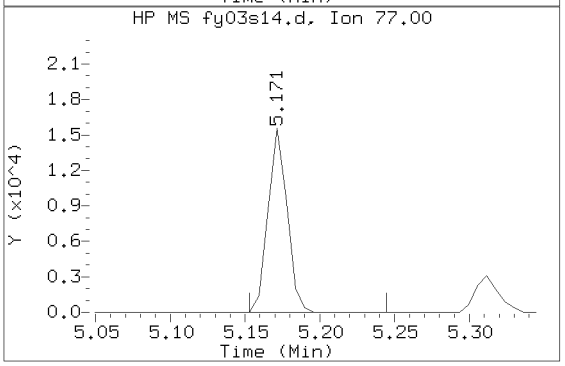






Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s14.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:27 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC08 Lab Sample ID: 1043317

Compound Number	: 22
Compound Name	: o-Xylene
Scan Number	: 711
Retention Time (minutes)	: 5.171
Relative Retention Time	: 0.00001
Quant Ion	: 106.00
Area (flag)	: 56955
On-Column Amount (ng)	: 13.0289

Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem/HP15830.i/19may03a.b/fy03s16.d
Injection date and time: **03-MAY-2019 15:49**
Data file Sample Info. Line: ANC07;1043318;1;0;;LSV49;;;fy03b02;
Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area (+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910 (-0.006)	176	65	115032 (-7)	250.00	
14) Fluorobenzene	3.507 (0.000)	438	96	349193 (0)	50.00	
19) Chlorobenzene-d5	4.860 (0.000)	660	117	274046 (1)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805 (0.000)	815	152	149075 (2)	50.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922 (0.000)	113	78103	47.708	95%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141 (0.000)	102	22885	49.005	98%		80 - 120
15) Toluene-d8	(3)	4.281 (0.001)	98	350280	49.410	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318 (0.000)	95	137514	49.156	98%		80 - 120

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)	3.403 (0.001)	78	15317	1.771	1.77			0.2	1
16) Toluene	(3)	4.312 (-0.000)	92	33848	5.741	5.74			0.2	1
20) Ethylbenzene	(3)	4.946 (0.000)	91	70680	6.192	6.19			0.4	1
21) m+p-Xylene	(3)	5.019 (-0.000)	106	80753	17.663	17.66			1	5
22) o-Xylene	(3)	5.171 (0.000)	106	38387	8.745	8.75			0.4	1
23) Xylene (Total)	(3)		106	119140	26.408	26.41			1	5

Total number of targets = 6

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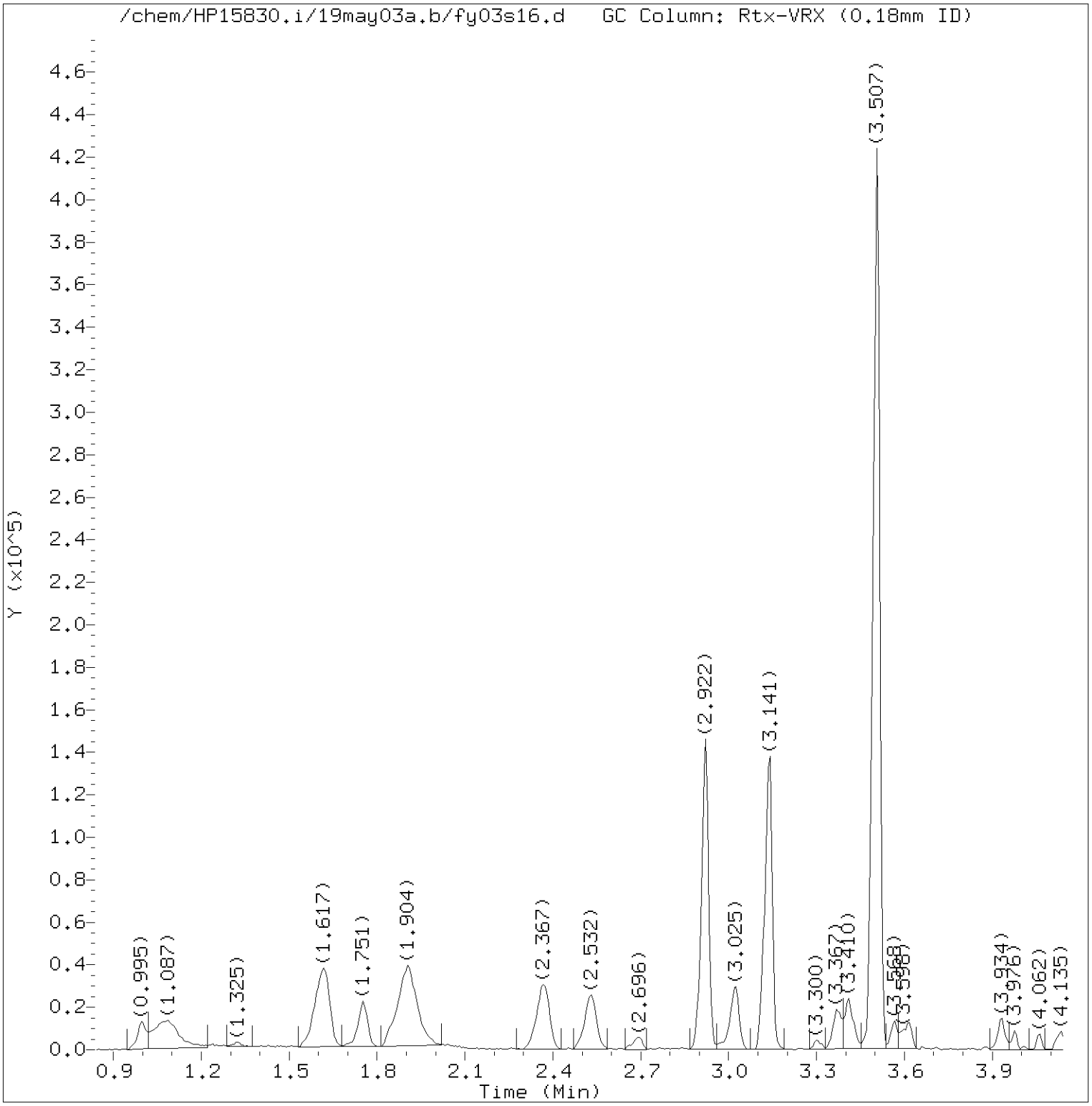
Secondary review performed and digitally signed by Kari Becker on 05/04/2019 at 11:54. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

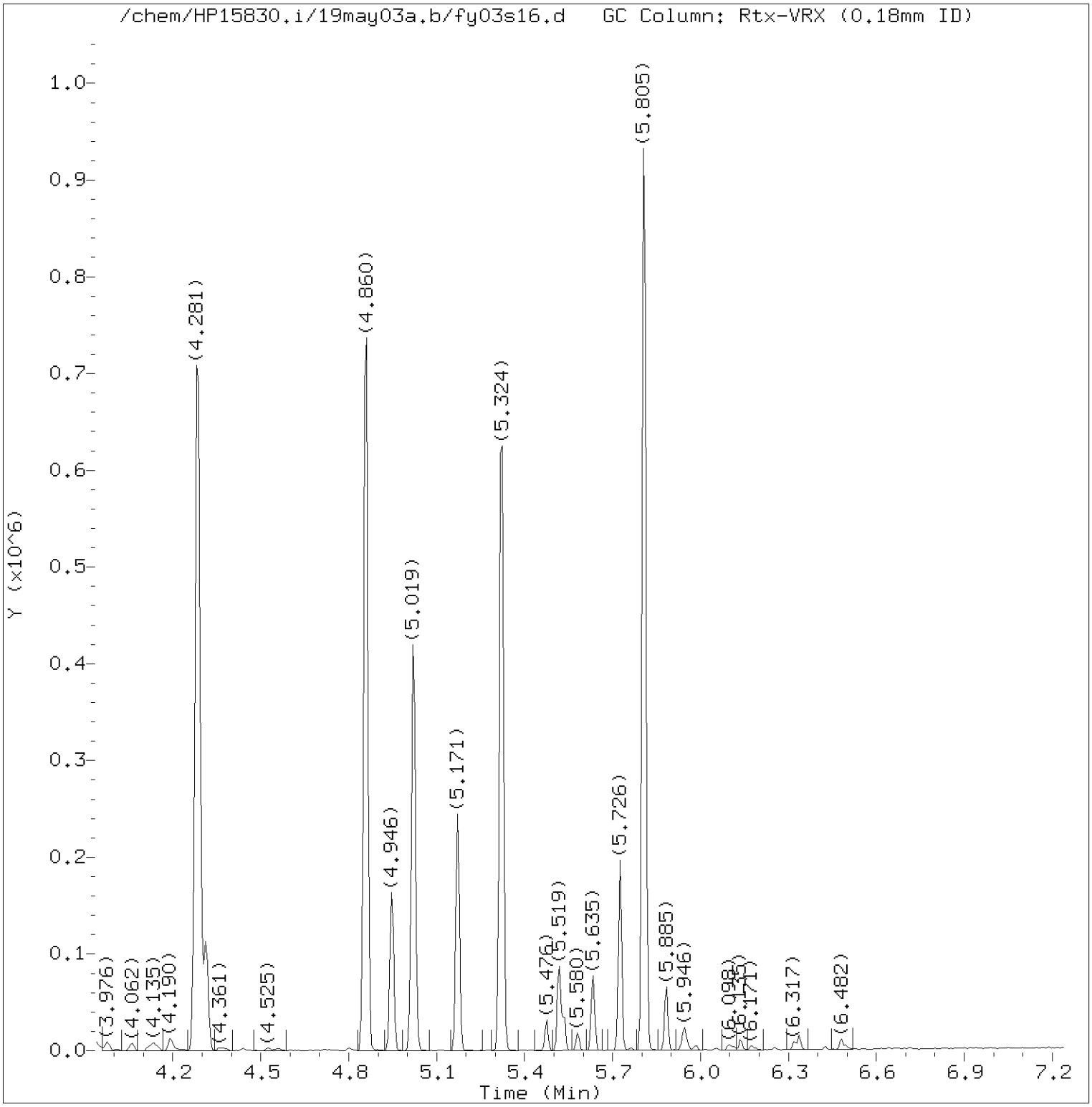
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

Digitally signed by Hu Yang
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

Digitally signed by Hu Yang
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	115032	250.000
7)$Dibromofluoromethane	(2)	2.922	113	78103	47.708
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22885	49.005
12) Benzene	(2)	3.403	78	15317	1.771
14)*Fluorobenzene	(2)	3.507	96	349193	50.000
15)$Toluene-d8	(3)	4.281	98	350280	49.410
16) Toluene	(3)	4.312	92	33848	5.741
19)*Chlorobenzene-d5	(3)	4.860	117	274046	50.000
20) Ethylbenzene	(3)	4.946	91	70680	6.192
21) m+p-Xylene	(3)	5.019	106	80753	17.663
22) o-Xylene	(3)	5.171	106	38387	8.745
25)$4-Bromofluorobenzene	(3)	5.318	95	137514	49.156
23) Xylene (Total)	(3)		106	119140	26.408
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	149075	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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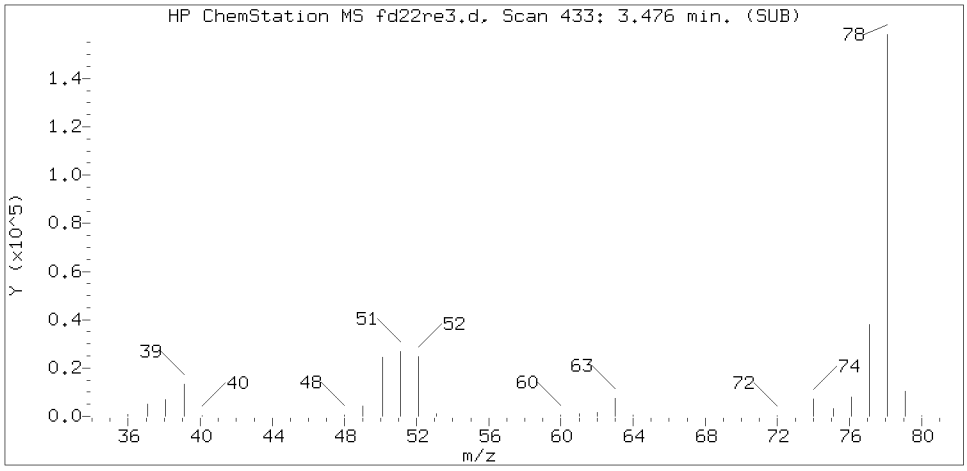
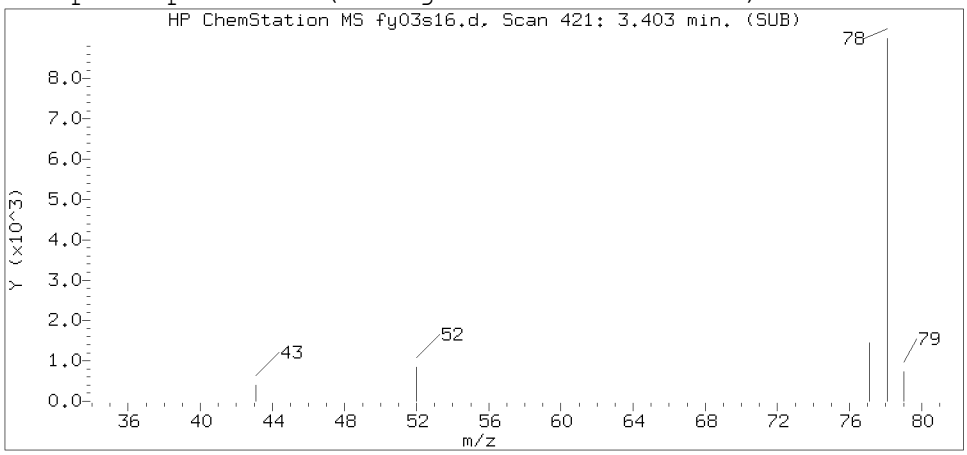
on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

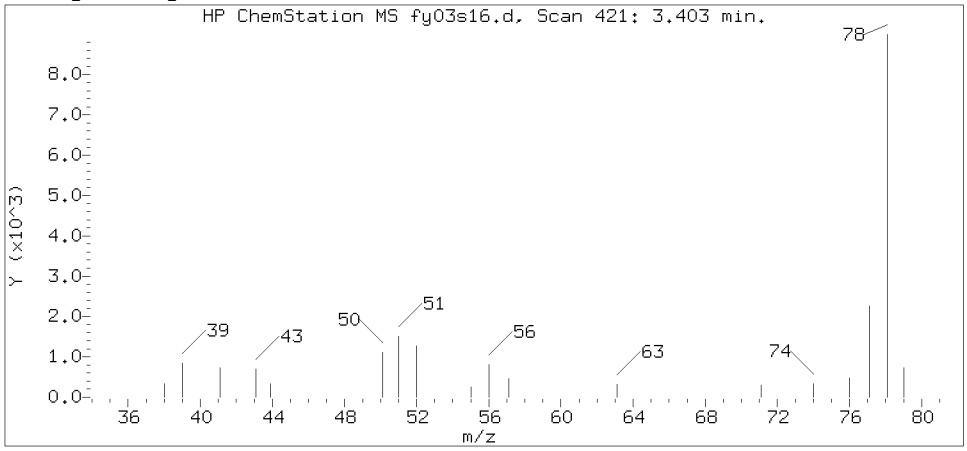
Reference Standard Spectrum for Benzene

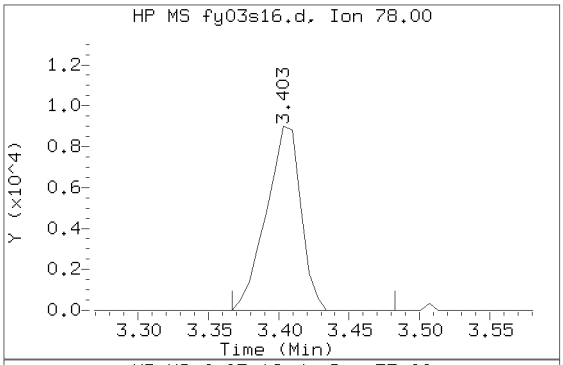


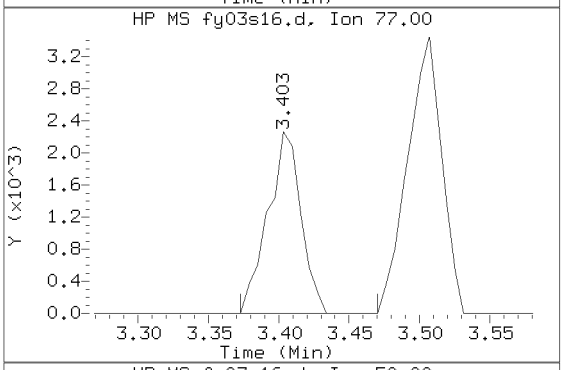
Sample Spectrum (Background Subtracted)

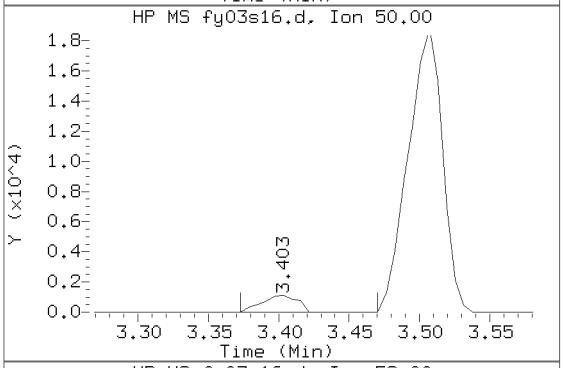


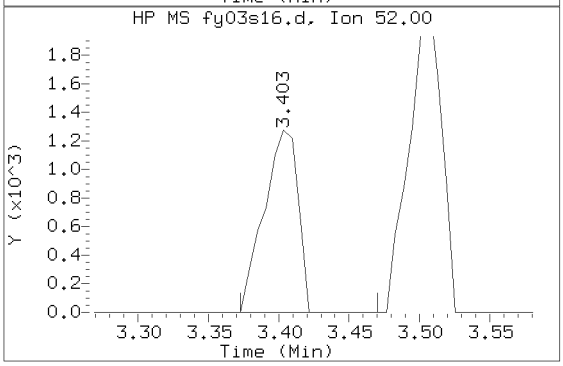
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

Compound Number	: 12
Compound Name	: Benzene
Scan Number	: 421
Retention Time (minutes)	: 3.403
Relative Retention Time	: 0.00174
Quant Ion	: 78.00
Area (flag)	: 15317
On-Column Amount (ng)	: 1.7708

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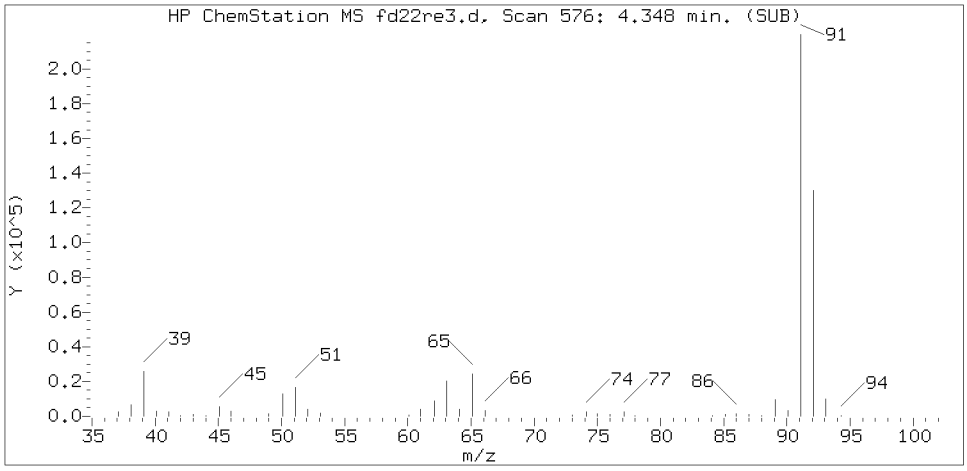
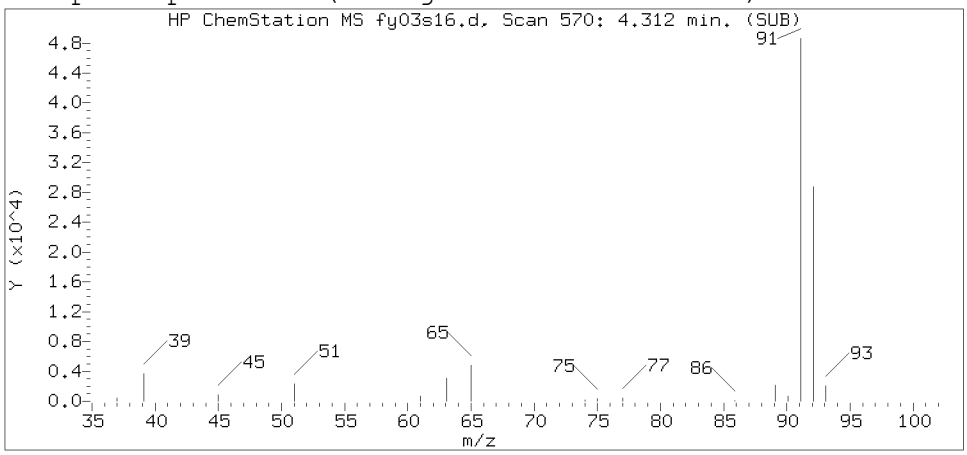
Target 3.5 esignature user ID: hy07820

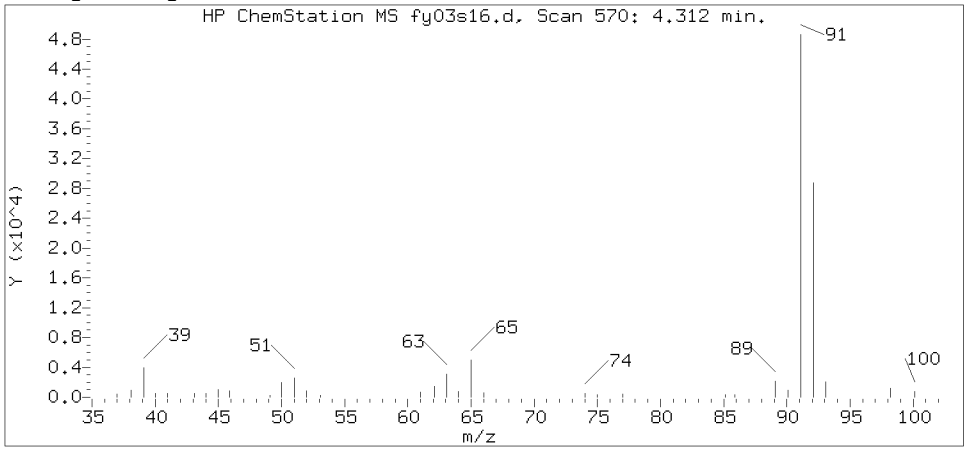
Reference Standard Spectrum for Toluene

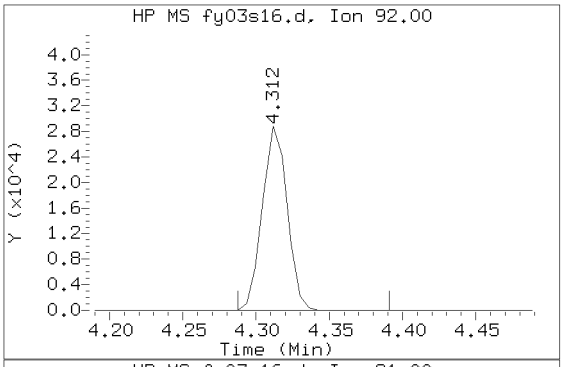


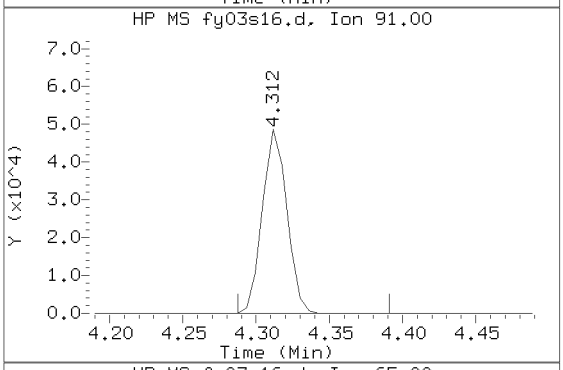
Sample Spectrum (Background Subtracted)

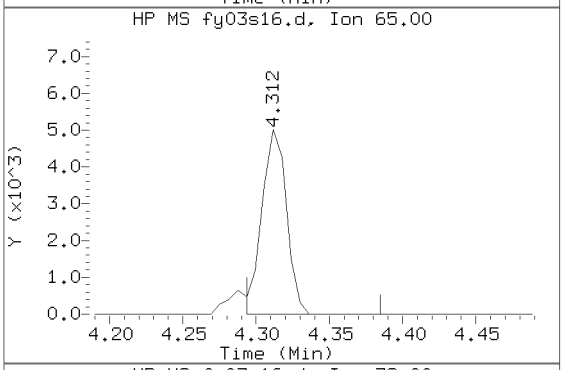


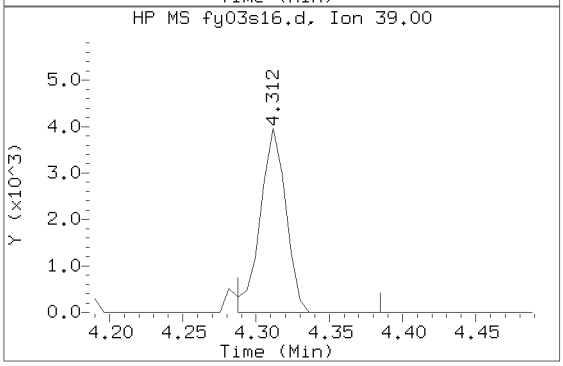
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

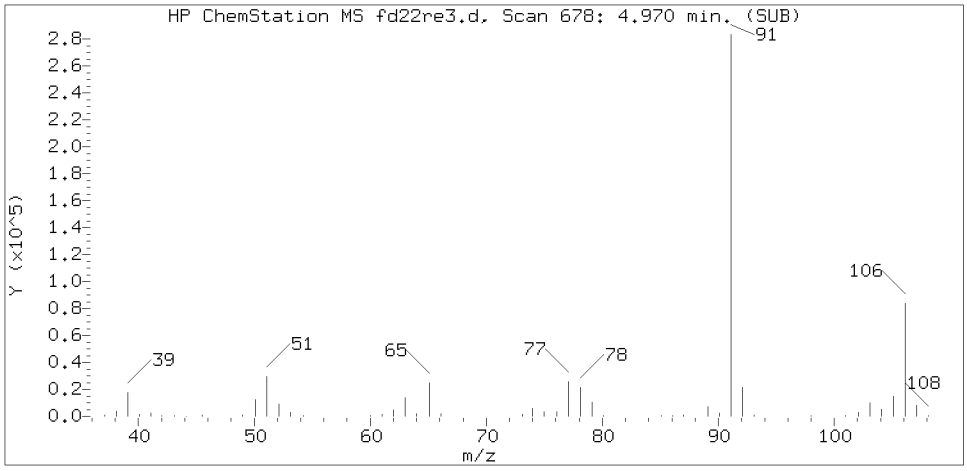
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

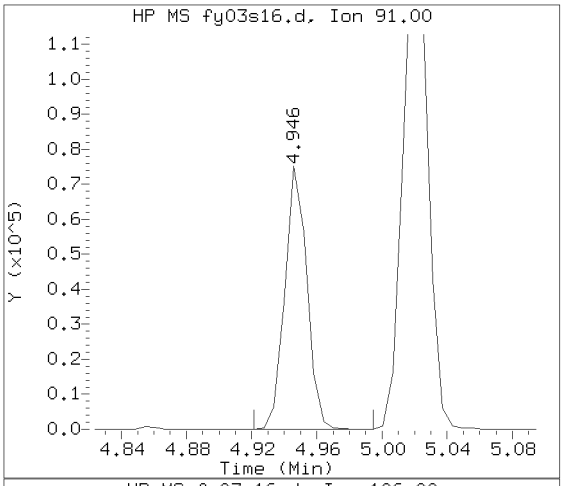
Sample Name: ANC07 Lab Sample ID: 1043318

Compound Number	: 16
Compound Name	: Toluene
Scan Number	: 570
Retention Time (minutes)	: 4.312
Relative Retention Time	:-0.00000
Quant Ion	: 92.00
Area (flag)	: 33848
On-Column Amount (ng)	: 5.7407

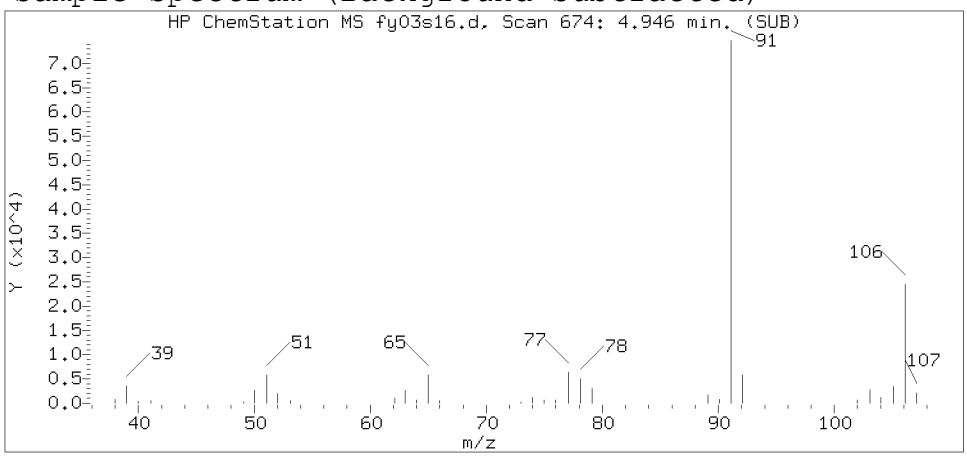
Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

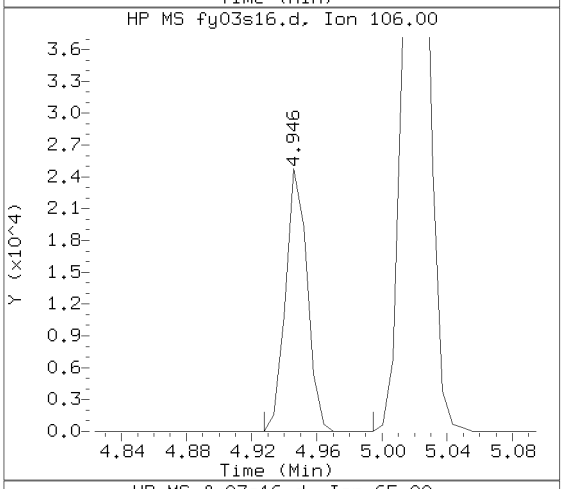
Reference Standard Spectrum for Ethylbenzene



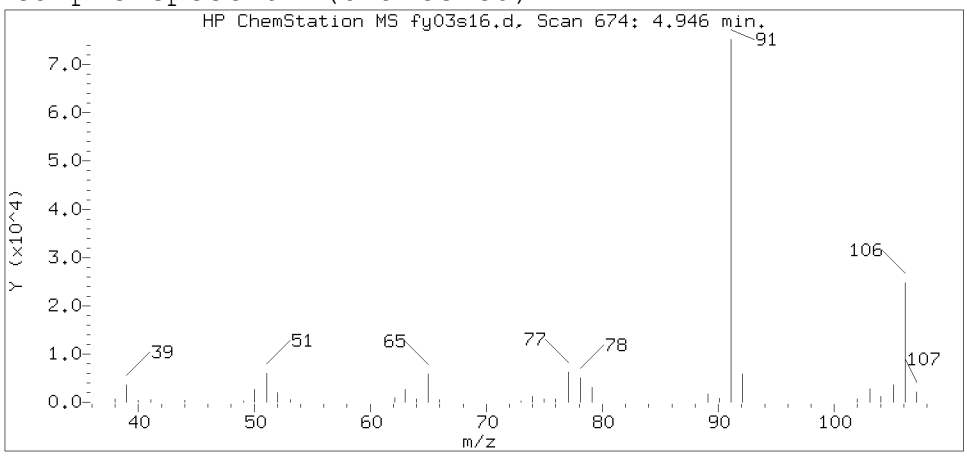


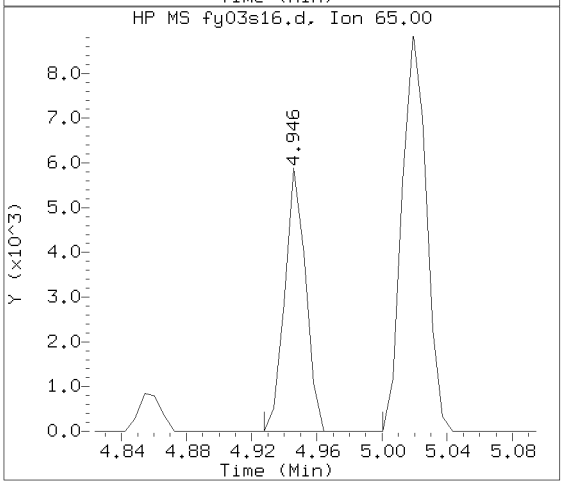
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

Compound Number	: 20
Compound Name	: Ethylbenzene
Scan Number	: 674
Retention Time (minutes)	: 4.946
Relative Retention Time	: 0.00000
Quant Ion	: 91.00
Area (flag)	: 70680
On-Column Amount (ng)	: 6.1920

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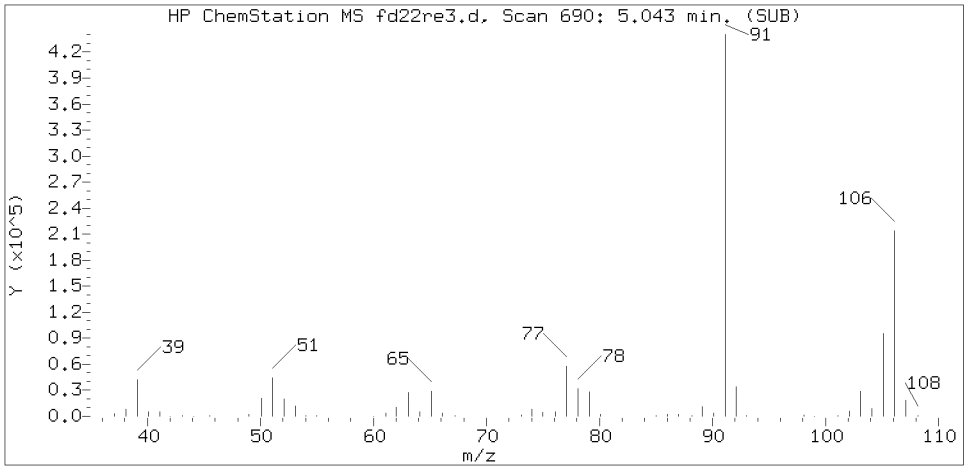
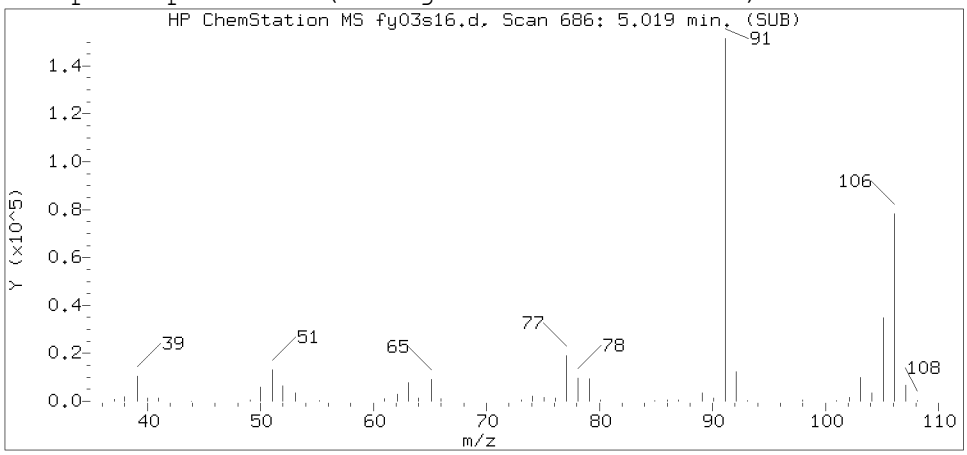
Target 3.5 esignature user ID: hy07820

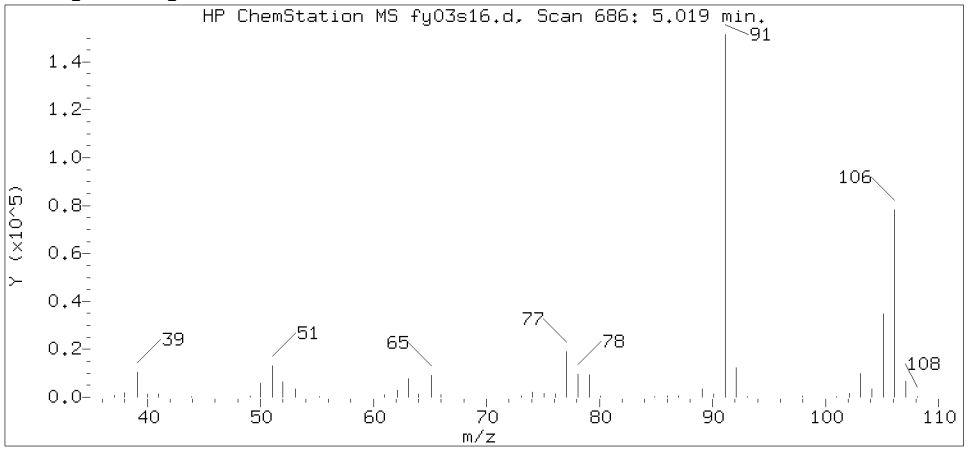
Reference Standard Spectrum for m+p-Xylene

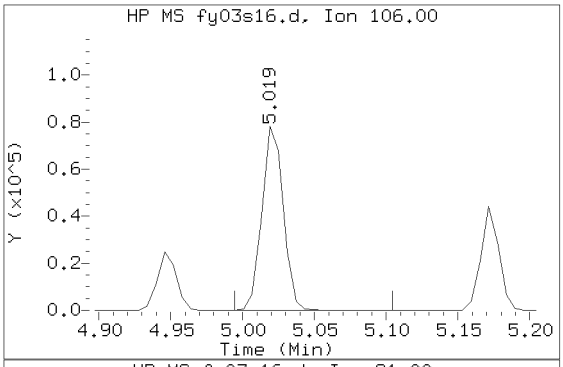


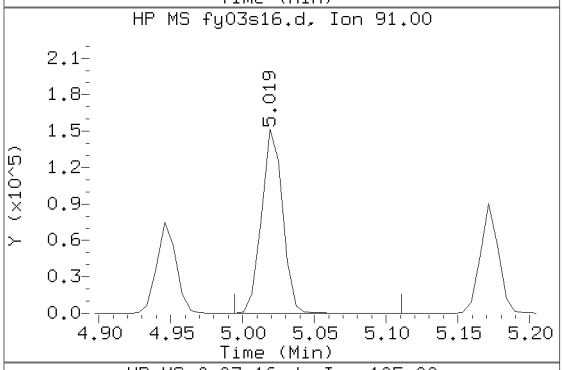
Sample Spectrum (Background Subtracted)

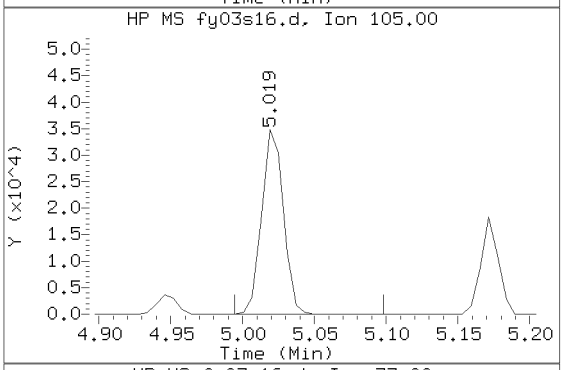


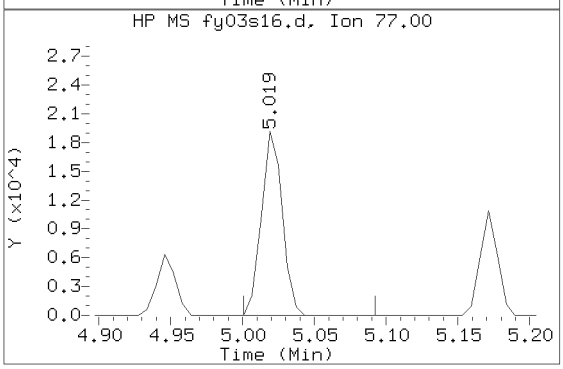
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

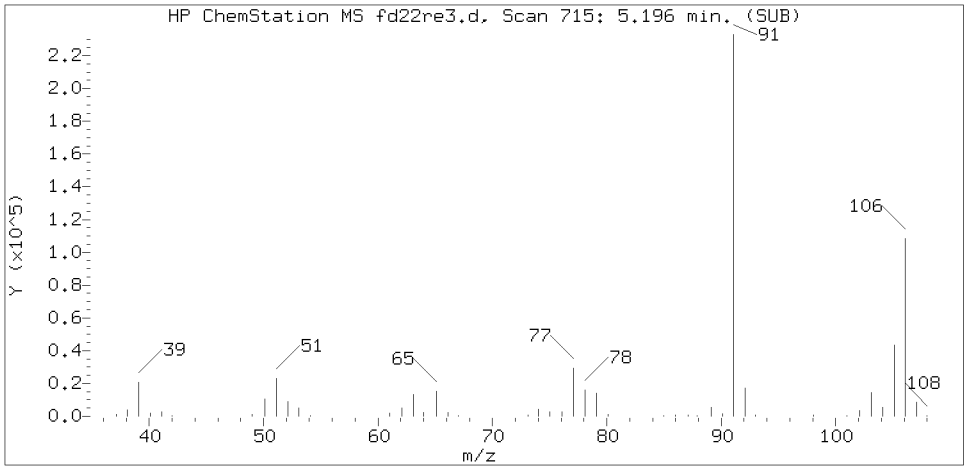
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

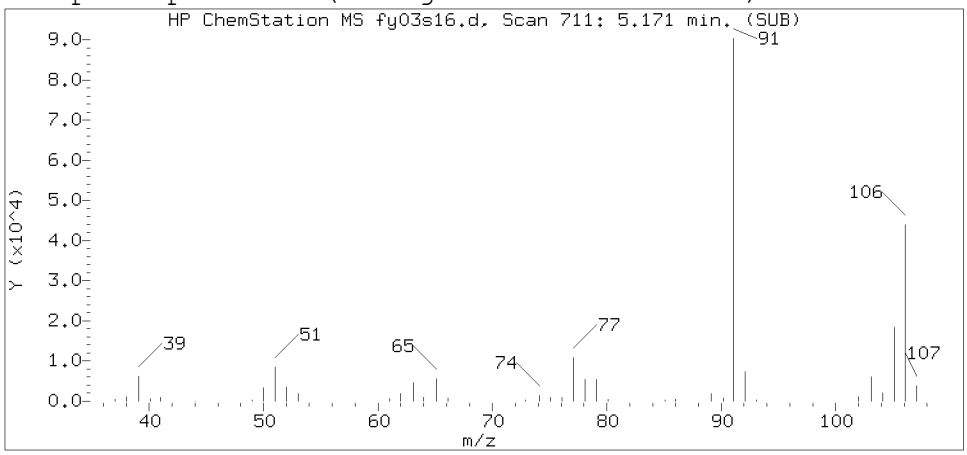
Compound Number : 21
Compound Name : m+p-Xylene
Scan Number : 686
Retention Time (minutes): 5.019
Relative Retention Time :-0.00000
Quant Ion : 106.00
Area (flag) : 80753
On-Column Amount (ng) : 17.6630

Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

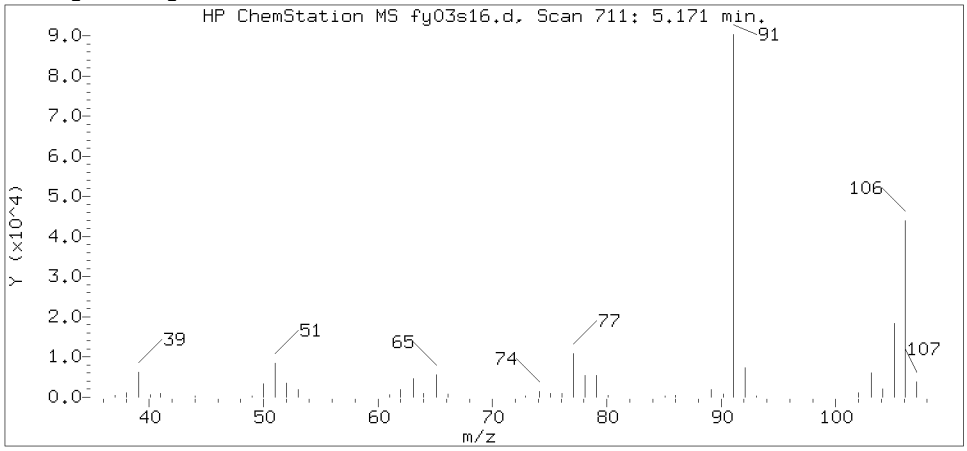
Reference Standard Spectrum for o-Xylene

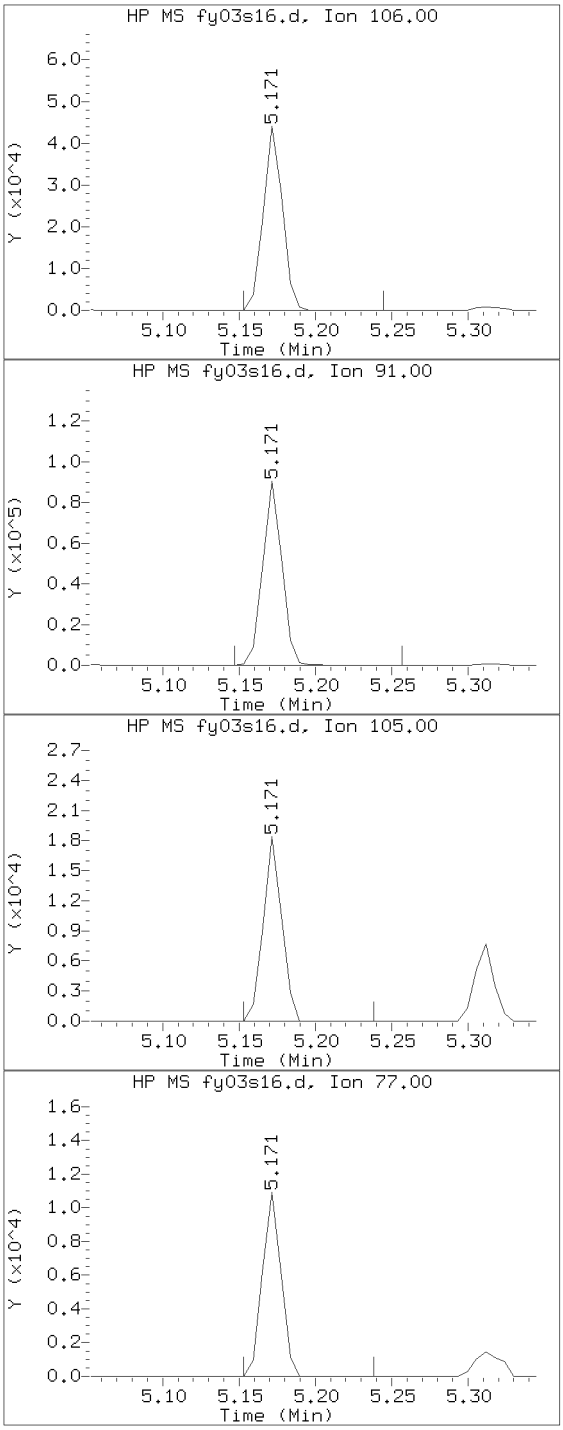


Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s16.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 15:49 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC07 Lab Sample ID: 1043318

Compound Number	: 22
Compound Name	: o-Xylene
Scan Number	: 711
Retention Time (minutes)	: 5.171
Relative Retention Time	: 0.00000
Quant Ion	: 106.00
Area (flag)	: 38387
On-Column Amount (ng)	: 8.7451

Digitally signed by Hu Yang on 05/03/2019 at 21:09.
Target 3.5 esignature user ID: hy07820

ANC10 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043319

Data file: /chem/HP15830.i/19may03a.b/fy03s18.d Injection date and time: **03-MAY-2019 16:11**
Data file Sample Info. Line: ANC10;1043319;1;0;;LSV49;;;fy03b02; Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area (+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910 (-0.006)	176	65	120322 (-3)	250.00	
14) Fluorobenzene	3.513 (-0.006)	439	96	349830 (0)	50.00	
19) Chlorobenzene-d5	4.860 (0.000)	660	117	273078 (0)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805 (0.000)	815	152	147517 (1)	50.00	

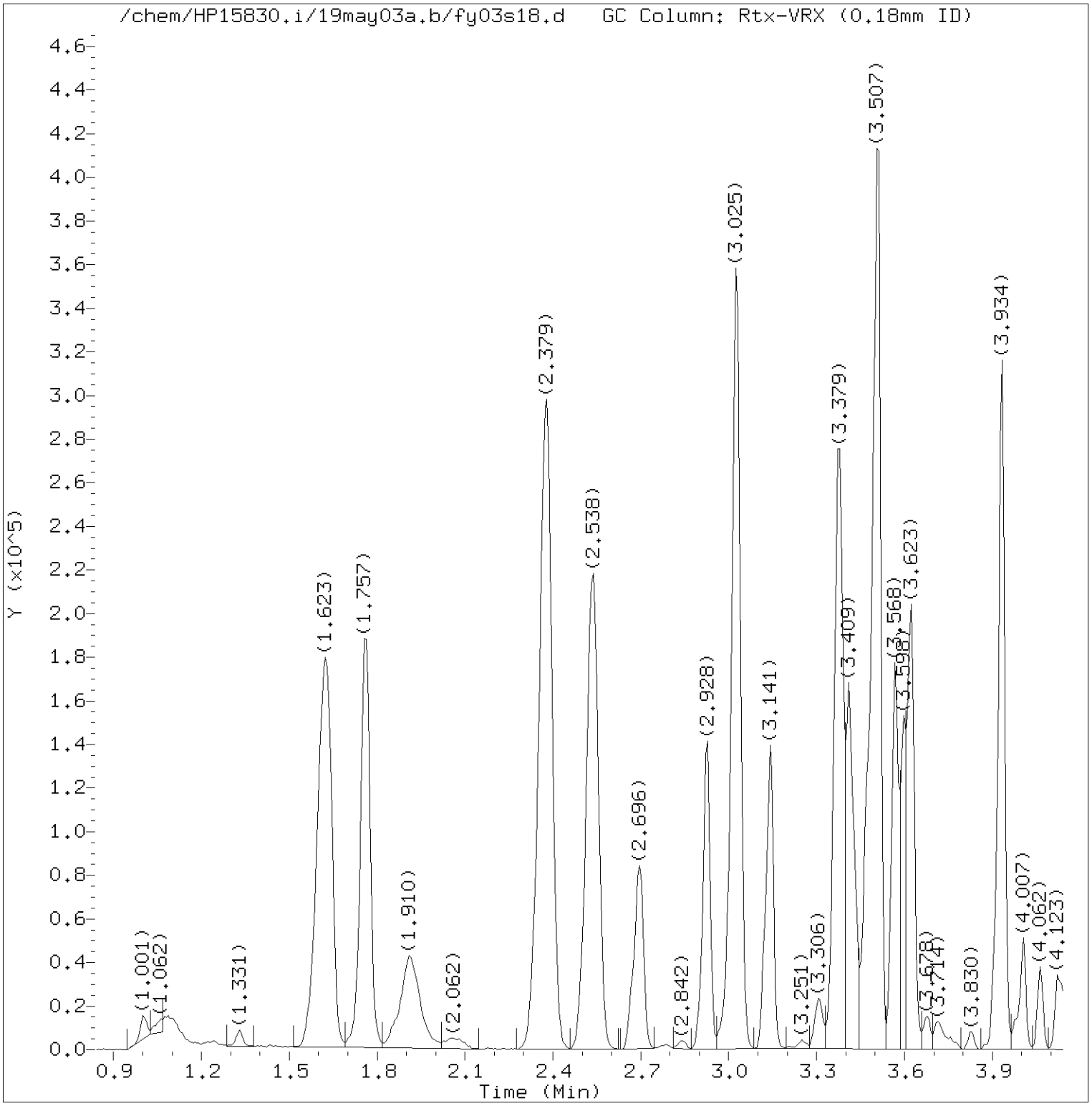
Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.928 (0.000)	113	77850	47.467	95%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141 (0.002)	102	22563	48.227	96%		80 - 120
15) Toluene-d8	(3)	4.287 (0.000)	98	351399	49.744	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318 (0.000)	95	136896	49.109	98%		80 - 120

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
12) Benzene	(2)	3.409 (0.001)	78	105289	12.150	12.15			0.2	1
16) Toluene	(3)	4.318 (-0.001)	92	6642	1.130	1.13			0.2	1
20) Ethylbenzene	(3)	4.946 (-0.000)	91	77900	6.849	6.85			0.4	1
21) m+p-Xylene	(3)	5.019 (-0.000)	106	677054	148.616	148.62			1	5
22) o-Xylene	(3)	5.171 (-0.000)	106	2630	0.601	0.60		J	0.4	1
23) Xylene (Total)	(3)		106	679684	149.217	149.22			1	5

Total number of targets = 6

Digitally signed by Hu Yang on 05/03/2019 at 21:10. Target 3.5 esignature user ID: hy07820

Secondary review performed and digitally signed by Kari Becker on 05/04/2019 at 11:54. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

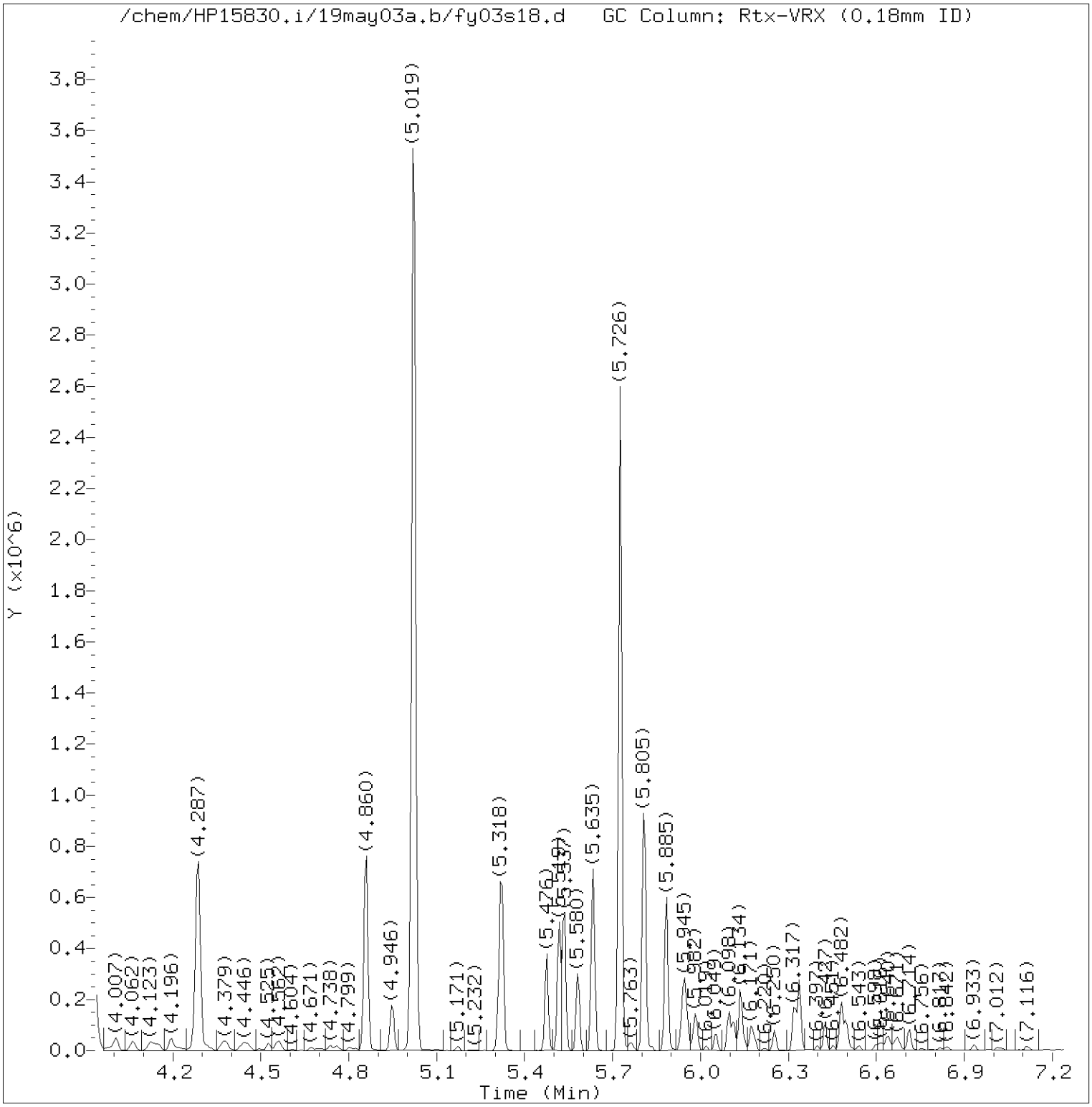
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC10 Lab Sample ID: 1043319

Digitally signed by Hu Yang
on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC10 Lab Sample ID: 1043319

Digitally signed by Hu Yang
on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

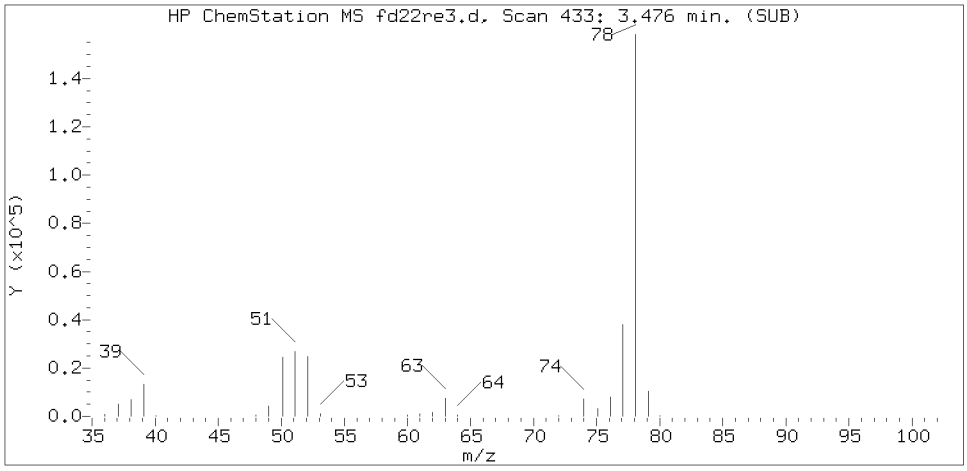
Sample Name: ANC10 Lab Sample ID: 1043319

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	120322	250.000
7)$Dibromofluoromethane	(2)	2.928	113	77850	47.467
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22563	48.227
12) Benzene	(2)	3.409	78	105289	12.150
14)*Fluorobenzene	(2)	3.513	96	349830	50.000
15)$Toluene-d8	(3)	4.287	98	351399	49.744
16) Toluene	(3)	4.318	92	6642	1.130
19)*Chlorobenzene-d5	(3)	4.860	117	273078	50.000
20) Ethylbenzene	(3)	4.946	91	77900	6.849
21) m+p-Xylene	(3)	5.019	106	677054	148.616
22) o-Xylene	(3)	5.171	106	2630	0.601
25)$4-Bromofluorobenzene	(3)	5.318	95	136896	49.109
23) Xylene (Total)	(3)		106	679684	149.217
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	147517	50.000

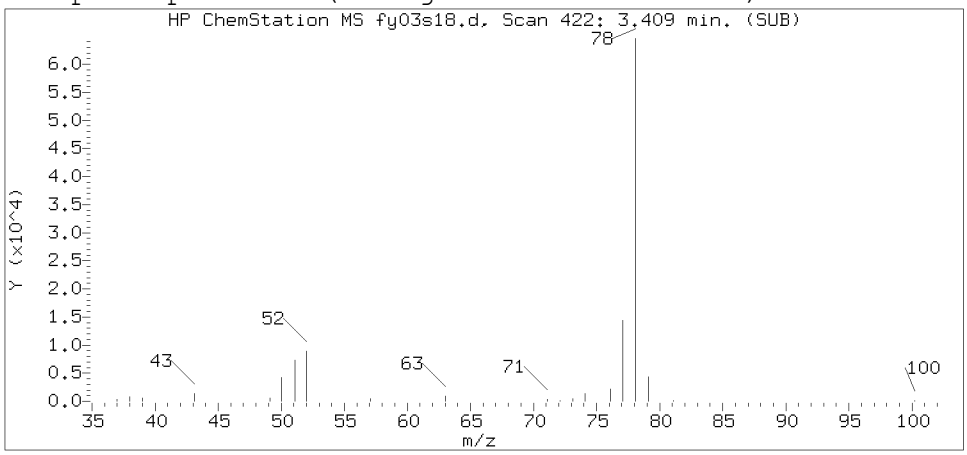
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Hu Yang
on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

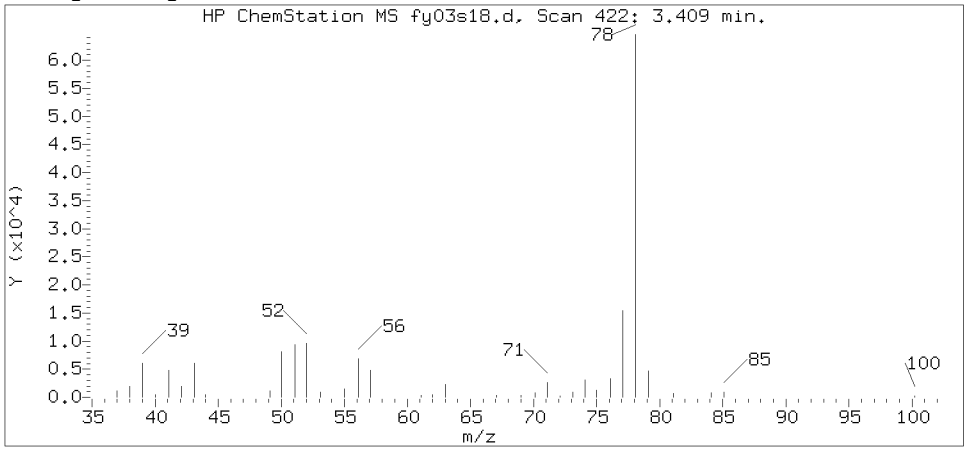
Reference Standard Spectrum for Benzene

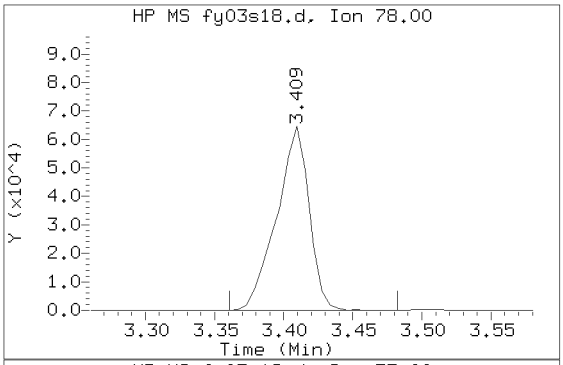


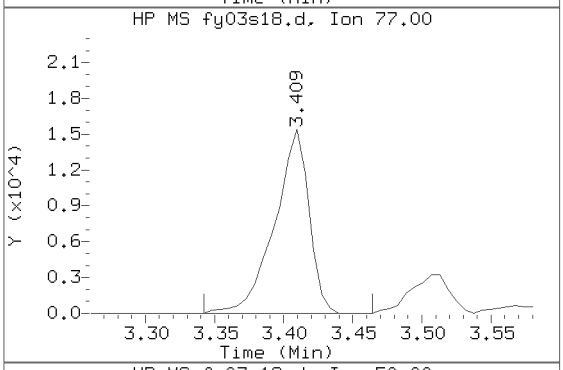
Sample Spectrum (Background Subtracted)

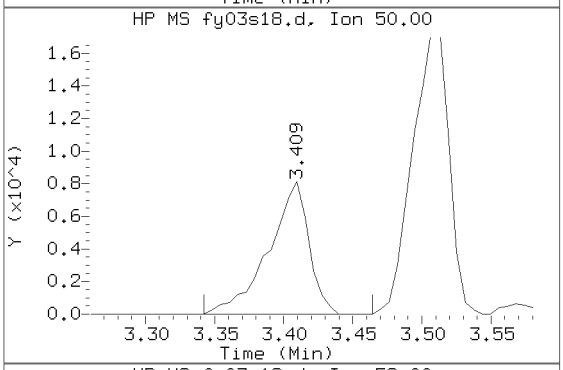


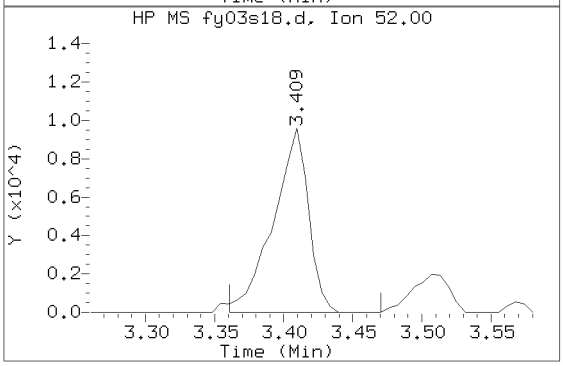
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

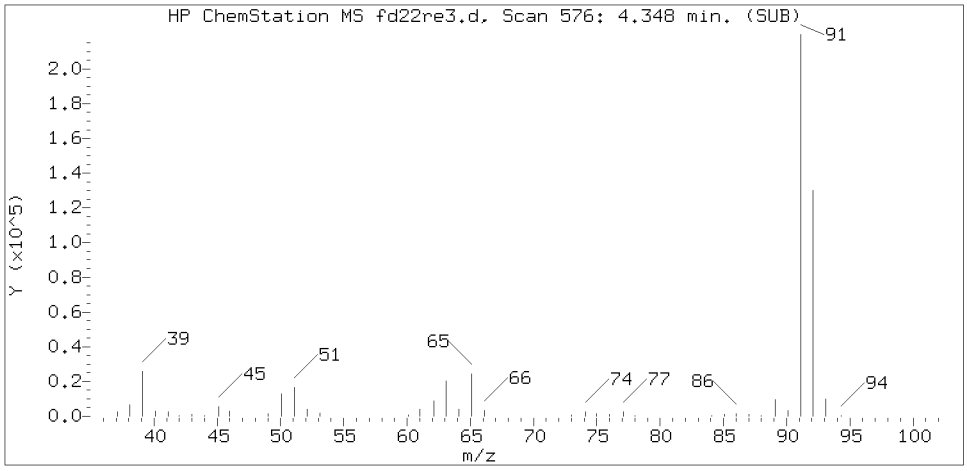
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC10 Lab Sample ID: 1043319

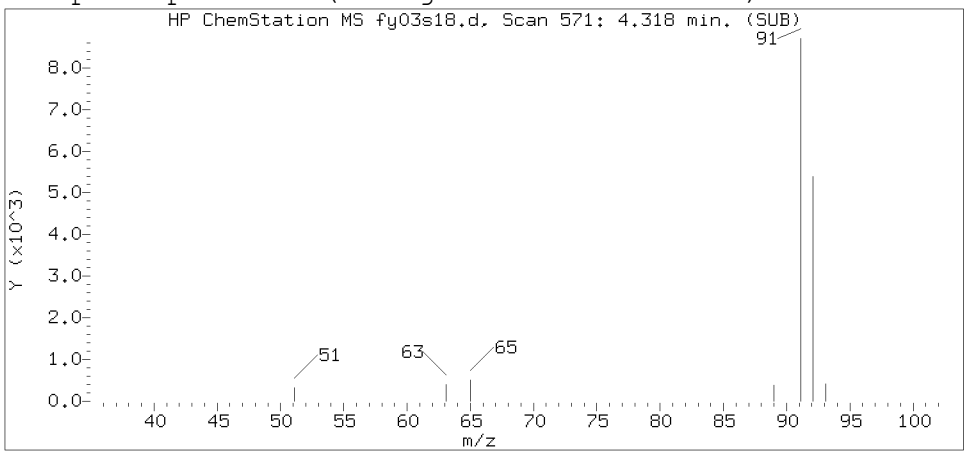
Compound Number	: 12
Compound Name	: Benzene
Scan Number	: 422
Retention Time (minutes)	: 3.409
Relative Retention Time	: 0.00169
Quant Ion	: 78.00
Area (flag)	: 105289
On-Column Amount (ng)	: 12.1505

Digitally signed by Hu Yang on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

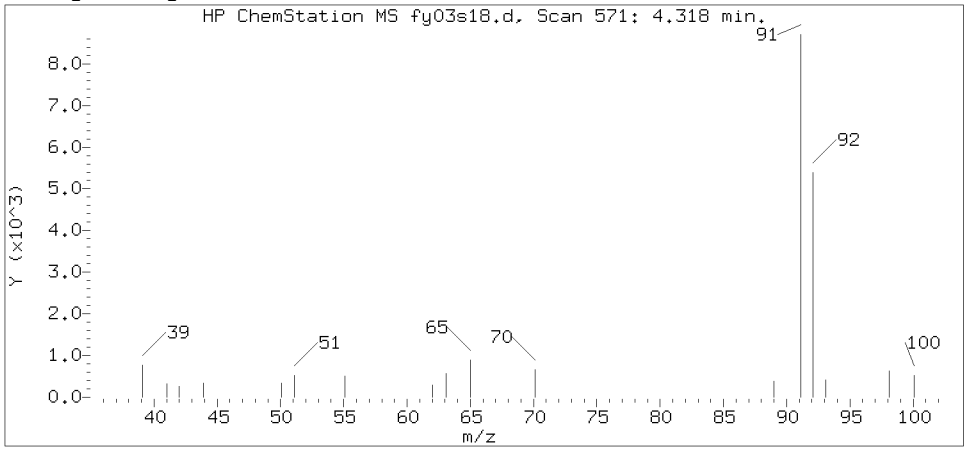
Reference Standard Spectrum for Toluene

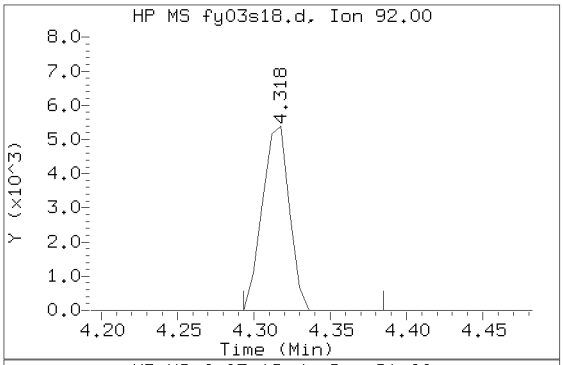


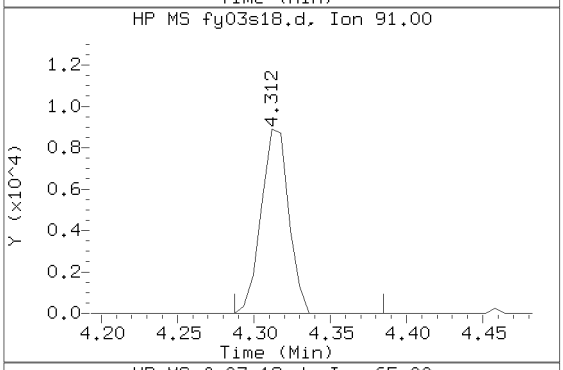
Sample Spectrum (Background Subtracted)

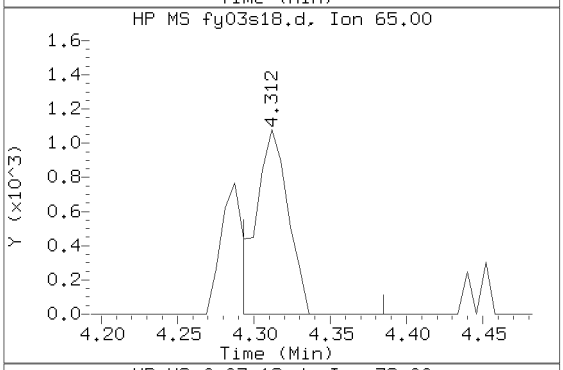


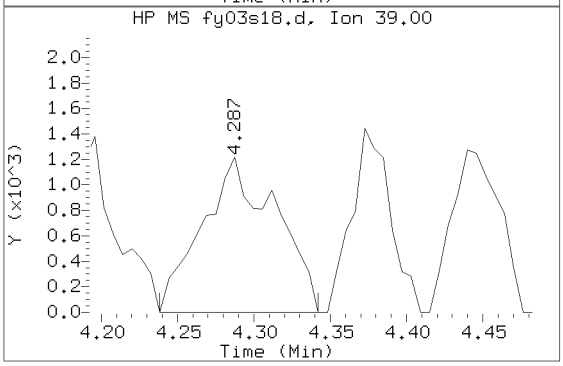
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

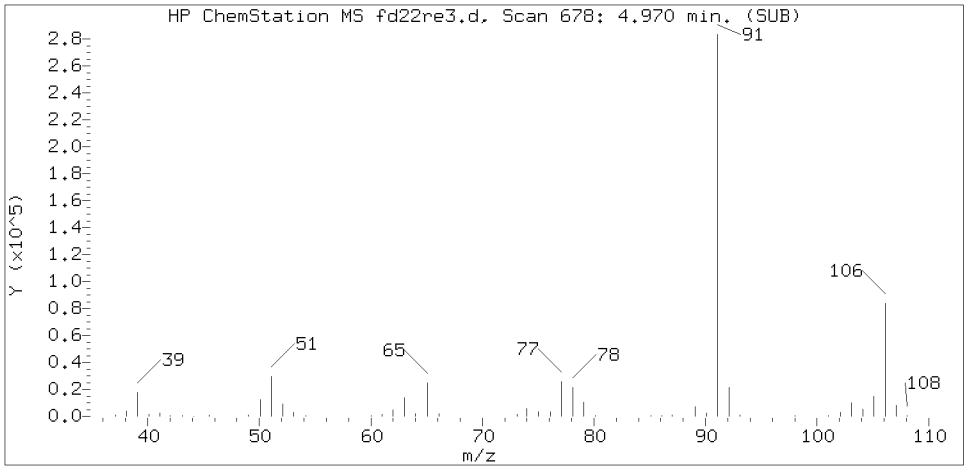
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

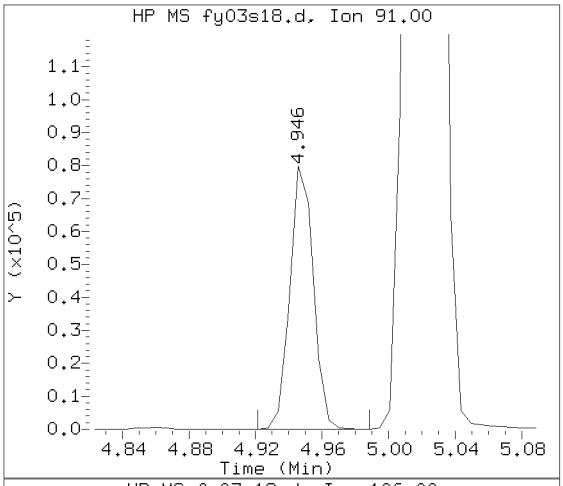
Sample Name: ANC10 Lab Sample ID: 1043319

Compound Number	: 16
Compound Name	: Toluene
Scan Number	: 571
Retention Time (minutes)	: 4.318
Relative Retention Time	:-0.00125
Quant Ion	: 92.00
Area (flag)	: 6642
On-Column Amount (ng)	: 1.1305

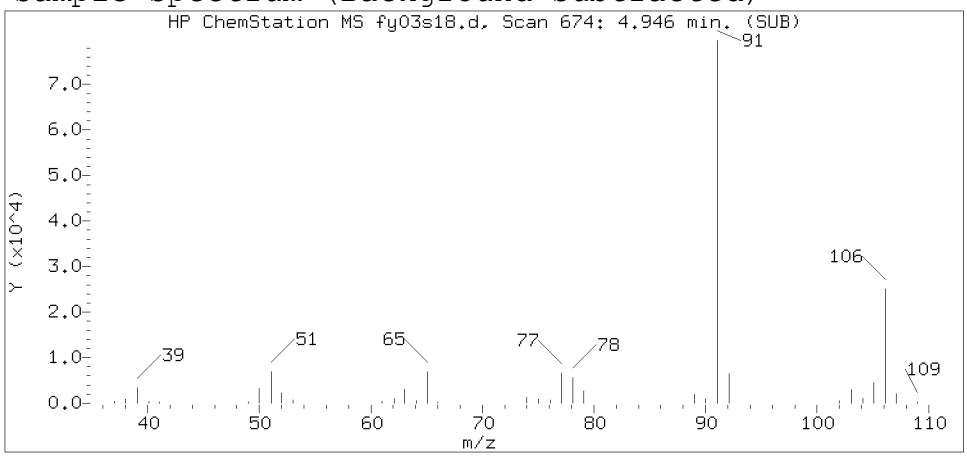
Digitally signed by Hu Yang on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

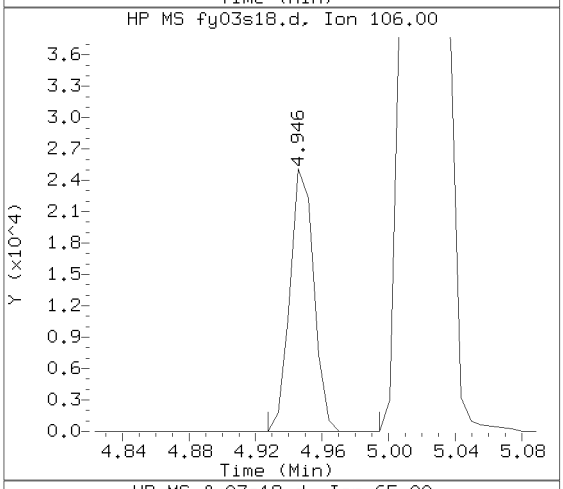
Reference Standard Spectrum for Ethylbenzene



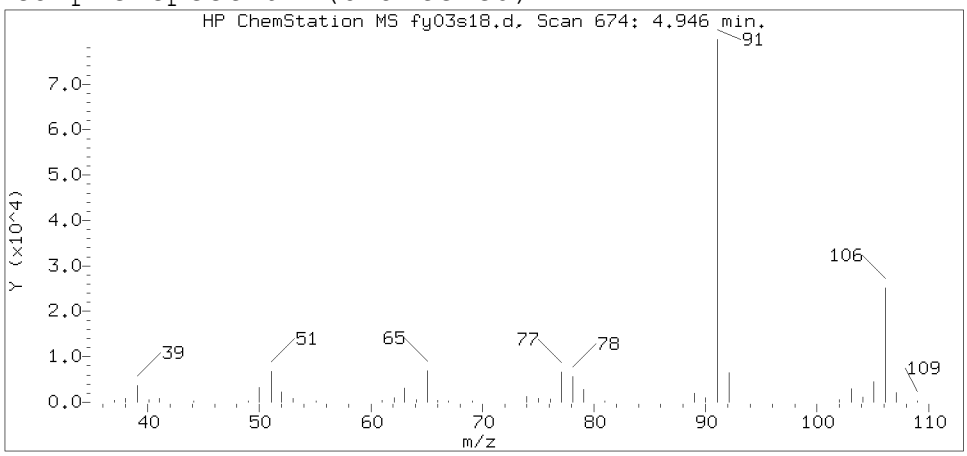


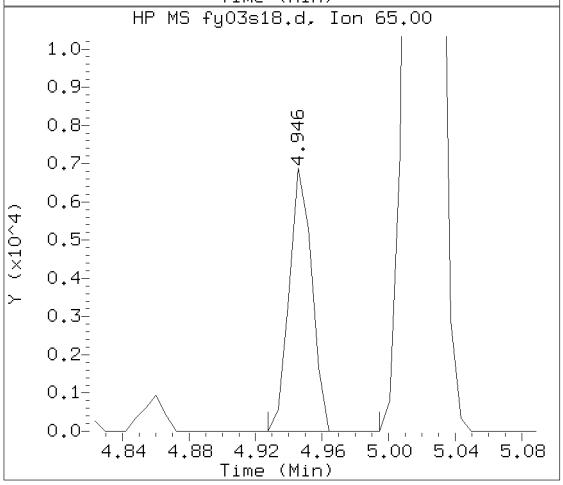
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

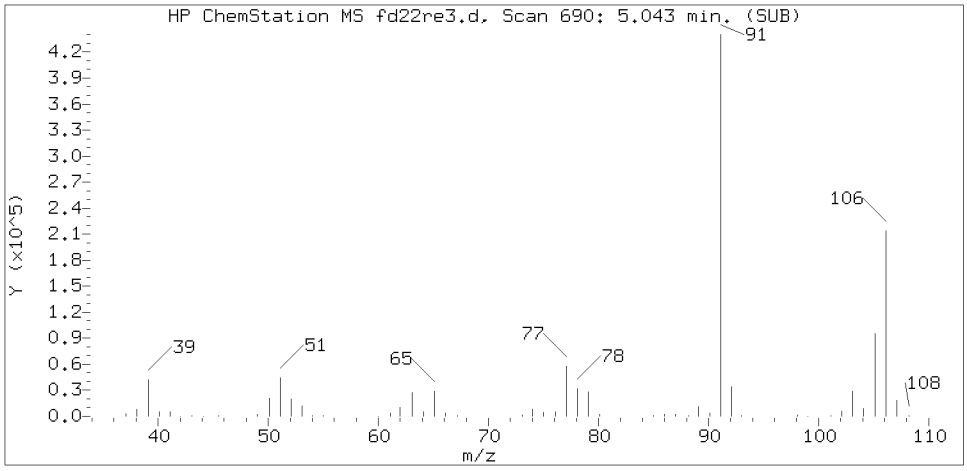
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

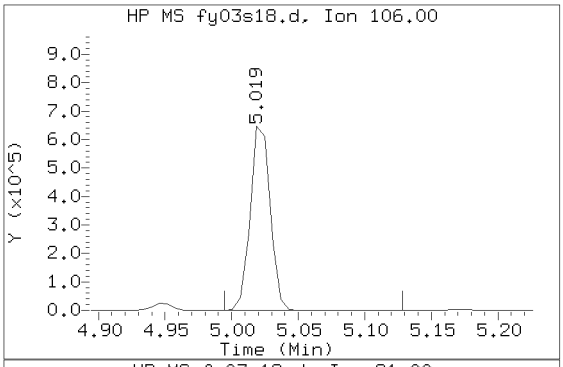
Sample Name: ANC10 Lab Sample ID: 1043319

Compound Number : 20
Compound Name : Ethylbenzene
Scan Number : 674
Retention Time (minutes): 4.946
Relative Retention Time :-0.00000
Quant Ion : 91.00
Area (flag) : 77900
On-Column Amount (ng) : 6.8487

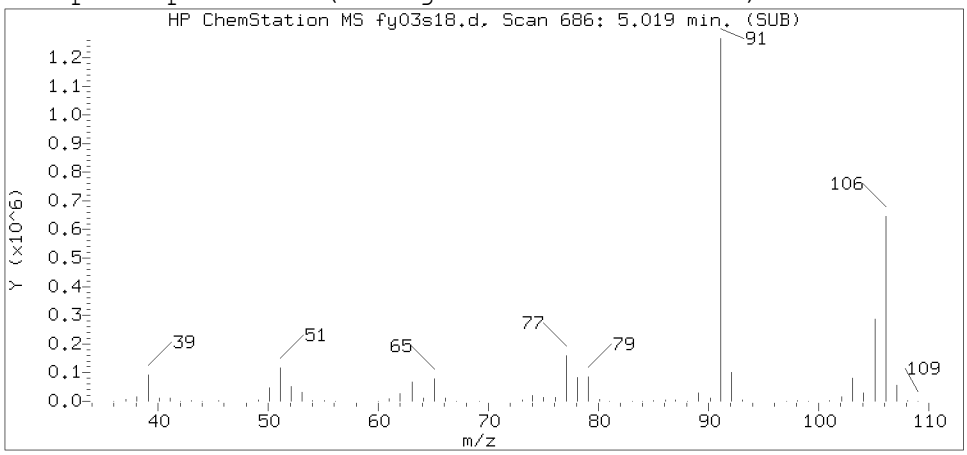
Digitally signed by Hu Yang on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

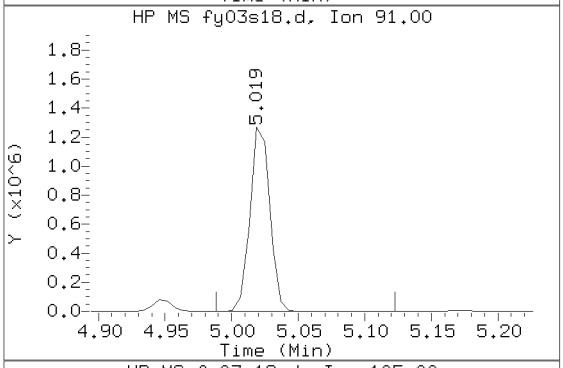
Reference Standard Spectrum for m+p-Xylene

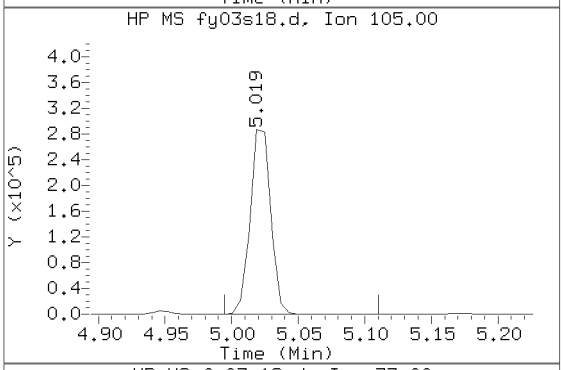




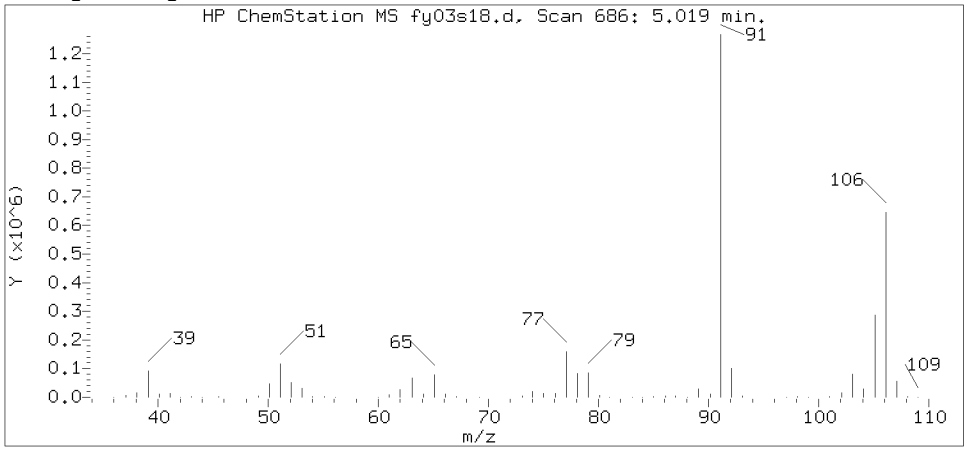
Sample Spectrum (Background Subtracted)

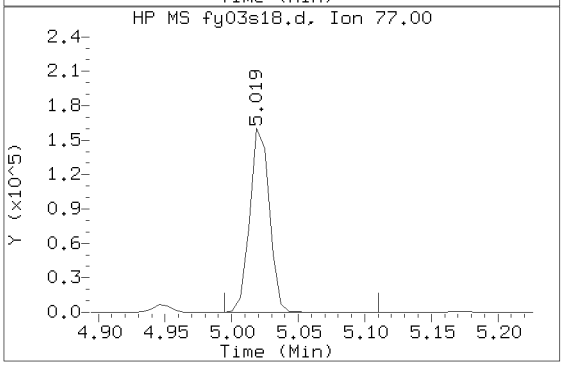






Sample Spectrum (Unaltered)





Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

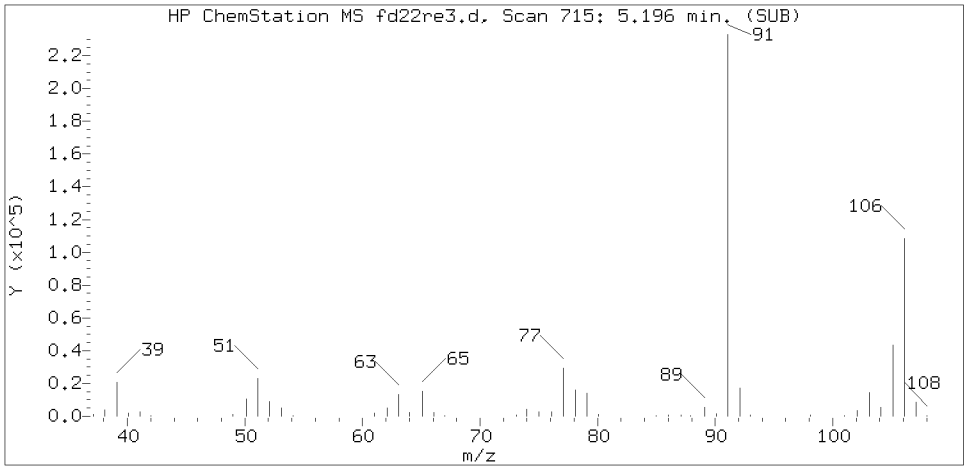
Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC10 Lab Sample ID: 1043319

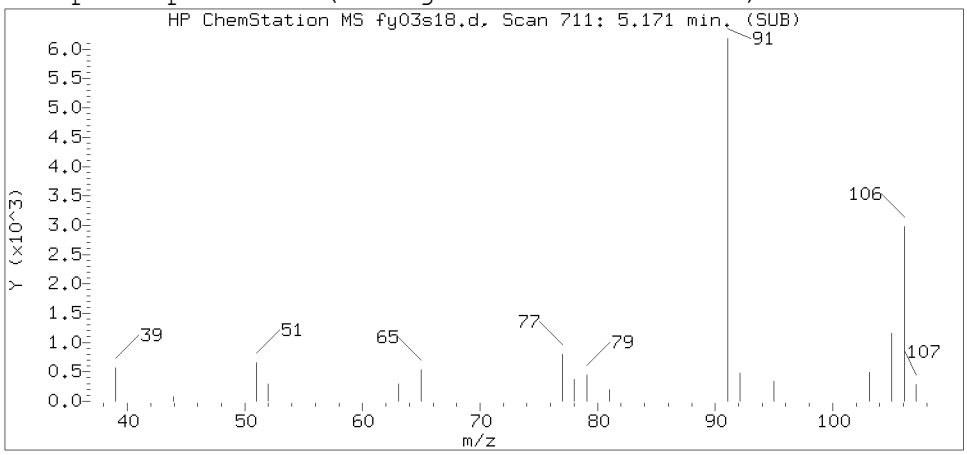
Compound Number : 21
Compound Name : m+p-Xylene
Scan Number : 686
Retention Time (minutes): 5.019
Relative Retention Time :-0.00000
Quant Ion : 106.00
Area (flag) : 677054
On-Column Amount (ng) : 148.6158

Digitally signed by Hu Yang on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

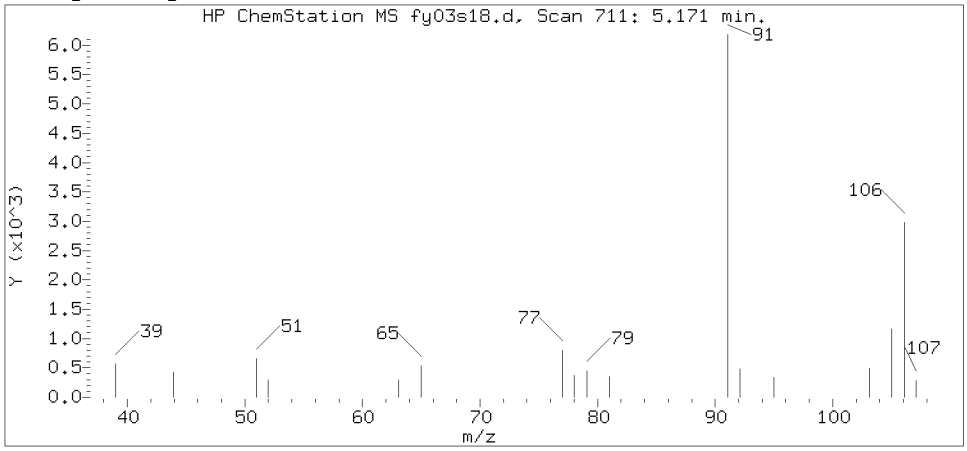
Reference Standard Spectrum for o-Xylene

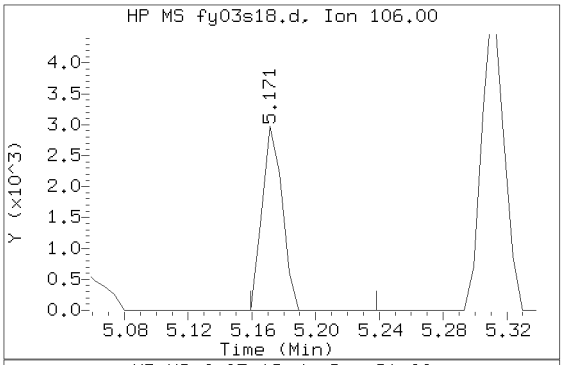


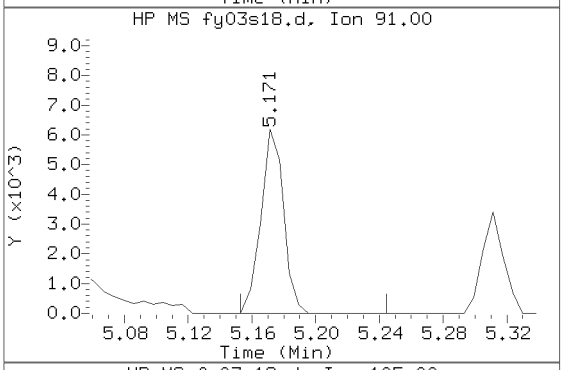
Sample Spectrum (Background Subtracted)

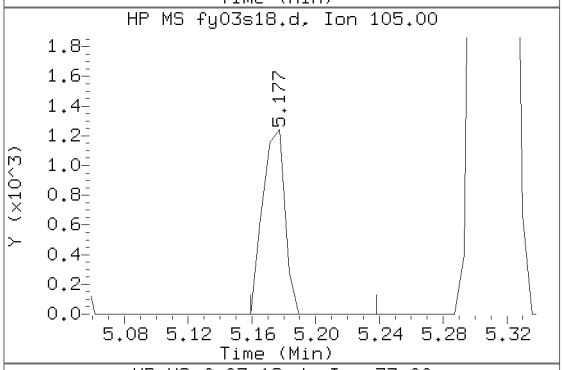


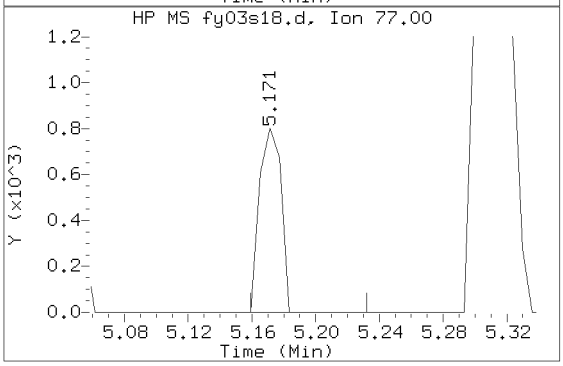
Sample Spectrum (Unaltered)











Data File: /chem/HP15830.i/19may03a.b/fy03s18.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:11 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANC10 Lab Sample ID: 1043319

Compound Number : 22
Compound Name : o-Xylene
Scan Number : 711
Retention Time (minutes): 5.171
Relative Retention Time :-0.00000
Quant Ion : 106.00
Area (flag) : 2630
On-Column Amount (ng) : 0.6013

Digitally signed by Hu Yang on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

ANCFD

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043320

Data file: /chem/HP15830.i/19may03a.b/fy03s20.d Injection date and time: **03-MAY-2019 16:33**
Data file Sample Info. Line: ANCFD;1043320;1;0;;LSV49;;;fy03b02; Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area (+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.904 (0.000)	175	65	117002 (-5)	250.00	
14) Fluorobenzene	3.507 (0.000)	438	96	341445 (-3)	50.00	
19) Chlorobenzene-d5	4.861 (0.000)	660	117	273960 (1)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805 (0.000)	815	152	149494 (2)	50.00	

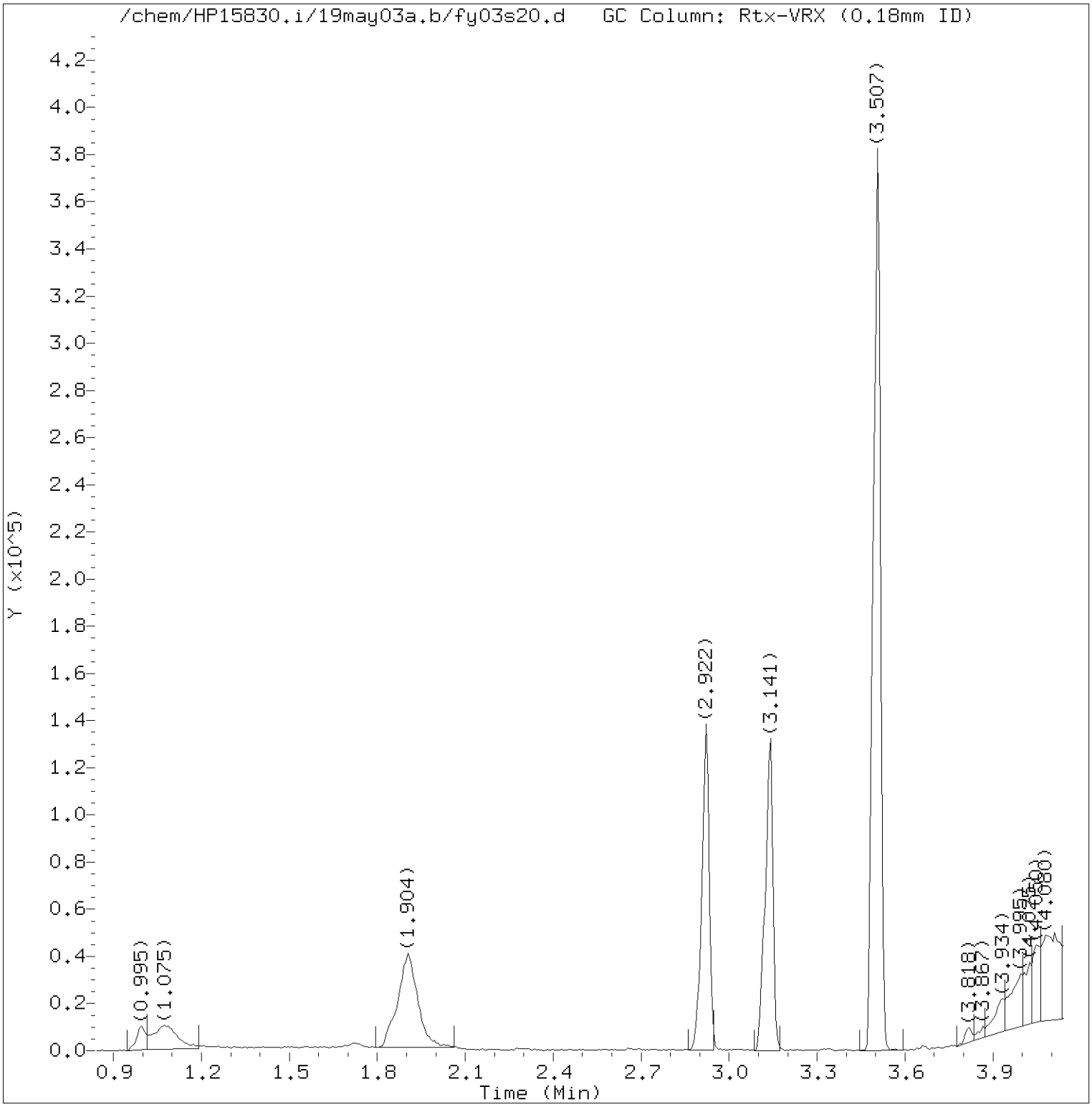
Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922 (0.000)	113	76614	47.861	96%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141 (0.000)	102	22060	48.310	97%		80 - 120
15) Toluene-d8	(3)	4.281 (0.001)	98	351611	49.613	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318 (0.000)	95	138013	49.350	99%		80 - 120

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
12) Benzene	(2)			Not Detected					0.2	1
16) Toluene	(3)			Not Detected					0.2	1
20) Ethylbenzene	(3)			Not Detected					0.4	1
21) m+p-Xylene	(3)			Not Detected					1	5
22) o-Xylene	(3)			Not Detected					0.4	1
23) Xylene (Total)	(3)			Not Detected					1	5

Total number of targets = 6

Digitally signed by Hu Yang on 05/03/2019 at 21:10. Target 3.5 esignature user ID: hy07820

Secondary review performed and digitally signed by Kari Becker on 05/04/2019 at 11:54. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

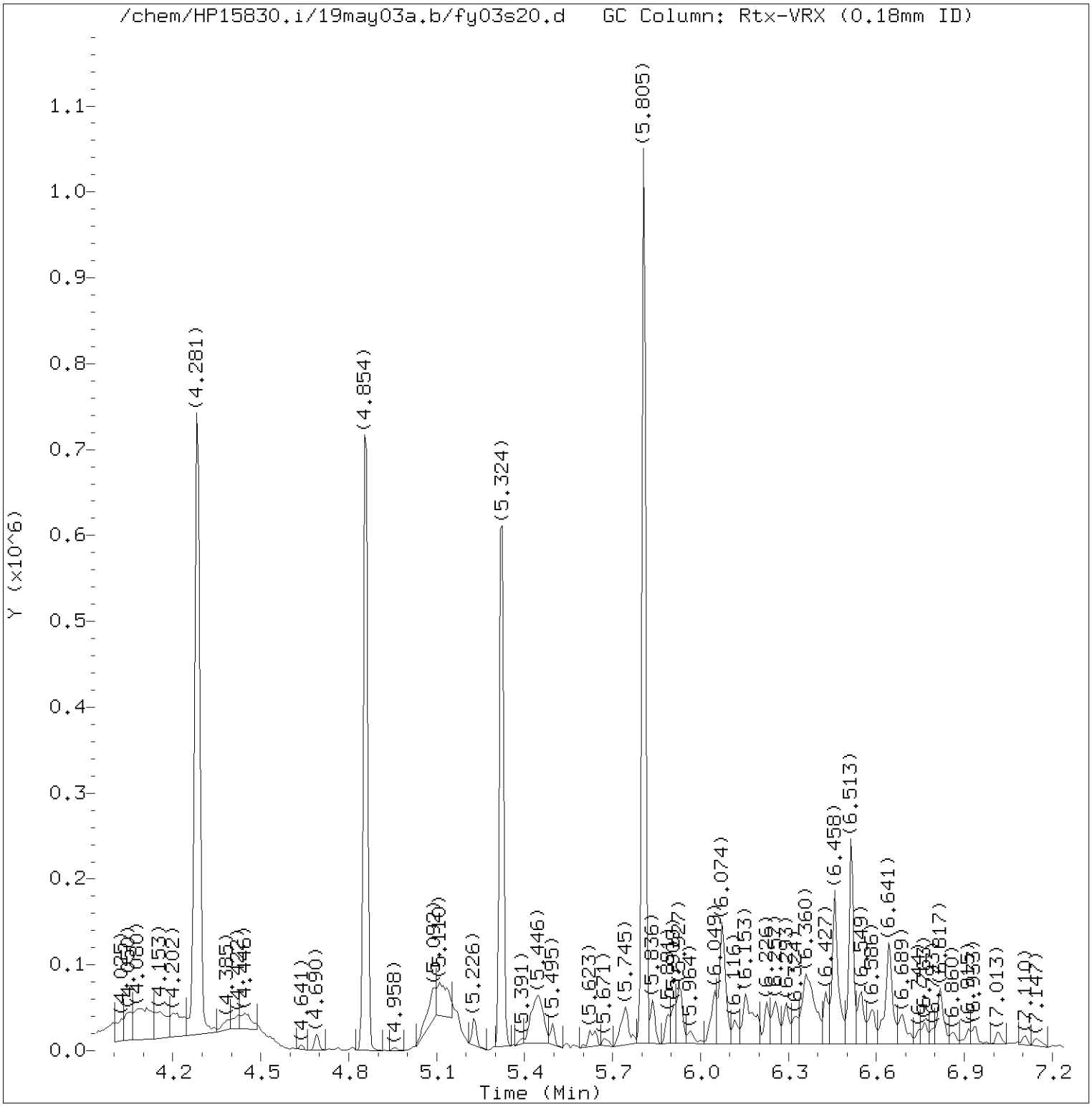
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s20.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:33 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANCFD Lab Sample ID: 1043320

Digitally signed by Hu Yang
on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s20.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:33 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANCFD Lab Sample ID: 1043320

Digitally signed by Hu Yang
on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03s20.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 16:33 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:50 hy07820

Sample Name: ANCFD Lab Sample ID: 1043320

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.904	65	117002	250.000
7)$Dibromofluoromethane	(2)	2.922	113	76614	47.861
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22060	48.310
14)*Fluorobenzene	(2)	3.507	96	341445	50.000
15)$Toluene-d8	(3)	4.281	98	351611	49.613
19)*Chlorobenzene-d5	(3)	4.861	117	273960	50.000
25)$4-Bromofluorobenzene	(3)	5.318	95	138013	49.350
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	149494	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Hu Yang
on 05/03/2019 at 21:10.
Target 3.5 esignature user ID: hy07820

ANCTB

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1043321

Data file: /chem/HP15830.i/19may02a.b/fy02s10.d Injection date and time: **02-MAY-2019 12:15**
Data file Sample Info. Line: ANCTB;1043321;1;0;;LSV49;;;fy02b02; Instrument ID: **HP15830.i** Batch: **F191222AA**
Date, time and analyst ID of latest file update: 03-May-2019 09:41 ads07818

Blank Data file reference: **/chem/HP15830.i/19may02a.b/fy02b02.d**

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: **12790**
Calibration date and time (Last Method Edit): 02-MAY-2019 09:33
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may02a.b/fy02c02.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.910	(0.006)	176	65	126287	(1)	250.00	
14) Fluorobenzene	3.507	(0.000)	438	96	369119	(0)	50.00	
19) Chlorobenzene-d5	4.861	(0.000)	660	117	285908	(1)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	150489	(2)	50.00	

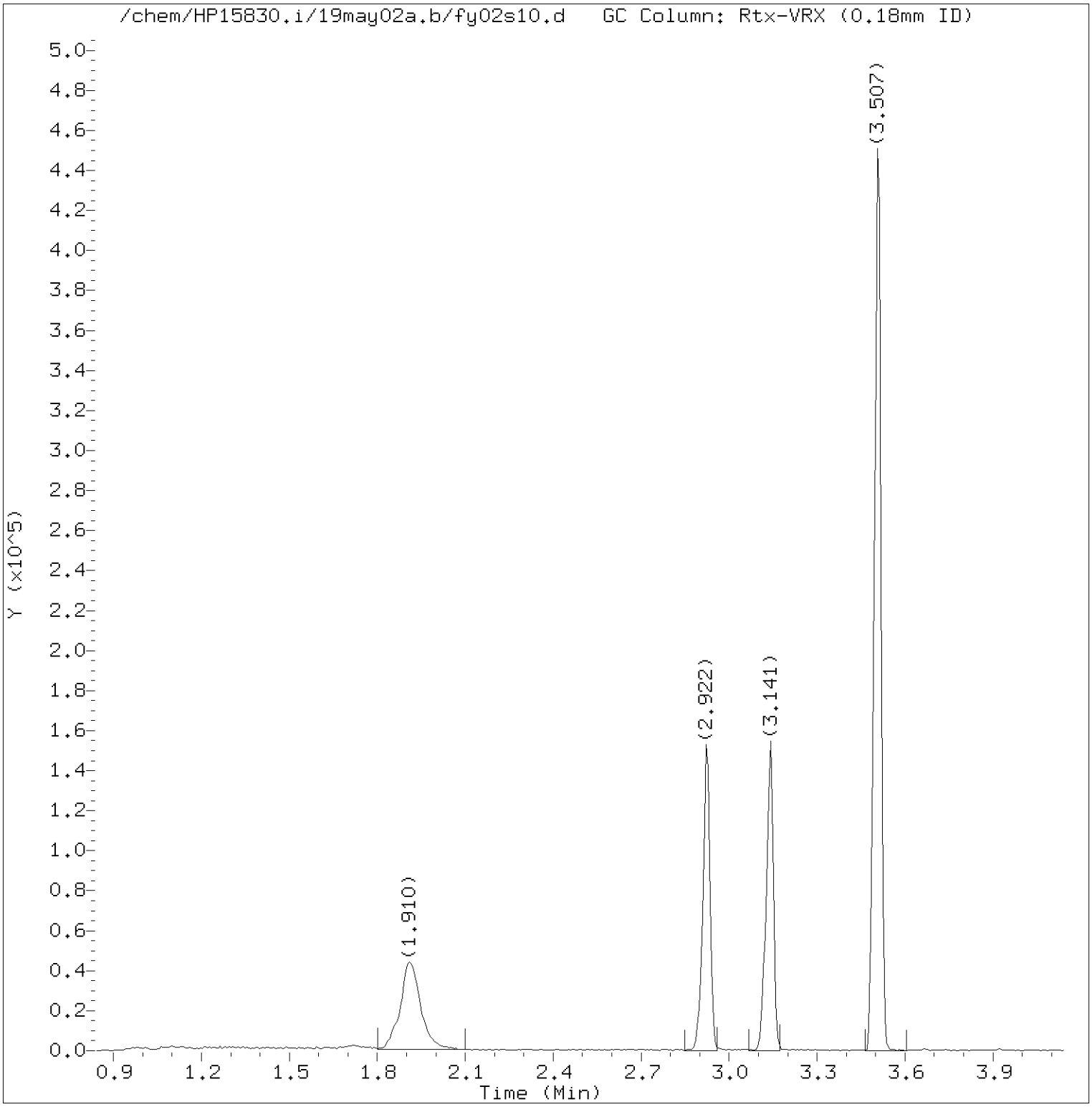
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.000)	113	81963	47.364	95%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.000)	102	24048	48.717	97%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	365632	49.436	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318	(0.001)	95	140919	48.283	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
12) Benzene	(2)				Not Detected					0.2	1
16) Toluene	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5

Total number of targets = 6

Digitally signed by Alexander D. Sechrist on 05/03/2019 at 09:47. Target 3.5 esignature user ID: ads07818

Secondary review performed and digitally signed by Richard Samson on 05/03/2019 at 11:06. PARALLAX ID: rs08358



Total Ion Chromatogram (TIC)

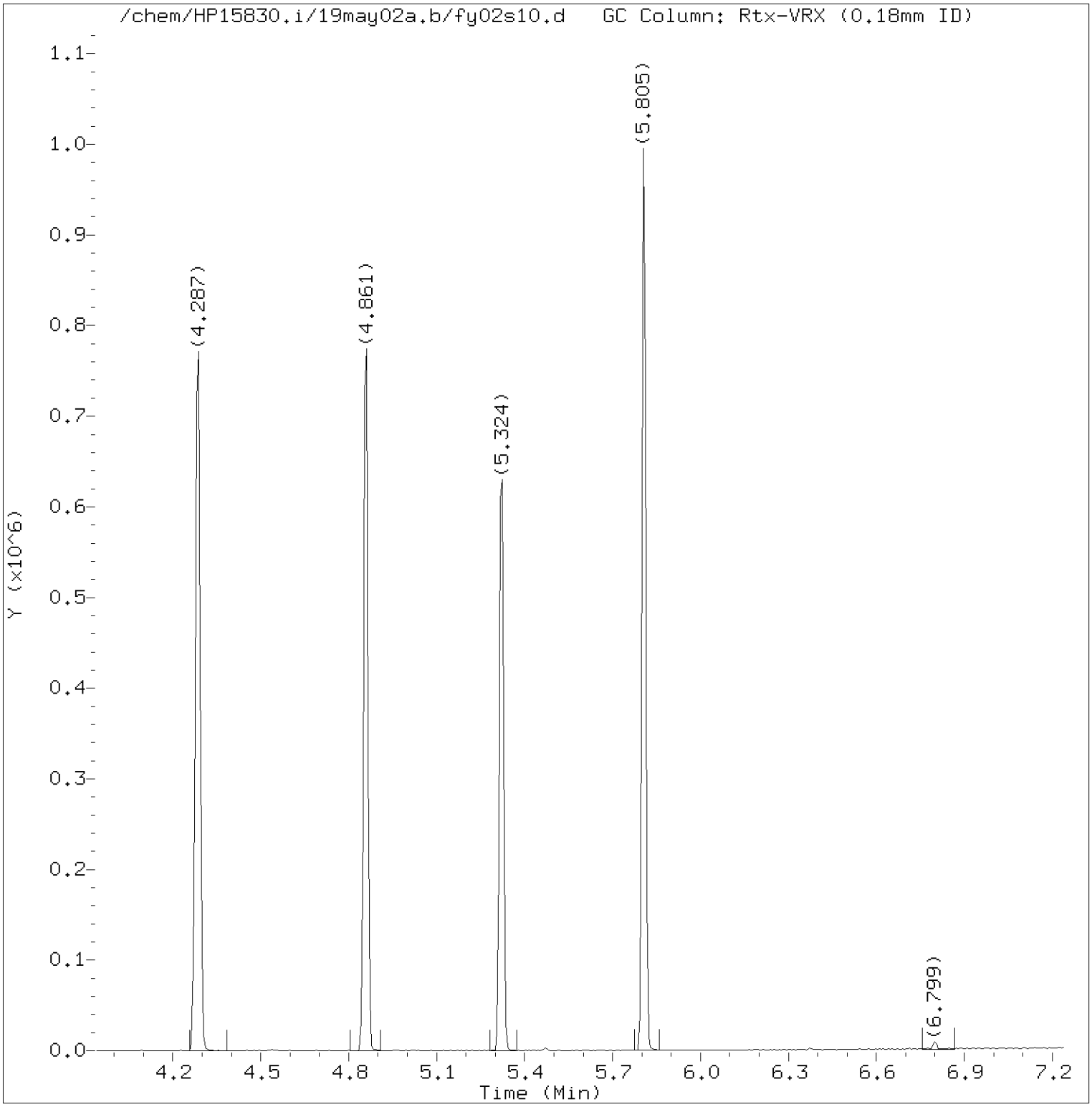
Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s10.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 12:15 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:41 ads07818

Sample Name: ANCTB Lab Sample ID: 1043321

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:47.
Target 3.5 esignature user ID: ads07818



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s10.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 12:15 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:41 ads07818

Sample Name: ANCTB Lab Sample ID: 1043321

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:47.
Target 3.5 esignature user ID: ads07818

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02s10.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 12:15 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 12790
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 03-May-2019 09:41 ads07818

Sample Name: ANCTB Lab Sample ID: 1043321

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.910	65	126287	250.000
7)$Dibromofluoromethane	(2)	2.922	113	81963	47.364
10)$1,2-Dichloroethane-d4	(2)	3.141	102	24048	48.717
14)*Fluorobenzene	(2)	3.507	96	369119	50.000
15)$Toluene-d8	(3)	4.287	98	365632	49.436
19)*Chlorobenzene-d5	(3)	4.861	117	285908	50.000
25)$4-Bromofluorobenzene	(3)	5.318	95	140919	48.283
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	150489	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Alexander D. Sechrist
on 05/03/2019 at 09:47.
Target 3.5 esignature user ID: ads07818

Raw QC Data

Volatiles by GC/MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKF93

Data file: /chem/HP15830.i/19may02a.b/fy02b02.d
Data file Sample Info. Line: VBLKF93;VBLKF93;1;3;;;;;;
Date, time and analyst ID of latest file update: 02-May-2019 10:34 ads07818

Injection date and time: **02-MAY-2019 10:10**
Instrument ID: **HP15830.i** Batch: **F191222AA**

Blank Data file reference: **/chem/HP15830.i/19may02a.b/fy02b02.d**

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: **10943BC**
Calibration date and time (Last Method Edit): 02-MAY-2019 09:33
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may02a.b/fy02c02.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.916	(0.000)	177	65	126428	(1)	250.00	
14) Fluorobenzene	3.513	(-0.006)	439	96	363326	(-2)	50.00	
19) Chlorobenzene-d5	4.861	(0.000)	660	117	279947	(-1)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	151017	(2)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.928	(0.000)	113	92880	54.528	109%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.002)	102	23758	48.895	98%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	362993	50.124	100%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.324	(0.000)	95	139596	48.849	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
1) Ethanol	(1)				Not Detected					280	750
3) t-Butyl alcohol	(1)				Not Detected					12	50
4) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.2	1
5) di-Isopropyl ether	(2)				Not Detected					0.2	1
6) Ethyl t-butyl ether	(2)				Not Detected					0.2	1
11) 1,2-Dichloroethane	(2)				Not Detected					0.3	1
12) Benzene	(2)				Not Detected					0.2	1
13) t-Amyl methyl ether	(2)				Not Detected					0.8	5
16) Toluene	(3)				Not Detected					0.2	1
18) 1,2-Dibromoethane	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5
24) Isopropylbenzene	(3)				Not Detected					0.2	5
26) 1,3,5-Trimethylbenzene	(4)				Not Detected					0.3	5
27) 1,2,4-Trimethylbenzene	(4)				Not Detected					1	5
29) Naphthalene	(4)				Not Detected					1	5

Digitally signed by Alexander D. Sechrist on 05/02/2019 at 10:35. Target 3.5 esignature user ID: ads07818

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP15830.i/19may02a.b/fy02b02.d Injection date and time: **02-MAY-2019 10:10**
Data file Sample Info. Line: VBLKF93;VBLKF93;1;3;;;;;; Instrument ID: **HP15830.i** Batch: **F191222AA**
Date, time and analyst ID of latest file update: 02-May-2019 10:34 ads07818

Blank Data file reference: **/chem/HP15830.i/19may02a.b/fy02b02.d**

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: **10943BC**
Calibration date and time (Last Method Edit): 02-MAY-2019 09:33
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may02a.b/fy02c02.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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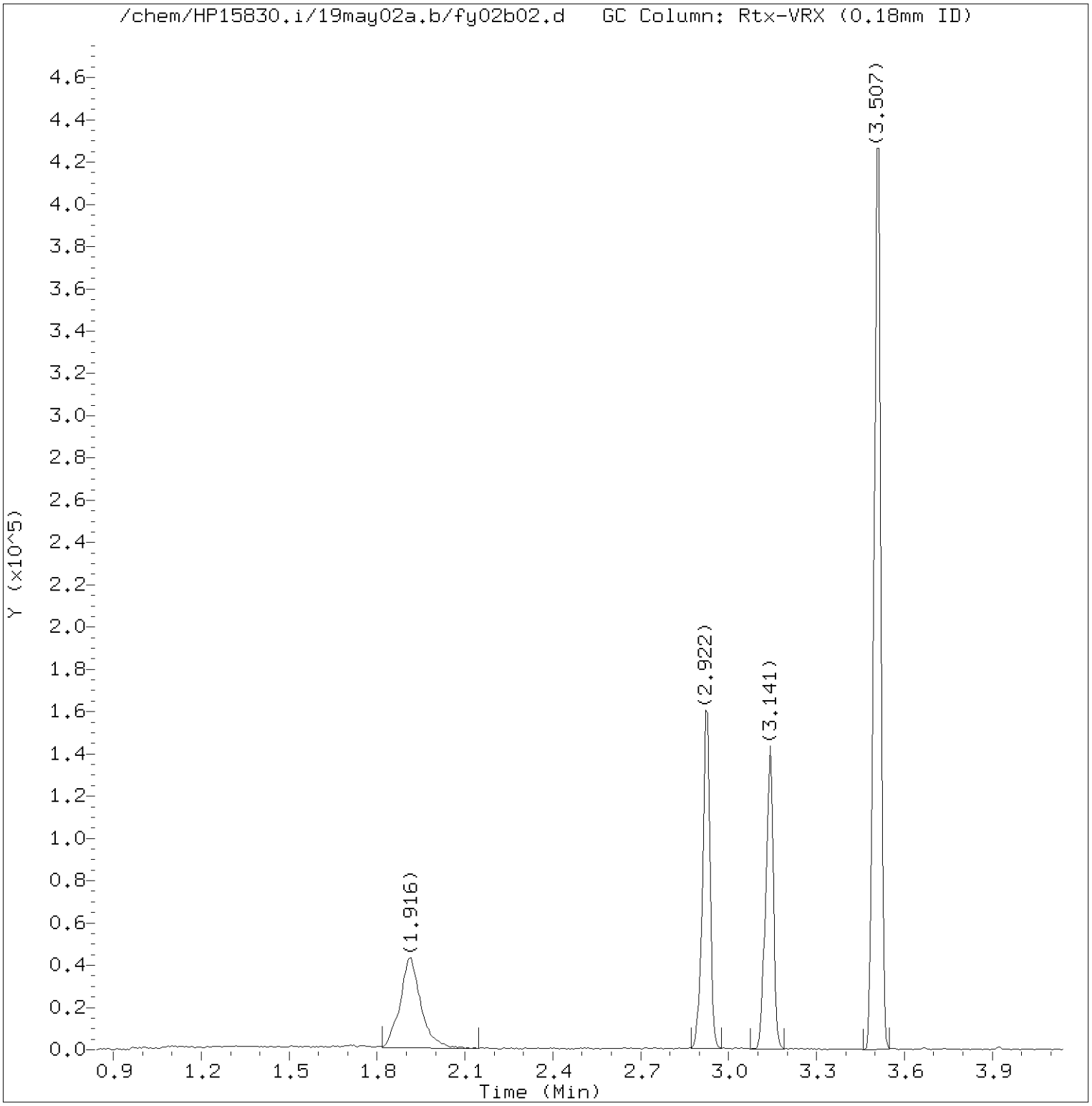
Total number of targets = 18

Digitally signed by Alexander D. Sechrist on 05/02/2019 at 10:35. Target 3.5 esignature user ID: ads07818

Secondary review performed and digitally signed by Richard Samson on 05/03/2019 at 11:06. PARALLAX ID: rs08358



Total Ion Chromatogram (TIC)

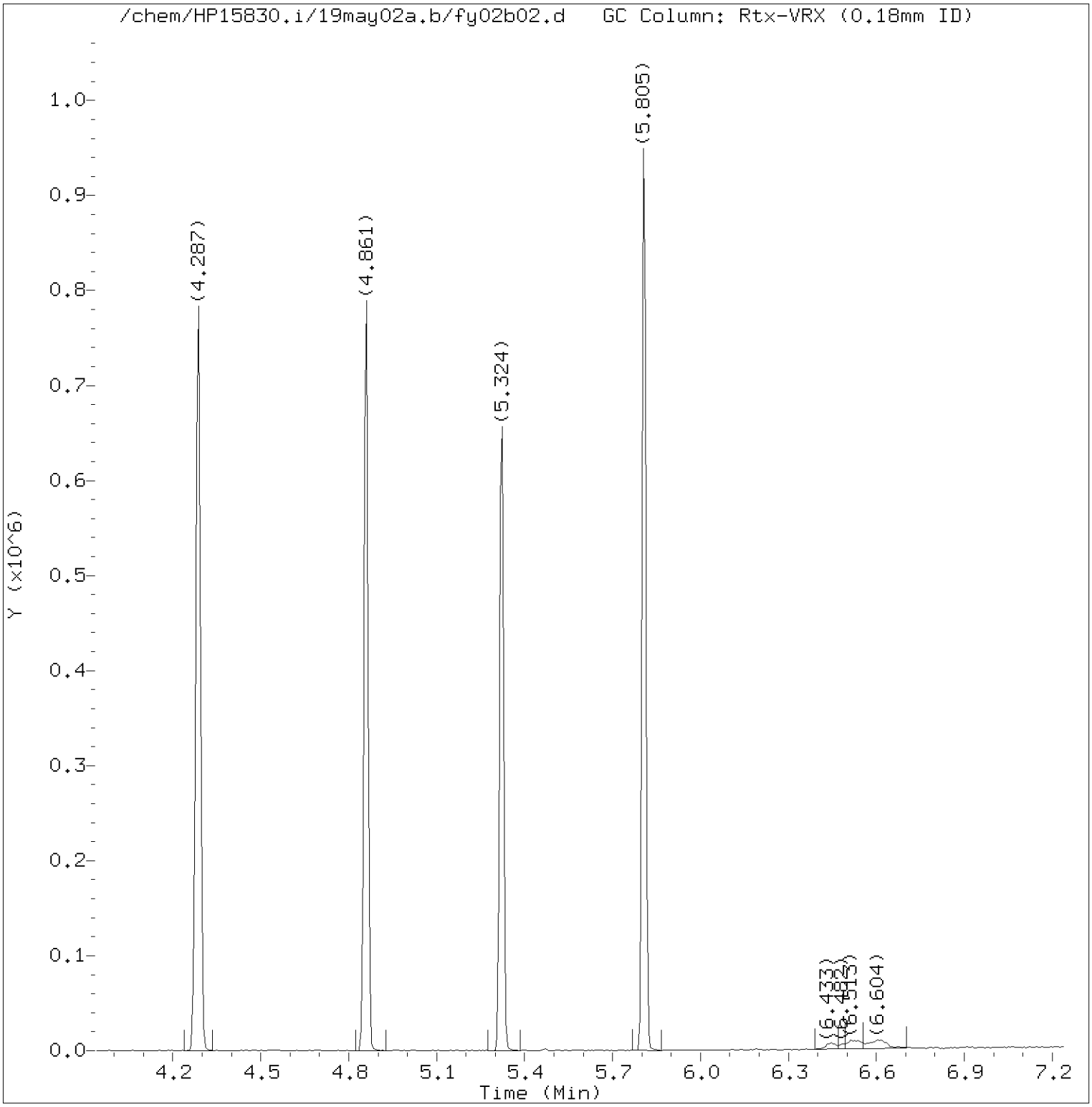
Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02b02.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 10:10 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 10943BC
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 02-May-2019 10:34 ads07818

Sample Name: VBLKF93 Lab Sample ID: VBLKF93

Digitally signed by Alexander D. Sechrist
on 05/02/2019 at 10:35.
Target 3.5 esignature user ID: ads07818



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02b02.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 10:10 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 10943BC
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 02-May-2019 10:34 ads07818

Sample Name: VBLKF93 Lab Sample ID: VBLKF93

Digitally signed by Alexander D. Sechrist
on 05/02/2019 at 10:35.
Target 3.5 esignature user ID: ads07818

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may02a.b/fy02b02.d Instrument ID: HP15830.i
Injection date and time: 02-MAY-2019 10:10 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may02a.b/UST-PT2C.m Sublist used: 10943BC
Calibration date and time: 02-MAY-2019 09:33
Date, time and analyst ID of latest file update: 02-May-2019 10:34 ads07818

Sample Name: VBLKF93 Lab Sample ID: VBLKF93

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.916	65	126428	250.000
7)$Dibromofluoromethane	(2)	2.928	113	92880	54.528
10)$1,2-Dichloroethane-d4	(2)	3.141	102	23758	48.895
14)*Fluorobenzene	(2)	3.513	96	363326	50.000
15)$Toluene-d8	(3)	4.287	98	362993	50.124
19)*Chlorobenzene-d5	(3)	4.861	117	279947	50.000
25)$4-Bromofluorobenzene	(3)	5.324	95	139596	48.849
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	151017	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Alexander D. Sechrist
on 05/02/2019 at 10:35.
Target 3.5 esignature user ID: ads07818

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKF97

Data file: /chem/HP15830.i/19may03a.b/fy03b02.d
Data file Sample Info. Line: VBLKF97;VBLKF97;1;3;;;;;;
Date, time and analyst ID of latest file update: 03-May-2019 20:58 hy07820

Injection date and time: **03-MAY-2019 12:33**
Instrument ID: **HP15830.i** Batch: **F191232AA**

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **10943BC**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.904	(0.000)	175	65	119925	(-3)	250.00	
14) Fluorobenzene	3.507	(0.000)	438	96	345720	(-1)	50.00	
19) Chlorobenzene-d5	4.861	(0.000)	660	117	271353	(0)	50.00	
28) 1,4-Dichlorobenzene-d4	5.805	(0.000)	815	152	145654	(0)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.000)	113	77424	47.769	96%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.000)	102	22782	49.274	99%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	348695	49.675	99%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.318	(0.000)	95	135897	49.060	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
1) Ethanol	(1)				Not Detected					280	750
3) t-Butyl alcohol	(1)				Not Detected					12	50
4) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.2	1
5) di-Isopropyl ether	(2)				Not Detected					0.2	1
6) Ethyl t-butyl ether	(2)				Not Detected					0.2	1
11) 1,2-Dichloroethane	(2)				Not Detected					0.3	1
12) Benzene	(2)				Not Detected					0.2	1
13) t-Amyl methyl ether	(2)				Not Detected					0.8	5
16) Toluene	(3)				Not Detected					0.2	1
18) 1,2-Dibromoethane	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5
24) Isopropylbenzene	(3)				Not Detected					0.2	5
26) 1,3,5-Trimethylbenzene	(4)				Not Detected					0.3	5
27) 1,2,4-Trimethylbenzene	(4)				Not Detected					1	5
29) Naphthalene	(4)				Not Detected					1	5

Digitally signed by Hu Yang on 05/03/2019 at 20:58. Target 3.5 esignature user ID: hy07820

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP15830.i/19may03a.b/fy03b02.d Injection date and time: **03-MAY-2019 12:33**
Data file Sample Info. Line: VBLKF97;VBLKF97;1;3;;;;;; Instrument ID: **HP15830.i** Batch: **F191232AA**
Date, time and analyst ID of latest file update: 03-May-2019 20:58 hy07820

Blank Data file reference: **/chem/HP15830.i/19may03a.b/fy03b02.d**

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: **10943BC**
Calibration date and time (Last Method Edit): 03-MAY-2019 12:05
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may03a.b/fy03c02.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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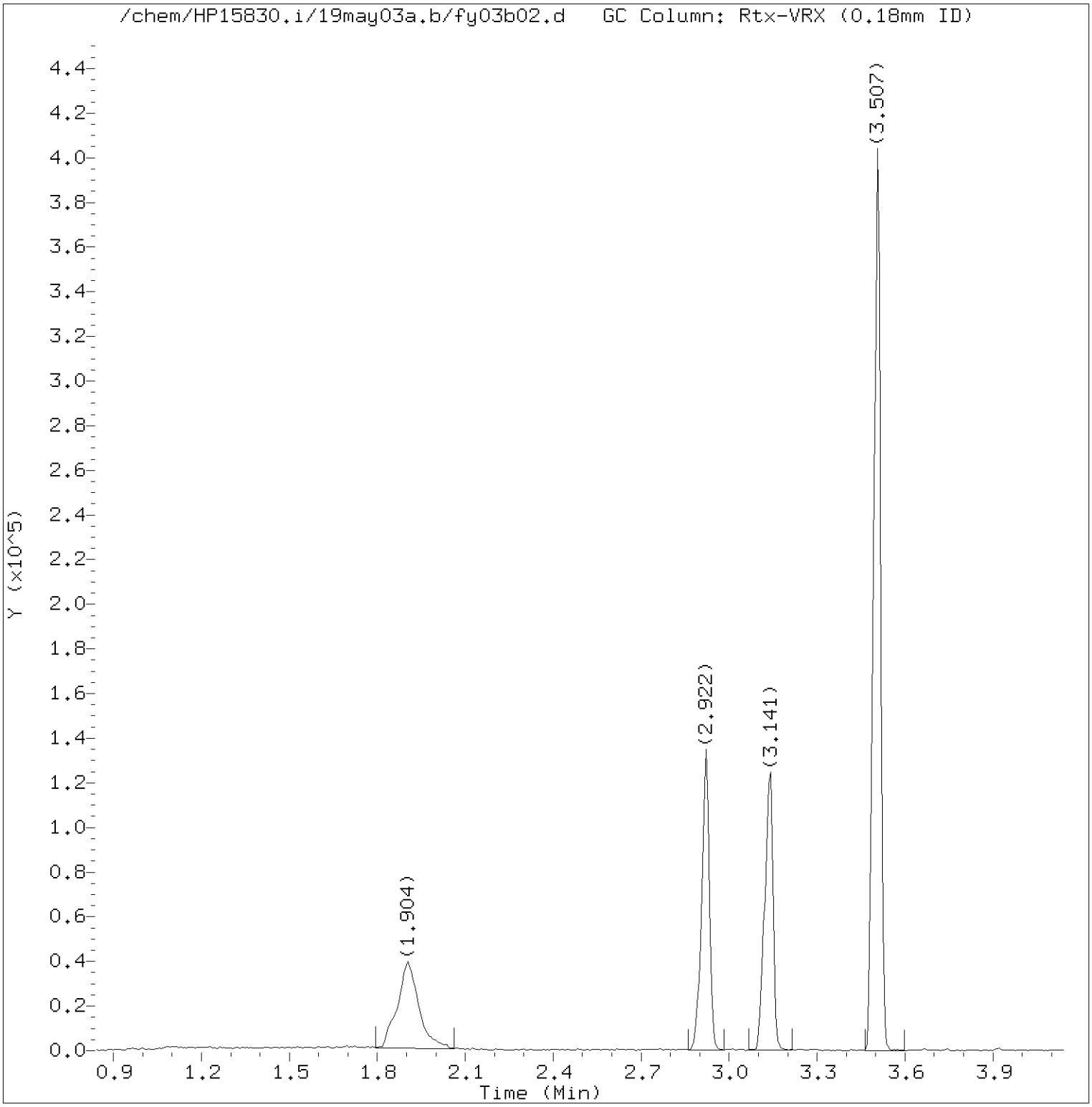
Total number of targets = 18

Digitally signed by Hu Yang on 05/03/2019 at 20:58. Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

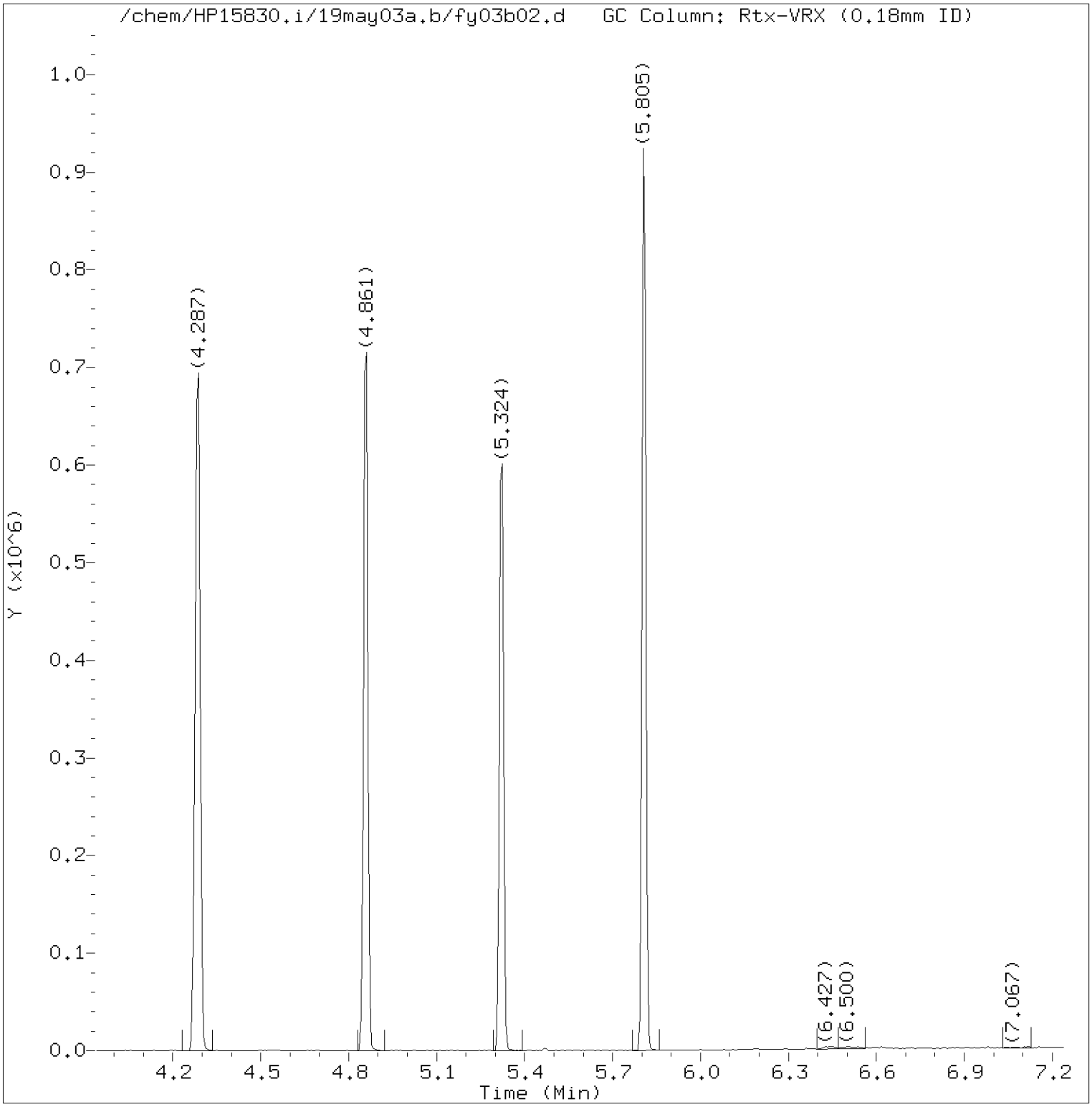
Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03b02.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 12:33 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 10943BC
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:58 hy07820

Sample Name: VBLKF97 Lab Sample ID: VBLKF97

Digitally signed by Hu Yang
on 05/03/2019 at 20:58.
Target 3.5 esignature user ID: hy07820



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03b02.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 12:33 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 10943BC
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:58 hy07820

Sample Name: VBLKF97 Lab Sample ID: VBLKF97

Digitally signed by Hu Yang
on 05/03/2019 at 20:58.
Target 3.5 esignature user ID: hy07820

Quant Report

Target Revision 3.5

Data File: /chem/HP15830.i/19may03a.b/fy03b02.d Instrument ID: HP15830.i
Injection date and time: 03-MAY-2019 12:33 Analyst ID: ADS07818

Method used: /chem/HP15830.i/19may03a.b/UST-PT2C.m Sublist used: 10943BC
Calibration date and time: 03-MAY-2019 12:05
Date, time and analyst ID of latest file update: 03-May-2019 20:58 hy07820

Sample Name: VBLKF97 Lab Sample ID: VBLKF97

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
2)*t-Butyl alcohol-d10	(1)	1.904	65	119925	250.000
7)$Dibromofluoromethane	(2)	2.922	113	77424	47.769
10)$1,2-Dichloroethane-d4	(2)	3.141	102	22782	49.274
14)*Fluorobenzene	(2)	3.507	96	345720	50.000
15)$Toluene-d8	(3)	4.287	98	348695	49.675
19)*Chlorobenzene-d5	(3)	4.861	117	271353	50.000
25)$4-Bromofluorobenzene	(3)	5.318	95	135897	49.060
28)*1,4-Dichlorobenzene-d4	(4)	5.805	152	145654	50.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Hu Yang
on 05/03/2019 at 20:58.
Target 3.5 esignature user ID: hy07820

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKF10

Data file: /chem/HP15830.i/19may07a.b/fy07b02.d
Data file Sample Info. Line: VBLKF10;VBLKF10;1;3;;;;;;
Date, time and analyst ID of latest file update: 07-May-2019 11:33 ads07818

Injection date and time: **07-MAY-2019 11:21**
Instrument ID: **HP15830.i** Batch: **F191272AA**

Blank Data file reference: **/chem/HP15830.i/19may07a.b/fy07b02.d**

Method used: /chem/HP15830.i/19may07a.b/UST-PT2C.m Sublist used: **10943BC**
Calibration date and time (Last Method Edit): 07-MAY-2019 10:44
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may07a.b/fy07c02.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
2) t-Butyl alcohol-d10	1.904	(0.006)	175	65	100203	(-5)	250.00	
14) Fluorobenzene	3.507	(0.000)	438	96	320720	(-5)	50.00	
19) Chlorobenzene-d5	4.860	(0.000)	660	117	238337	(-3)	50.00	
28) 1,4-Dichlorobenzene-d4	5.811	(0.000)	816	152	120869	(-3)	50.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
7) Dibromofluoromethane	(2)	2.922	(0.000)	113	68304	45.427	91%		80 - 120
10) 1,2-Dichloroethane-d4	(2)	3.141	(0.000)	102	20807	48.511	97%		80 - 120
15) Toluene-d8	(3)	4.287	(0.000)	98	311165	50.469	101%		80 - 120
25) 4-Bromofluorobenzene	(3)	5.324	(0.000)	95	117431	48.267	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Ethanol	(1)				Not Detected					280	750
3) t-Butyl alcohol	(1)				Not Detected					12	50
4) Methyl Tertiary Butyl Ether	(2)				Not Detected					0.2	1
5) di-Isopropyl ether	(2)				Not Detected					0.2	1
6) Ethyl t-butyl ether	(2)				Not Detected					0.2	1
11) 1,2-Dichloroethane	(2)				Not Detected					0.3	1
12) Benzene	(2)				Not Detected					0.2	1
13) t-Amyl methyl ether	(2)				Not Detected					0.8	5
16) Toluene	(3)				Not Detected					0.2	1
18) 1,2-Dibromoethane	(3)				Not Detected					0.2	1
20) Ethylbenzene	(3)				Not Detected					0.4	1
21) m+p-Xylene	(3)				Not Detected					1	5
22) o-Xylene	(3)				Not Detected					0.4	1
23) Xylene (Total)	(3)				Not Detected					1	5
24) Isopropylbenzene	(3)				Not Detected					0.2	5
26) 1,3,5-Trimethylbenzene	(4)				Not Detected					0.3	5
27) 1,2,4-Trimethylbenzene	(4)				Not Detected					1	5
29) Naphthalene	(4)				Not Detected					1	5

Digitally signed by Alexander D. Sechrist on 05/07/2019 at 12:39. Target 3.5 esignature user ID: ads07818

Analysis Summary for GC/MS Volatiles

Data file: /chem/HP15830.i/19may07a.b/fy07b02.d Injection date and time: **07-MAY-2019 11:21**
Data file Sample Info. Line: VBLKF10;VBLKF10;1;3;;;;;; Instrument ID: **HP15830.i** Batch: **F191272AA**
Date, time and analyst ID of latest file update: 07-May-2019 11:33 ads07818

Blank Data file reference: **/chem/HP15830.i/19may07a.b/fy07b02.d**

Method used: /chem/HP15830.i/19may07a.b/UST-PT2C.m Sublist used: **10943BC**
Calibration date and time (Last Method Edit): 07-MAY-2019 10:44
Mid Level Daily Calibration Standard Reference: **/chem/HP15830.i/19may07a.b/fy07c02.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 5 ml Sample Volume (Vo): 5 ml

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Total number of targets = 18

Digitally signed by Alexander D. Sechrist on 05/07/2019 at 12:39. Target 3.5 esignature user ID: ads07818

Secondary review performed and digitally signed by Richard Samson on 05/08/2019 at 11:57. PARALLAX ID: rs08358

Volatiles by GC-GRO Data

Case Narrative/Conformance Summary

Volatiles by GC-GRO

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

Volatiles by GC

Fraction: Volatiles by GC-GRO

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1043306	QA-O-190424	X		1	Equipment Blank
1043307	MW-2-W-190424	X		1	
1043309	MW-3-W-190424	X		1	Unspiked
1043310	MW-3-W-190424 MS	X		1	Matrix Spike
1043311	MW-3-W-190424 MSD	X		1	Matrix Spike Duplicate
1043313	MW-6-W-190424	X		1	
1043315	MW-9-W-190424	X		5	
1043317	MW-8-W-190424	X		1	
1043318	MW-7-W-190424	X		1	
1043319	MW-10-W-190424	X		1	
1043320	BD-1-WD-190424	X		1	Field Duplicate Sample
1043321	QA-T-190419	X		1	Trip Blank

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

Volatiles by GC

Fraction: Volatiles by GC-GRO

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Volatiles by GC-GRO

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Quality Control Reference List
Volatiles by GC

CLIENT: Chevron
SDG: LSV49

Fraction: Volatiles by GC-GRO

Analysis	Batch Number	Sample Number	Analysis Date
TPH-GRO AK water C6-C10	19119B20A	BLKQ9	04/29/2019 20:43
		LCSD9	04/29/2019 21:10
		1043306	04/29/2019 22:05
		1043307	04/29/2019 22:33
		1043309 UNSPK	04/29/2019 23:00
		1043310 MS	04/29/2019 23:28
		1043311 MSD	04/29/2019 23:55
		1043313	04/30/2019 00:23
		1043315	04/30/2019 02:40
		1043317	04/30/2019 00:50
		1043318	04/30/2019 01:18
		1043319	04/30/2019 01:45
		1043320	04/30/2019 02:13
		1043321	04/29/2019 21:38

Quality Control Summary
Method Blank
Volatiles by GC
SDG: LSV49
Matrix: LIQUID

Fraction: Volatiles by GC-GRO

19119B20A / BLKQ9 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
TPH-GRO AK water C6-C10	04/29/19	N.D.	mg/l	0.014	0.10

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Quality Control Summary
Surrogates
Volatiles by GC
SDG: LSV49
Matrix: LIQUID

Fraction: Volatiles by GC-GRO

19119B20A	Trifluorotoluene-F	
	Spike Added	0.03 mg/l
Sample	% Recovery	Limits
BLKQ9	81	60 - 120
LCSD9	96	60 - 120
1043306	71	60 - 120
1043307	68	60 - 120
1043309 UNSPK	74	60 - 120
1043310 MS	92	60 - 120
1043311 MSD	92	60 - 120
1043313	85	60 - 120
1043315	89	60 - 120
1043317	78	60 - 120
1043318	85	60 - 120
1043319	87	60 - 120
1043320	88	60 - 120
1043321	72	60 - 120

Volatiles by GC

Fraction: Volatiles by GC-GRO

UNSPK: 1043309 MS: 1043310 MSD: 1043311 **Analyte**	Batch: **19119B20A** (Sample number(s): 1043306-1043307, 1043309-1043311, 1043313, 1043315, 1043317-1043321)								
	Spike Added mg/l	**Unspiked Conc mg/l**	**MS Conc mg/l**	**MSD Conc mg/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
TPH-GRO AK water C6-C10	1.10	N.D.	1.22	1.20	111	110	60-120	1	20

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: LSV49
Matrix: LIQUID

Volatiles by GC

Fraction: Volatiles by GC-GRO

LCS: LCSD9	Batch: **19119B20A** (Sample number(s): 1043306-1043307, 1043309-1043311, 1043313, 1043315, 1043317-1043321)							
Analyte	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
TPH-GRO AK water C6-C10	1.10	1.15	NA	105	NA	60-120	NA	NA

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LOQ/MDL Summary
Volatiles by GC

SDG: LSV49

Fraction: Volatiles by GC-GRO

01438: TPH-GRO AK water C6-C10 Analyte Name	Default MDL	Default LOQ	Units
TPH-GRO AK water C6-C10	0.014	0.10	mg/l

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 11002F Calibration File: [PT2]ALK20019

GC Column (1) : J&W DB-VRX ID: 75 (mm)

ICAL Date(s) Analyzed: 1/19/2018 1/19/2018

COMPOUND	RT OF STANDARDS						MIDPOINT	RT WINDOW	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	RT	FROM	TO
Trifluorotoluene-F	2.90	2.90	2.91	2.90	2.90	2.90	2.90	2.87	2.93

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 11002F Calibration File: [PT2]ALK20019

GC Column (1) : J&W DB-VRX ID: 75 (mm)

ICAL Date(s) Analyzed: 1/19/2018 1/19/2018

COMPOUND	CALIBRATION FACTORS							
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	MEAN	%RSD
Trifluorotoluene-F	3.89E+03	3.96E+03	3.80E+03	3.94E+03	4.08E+03		3.93E+03	3

Average % RSD: 3

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 11002F Calibration File: [PT2]ALK20019

GC Column (1) : J&W DB-VRX ID: 75 (mm)

ICAL Date(s) Analyzed: 1/19/2018 1/19/2018

COMPOUND	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	AVERAGE CF	LEVEL	AMOUNT	PEAK AREA	%RSD
GRO	1		1.60	5.13	2837	2664	1	44	124842	4.29
					2655		2	110	292045	
					2570		3	550	1413377	
					2568		4	1100	2824836	
					2585		5	2750	7107790	
					2767		6	5500	15219620	

Approved: MS 8358
1-26-18

File Name: I:\Cal\20\[PT2]ALK20019.cal
Version: 10

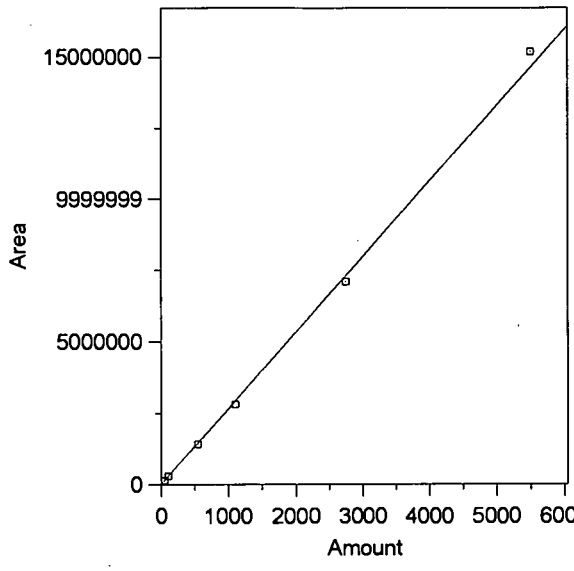
Creator: MDB02001
Description: TPH GRO (Northern CA)
Reason for change:

External standard calibration
Standard injection volume: 1
Standard sample weight: 1
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units: PPB
No default component

Method of calculating data point averages: Current update equal to cal data
Print calibration update report

All levels are normal data points.

1 GRO



Expected retention time:	2 minutes
Search window:	0 minutes
No retention time reference component	
Group number:	3
GRO	
High alarm limit:	0
Low alarm limit:	0
Component constant:	550

Single peak quantification by area

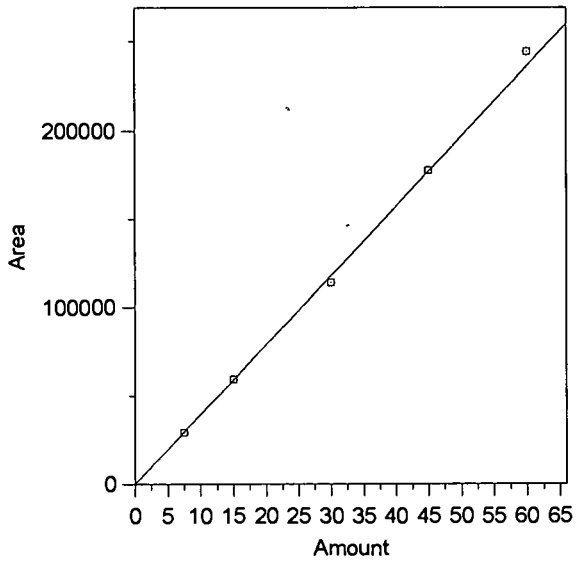
$Y = 2663.656 X + 0$

Average CF fit with equal weighting, forced to origin

Coefficient of determination:	0.9977452
Average error:	3.469%
Average CF:	2663.656
RSD:	4.286%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	44	124842	2837.318	6.520	Manual	1/25/2018 10:35:13 AM
2	110	292045	2654.955	-0.327	Manual	1/25/2018 10:35:24 AM
3	550	1413377	2569.776	-3.524	Manual	1/25/2018 10:35:31 AM
4	1100	2824836	2568.033	-3.590	Manual	1/25/2018 10:35:40 AM
5	2750	7107790	2584.651	-2.966	Manual	1/25/2018 10:35:51 AM
6	5500	1.521962E+07	2767.204	3.887	Manual	1/25/2018 10:36:01 AM

2 SURR-TFT-F



Expected retention time:	2.899 minutes
Search window:	0.03 minutes
No retention time reference component	
Group number:	1
SURR-TFT-F	
High alarm limit:	0
Low alarm limit:	0
Component constant:	30

Single peak quantification by area

$Y = 3934.36 X + 0$

Average CF fit with equal weighting, forced to origin

Coefficient of determination:	0.9971362
Average error:	1.782%
Average CF:	3934.36
RSD:	2.544%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	7.5	29181.01	3890.801	-1.107	Y:\Active\CP20\2018019.0018.BND	1/25/2018 10:29:27 AM
2	15	59457.13	3963.809	0.748	Y:\Active\CP20\2018019.0020.BND	1/25/2018 10:29:30 AM
3	30	114078.1	3802.603	-3.349	Y:\Active\CP20\2018019.0022.BND	1/25/2018 10:29:33 AM
4	45	177259.5	3939.1	0.120	Y:\Active\CP20\2018019.0024.BND	1/25/2018 10:29:36 AM
5	60	244529.3	4075.488	3.587	Y:\Active\CP20\2018019.0026.BND	1/25/2018 10:29:39 AM
6	(-1)	(52071)	--	--	Manual	1/25/2018 10:36:06 AM

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 11002F Detector: FID Date Analyzed: 01/19/18

GC Column (1) : J&W DB-VRX ID: 75 (mm) Time Analyzed: 4:30

Lab File ID: 2018019.0036.RAW Initial Calibration: [PT2]ALK20019

Lab Standard ID: GICVXHE Init. Calib Date(s): 01/19/18 01/19/18

Calibration: [PT2]ALK20019 Method: ALASKA

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D	Limits
Trifluorotoluene-F	2.91	2.87	2.93	26.53	30.18	-12	-43 to +46
GRO		1.60	5.13	1040.34	1100.94	-6	-25 to +25

Compounds 2 Average of %D: 9

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 11002F Detector: FID Date Analyzed: 04/29/19

GC Column (1) : J&W DB-VRX ID: 75 (mm) Time Analyzed: 20:15

Lab File ID: 2019119.0016.RAW Initial Calibration: [PT2]ALK20019

Lab Standard ID: WG20XFW Init. Calib Date(s): 01/19/18 01/19/18

Calibration: [PT2]ALK20019 Method: ALASKA

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D	Limits
Trifluorotoluene-F	2.91	2.86	2.92	24.56	30.08	-18	-43 to +46
GRO		1.60	5.13	1083.94	1100.90	-2	-25 to +25

Compounds 2 Average of %D: 10

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 11002F Detector: FID Date Analyzed: 04/30/19

GC Column (1) : J&W DB-VRX ID: 75 (mm) Time Analyzed: 3:07

Lab File ID: 2019119.0046.RAW Initial Calibration: [PT2]ALK20019

Lab Standard ID: WG20XFY Init. Calib Date(s): 01/19/18 01/19/18

Calibration: [PT2]ALK20019 Method: ALASKA

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT	NOM AMOUNT	%D	Limits
Trifluorotoluene-F	2.91	2.86	2.92	28.73	30.08	-4	-43 to +46
GRO		1.60	5.13	1072.65	1100.90	-3	-25 to +25

Compounds 2 Average of %D: 4

8D
ANALYTICAL SEQUENCE

Sequence: 2018019 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: JW DB-VRX ID: 75

Instrument: 11002F

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

	Sample Code No.	Lab Sample ID	Date Analyzed	Time Analyzed	Calibration File	TFTF
001	AA	IBLK	01/18/2018	20:31:30	[PT1]8015B20019	2.92
002	AA	IBLK	01/18/2018	20:45:03	[PT2]8015B20019	2.91
003	AA	IBLK	01/18/2018	20:58:42	[PT1]8015B20019	2.91
004	AA	IBLK	01/18/2018	21:12:27	[PT2]8015B20019	2.91
005	AA	IBLK	01/18/2018	21:26:07	[PT1]8015B20019	2.92
006	AA	IBLK	01/18/2018	21:39:49	[PT2]8015B20019	2.90
007	AA	IBLK	01/18/2018	21:53:29	[PT1]8015B20019	2.91
008	AA	IBLK	01/18/2018	22:07:10	[PT2]8015B20019	2.91
009	AA	IBLK	01/18/2018	22:20:51	[PT1]8015B20019	2.91
010	AA	IBLK	01/18/2018	22:34:33	[PT2]8015B20019	2.91
011	AA	WGRTX1825A	01/18/2018	22:48:14	[PT1]8015B20019	2.92
012	AA	WGRTX1825A	01/18/2018	23:02:00	[PT2]8015B20019	2.90
013	AA	IBLK	01/18/2018	23:15:40	[PT1]8015B20019	
014	AA	IBLK	01/18/2018	23:29:23	[PT2]8015B20019	2.91
015	AA	IBLK	01/18/2018	23:43:02	[PT1]8015B20019	
016	AA	IBLK	01/18/2018	23:56:44	[PT2]8015B20019	2.90
017	WGRO1AA	WGRO11825B	01/19/2018	00:10:25	[PT1]8015B20019	2.91
018	WGRO1AA	WGRO11825B	01/19/2018	00:24:07	[PT2]8015B20019	2.90
019	WGRO2AA	WGRO21825B	01/19/2018	00:37:47	[PT1]8015B20019	2.91
020	WGRO2AA	WGRO21825B	01/19/2018	00:51:31	[PT2]8015B20019	2.90
021	WGRO3AA	WGRO31825B	01/19/2018	01:05:12	[PT1]8015B20019	2.91
022	WGRO3AA	WGRO31825B	01/19/2018	01:18:54	[PT2]8015B20019	2.91
023	WGRO4AA	WGRO41825B	01/19/2018	01:32:35	[PT1]8015B20019	2.91
024	WGRO4AA	WGRO41825B	01/19/2018	01:46:17	[PT2]8015B20019	2.90
025	WGRO5AA	WGRO51825B	01/19/2018	01:59:56	[PT1]8015B20019	2.91
026	WGRO5AA	WGRO51825B	01/19/2018	02:13:39	[PT2]8015B20019	2.90
027	WGRO6AA	WGRO61825B	01/19/2018	02:27:19	[PT1]8015B20019	2.91
028	WGRO6AA	WGRO61825B	01/19/2018	02:41:01	[PT2]8015B20019	2.90
029	AA	IBLK	01/19/2018	02:54:40	[PT1]8015B20019	2.91
030	AA	IBLK	01/19/2018	03:08:20	[PT2]8015B20019	2.91
031	AA	IBLK	01/19/2018	03:21:58	[PT1]8015B20019	2.91

ICAL Dates

[PT1]8015B20019 01/19/2018 - 01/19/2018
[PT2]8015B20019 01/19/2018 - 01/19/2018

TFTF = Trifluorotoluene-F
TFTF = Trifluorotoluene-F

ICAL RT QC Limits

2.91 (2.86 - 2.96 Minutes)
2.9 (2.85 - 2.95 Minutes)

Files processed using C6-C10 for the Alaska calibration [PT2] ALK20019

MOB2001
3-1319

FORM VIII PEST

8D
ANALYTICAL SEQUENCE

Sequence: 2018019 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: JW DB-VRX ID: 75

Instrument: 11002F

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

	Sample Code No.	Lab Sample ID	Date Analyzed	Time Analyzed	Calibration File	TFTF
032	AA	IBLK	01/19/2018	03:35:38	[PT2]8015B20019	2.91
033	GMDLXLC	GMDLX1825B	01/19/2018	03:49:18	[PT1]8015B20019	2.91
034	GMDLXLD	GMDLX1825B	01/19/2018	04:03:00	[PT2]8015B20019	2.90
035	GICVXHD	GICVX1825B	01/19/2018	04:16:35	[PT1]8015B20019	2.91
036	GICVXHE	GICVX1825B	01/19/2018	04:30:13	[PT2]8015B20019	2.91

	ICAL Dates		ICAL RT	QC Limits
[PT1]8015B20019	01/19/2018 - 01/19/2018	TFTF = Trifluorotoluene-F	2.91	(2.86 - 2.96 Minutes)
[PT2]8015B20019	01/19/2018 - 01/19/2018	TFTF = Trifluorotoluene-P	2.9	(2.85 - 2.95 Minutes)

FORM VIII PEST

8D
ANALYTICAL SEQUENCE

Sequence: 2019119 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: JW DB-VRX ID: 75

Instrument: 11002F

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

	Sample Code No.	Lab Sample ID	Date Analyzed	Time Analyzed	Calibration File
001	AA	WGRTX1925H	04/29/2019	16:49:49	[PT1]8015B20019
002	AA	WGRTX1925H	04/29/2019	17:03:26	[PT2]ALK20019
003	WG20XFU	WG20X1925BW	04/29/2019	17:17:04	[PT1]8015B20019
004	WG20XFV	WG20X1925BW	04/29/2019	17:30:48	[PT2]TPH20019
005	BLKQ8	BLANKA	04/29/2019	17:44:29	[PT1]8015B20019
006	BLKQA	BLANKA	04/29/2019	17:58:12	[PT2]TPH20019
007	LCSD8	LCSA	04/29/2019	18:11:53	[PT1]8015B20019
008	LCSDA	LCSA	04/29/2019	18:25:37	[PT2]TPH20019
009	CE-FB	1043443	04/29/2019	18:39:25	[PT1]8015B20019
010	LCSDQ6	LCSDA	04/29/2019	18:53:10	[PT2]TPH20019
011	93090	1042975	04/29/2019	19:06:50	[PT1]8015B20019
012	UST-5	1043224	04/29/2019	19:20:37	[PT2]TPH20019
013	AA	IBLK	04/29/2019	19:34:26	[PT1]8015B20019
014	PLC04	1043230	04/29/2019	19:48:09	[PT2]TPH20019
015	CE-01	1043433	04/29/2019	20:01:57	[PT1]8015B20019
016	WG20XFW	WG20X1925BW	04/29/2019	20:15:41	[PT2]ALK20019
017	CE-01MS	1043434	04/29/2019	20:29:27	[PT1]8015B20019
018	BLKQ9	BLANKA	04/29/2019	20:43:12	[PT2]ALK20019
019	CE-01MSD	1043435	04/29/2019	20:56:56	[PT1]8015B20019
020	LCSD9	LCSA	04/29/2019	21:10:41	[PT2]ALK20019
021	CE-02	1043436	04/29/2019	21:24:26	[PT1]8015B20019
022	ANCTB	1043321	04/29/2019	21:38:16	[PT2]ALK20019
023	CE-03	1043437	04/29/2019	21:51:56	[PT1]8015B20019
024	ANCEB	1043306	04/29/2019	22:05:40	[PT2]ALK20019
025	CE-04	1043438	04/29/2019	22:19:26	[PT1]8015B20019
026	ANC02	1043307	04/29/2019	22:33:09	[PT2]ALK20019
027	CE-05	1043439	04/29/2019	22:46:48	[PT1]8015B20019
028	ANC03	1043309	04/29/2019	23:00:33	[PT2]ALK20019
029	CE-06	1043440	04/29/2019	23:14:20	[PT1]8015B20019
030	ANC03MS	1043310	04/29/2019	23:28:05	[PT2]ALK20019
031	WG20XFX	WG20X1925BW	04/29/2019	23:41:51	[PT1]8015B20019
032	ANC03MSD	1043311	04/29/2019	23:55:39	[PT2]ALK20019
033	AA	IBLK	04/30/2019	00:09:26	[PT1]8015B20019
034	ANC06	1043313	04/30/2019	00:23:10	[PT2]ALK20019
035	CE-07	1043441	04/30/2019	00:36:50	[PT1]8015B20019
036	ANC08	1043317	04/30/2019	00:50:35	[PT2]ALK20019

8D
ANALYTICAL SEQUENCE

Sequence: 2019119 Lab Name: Lancaster laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.:

GC Column: JW DB-VRX ID: 75

Instrument: 11002F

THIS ANALYTICAL SEQUENCE OF BLANKS, SAMPLES AND STANDARDS IS GIVEN BELOW:

	Sample Code No.	Lab Sample ID	Date Analyzed	Time Analyzed	Calibration File
037	CE-08	1043442	04/30/2019	01:04:17	[PT1]8015B20019
038	ANC07	1043318	04/30/2019	01:18:05	[PT2]ALK20019
039	CE-7A	1043445	04/30/2019	01:31:54	[PT1]8015B20019
040	ANC10	1043319	04/30/2019	01:45:40	[PT2]ALK20019
041	CE-09	1043446	04/30/2019	01:59:19	[PT1]8015B20019
042	ANCFD	1043320	04/30/2019	02:13:02	[PT2]ALK20019
043	CE-10	1043447	04/30/2019	02:26:46	[PT1]8015B20019
044	ANC09	1043315	04/30/2019	02:40:32	[PT2]ALK20019
045	ORSI-	1043688	04/30/2019	02:54:15	[PT1]8015B20019
046	WG20XFY	WG20X1925BW	04/30/2019	03:07:57	[PT2]ALK20019
047	94303	1043810	04/30/2019	03:21:38	[PT1]8015B20019
048	AA	IBLK	04/30/2019	03:35:22	[PT2]ALK20019
049	94304	1043811	04/30/2019	03:49:08	[PT1]8015B20019
050	AA	IBLK	04/30/2019	04:10:18	[PT2]ALK20019
051	WG20XFZ	WG20X1925BW	04/30/2019	04:16:33	[PT1]8015B20019
052	AA	IBLK	04/30/2019	04:30:21	[PT2]ALK20019

Sample Data

Volatiles by GC-GRO

Eurofins Lancaster Laboratories Range Data Summary

Sample Name: 1043306 ANCEB Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/29/2019 22:05:40
Instrument : CP20--11002F
Result file : 2019119.0024.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

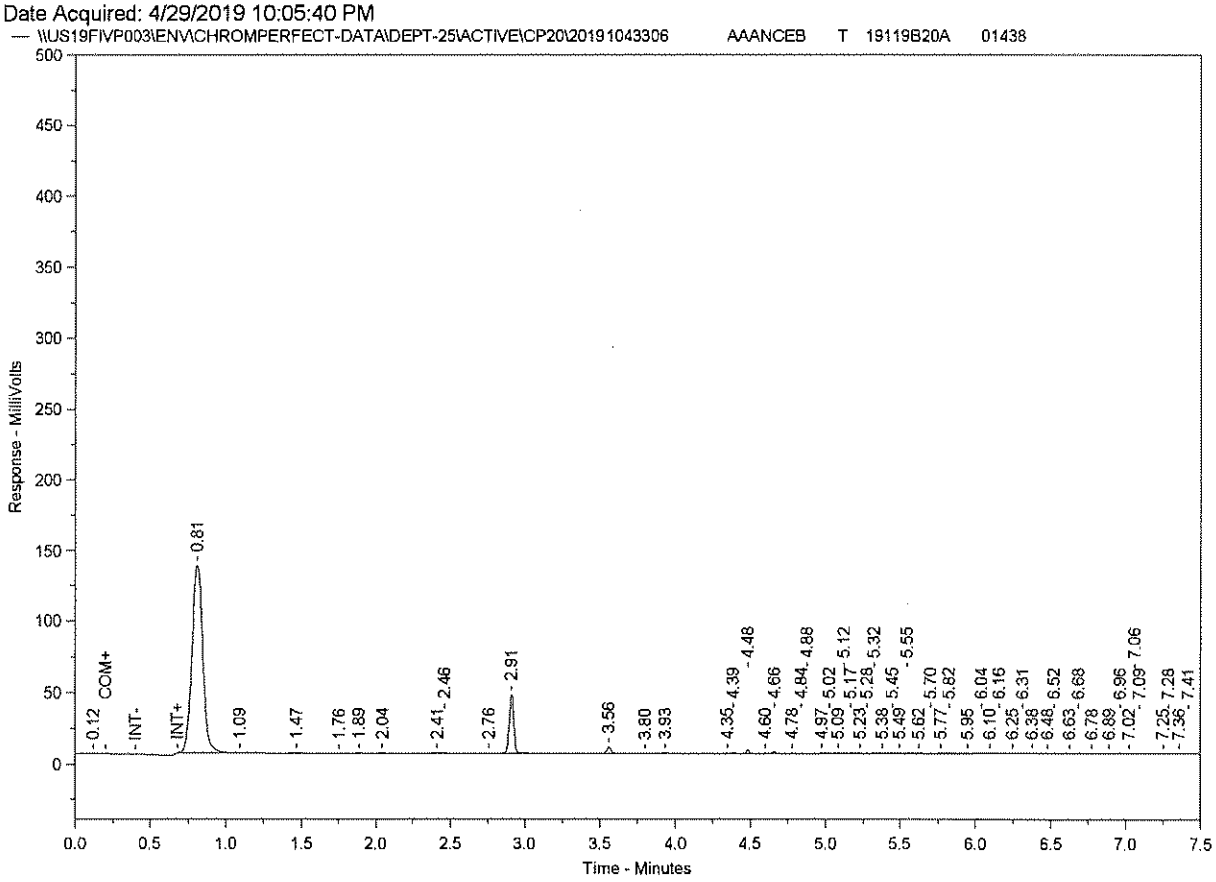
SURR-TFT-F 71% (60-120) Conc.: 21.20722

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	83437	21.2072				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	100317	6.3363	<100	<14		ppb

Comments: _____

Reviewed by: JGorm Verified by: MMS8358
Date: 4/30/19 Date: 4/30/19

1043306 AAANCEB T 19119B20A 01438
CP20 11002F 2019119.0024.RAW
Date Acquired: 4/29/2019 10:05:40 PM



1043306 AAANCEB T 19119B20A 01438
Date Acquired: 4/29/2019 10:05:40 PM **Instrument: CP20 11002F**
Raw File: 2019119.0024.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.910	2.895	21.207	83437	41032.89

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	100317	83437	16880

Surrogate Percent Recovery: 70.69073

Total GRO Area: 16879.90
Total GRO Concentration: 6.34 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0024.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043307 ANC02 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/29/2019 22:33:09
Instrument : CP20--11002F
Result file : 2019119.0026.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

SURR-TFT-F 68% (60-120) Conc.: 20.320005

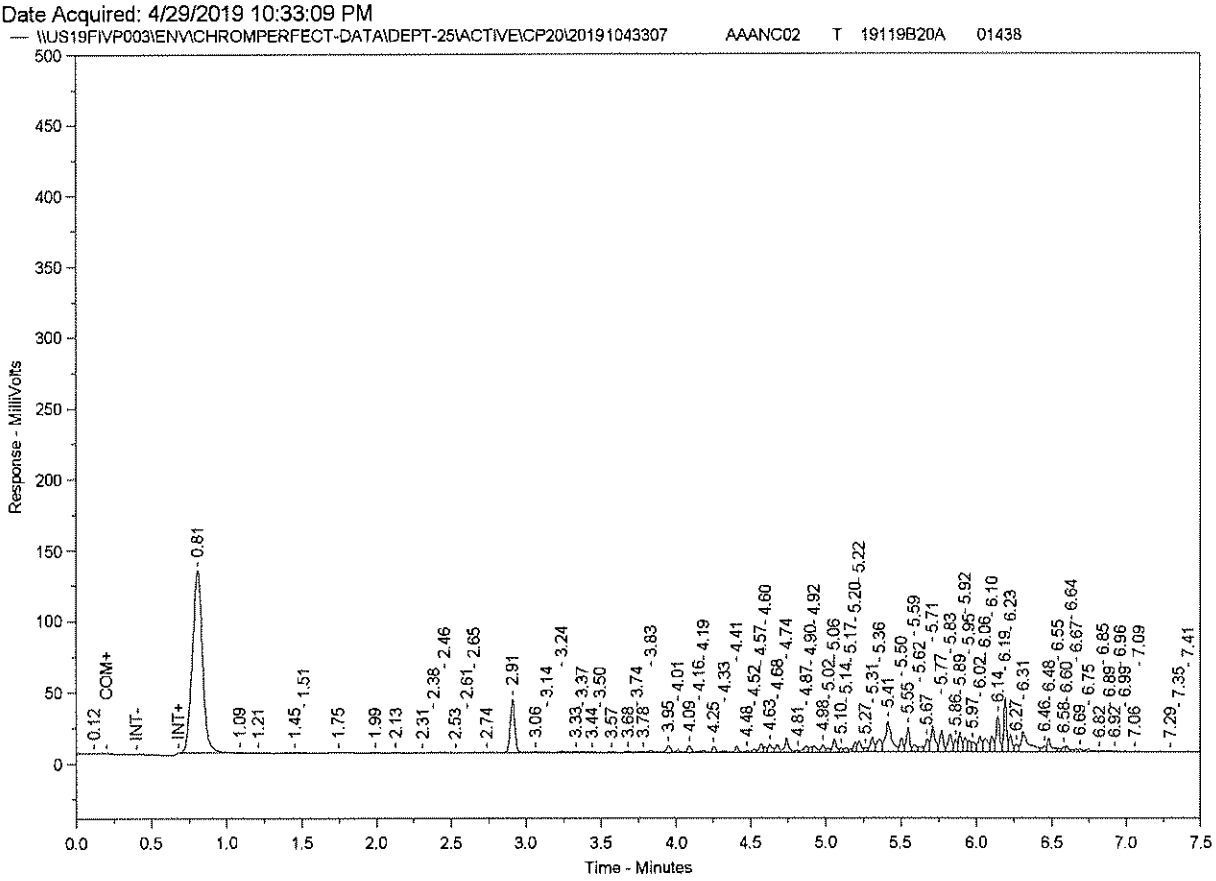
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	79946	20.3200				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	248199	63.1581	<100	14	J	ppb

Comments: _____

Reviewed by: JB Date: 4/30/19

Verified by: MS 8358 Date: 43019

1043307 AAANC02 T 19119B20A 01438
CP20 11002F 2019119.0026.RAW
Date Acquired: 4/29/2019 10:33:09 PM



1043307 AAANC02 T 19119B20A 01438
Date Acquired: 4/29/2019 10:33:09 PM **Instrument: CP20 11002F**
Raw File: 2019119.0026.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.908	2.895	20.320	79946	37512.82

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	248199	79946	168253

Surrogate Percent Recovery: 67.73335

Total GRO Area: 168253.20
Total GRO Concentration: 63.17 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0026.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043309 ANC03 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/29/2019 23:00:33
Instrument : CP20--11002F
Result file : 2019119.0028.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

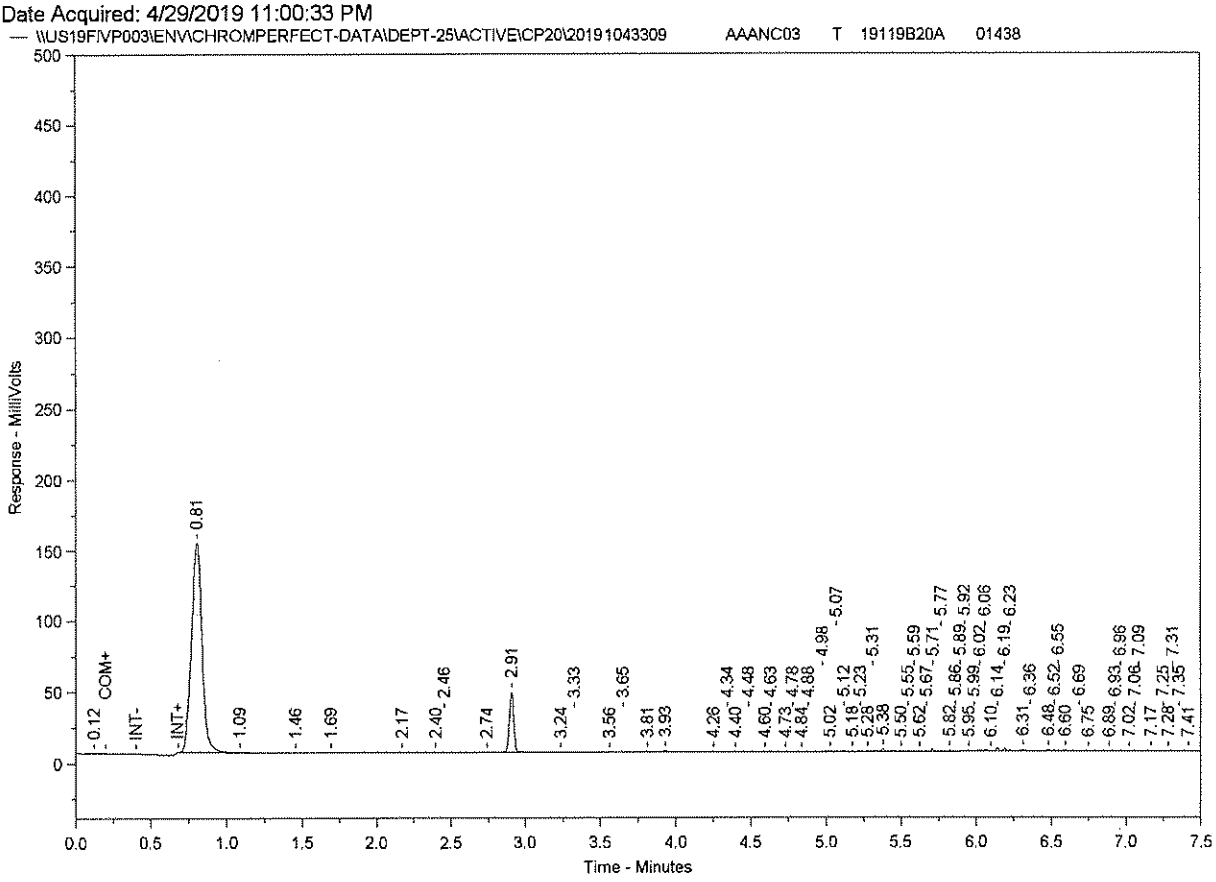
SURR-TFT-F 74% (60-120) Conc.: 22.130447

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	87069	22.1304				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	92951	2.2078	<100	<14		ppb

Comments: _____

Reviewed by: JLorm Verified by: MS8358
Date: 4/30/19 Date: 43019

1043309 AAANC03 T 19119B20A 01438
CP20 11002F 2019119.0028.RAW
Date Acquired: 4/29/2019 11:00:33 PM



1043309 AAANC03 T 19119B20A 01438
Date Acquired: 4/29/2019 11:00:33 PM
Instrument: CP20 11002F
Raw File: 2019119.0028.RAW
Units: ug/L
Analyst:
Method File: [PT2]ALK20019.MET
Dilution Factor: 1
Column: 30 M DB-VRX x 0.25mm x 1.40 um

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.908	2.895	22.130	87069	42327.39

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	92951	87069	5882

Surrogate Percent Recovery: 73.76816

Total GRO Area: 5881.62
Total GRO Concentration: 2.21 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0028.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043313 ANC06 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst: 2001 SDG: LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/30/2019 00:23:10
Instrument : CP20--11002F
Result file : 2019119.0034.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

SURR-TFT-F 85% (60-120) Conc.: 25.446489

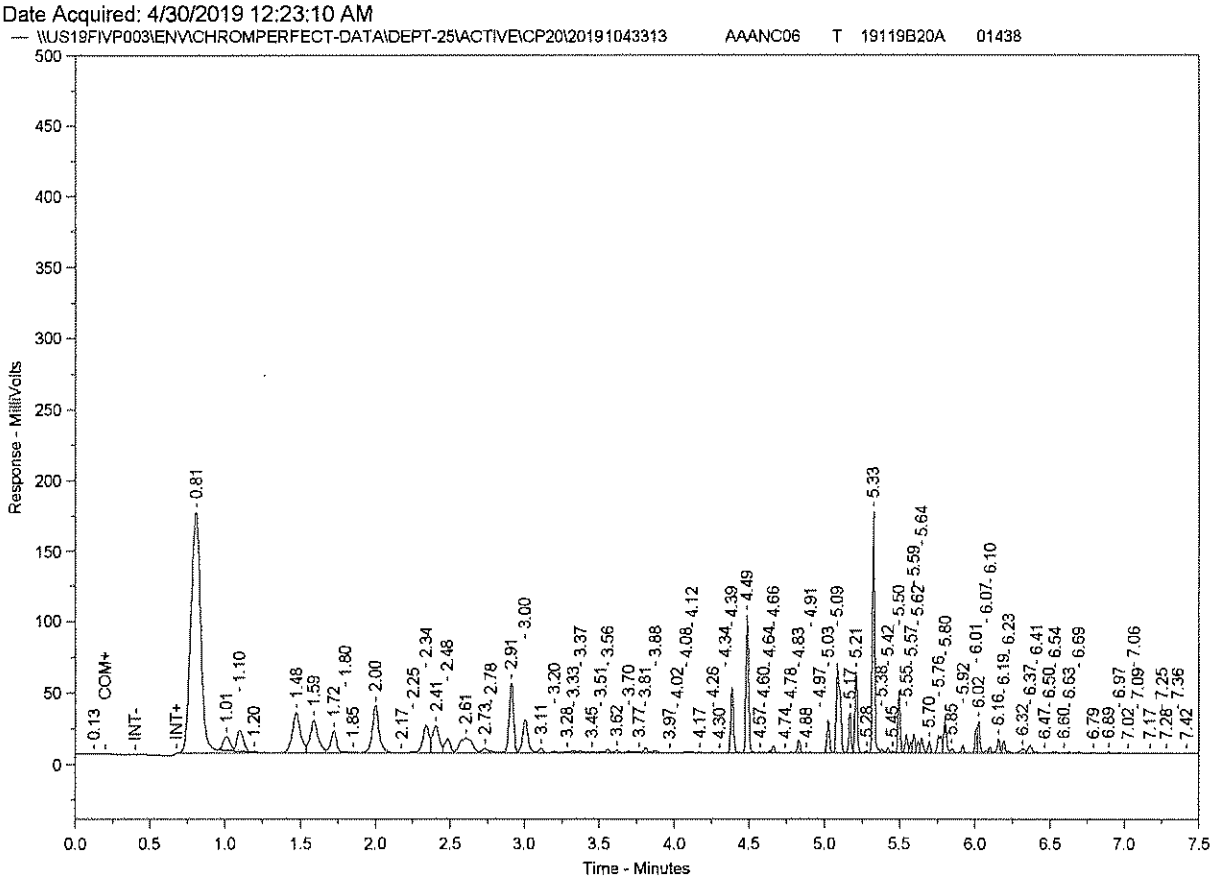
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	100116	25.4465				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	923123	308.9369	100	14		ppb

Comments: _____

Reviewed by: _____ Verified by: _____

Date: 4/30/19 Date: 4/30/19

1043313 AAANC06 T 19119B20A 01438
CP20 11002F 2019119.0034.RAW
Date Acquired: 4/30/2019 12:23:10 AM



1043313 AAANC06 T 19119B20A 01438
Date Acquired: 4/30/2019 12:23:10 AM **Instrument: CP20 11002F**
Raw File: 2019119.0034.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.910	2.895	25.446	100116	48832.36

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	923124	100116	823008

Surrogate Percent Recovery: 84.82163

Total GRO Area: 823007.90
Total GRO Concentration: 308.98 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0034.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043315 ANC09 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 5. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/30/2019 02:40:32
Instrument : CP20--11002F
Result file : 2019119.0044.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

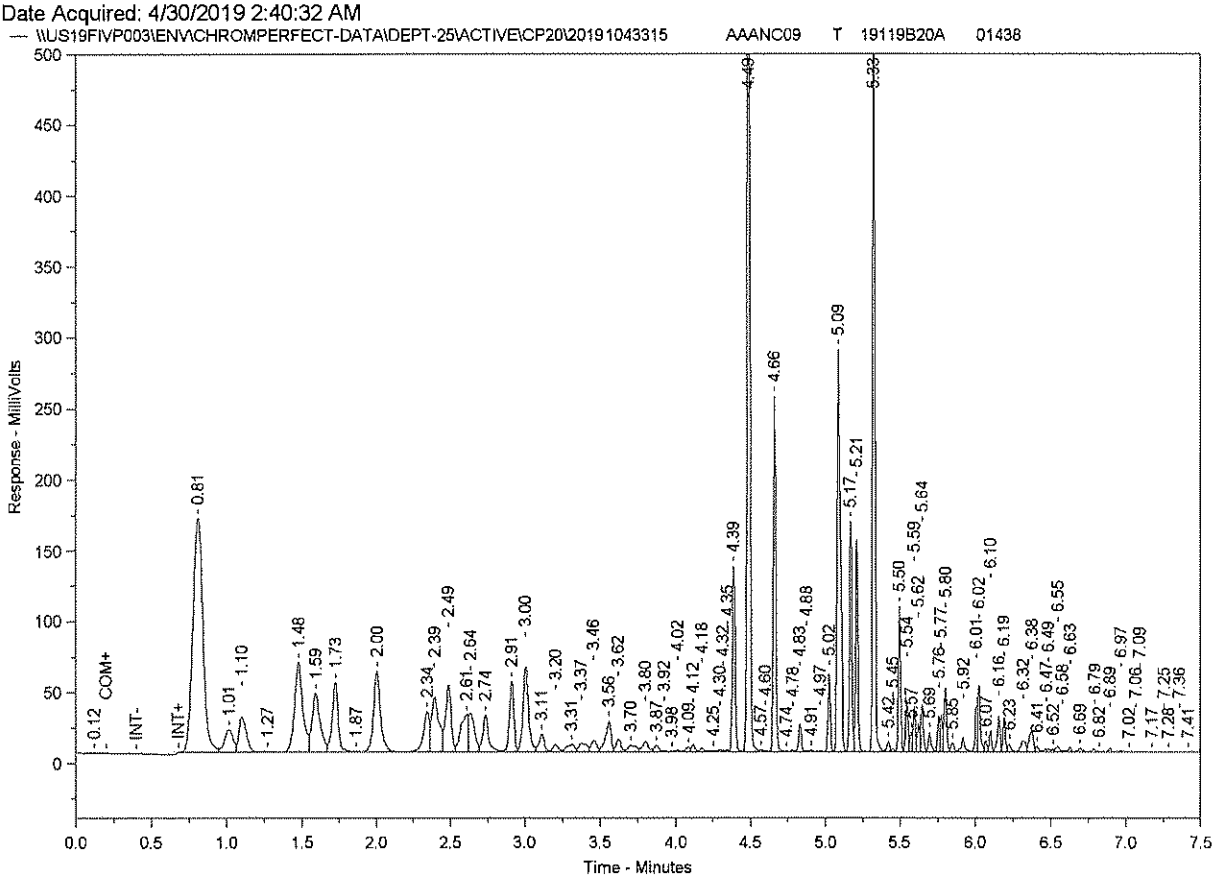
SURR-TFT-F 89% (60-120) Conc.: 133.48822

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	105038	133.4882				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	3325133	6043.7224	500	70		ppb

Comments: _____

Reviewed by: JMcm Verified by: MB8358
Date: 4/30/19 Date: 43019

1043315 AAANC09 T 19119B20A 01438
CP20 11002F 2019119.0044.RAW
Date Acquired: 4/30/2019 2:40:32 AM



1043315 AAANC09 T 19119B20A 01438
Date Acquired: 4/30/2019 2:40:32 AM **Instrument: CP20 11002F**
Raw File: 2019119.0044.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 5 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.911	2.895	133.488	105038	50685.78

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	3325133	105038	3220095

Surrogate Percent Recovery: 88.99214

Total GRO Area: 3220095.00
Total GRO Concentration: 6044.50 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0044.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043317 ANC08 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/30/2019 00:50:35
Instrument : CP20--11002F
Result file : 2019119.0036.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

SURR-TFT-F 78% (60-120) Conc.: 23.256702

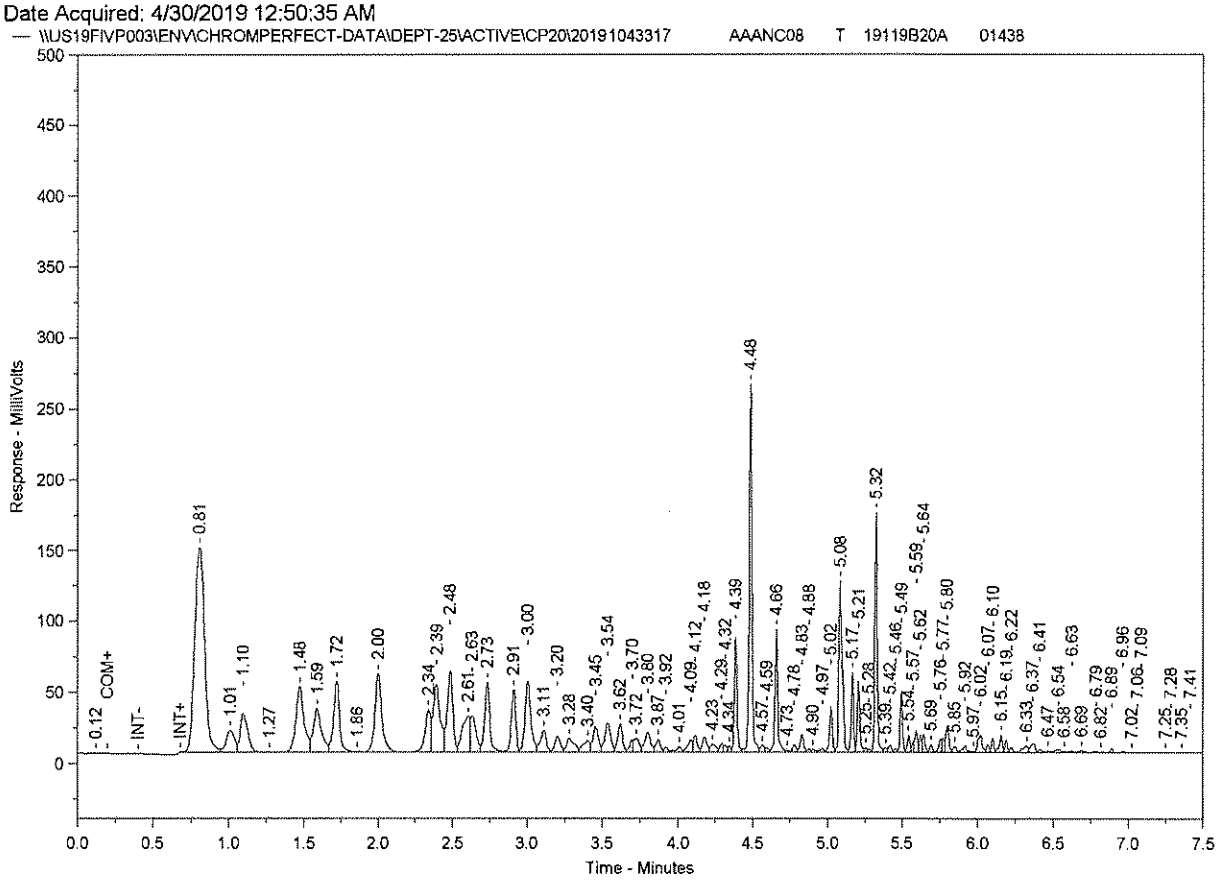
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	91500	23.2567				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	2569572	930.2073	100	14		ppb

Comments: _____

Reviewed by: JMcm Verified by: MMS 4.30.19

Date: 4/30/19 Date: 4.30.19

1043317 AAANC08 T 19119B20A 01438
CP20 11002F 2019119.0036.RAW
Date Acquired: 4/30/2019 12:50:35 AM



1043317 AAANC08 T 19119B20A 01438
Date Acquired: 4/30/2019 12:50:35 AM **Instrument: CP20 11002F**
Raw File: 2019119.0036.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.909	2.895	23.257	91500	44363.09

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	2569573	91500	2478072

Surrogate Percent Recovery: 77.52235

Total GRO Area: 2478072.00
Total GRO Concentration: 930.33 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0036.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043318 ANC07 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/30/2019 01:18:05
Instrument : CP20--11002F
Result file : 2019119.0038.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

SURR-TFT-F 85% (60-120) Conc.: 25.567385

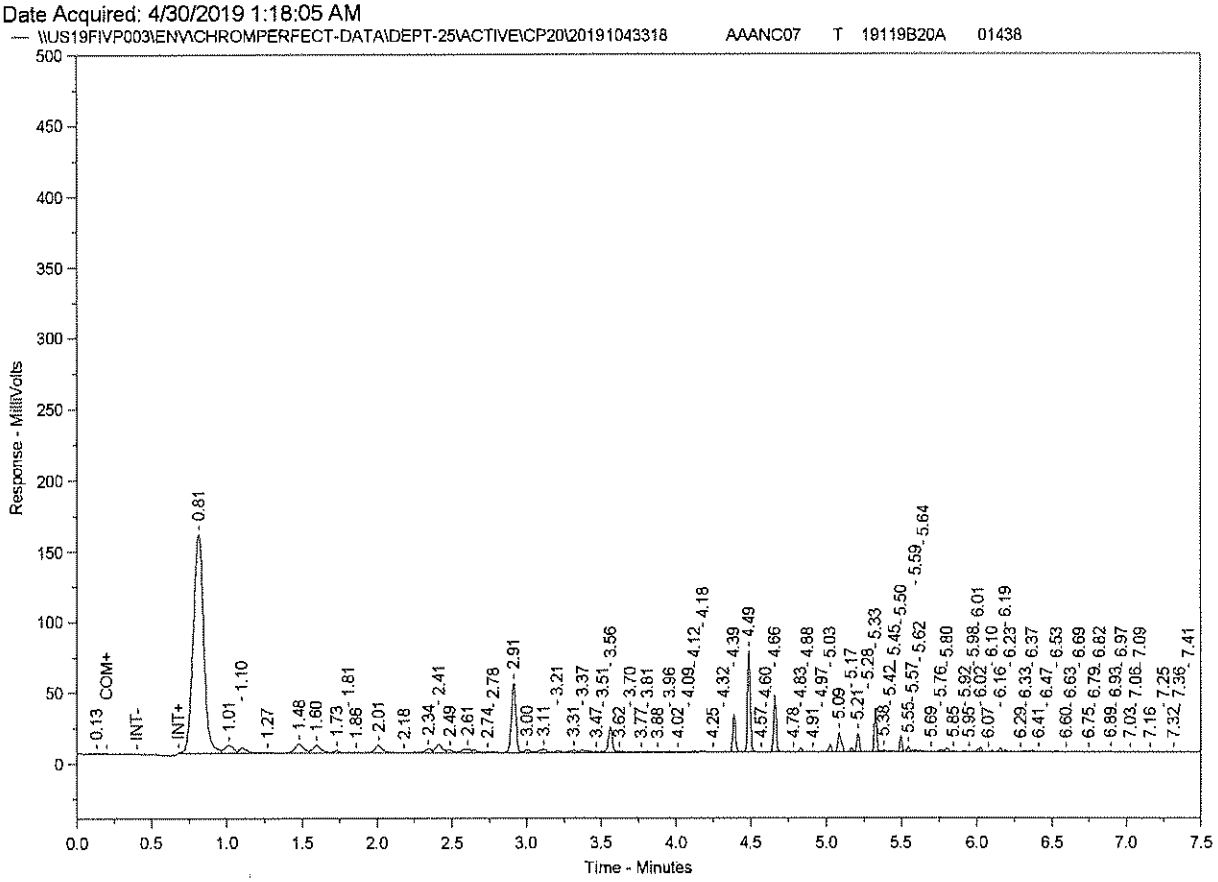
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	100591	25.5674				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	447135	130.0841	100	14		ppb

Comments: _____

Reviewed by: JMcm Verified by: MS838

Date: 4/30/19 Date: 43019

1043318 AAANC07 T 19119B20A 01438
CP20 11002F 2019119.0038.RAW
Date Acquired: 4/30/2019 1:18:05 AM



1043318 AAANC07 T 19119B20A 01438
Date Acquired: 4/30/2019 1:18:05 AM **Instrument: CP20 11002F**
Raw File: 2019119.0038.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.912	2.895	25.567	100591	49400.09

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	447135	100591	346544

Surrogate Percent Recovery: 85.22462

Total GRO Area: 346544.10
Total GRO Concentration: 130.10 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0038.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043319 ANC10 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/30/2019 01:45:40
Instrument : CP20--11002F
Result file : 2019119.0040.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

SURR-TFT-F 87% (60-120) Conc.: 26.240776

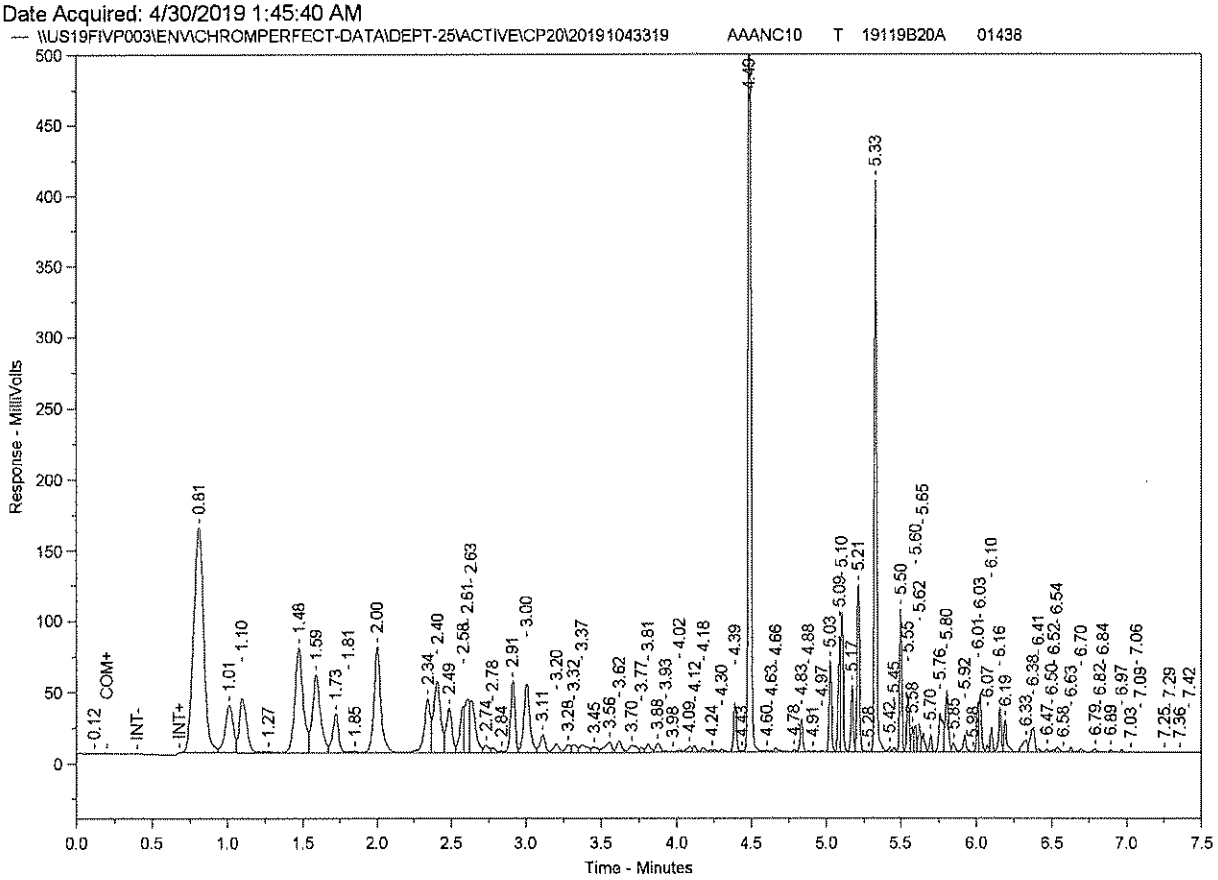
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	103241	26.2408				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	2548268	917.8029	100	14		ppb

Comments: _____

Reviewed by: JLcorn Verified by: MS8058

Date: 4/30/19 Date: 43019

1043319 AAANC10 T 19119B20A 01438
CP20 11002F 2019119.0040.RAW
Date Acquired: 4/30/2019 1:45:40 AM



1043319 AAANC10 T 19119B20A 01438
Date Acquired: 4/30/2019 1:45:40 AM **Instrument: CP20 11002F**
Raw File: 2019119.0040.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.911	2.895	26.241	103241	50124.4

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	2548268	103241	2445027

Surrogate Percent Recovery: 87.46925

Total GRO Area: 2445027.00
Total GRO Concentration: 917.92 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0040.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043320 ANCFD Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst: 2001 SDG: LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/30/2019 02:13:02
Instrument : CP20--11002F
Result file : 2019119.0042.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

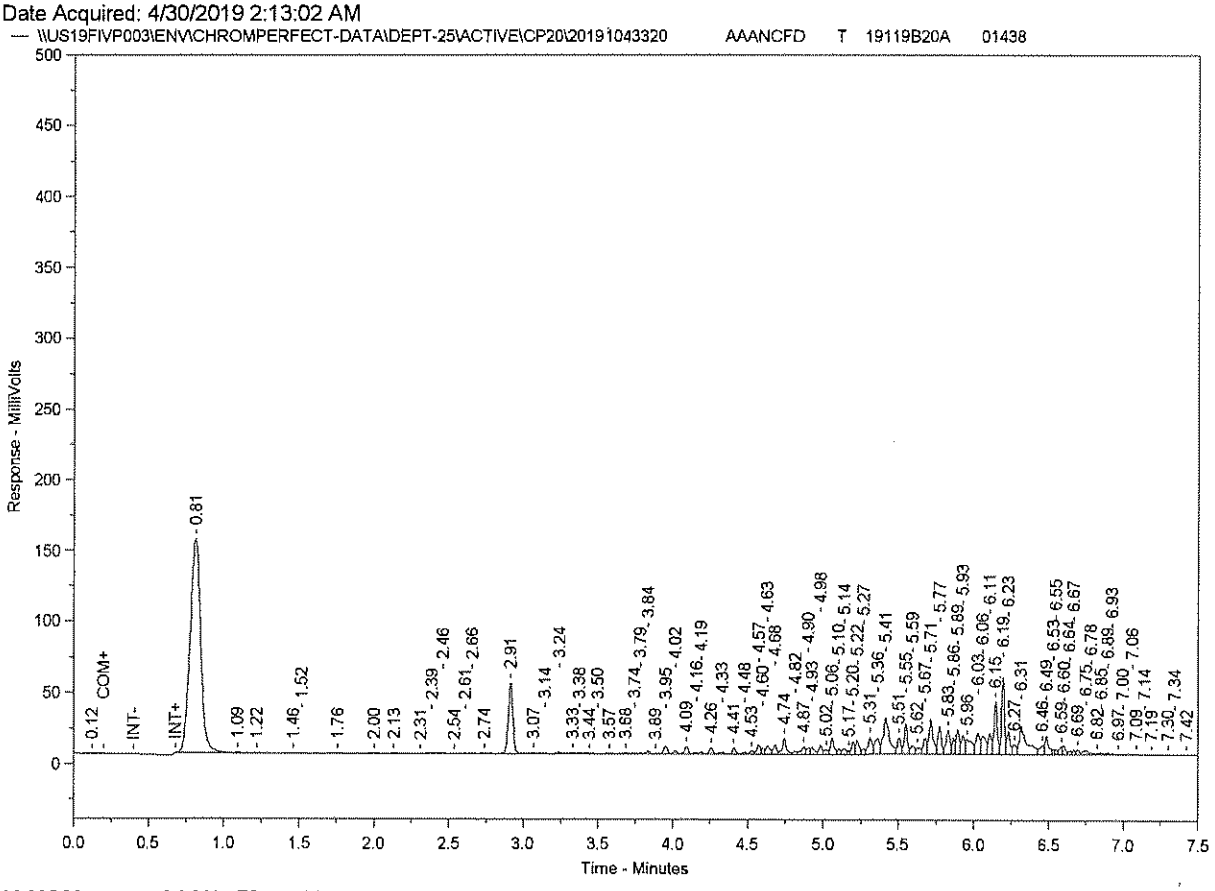
SURR-TFT-F 88% (60-120) Conc.: 26.389458

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	103826	26.3895				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	295265	71.8615	<100	14	J	ppb

Comments: _____

Reviewed by: JLoom Verified by: MB8358
Date: 4/30/19 Date: 4-30-19

1043320 AAANCFD T 19119B20A 01438
CP20 11002F 2019119.0042.RAW
Date Acquired: 4/30/2019 2:13:02 AM



1043320 AAANCFD T 19119B20A 01438
Date Acquired: 4/30/2019 2:13:02 AM **Instrument: CP20 11002F**
Raw File: 2019119.0042.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.912	2.895	26.389	103826	49784.96

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	295265	103826	191439

Surrogate Percent Recovery: 87.96486

Total GRO Area: 191438.90
Total GRO Concentration: 71.87 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0042.RAW

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043321 ANCTB Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG:LSV49 State: AK
Analyses: 01438

Injection Summary

Injected on : 4/29/2019 21:38:16
Instrument : CP20--11002F
Result file : 2019119.0022.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

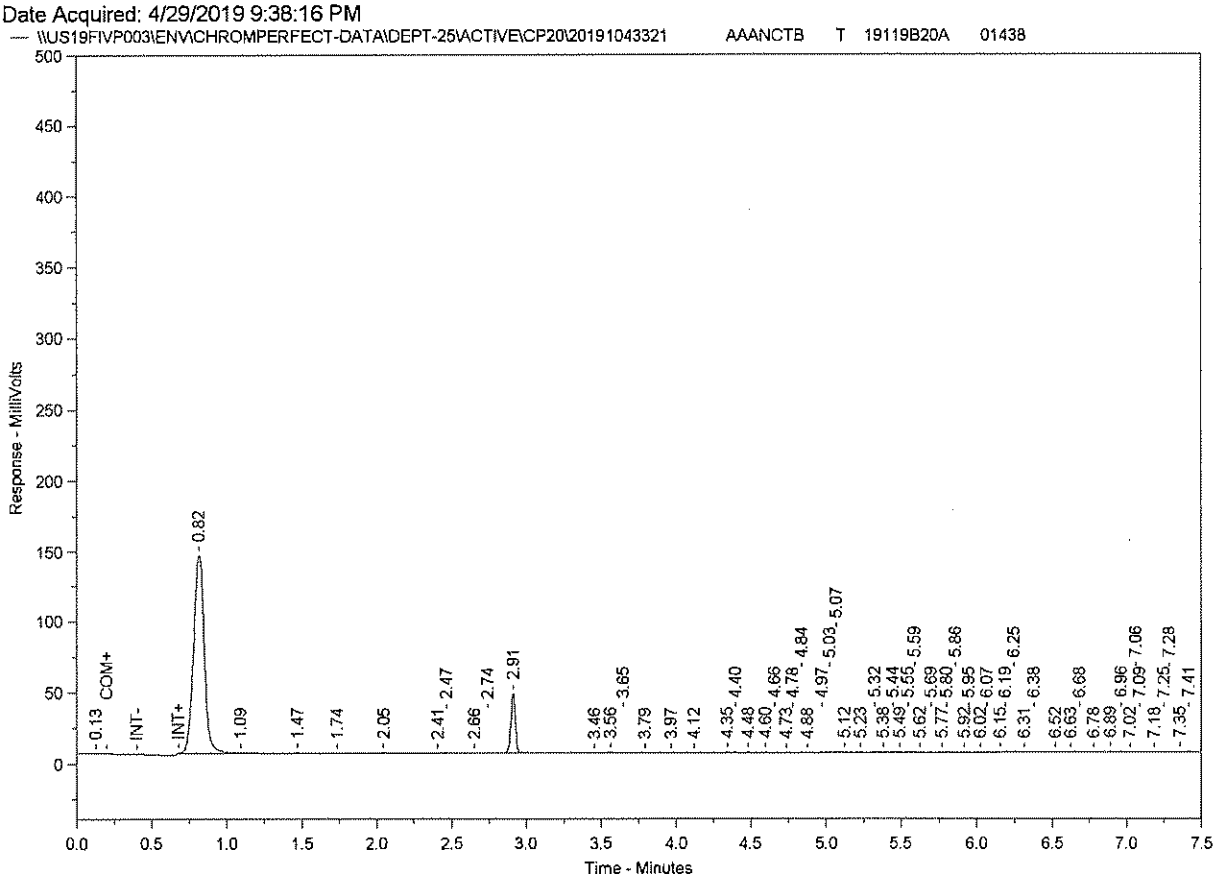
SURR-TFT-F 72% (60-120) Conc.: 21.566143

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	84849	21.5661				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	89326	1.6805	<100	<14		ppb

Comments: _____

Reviewed by: JGrm Verified by: MMS 8358
Date: 4/30/19 Date: 43019

1043321 AAANCTB T 19119B20A 01438
CP20 11002F 2019119.0022.RAW
Date Acquired: 4/29/2019 9:38:16 PM



1043321 AAANCTB T 19119B20A 01438
Date Acquired: 4/29/2019 9:38:16 PM **Instrument: CP20 11002F**
Raw File: 2019119.0022.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.912	2.895	21.566	84849	41901.09

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	89326	84849	4477

Surrogate Percent Recovery: 71.88714

Total GRO Area: 4476.80
Total GRO Concentration: 1.68 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0022.RAW

Raw QC Data

Volatiles by GC-GRO

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: BLANKA BLKQ9 Sample ID: AA **Batchnumber:** 19119B20A
Sample Amount: 1. Total Volume: 1. ml Analyst:2001 SDG: State:
Analyses: 01438

Injection Summary

Injected on : 4/29/2019 20:43:12
Instrument : CP20--11002F
Result file : 2019119.0018.RAW
Calibration files : [PT2]ALK20019.cal
Method files : [PT2]ALK20019.MET
Setting : [PT2]ALK20019

Surrogate Recoveries

SURR-TFT-F 81% (60-120) Conc.: 24.319841

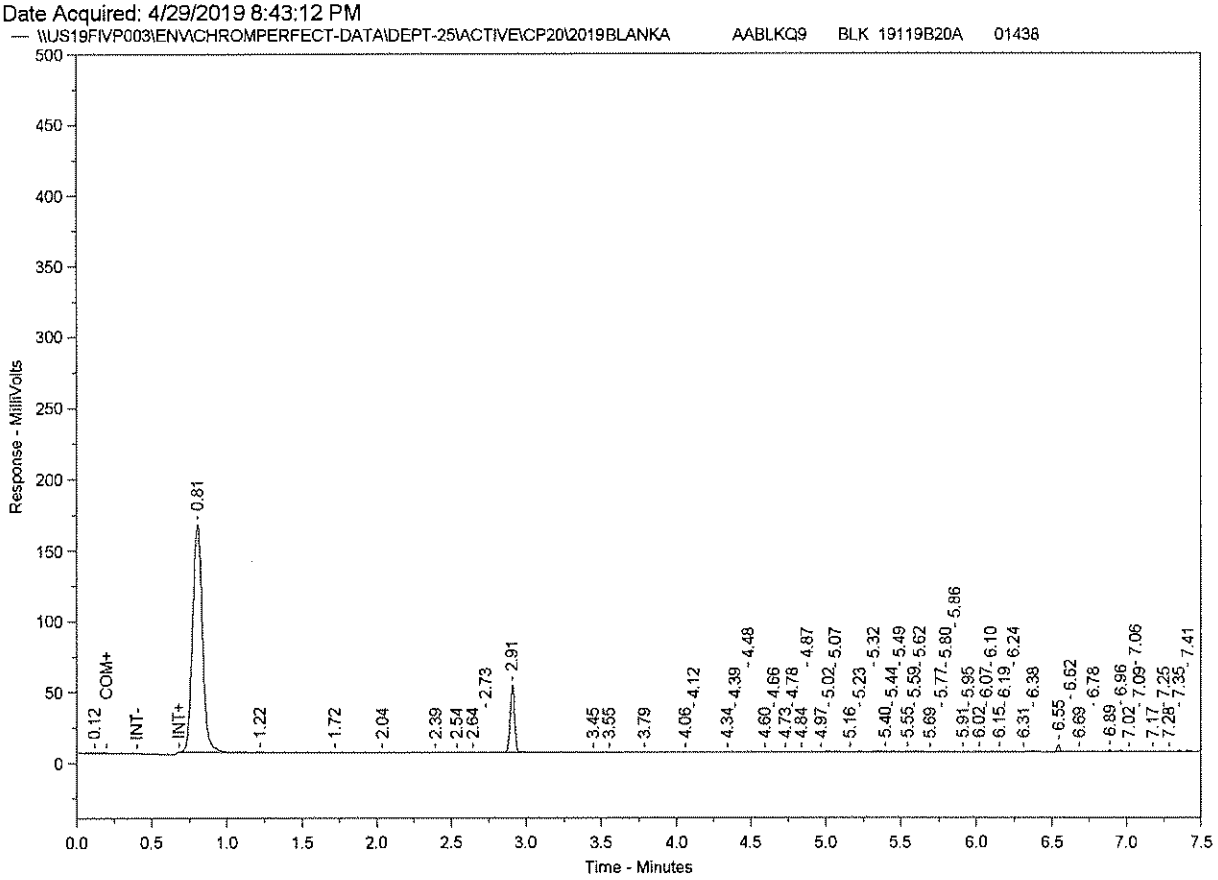
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
SURR-TFT-F	2.91 (2.86 - 2.92)	95683	24.3198				ppb
SURR-1C3FB	4.53 - 4.60	0	0.0000				ppb
GRO	1.60 - 5.13	99802	1.5462	<100	<14		ppb

Comments: _____

Reviewed by: [signature] Verified by: MB 8358

Date: 4/30/19 Date: 43019

BLANKA AABLKQ9 BLK 19119B20A 01438
CP20 11002F 2019119.0018.RAW
Date Acquired: 4/29/2019 8:43:12 PM



BLANKA AABLKQ9 BLK 19119B20A 01438
Date Acquired: 4/29/2019 8:43:12 PM **Instrument: CP20 11002F**
Raw File: 2019119.0018.RAW **Units: ug/L**
Analyst: **Method File: [PT2]ALK20019.MET**
Dilution Factor: 1 **Column: 30 M DB-VRX x 0.25mm x 1.40 um**

Threshold: 1

Peak Table using calibration : [PT2]ALK20019.cal- Version 19
Number of Compounds: 2

Component Name	Ret. Time	Exp. Ret Time	Amount ug/L	Peak Area (A)*	Peak Height (H)
SURR-TFT-F	2.907	2.895	24.320	95683	47478.04

RT Start	RT Stop	Unadj GRO	Total Surr.	Adj. GRO
1.6	5.13	99802	95683	4119

Surrogate Percent Recovery: 81.06614

Total GRO Area: 4119.13
Total GRO Concentration: 1.55 ug/L

File: \\US19FIVP003\ENV\CHROMPERFECT-DATA\DEPT-25\ACTIVE\CP20\2019119.0018.RAW

TPH-DRO by GC Data

Case Narrative/Conformance Summary

TPH-DRO by GC

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

EPH/Miscellaneous GC

Fraction: TPH-DRO by GC

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1043306	QA-O-190424	X		1	Equipment Blank
1043307	MW-2-W-190424	X		2	
1043309	MW-3-W-190424	X		1	Unspiked
1043310	MW-3-W-190424 MS	X		1	Matrix Spike
1043311	MW-3-W-190424 MSD	X		1	Matrix Spike Duplicate
1043313	MW-6-W-190424	X		1	
1043315	MW-9-W-190424	X		1	
1043317	MW-8-W-190424	X		1	
1043318	MW-7-W-190424	X		1	
1043319	MW-10-W-190424	X		1	
1043320	BD-1-WD-190424	X		1	Field Duplicate Sample

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

Method Blank

For noncompliant preparation/method blanks, corrective action is not required if the sample is ND or > 10 times the blank concentration, unless otherwise specified in the method or by the client.

Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

EPH/Miscellaneous GC

Fraction: TPH-DRO by GC

(Sample number(s): 1043306-1043307: Analysis: 13025)
Target analytes were detected in the method blank associated with the samples as noted on the QC summary. The observed sample pattern in the method blank is not typical of #2 fuel/diesel. The reported result in the method blank is due to an individual peak(s) eluting in the DRO range.

LCS/LCSD

Batch#: 191260013A
The recovery(ies) for the following analyte(s) in the LCS and LCSD were below the acceptance window: DRO C10-C25
Refer to the QC Summary forms for more information.

MS/MSD

Batch#: 191220016A (Sample number(s): 1043309-1043311, 1043313, 1043315, 1043317-1043320, UNSPK: 1043309)
The recovery(ies) for the following analyte(s) in the MSD were below the acceptance window: DRO C10-C25

Surrogate

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

Batch#: 191220016A (Sample number(s): 1043309-1043311, 1043313, 1043315, 1043317-1043320, UNSPK: 1043309)
The recovery(ies) for the following surrogate(s) were below the acceptance window: Orthoterphenyl (1043317)

(Sample number(s): 1043317: Analysis: 13025)
The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

EPH/Miscellaneous GC

Fraction: TPH-DRO by GC

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

TPH-DRO by GC

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Quality Control Reference List
EPH/Miscellaneous GC

CLIENT: Chevron
SDG: LSV49

Fraction: TPH-DRO by GC

Analysis	Batch Number	Sample Number	Analysis Date
AK 102-SV DRO	191200032A	PBLK32120	05/03/2019 00:43
		LCS32120	05/03/2019 01:11
		1043306	05/03/2019 04:55
		1043307	05/10/2019 03:18
AK 102-SV DRO	191220016A	PBLK16122	05/08/2019 07:07
		LCS16122	05/08/2019 07:35
		1043309 UNSPK	05/08/2019 08:59
		1043310 MS	05/08/2019 08:02
		1043311 MSD	05/08/2019 08:31
		1043313	05/08/2019 09:26
		1043315	05/08/2019 09:55
		1043317	05/08/2019 10:22
		1043318	05/08/2019 10:50
		1043319	05/08/2019 11:19
		1043320	05/08/2019 11:46
AK 102-SV DRO	191260013A	PBLK13126	05/07/2019 19:55
		LCS13126	05/07/2019 20:23
		LCSD13126	05/07/2019 20:51
		1043306RE	05/07/2019 23:39

Quality Control Summary
Method Blank
EPH/Miscellaneous GC
SDG: LSV49
Matrix: LIQUID

Fraction: TPH-DRO by GC

191200032A / PBLK32120 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
DRO C10-C25	05/03/19	0.14 J	mg/l	0.050	0.25

191220016A / PBLK16122 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
DRO C10-C25	05/08/19	N.D.	mg/l	0.050	0.25

191260013A / PBLK13126 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
DRO C10-C25	05/07/19	0.062 J	mg/l	0.050	0.25

Quality Control Summary
Surrogates
EPH/Miscellaneous GC
SDG: LSV49
Matrix: LIQUID

Fraction: TPH-DRO by GC

191200032A	Orthoterphenyl	
	Spike Added	0.01994 mg/l
Sample	% Recovery	Limits
PBLK32120	103	60 - 120
LCS32120	108	60 - 120
1043306	104	50 - 150
1043307	75	50 - 150

191220016A	Orthoterphenyl	
	Spike Added	0.01994 mg/l
Sample	% Recovery	Limits
PBLK16122	100	60 - 120
LCS16122	109	60 - 120
1043309 UNSPK	89	50 - 150
1043310 MS	80	50 - 150
1043311 MSD	70	50 - 150
1043313	93	50 - 150
1043315	97	50 - 150
1043317	43 *	50 - 150
1043318	81	50 - 150
1043319	102	50 - 150
1043320	64	50 - 150

191260013A	Orthoterphenyl	
	Spike Added	0.020001 mg/l
Sample	% Recovery	Limits
PBLK13126	104	60 - 120
LCS13126	116	60 - 120
LCSD13126	113	60 - 120
1043306RE	88	50 - 150

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

EPH/Miscellaneous GC
Fraction: TPH-DRO by GC

UNSPK: 1043309 MS: 1043310 MSD: 1043311 **Analyte**	Batch: **191220016A** (Sample number(s): 1043309-1043311, 1043313, 1043315, 1043317-1043320)								
	Spike Added mg/l MS/MSD	**Unspiked Conc mg/l**	**MS Conc mg/l**	**MSD Conc mg/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
DRO C10-C25	4.28 / 4.23	0.374	3.90	3.42	82	72 *	75-125	13	30

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: LSV49
Matrix: LIQUID

EPH/Miscellaneous GC
Fraction: TPH-DRO by GC

LCS: LCS32120	Batch: **191200032A** (Sample number(s): 1043306-1043307)							
Analyte	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
DRO C10-C25	4.01	4.52	NA	113	NA	75-125	NA	NA

LCS: LCS16122	Batch: **191220016A** (Sample number(s): 1043309-1043311, 1043313, 1043315, 1043317-1043320)							
Analyte	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
DRO C10-C25	4.01	3.53	NA	88	NA	75-125	NA	NA

LCS: LCS13126 LCSD: LCSD13126	Batch: **191260013A** (Sample number(s): 1043306)							
Analyte	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
DRO C10-C25	4.01	2.88	2.68	72 *	67 *	75-125	7	20

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LOQ/MDL Summary
EPH/Miscellaneous GC

SDG: LSV49

Fraction: TPH-DRO by GC

13025: AK 102-SV DRO Analyte Name	Default MDL	Default LOQ	Units
DRO C10-C25	0.050	0.25	mg/l

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823501

GC Column (1) : DB5 ID: 30 (mm)

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	RT OF STANDARDS					MIDPOINT RT	RT WINDOW	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5		FROM	TO
Capric Acid	7.26	7.27	7.30	7.32	7.35	7.30	7.20	7.40
o-Terphenyl	11.11	11.11	11.11	11.11	11.11	11.11	11.06	11.16

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823501

GC Column (1) : DB5 ID: 30 (mm)

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	CALIBRATION FACTORS						
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
Capric Acid	3.80E+04	3.99E+04	5.09E+04	5.02E+04	5.31E+04	4.64E+04	15
o-Terphenyl	9.27E+04	9.36E+04	9.41E+04	9.43E+04	9.49E+04	9.39E+04	1

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823501

GC Column (1) : DB5 ID: 30 (mm)

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	LEVEL	AMOUNT (ng)	PEAK AREA	%RSD
C10-C25	1		3.46	13.22	✓ 74160	1	20	1300155	8.91
	1					2	100	6931120	
	1					3	500	39745830	
	1					4	800	63434040	
	1					5	1001	77776460	

File Name: Y:\CP24\24adl41823501.CAL
Version: 10

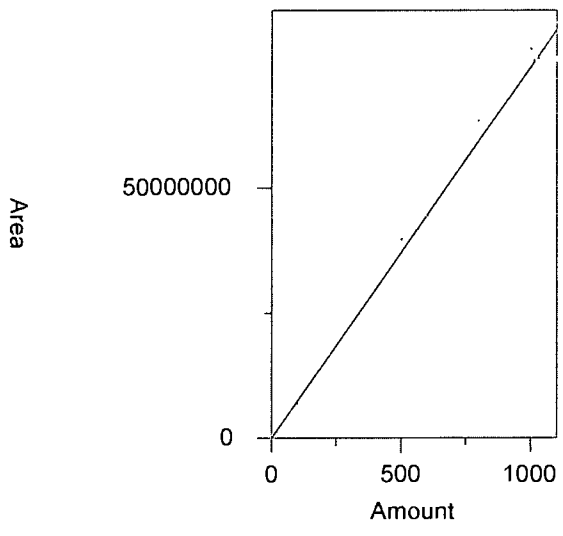
Creator: TOG02268
Description: mini ALASKA 102
Reason for change:

External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units: PPM
No default component

Method of calculating data point averages: Current update equal to cal data
Print calibration update report

All levels are normal data points.

1 DRO RF C10-<C25



Expected retention time: 0.001 minutes
Search window: 0 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 74160.38

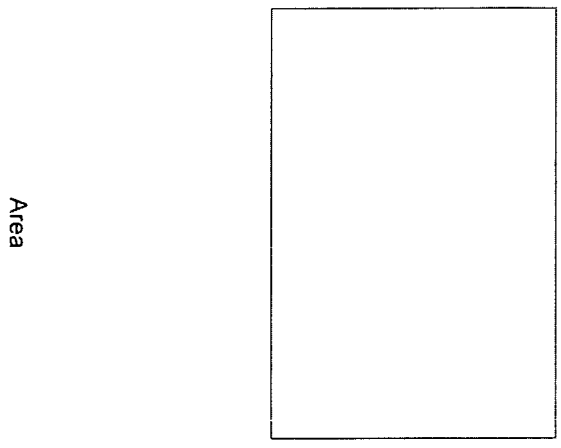
Single peak quantification by area

Y = 74160.38 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9919068
Average error: 7.552%
Average CF: 74160.38
RSD: 8.908%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	20	1300155	65007.75	-12.342	Manual	8/27/2018 2:55:48 PM
2	100	6931120	69311.2	-6.539	Manual	8/27/2018 2:55:56 PM
3	500	3.974583E+07	79491.66	7.189	Manual	8/27/2018 2:56:10 PM
4	800	6.343404E+07	79292.55	6.920	Manual	8/27/2018 2:56:23 PM
5	1001	7.777646E+07	77698.77	4.771	Manual	8/28/2018 10:18:09 AM

2 C10



Expected retention time (frozen): 3.56 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

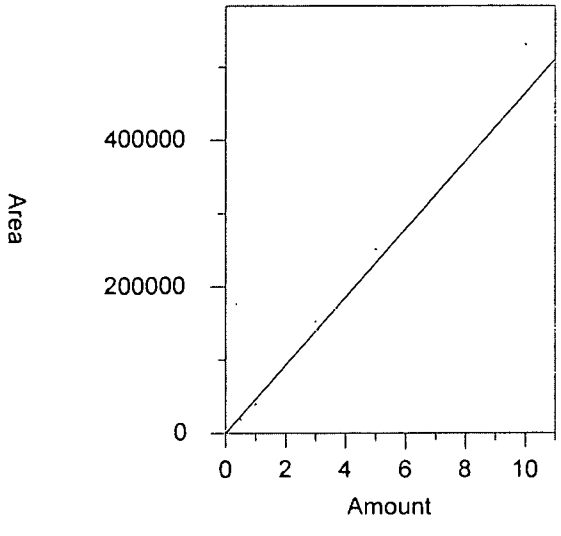
Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 1
Average error: 0.000%
Average CF: 0
RSD: 0.000%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	1	0	0	0.000	Manual	7/12/2012 3:57:42 PM
2	(-1)	0	--	--	Manual	7/12/2012 3:57:46 PM
3	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP24\\L122B.0012.BND	5/3/2012 8:57:46 PM
4	(-1)	0	--	--	Manual	7/12/2012 3:57:48 PM
5	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP24\\L122B.0014.BND	5/3/2012 8:57:50 PM

3 Capric Acid



Expected retention time (frozen): 7.3 minutes
Search window: 0.1 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 46445.11

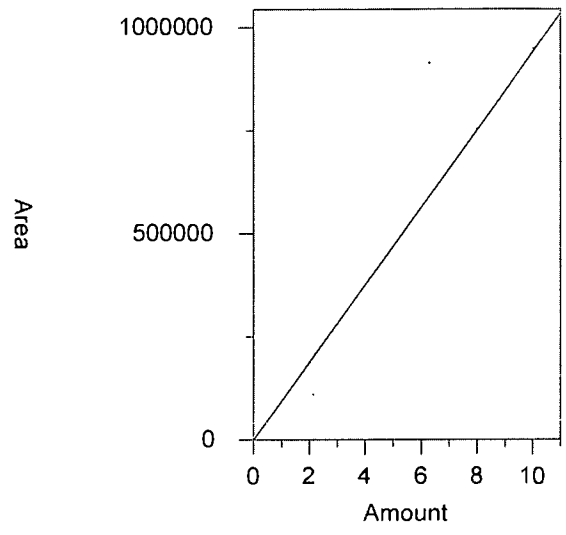
Single peak quantification by area

Y = 46445.11 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9706736
Average error: 12.901%
Average CF: 46445.11
RSD: 14.974%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	18984.1	37968.2	-18.251	Manual	8/28/2018 10:06:22 AM
2	1	39942.8	39942.8	-14.000	Manual	8/28/2018 10:06:35 AM
3	3	152817.3	50939.1	9.676	Manual	8/28/2018 10:06:46 AM
4	5	251220.6	50244.12	8.180	Manual	8/28/2018 10:06:57 AM
5	10	531313.3	53131.33	14.396	Manual	8/28/2018 10:07:12 AM

4 o-Terphenyl SURR



Expected retention time (frozen): 11.11 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 93912.2

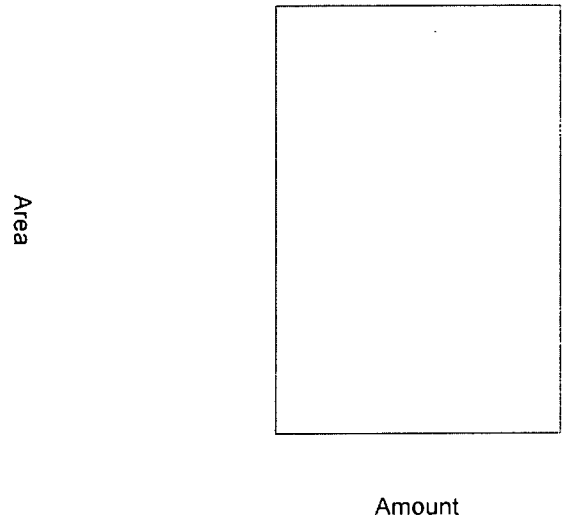
Single peak quantification by area

Y = 93912.2 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9998285
Average error: 0.649%
Average CF: 93912.2
RSD: 0.856%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	46364.41	92728.82	-1.260	Manual	8/27/2018 2:53:28 PM
2	2	187143.8	93571.9	-0.362	Manual	8/27/2018 2:53:45 PM
3	4	376480.1	94120.02	0.221	Manual	8/27/2018 2:54:10 PM
4	8	754293.6	94286.7	0.399	Manual	8/27/2018 2:55:00 PM
5	10	948535.2	94853.52	1.002	Manual	8/27/2018 2:55:12 PM

5 C25



Expected retention time (frozen): 13.32 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 1
Average error: 0.000%
Average CF: 0
RSD: 0.000%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	1	0	0	0.000	Manual	7/12/2012 3:57:48 PM
2	(-1)	0	--	--	Manual	7/12/2012 3:57:49 PM
3	(-1)	0	--	--	Manual	7/12/2012 3:57:50 PM
4	(-1)	0	--	--	Manual	8/18/2016 9:00:22 PM
5	(-1)	0	--	--	Manual	7/12/2012 3:57:52 PM

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823508

GC Column (1) : DB5 ID: 30 (mm) ICA_ 24ADL41823501

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	RT OF STANDARDS					MIDPOINT RT	RT WINDOW	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5		FROM	TO
Capric Acid						7.23	7.13	7.33
o-Terphenyl						10.72	10.67	10.77

capric acid not updated NPR 1828 5/8/19

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823508

GC Column (1) : DB5 ID: 30 (mm) ICAL 24ADL41823501

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	CALIBRATION FACTORS						%RSD
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	
Capric Acid	3.80E+04	3.99E+04	5.09E+04	5.02E+04	5.31E+04	4.64E+04	15
o-Terphenyl	9.27E+04	9.36E+04	9.41E+04	9.43E+04	9.49E+04	9.39E+04	1

Retention time update only using file(s) 24STAT191220C1.012.RAW analyzed on 5/2/2019 16:47:42

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823508

GC Column (1) : DB5 ID: 30 (mm) ICAL 24ADL41823501

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	LEVEL	AMOUNT (ng)	PEAK AREA	%RSD
C10-C25	1		3.10	12.97	✓ 74160	1	20	1300155	8.91
	1					2	100	6931120	
	1					3	500	39745830	
	1					4	800	63434040	
	1					5	1001	77776460	

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

File Name: Y:\CP24\24AdL41823508.CAL
Version: 2

Creator: TOG02268
Description: mini ALASKA 102
Reason for change:

capric acid not updated

External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units: PPM
No default component

DRL 1806 5/8/19

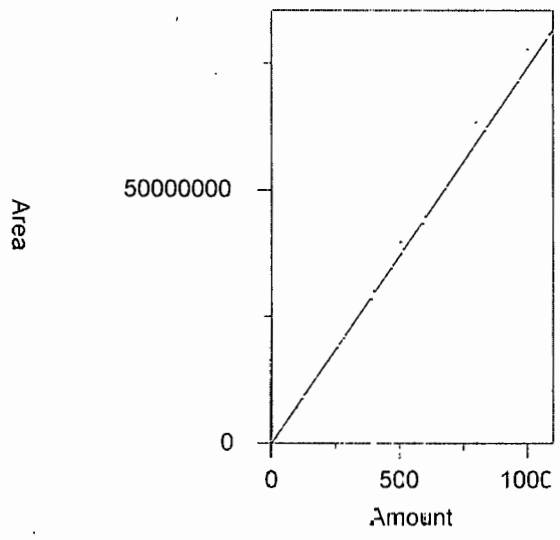
Jamie L. Brithart
Senior Chemist

Method of calculating data point averages: Current update equal to cal data
Print calibration update report

All levels are normal data points.

MAY 0 8 2019

1 DRO RF C10-<C25



Expected retention time: 0.001 minutes
Search window: 0 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 74160.38

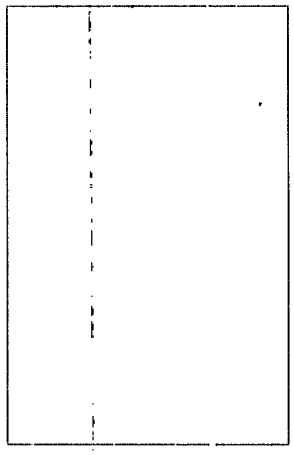
Single peak quantification by area

Y = 74160.38 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9919068
Average error: 7.552%
Average CF: 74160.38
RSD: 8.908%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	20	1300155	65007.75	-12.342	Manual	8/27/2018 2:55:48 PM
2	100	6931120	69311.2	-6.539	Manual	8/27/2018 2:55:56 PM
3	500	3.974583E+07	79491.66	7.189	Manual	8/27/2018 2:56:10 PM
4	800	6.343404E+07	79292.55	6.920	Manual	8/27/2018 2:56:23 PM
5	1001	7.777646E+07	77698.77	4.771	Manual	8/28/2018 10:18:09 AM

2 C10



Expected retention time (frozen): 3.2 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

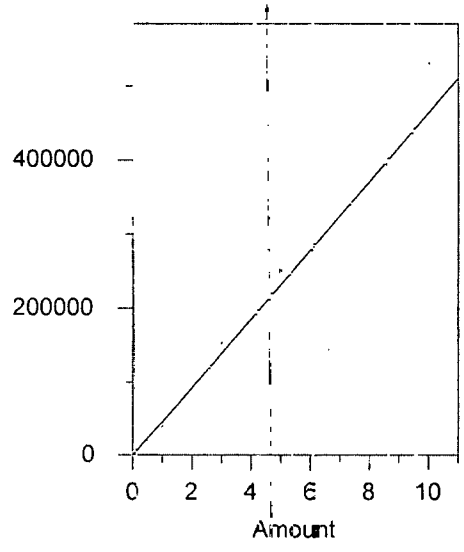
Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 1
Average error: 0.000%
Average CF: 0
RSD: 0.000%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	1	0	0	0.000	Manual	7/12/2012 3:57:42 PM
2	(-1)	0	--	--	Manual	7/12/2012 3:57:46 PM
3	(-1)	0	--	--	\\USLAN-CHROMPERFACTIVE-DATA\CP24\\L122B.0012.BND	5/3/2012 8:57:46 PM
4	(-1)	0	--	--	Manual	7/12/2012 3:57:48 PM
5	(-1)	0	--	--	\\USLAN-CHROMPERFACTIVE-DATA\CP24\\L122B.0014.BND	5/3/2012 8:57:50 PM

3 Capric Acid



Expected retention time (frozen): 7.23 minutes
Search window: 0.1 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 46445.11

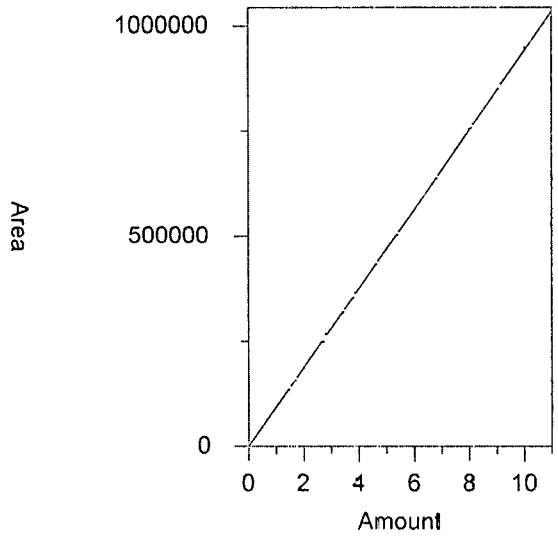
Single peak quantification by area

Y = 46445.11 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9706736
Average error: 12.901%
Average CF 46445.11
RSD: 14.974%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	18984.1	37968.2	-18.251	Manual	8/28/2018 10:06:22 AM
2	1	39942.8	39942.8	-14.000	Manual	8/28/2018 10:06:35 AM
3	3	152817.3	50939.1	9.676	Manual	8/28/2018 10:06:46 AM
4	5	251220.6	50244.12	8.180	Manual	8/28/2018 10:06:57 AM
5	10	531313.3	53131.33	14.396	Manual	8/28/2018 10:07:12 AM

4 o-Terphenyl SURR



Expected retention time (frozen): 10.72 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 93912.2

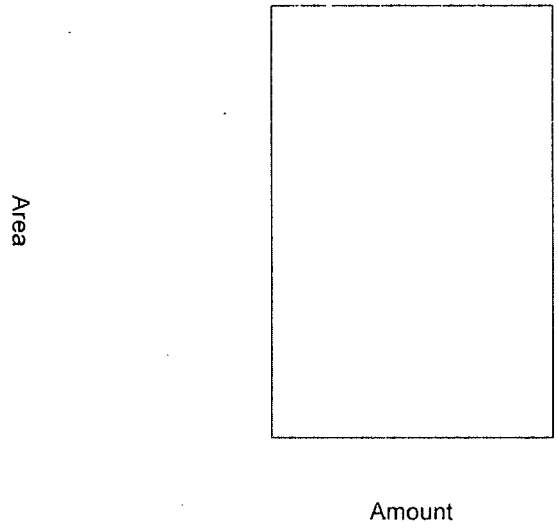
Single peak quantification by area

Y = 93912.2 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9998285
Average error: 0.649%
Average CF: 93912.2
RSD: 0.856%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	46364.41	92728.82	-1.260	Manual	8/27/2018 2:53:28 PM
2	2	187143.8	93571.9	-0.362	Manual	8/27/2018 2:53:45 PM
3	4	376480.1	94120.02	0.221	Manual	8/27/2018 2:54:10 PM
4	8	754293.6	94286.7	0.399	Manual	8/27/2018 2:55:00 PM
5	10	948535.2	94853.52	1.002	Manual	8/27/2018 2:55:12 PM

5 C25



Expected retention time (frozen): 13.07 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 1
Average error: 0.000%
Average CF: 0
RSD: 0.000%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	1	0	0	0.000	Manual	7/12/2012 3:57:48 PM
2	(-1)	0	--	--	Manual	7/12/2012 3:57:49 PM
3	(-1)	0	--	--	Manual	7/12/2012 3:57:50 PM
4	(-1)	0	--	--	Manual	8/18/2016 9:00:22 PM
5	(-1)	0	--	--	Manual	7/12/2012 3:57:52 PM

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823509

GC Column (1) : DB5 ID: 30 (mm) ICAL 24ADL41823501

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	RT OF STANDARDS LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MIDPOINT RT	RT WINDOW FROM	TO
Capric Acid						6.91	6.81	7.01
o-Terphenyl						10.64	10.59	10.69

Retention time update only using file(s) 24STAT19128001.002.RAW analyzed on 5/8/2019 17:28:53

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No. SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823509

GC Column (1) : DB5 ID: 30 (mm) ICAL 24ADL41823501

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	CALIBRATION FACTORS						%RSD
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	
Capric Acid	3.80E+04	3.99E+04	5.09E+04	5.02E+04	5.31E+04	4.64E+04	15
o-Terphenyl	9.27E+04	9.36E+04	9.41E+04	9.43E+04	9.49E+04	9.39E+04	1

Retention time update only using file(s) 24STAT19128001.002.RAW analyzed on 5/8/2019 17:28:53

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No. SAS No.: SDG No.:

Instrument: 19871A Calibration File: 24ADL41823509

GC Column (1) : DB5 ID: 30 (mm) ICAL 24ADL41823501

ICAL Date(s) Analyzed: 8/24/2018 8/27/2018

COMPOUND	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	LEVEL	AMOUNT (ng)	PEAK AREA	%RSD
C10-C25	1		3.03	12.93	✓ 74160	1	20	1300155	8.91
	1					2	100	6931120	
	1					3	500	39745830	
	1					4	800	63434040	
	1					5	1001	77776460	

Retention time update only using file(s) 24STAT19128001.002.RAW analyzed on 5/8/2019 17:28:53

File Name: Y:\CP24\24adl41823509.CAL
Version: 3

Creator: TOG02268
Description: mini ALASKA 102
Reason for change:

Jamie L. Brillhart
Senior Chemist

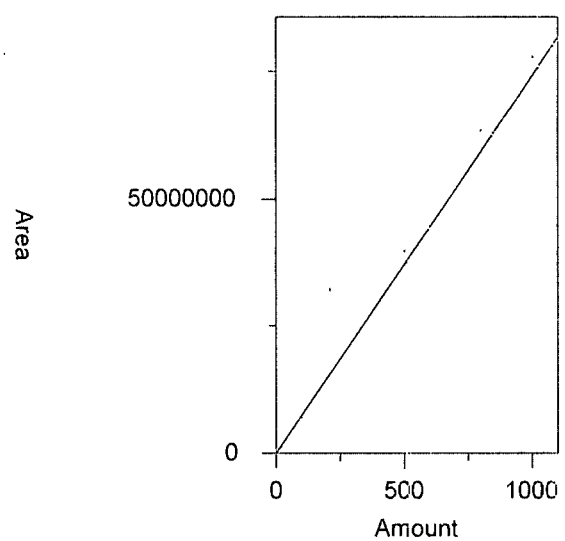
MAY 0 9 2019

External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units: PPM
No default component

Method of calculating data point averages: Current update equal to cal data
Print calibration update report

All levels are normal data points.

1 DRO RF C10-<C25



Expected retention time:	0.001 minutes
Search window:	0 minutes
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	74160.38

Single peak quantification by area

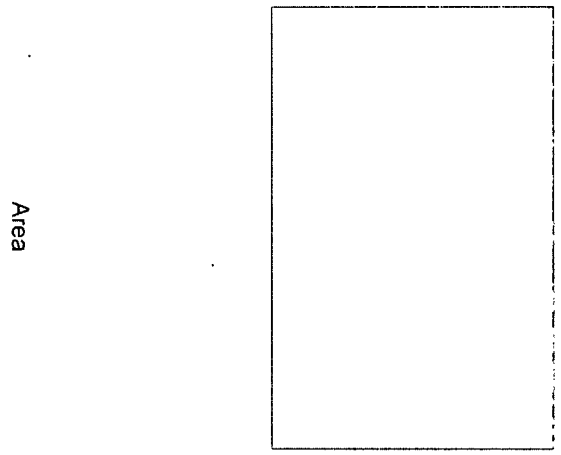
Y = 74160.38 X + 0

Average CF fit with equal weighting, forced to origin

Coefficient of determination:	0.9919068
Average error:	7.552%
Average CF:	74160.38
RSD:	8.908%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	20	1300155	65007.75	-12.342	Manual	8/27/2018 2:55:48 PM
2	100	6931120	69311.2	-6.539	Manual	8/27/2018 2:55:56 PM
3	500	3.974583E+07	79491.66	7.189	Manual	8/27/2018 2:56:10 PM
4	800	6.343404E+07	79292.55	6.920	Manual	8/27/2018 2:56:23 PM
5	1001	7.777646E+07	77698.77	4.771	Manual	8/28/2018 10:18:09 AM

2 C10



Expected retention time (frozen): 3.13 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

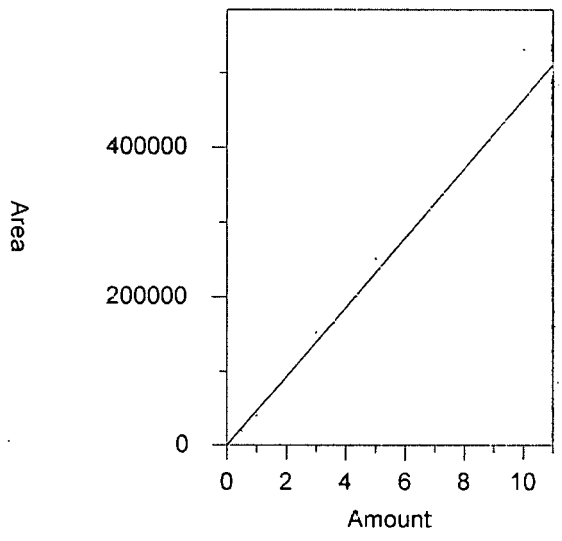
Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 1
Average error: 0.000%
Average CF: 0
RSD: 0.000%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	1	0	0	0.000	Manual	7/12/2012 3:57:42 PM
2	(-1)	0	--	--	Manual	7/12/2012 3:57:46 PM
3	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP24\\L122B.0012.BND	5/3/2012 8:57:46 PM
4	(-1)	0	--	--	Manual	7/12/2012 3:57:48 PM
5	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP24\\L122B.0014.BND	5/3/2012 8:57:50 PM

3 Capric Acid



Expected retention time (frozen): 6.91 minutes
Search window: 0.1 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 46445.11

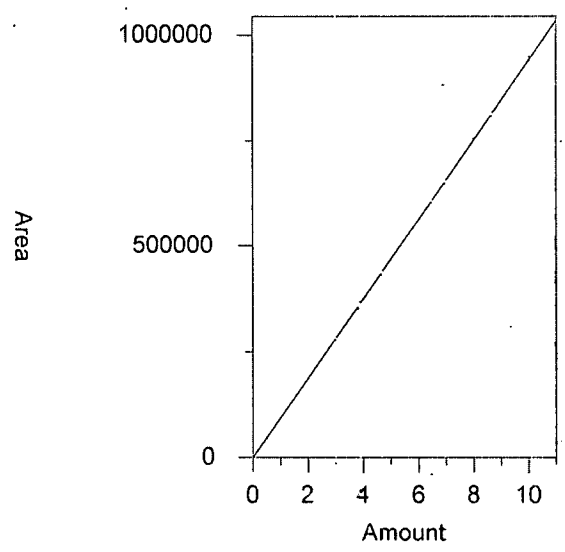
Single peak quantification by area

Y = 46445.11 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9706736
Average error: 12.901%
Average CF: 46445.11
RSD: 14.974%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	18984.1	37968.2	-18.251	Manual	8/28/2018 10:06:22 AM
2	1	39942.8	39942.8	-14.000	Manual	8/28/2018 10:06:35 AM
3	3	152817.3	50939.1	9.676	Manual	8/28/2018 10:06:46 AM
4	5	251220.6	50244.12	8.180	Manual	8/28/2018 10:06:57 AM
5	10	531313.3	53131.33	14.396	Manual	8/28/2018 10:07:12 AM

4 o-Terphenyl SURR



Expected retention time (frozen): 10.64 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 93912.2

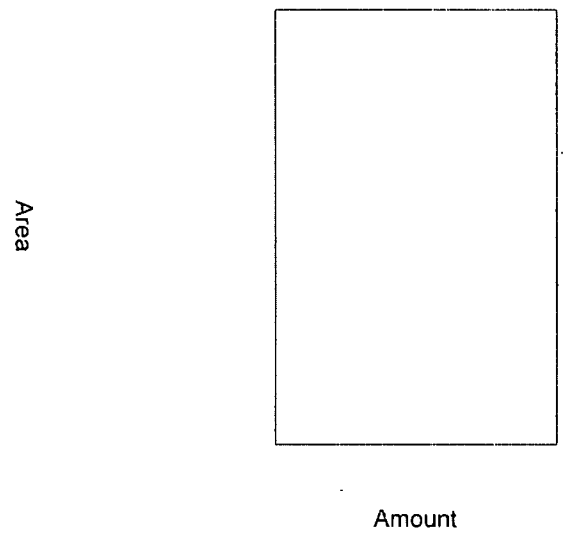
Single peak quantification by area

Y = 93912.2 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9998285
Average error: 0.649%
Average CF: 93912.2
RSD: 0.856%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	46364.41	92728.82	-1.260	Manual	8/27/2018 2:53:28 PM
2	2	187143.8	93571.9	-0.362	Manual	8/27/2018 2:53:45 PM
3	4	376480.1	94120.02	0.221	Manual	8/27/2018 2:54:10 PM
4	8	754293.6	94286.7	0.399	Manual	8/27/2018 2:55:00 PM
5	10	948535.2	94853.52	1.002	Manual	8/27/2018 2:55:12 PM

5 C25



Expected retention time (frozen): 13.03 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 1
Average error: 0.000%
Average CF: 0
RSD: 0.000%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	1	0	0	0.000	Manual	7/12/2012 3:57:48 PM
2	(-1)	0	--	--	Manual	7/12/2012 3:57:49 PM
3	(-1)	0	--	--	Manual	7/12/2012 3:57:50 PM
4	(-1)	0	--	--	Manual	3/18/2016 9:00:22 PM
5	(-1)	0	--	--	Manual	7/12/2012 3:57:52 PM

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 08/24/18

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 11:09

Lab File ID: 24STAT18235001.037.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4AKCDBI Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823501

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	11.11	11.06	11.16	5.11	5.03	2
C10-C25		3.46	13.22	✓ 493.33	✓ 501.10	-2

Compounds 2

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/03/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 0:15

Lab File ID: 24STAT19122001.028.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUG Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823508

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.71	10.67	10.77	5.61	5.00	12
C10-C25		3.10	12.97	565.53	500.12	13

Compounds 2

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/03/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 5:51

Lab File ID: 24STAT19122001.040.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUH Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823508

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.70	10.67	10.77	5.74	5.00	15
C10-C25		3.10	12.97	585.61	500.12	17

Compounds 2

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/09/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 22:38

Lab File ID: 24STAT19129001.019.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUS Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823509

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.62	10.59	10.69	5.78	5.00	16
C10-C25		3.03	12.93	553.81	500.12	11

Compounds 2

Retention time update only using file(s) 24STAT19128001.002.RAW analyzed on 5/8/2019 17:28:53

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/10/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 3:46

Lab File ID: 24STAT19129001.030.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUR Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823509

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.61	10.51	10.61	5.72	5.00	14
C10-C25		3.03	12.93	547.39	500.12	9

Compounds 2

Retention time update only using file(s) 24STAT19128001.002.RAW analyzed on 5/8/2019 17:28:53

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/07/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 19:27

Lab File ID: 24STAT19127001.018.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUJ Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823508

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.68	10.67	10.77	5.77	5.00	15
C10-C25		3.10	12.97	583.03	500.12	17

Compounds 2

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/08/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 0:35

Lab File ID: 24STAT19127001.029.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUJ Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823508

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.68	10.67	10.77	5.80	5.00	16
C10-C25		3.10	12.97	596.09	500.12	19

Compounds 2

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/08/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 6:38

Lab File ID: 24STAT19127001.042.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUJ Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823508

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.67	10.67	10.77	5.93	5.00	19
C10-C25		3.10	12.97	607.28	500.12	21

Compounds 2

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: 19871A Date Analyzed: 05/08/19

GC Column (1) : DB5 ID: 30 (mm) Time Analyzed: 14:07

Lab File ID: 24STAT19127001.058.RAW Initial Calibration: 24ADL41823501

Lab Standard ID: 4ADCXUK Init. Calib Date(s): 08/24/18 08/27/18

Calibration: 24ADL41823508

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.67	10.67	10.77	5.11	5.00	2
C10-C25		3.10	12.97	587.16	500.12	17

Compounds 2

Retention time update only using file(s) 24STAT19122001.012.RAW analyzed on 5/2/2019 16:47:42

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EPH/Miscellaneous GC
Runlog for 24STAT 18235001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT18235001.001	CONDITIONER		8/23/18 18:08	1823499999	1.00
1826	24STAT18235001.002	CONDITIONER		8/23/18 18:38	1823499999	1.00
1826	24STAT18235001.003	FLA_31832A	FLA_3KY	8/23/18 19:07	1823499999	1.00
1826	24STAT18235001.004	BLANK1 8/23/18 S	PBLK40234	8/23/18 19:35	182340040A	1.00
1826	24STAT18235001.005	MDL1 8/23/18 S		8/23/18 20:03	182340040A	1.00
1826	24STAT18235001.006	BLANK2 8/23/18 S	PBLK40234	8/23/18 20:31	182340040A	1.00
1826	24STAT18235001.007	MDL2 8/23/18 S		8/23/18 20:59	182340040A	1.00
1826	24STAT18235001.008	FLA_31832A	FLA_3KZ	8/23/18 21:27	1823499999	1.00
1826	24STAT18235001.009	AKRTX1832D	AKRTXEC	8/23/18 21:56	1823499999	1.00
1826	24STAT18235001.010	AKCK31832B	AKCK3OY	8/23/18 22:24	1823499999	1.00
1826	24STAT18235001.011	BLANKA 8/22/18	PBLK33233	8/23/18 22:53	182330033A	1.00
1826	24STAT18235001.012	LOD1 8/22/18		8/23/18 23:21	182330033A	1.00
1826	24STAT18235001.013	LOD2 8/22/18		8/23/18 23:49	182330033A	1.00
1826	24STAT18235001.014	AKCK31832B	AKCK3OZ	8/24/18 0:17	1823499999	1.00
1826	24STAT18235001.015	AKRTX1832D	AKRTXED	8/24/18 0:45	1823499999	1.00
1826	24STAT18235001.017	AKRTX1832D	AKRTXEG	8/24/18 1:42	1823499999	1.00
1826	24STAT18235001.018	IBLKX1832BZ	IBLKXPP	8/24/18 2:10	1823499999	1.00
1826	24STAT18235001.019	4AKS11832A	4AKS1AA	8/24/18 2:38	1823499999	1.00
1826	24STAT18235001.020	4AKS21832A	4AKS2AA	8/24/18 3:07	1823499999	1.00
1826	24STAT18235001.021	4AKS31832A	4AKS3AA	8/24/18 3:35	1823499999	1.00
1826	24STAT18235001.022	4AKS41832A	4AKS4AA	8/24/18 4:03	1823499999	1.00
1826	24STAT18235001.023	4AKS51832A	4AKS5AA	8/24/18 4:32	1823499999	1.00
1826	24STAT18235001.024	4AKD11832A	4AKD1AA	8/24/18 5:00	1823499999	1.00
1826	24STAT18235001.025	4AKD21832A	4AKD2AA	8/24/18 5:28	1823499999	1.00
1826	24STAT18235001.026	4AKD31832A	4AKD3AA	8/24/18 5:57	1823499999	1.00
1826	24STAT18235001.027	4AKD41832A	4AKD4AA	8/24/18 6:25	1823499999	1.00
1826	24STAT18235001.028	4AKD51832A	4AKD5AA	8/24/18 6:54	1823499999	1.00
1826	24STAT18235001.029	4AKR11832A	4AKR1AA	8/24/18 7:22	1823499999	1.00
1826	24STAT18235001.030	4AKR21832A	4AKR2AA	8/24/18 7:50	1823499999	1.00
1826	24STAT18235001.031	4AKR31832A	4AKR3AA	8/24/18 8:19	1823499999	1.00
1826	24STAT18235001.032	4AKR41832A	4AKR4AA	8/24/18 8:47	1823499999	1.00
1826	24STAT18235001.033	4AKR51832A	4AKR5AA	8/24/18 9:16	1823499999	1.00
1826	24STAT18235001.034	MECL2	MECL2AA	8/24/18 9:44	1823499999	1.00
1826	24STAT18235001.035	4MDXX1832A	4MDXXBP	8/24/18 10:12	1823499999	1.00
1826	24STAT18235001.037	4AKCDX1832A	4AKCDBI	8/24/18 11:09	1823499999	1.00
1826	24STAT18235001.040	CONDITIONER		8/27/18 16:46	1823499999	1.00
1826	24STAT18235001.041	CONDITIONER		8/27/18 17:15	1823499999	1.00
1826	24STAT18235001.042	CONDITIONER		8/27/18 17:43	1823499999	1.00
1826	24STAT18235001.043	4CAP11832B	4CAP1AA	8/27/18 18:11	1823899999	1.00
1826	24STAT18235001.044	4CAP21832A	4CAP2AA	8/27/18 18:40	1823899999	1.00
1826	24STAT18235001.045	4CAP31832C	4CAP3AA	8/27/18 19:08	1823899999	1.00
1826	24STAT18235001.046	4CAP41832A	4CAP4AA	8/27/18 19:37	1823899999	1.00
1826	24STAT18235001.047	4CAP51832A	4CAP5AA	8/27/18 20:05	1823899999	1.00
1826	24STAT18235001.048	CONDITIONER	AA	8/27/18 20:33	1823899999	1.00
1826	24STAT18235001.049	CONDITIONER		8/28/18 10:57	1823899999	1.00
1826	24STAT18235001.050	CONDITIONER		8/28/18 11:25	1823899999	1.00
1826	24STAT18235001.051	4AKR11832B	4AKR1AA	8/28/18 12:12	1823999999	1.00
1826	24STAT18235001.052	4AKR21832A	4AKR2AA	8/28/18 12:40	1823999999	1.00
1826	24STAT18235001.053	4AKR31832A	4AKR3AA	8/28/18 13:08	1823999999	1.00
1826	24STAT18235001.054	4AKR41832A	4AKR4AA	8/28/18 13:37	1823999999	1.00
1826	24STAT18235001.055	4AKR51832A	4AKR5AA	8/28/18 14:05	1823999999	1.00
1826	24STAT18235001.056	MECL2	MECL2AA	8/28/18 14:34	1823999999	1.00
1826	24STAT18235001.057	4AKMDX1832A	4AKMDBB	8/28/18 15:02	1823999999	1.00
1826	24STAT18235001.058	4AKCRX1832A	4AKCRBJ	8/28/18 15:31	1823999999	1.00
1826	24STAT18235001.059	CONDITIONER	AA	8/28/18 15:59	1823999999	1.00

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EPH/Miscellaneous GC
Runlog for 24STAT 18242001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT18242001.001	CONDITIONER		8/30/18 11:31	1824199999	1.00
1826	24STAT18242001.002	CONDITIONER		8/30/18 12:03	1824199999	1.00
1826	24STAT18242001.003	CONDITIONER		8/30/18 12:31	1824199999	1.00
1826	24STAT18242001.004	AKRTX1832D	AKRTXEK	8/30/18 13:00	1824199999	1.00
1826	24STAT18242001.005	4AKMDX1832A	4AKMDBC	8/30/18 13:28	1824199999	1.00
1826	24STAT18242001.006	4AKCRX1832A	4AKCRBK	8/30/18 13:56	1824199999	1.00
1826	24STAT18242001.007	4ADCX1832B	4ADCXQW	8/30/18 14:24	1824199999	1.00
1826	24STAT18242001.008	BLANKA 8/20/18	PBLK50229	8/30/18 15:27	182290050A	2.00
1826	24STAT18242001.009	LCSA 8/20/18	LCS50229	8/30/18 15:55	182290050A	2.00
1826	24STAT18242001.010	LCSDA 8/20/18	LCSD50229	8/30/18 16:23	182290050A	2.00
1826	24STAT18242001.011	9749928	OSHA1	8/30/18 16:51	182290050A	2.00
1826	24STAT18242001.012	9749929	OSHA2	8/30/18 17:19	182290050A	2.00
1826	24STAT18242001.013	9749934	OSHA7	8/30/18 17:48	182290050A	2.00
1826	24STAT18242001.014	4ADCX1832B	4ADCXQX	8/30/18 18:16	1824199999	1.00
1826	24STAT18242001.015	AKRTX1832D	AKRTXEM	8/30/18 18:44	1824199999	1.00

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Runlog for 24STAT 19122001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19122001.001	CONDITIONER		5/2/19 10:57	1912199999	1.00
1826	24STAT19122001.002	CONDITIONER		5/2/19 11:25	1912199999	1.00
1826	24STAT19122001.003	CONDITIONER		5/2/19 11:53	1912199999	1.00
1826	24STAT19122001.004	CNIC31932F	CNIC3LT	5/2/19 12:21	1912199999	1.00
1826	24STAT19122001.005	BLANKA 5/1/19 S	PBLK12121	5/2/19 12:49	191210012A	1.00
1826	24STAT19122001.006	LCSA 5/1/19 S	LCS12121	5/2/19 13:17	191210012A	1.00
1826	24STAT19122001.007	1039494R S	460-1	5/2/19 13:46	191210012A	1.00
1826	24STAT19122001.008	1039494RDUP S	460-1DUP	5/2/19 14:14	191210012A	1.00
1826	24STAT19122001.009	1039494RMS S	460-1MS	5/2/19 14:42	191210012A	1.00
1826	24STAT19122001.010	CNIC31932F	CNIC3LU	5/2/19 15:10	1912199999	1.00
1826	24STAT19122001.011	AKRTX1832G	AKRTXKG	5/2/19 16:19	1912199999	1.00
1826	24STAT19122001.012	4ADCX1932A	4ADCXUF	5/2/19 16:47	1912199999	1.00
1826	24STAT19122001.013	BLANKA 5/1/19	PBLK31120	5/2/19 17:15	191200031A	2.00
1826	24STAT19122001.014	LCSA 5/1/19	LCS31120	5/2/19 17:43	191200031A	2.00
1826	24STAT19122001.015	1040952	SV451	5/2/19 18:11	191200031A	2.00
1826	24STAT19122001.016	1040953	SV452	5/2/19 18:39	191200031A	2.00
1826	24STAT19122001.017	1040954	SV453	5/2/19 19:07	191200031A	2.00
1826	24STAT19122001.018	1040955MS	SV453	5/2/19 19:35	191200031A	2.00
1826	24STAT19122001.019	1040956MSD	SV453	5/2/19 20:03	191200031A	2.00
1826	24STAT19122001.020	1040957	SV454	5/2/19 20:31	191200031A	2.00
1826	24STAT19122001.021	1040958	SV455	5/2/19 20:59	191200031A	2.00
1826	24STAT19122001.022	1040959	SV456	5/2/19 21:27	191200031A	2.00
1826	24STAT19122001.023	1040960	SV457	5/2/19 21:55	191200031A	2.00
1826	24STAT19122001.024	1040961	SV458	5/2/19 22:23	191200031A	2.00
1826	24STAT19122001.025	1040962	SV459	5/2/19 22:51	191200031A	2.00
1826	24STAT19122001.026	1041680	NLAEB	5/2/19 23:19	191200031A	2.00
1826	24STAT19122001.027	1041681	NLAM2	5/2/19 23:47	191200031A	2.00
1826	24STAT19122001.028	4ADCX1932A	4ADCXUG	5/3/19 0:15	1912199999	1.00
1826	24STAT19122001.029	BLANKA 5/1/19	PBLK32120	5/3/19 0:43	191200032A	2.00
1826	24STAT19122001.030	LCSA 5/1/19	LCS32120	5/3/19 1:11	191200032A	2.00
1826	24STAT19122001.031	1041682	NLAM3	5/3/19 1:39	191200032A	2.00
1826	24STAT19122001.032	1041683MS	NLAM3	5/3/19 2:07	191200032A	2.00
1826	24STAT19122001.033	1041684MSD	NLAM3	5/3/19 2:35	191200032A	2.00
1826	24STAT19122001.034	1041685	NLAM9	5/3/19 3:03	191200032A	2.00
1826	24STAT19122001.035	1041686	NLAM6	5/3/19 3:31	191200032A	2.00
1826	24STAT19122001.036	1041687	NLAM7	5/3/19 3:59	191200032A	2.00
1826	24STAT19122001.037	1041688	NLAFD	5/3/19 4:27	191200032A	2.00
1826	24STAT19122001.038	1043306	ANCEB	5/3/19 4:55	191200032A	2.00
1826	24STAT19122001.039	1043307	ANC02	5/3/19 5:23	191200032A	2.00
1826	24STAT19122001.040	AKRTX1832G	AKRTXKI	5/3/19 5:51	1912199999	1.00
1826	24STAT19122001.041	4ADCX1932A	4ADCXUH	5/3/19 6:19	1912199999	1.00

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Runlog for 24STAT 19128001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19128001.001	AKRTX1832G	AKRTXKR	5/8/19 17:01	1912799999	1.00
1826	24STAT19128001.002	4ADCX1932A	4ADCXUL	5/8/19 17:28	1912799999	1.00
1826	24STAT19128001.003	4CAP31932A	4CAP3GB	5/8/19 17:56	1912799999	1.00

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EPH/Miscellaneous GC
Runlog for 24STAT 19122001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19122001.001	CONDITIONER		5/2/19 10:57	1912199999	1.00
1826	24STAT19122001.002	CONDITIONER		5/2/19 11:25	1912199999	1.00
1826	24STAT19122001.003	CONDITIONER		5/2/19 11:53	1912199999	1.00
1826	24STAT19122001.004	CNIC31932F	CNIC3LT	5/2/19 12:21	1912199999	1.00
1826	24STAT19122001.005	BLANKA 5/1/19 S	PBLK12121	5/2/19 12:49	191210012A	1.00
1826	24STAT19122001.006	LCSA 5/1/19 S	LCS12121	5/2/19 13:17	191210012A	1.00
1826	24STAT19122001.007	1039494R S	460-1	5/2/19 13:46	191210012A	1.00
1826	24STAT19122001.008	1039494RDUP S	460-1DUP	5/2/19 14:14	191210012A	1.00
1826	24STAT19122001.009	1039494RMS S	460-1MS	5/2/19 14:42	191210012A	1.00
1826	24STAT19122001.010	CNIC31932F	CNIC3LU	5/2/19 15:10	1912199999	1.00
1826	24STAT19122001.011	AKRTX1832G	AKRTXKG	5/2/19 16:19	1912199999	1.00
1826	24STAT19122001.012	4ADCX1932A	4ADCXUF	5/2/19 16:47	1912199999	1.00
1826	24STAT19122001.013	BLANKA 5/1/19	PBLK31120	5/2/19 17:15	191200031A	2.00
1826	24STAT19122001.014	LCSA 5/1/19	LCS31120	5/2/19 17:43	191200031A	2.00
1826	24STAT19122001.015	1040952	SV451	5/2/19 18:11	191200031A	2.00
1826	24STAT19122001.016	1040953	SV452	5/2/19 18:39	191200031A	2.00
1826	24STAT19122001.017	1040954	SV453	5/2/19 19:07	191200031A	2.00
1826	24STAT19122001.018	1040955MS	SV453	5/2/19 19:35	191200031A	2.00
1826	24STAT19122001.019	1040956MSD	SV453	5/2/19 20:03	191200031A	2.00
1826	24STAT19122001.020	1040957	SV454	5/2/19 20:31	191200031A	2.00
1826	24STAT19122001.021	1040958	SV455	5/2/19 20:59	191200031A	2.00
1826	24STAT19122001.022	1040959	SV456	5/2/19 21:27	191200031A	2.00
1826	24STAT19122001.023	1040960	SV457	5/2/19 21:55	191200031A	2.00
1826	24STAT19122001.024	1040961	SV458	5/2/19 22:23	191200031A	2.00
1826	24STAT19122001.025	1040962	SV459	5/2/19 22:51	191200031A	2.00
1826	24STAT19122001.026	1041680	NLAEB	5/2/19 23:19	191200031A	2.00
1826	24STAT19122001.027	1041681	NLAM2	5/2/19 23:47	191200031A	2.00
1826	24STAT19122001.028	4ADCX1932A	4ADCXUG	5/3/19 0:15	1912199999	1.00
1826	24STAT19122001.029	BLANKA 5/1/19	PBLK32120	5/3/19 0:43	191200032A	2.00
1826	24STAT19122001.030	LCSA 5/1/19	LCS32120	5/3/19 1:11	191200032A	2.00
1826	24STAT19122001.031	1041682	NLAM3	5/3/19 1:39	191200032A	2.00
1826	24STAT19122001.032	1041683MS	NLAM3	5/3/19 2:07	191200032A	2.00
1826	24STAT19122001.033	1041684MSD	NLAM3	5/3/19 2:35	191200032A	2.00
1826	24STAT19122001.034	1041685	NLAM9	5/3/19 3:03	191200032A	2.00
1826	24STAT19122001.035	1041686	NLAM6	5/3/19 3:31	191200032A	2.00
1826	24STAT19122001.036	1041687	NLAM7	5/3/19 3:59	191200032A	2.00
1826	24STAT19122001.037	1041688	NLAFD	5/3/19 4:27	191200032A	2.00
1826	24STAT19122001.038	1043306	ANCEB	5/3/19 4:55	191200032A	2.00
1826	24STAT19122001.039	1043307	ANC02	5/3/19 5:23	191200032A	2.00
1826	24STAT19122001.040	4ADCX1932A	4ADCXUH	5/3/19 5:51	1912199999	1.00
1826	24STAT19122001.041	AKRTX1832G	AKRTXKI	5/3/19 6:19	1912199999	1.00

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EPH/Miscellaneous GC
Runlog for 24STAT 19129001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19129001.001	CONDITIONER		5/9/19 13:50	1912899999	1.00
1826	24STAT19129001.002	CONDITIONER		5/9/19 14:18	1912899999	1.00
1826	24STAT19129001.003	CONDITIONER		5/9/19 14:46	1912899999	1.00
1826	24STAT19129001.004	CONDITIONER		5/9/19 15:14	1912899999	1.00
1826	24STAT19129001.005	AKRTX1832G	AKRTXKU	5/9/19 15:42	1912899999	1.00
1826	24STAT19129001.006	4ADCX1932A	4ADCXUP	5/9/19 16:10	1912899999	1.00
1826	24STAT19129001.007	BLANKA 5/8/19	PBLK12128	5/9/19 16:38	191280012A	2.00
1826	24STAT19129001.008	LCSA 5/8/19	LCS12128	5/9/19 17:06	191280012A	2.00
1826	24STAT19129001.009	LCSDA 5/8/19	LCSD12128	5/9/19 17:34	191280012A	2.00
1826	24STAT19129001.010	1048288	V5106	5/9/19 18:03	191280012A	2.00
1826	24STAT19129001.011	1048289	V5107	5/9/19 18:31	191280012A	2.00
1826	24STAT19129001.012	1048290	V5108	5/9/19 18:59	191280012A	2.00
1826	24STAT19129001.013	1048291	V5109	5/9/19 19:27	191280012A	2.00
1826	24STAT19129001.014	1048292	V5110	5/9/19 19:55	191280012A	2.00
1826	24STAT19129001.015	1048293	V5111	5/9/19 20:22	191280012A	2.00
1826	24STAT19129001.016	1048294	V5112	5/9/19 20:51	191280012A	2.00
1826	24STAT19129001.017	1048295	V5113	5/9/19 21:19	191280012A	2.00
1826	24STAT19129001.018	4ADCX1932A	4ADCXUQ	5/9/19 21:46	1912899999	1.00
1826	24STAT19129001.019	4ADCX1932A	4ADCXUS	5/9/19 22:38	1912899999	1.00
1826	24STAT19129001.020	BLANKA 5/8/19	PBLK32127	5/9/19 23:06	191270032A	2.00
1826	24STAT19129001.021	LCSA 5/8/19	LCS32127	5/9/19 23:34	191270032A	2.00
1826	24STAT19129001.022	1048283MS	V5102	5/10/19 0:02	191270032A	2.00
1826	24STAT19129001.023	1048284MSD	V5102	5/10/19 0:30	191270032A	2.00
1826	24STAT19129001.024	1048281	V5101	5/10/19 0:58	191270032A	2.00
1826	24STAT19129001.025	1048282	V5102	5/10/19 1:26	191270032A	2.00
1826	24STAT19129001.026	1048285	V5103	5/10/19 1:54	191270032A	2.00
1826	24STAT19129001.027	1048286	V5104	5/10/19 2:22	191270032A	2.00
1826	24STAT19129001.028	1048287	V5105	5/10/19 2:50	191270032A	2.00
1826	24STAT19129001.029	1043307 RI DF2	ANC02	5/10/19 3:18	191200032A	4.00
1826	24STAT19129001.030	4ADCX1932A	4ADCXUR	5/10/19 3:46	1912899999	1.00
1826	24STAT19129001.031	AKRTX1832G	AKRTXKW	5/10/19 4:14	1912899999	1.00
1826	24STAT19129001.032	CNIC31932G	CNIC3LZ	5/10/19 4:42	1912899999	1.00
1826	24STAT19129001.033	BLANKA 5/6/19 S	PBLK14126	5/10/19 5:10	191260014A	1.00
1826	24STAT19129001.034	LCSA 5/6/19 S	LCS14126	5/10/19 5:38	191260014A	1.00
1826	24STAT19129001.035	1048606 S	632-1	5/10/19 6:06	191260014A	1.00
1826	24STAT19129001.036	1048606MS S	632-1MS	5/10/19 6:34	191260014A	1.00
1826	24STAT19129001.037	1048606MSD S	632-1MSD	5/10/19 7:02	191260014A	1.00
1826	24STAT19129001.038	1048607 S	632-2	5/10/19 7:30	191260014A	1.00
1826	24STAT19129001.039	1048608 S	632-3	5/10/19 7:58	191260014A	1.00
1826	24STAT19129001.040	1048609 S	632-4	5/10/19 8:26	191260014A	1.00
1826	24STAT19129001.041	CNIC31932G	CNIC3MA	5/10/19 8:54	1912899999	1.00
1826	24STAT19129001.042	BLANKA 5/7/19 S	PBLK10127	5/10/19 9:22	191270010A	1.00
1826	24STAT19129001.043	LCSA 5/7/19 S	LCS10127	5/10/19 9:50	191270010A	1.00
1826	24STAT19129001.044	1048610 S	632-5	5/10/19 10:18	191270010A	1.00
1826	24STAT19129001.045	1048611 S	632-6	5/10/19 10:46	191270010A	1.00
1826	24STAT19129001.046	1048612 S	632-7	5/10/19 11:14	191270010A	1.00
1826	24STAT19129001.047	1048613 S	632-8	5/10/19 11:42	191270010A	1.00
1826	24STAT19129001.048	1048613MS S	632-8MS	5/10/19 12:10	191270010A	1.00
1826	24STAT19129001.049	1048613MSD S	632-8MSD	5/10/19 12:38	191270010A	1.00
1826	24STAT19129001.050	1048614 S	632-9	5/10/19 13:06	191270010A	1.00
1826	24STAT19129001.051	1048615 S	63210	5/10/19 13:34	191270010A	1.00
1826	24STAT19129001.052	CNIC31932G	CNIC3MB	5/10/19 14:02	1912899999	1.00
1826	24STAT19129001.053	1048616 S	11632	5/10/19 14:30	191270010A	1.00
1826	24STAT19129001.054	BLANKA 5/8/19 S	PBLK20128	5/10/19 14:58	191280020A	5.00
1826	24STAT19129001.055	LCSA 5/8/19 S	LCS20128	5/10/19 15:26	191280020A	5.00
1826	24STAT19129001.056	1048617 S	63212	5/10/19 15:54	191280020A	5.00

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19129001.057	1048618 S	63213	5/10/19 16:23	191280020A	5.00
1826	24STAT19129001.058	1048619 S	63214	5/10/19 16:51	191280020A	5.00
1826	24STAT19129001.059	1048620 S	63215	5/10/19 17:18	191280020A	5.00
1826	24STAT19129001.060	1048621 S	63216	5/10/19 17:47	191280020A	5.00
1826	24STAT19129001.061	CNIC31932G	CNIC3MC	5/10/19 18:15	1912899999	1.00
1826	24STAT19129001.062	1048622 S	63217	5/10/19 18:42	191280020A	5.00
1826	24STAT19129001.063	1048623DUP S	63218DUP	5/10/19 19:11	191280020A	5.00
1826	24STAT19129001.064	1048623 S	63218	5/10/19 19:38	191280020A	5.00
1826	24STAT19129001.065	1048623MS S	63218MS	5/10/19 20:06	191280020A	5.00
1826	24STAT19129001.066	1050753 S	46611	5/10/19 20:35	191280020A	5.00
1826	24STAT19129001.067	CNIC31932G	CNIC3MD	5/10/19 21:02	1912899999	1.00

Eurofins Lancaster Laboratories
EPH/Miscellaneous GC
Runlog for 24STAT 19127001
Instrument CP24--19871A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP24\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19127001.001	CONDITIONER		5/7/19 10:39	1912699999	1.00
1826	24STAT19127001.002	AKRTX1832G	AKRTXKM	5/7/19 11:06	1912699999	1.00
1826	24STAT19127001.003	4ADCX1932A	4ADCXUI	5/7/19 12:25	1912699999	1.00
1826	24STAT19127001.004	BLANKA 5/6/19	PBLK41123	5/7/19 12:53	191230041A	2.00
1826	24STAT19127001.005	LCSA 5/6/19	LCS41123	5/7/19 13:21	191230041A	2.00
1826	24STAT19127001.006	LCSDA 5/6/19	LCSD41123	5/7/19 13:49	191230041A	2.00
1826	24STAT19127001.007	1040952R	SV451	5/7/19 14:18	191230041A	2.00
1826	24STAT19127001.008	1040953R	SV452	5/7/19 14:46	191230041A	2.00
1826	24STAT19127001.009	1040954R	SV453	5/7/19 15:14	191230041A	2.00
1826	24STAT19127001.010	1040957R	SV454	5/7/19 15:42	191230041A	2.00
1826	24STAT19127001.011	1040958R	SV455	5/7/19 16:10	191230041A	2.00
1826	24STAT19127001.012	1040959R	SV456	5/7/19 16:38	191230041A	2.00
1826	24STAT19127001.013	1040960R	SV457	5/7/19 17:07	191230041A	2.00
1826	24STAT19127001.014	1040961R	SV458	5/7/19 17:35	191230041A	2.00
1826	24STAT19127001.015	1040962R	SV459	5/7/19 18:03	191230041A	2.00
1826	24STAT19127001.016	1041680R	NLAEB	5/7/19 18:31	191230041A	2.00
1826	24STAT19127001.017	1041681R	NLAM2	5/7/19 18:59	191230041A	2.00
1826	24STAT19127001.018	4ADCX1932A	4ADCXUJ	5/7/19 19:27	1912699999	1.00
1826	24STAT19127001.019	BLANKA 5/6/19	PBLK13126	5/7/19 19:55	191260013A	2.00
1826	24STAT19127001.020	LCSA 5/6/19	LCS13126	5/7/19 20:23	191260013A	2.00
1826	24STAT19127001.021	LCSDA 5/6/19	LCSD13126	5/7/19 20:51	191260013A	2.00
1826	24STAT19127001.022	1041682R	NLAM3	5/7/19 21:19	191260013A	2.00
1826	24STAT19127001.023	1041685R	NLAM9	5/7/19 21:47	191260013A	2.00
1826	24STAT19127001.024	1041686R	NLAM6	5/7/19 22:15	191260013A	2.00
1826	24STAT19127001.025	1041687R	NLAM7	5/7/19 22:43	191260013A	2.00
1826	24STAT19127001.026	1041688R	NLAFD	5/7/19 23:11	191260013A	2.00
1826	24STAT19127001.027	1043306R	ANCEB	5/7/19 23:39	191260013A	2.00
1826	24STAT19127001.028	1043307R	ANC02	5/8/19 0:07	191260013A	2.00
1826	24STAT19127001.029	4ADCX1932A	4ADCXUJ	5/8/19 0:35	1912699999	1.00
1826	24STAT19127001.030	BLANKA 5/3/19	PBLK12123	5/8/19 1:03	191230012A	2.00
1826	24STAT19127001.031	LCSA 5/3/19	LCS12123	5/8/19 1:31	191230012A	2.00
1826	24STAT19127001.032	1044740	FLA12	5/8/19 1:59	191230012A	2.00
1826	24STAT19127001.033	1044741	FLA10	5/8/19 2:27	191230012A	2.00
1826	24STAT19127001.034	1044742	FLAM7	5/8/19 2:55	191230012A	2.00
1826	24STAT19127001.035	1044743MS	FLAM7	5/8/19 3:23	191230012A	2.00
1826	24STAT19127001.036	1044744MSD	FLAM7	5/8/19 3:51	191230012A	2.00
1826	24STAT19127001.037	1044745	FLAM9	5/8/19 4:19	191230012A	2.00
1826	24STAT19127001.038	1044746	FLAD1	5/8/19 4:47	191230012A	2.00
1826	24STAT19127001.039	1044747	FLAM5	5/8/19 5:15	191230012A	2.00
1826	24STAT19127001.040	1044748	FLAM6	5/8/19 5:43	191230012A	2.00
1826	24STAT19127001.041	1044749	FLAD2	5/8/19 6:11	191230012A	2.00
1826	24STAT19127001.042	4ADCX1932A	4ADCXUJ	5/8/19 6:38	1912699999	1.00
1826	24STAT19127001.043	BLANKA 5/2/19	PBLK16122	5/8/19 7:07	191220016A	2.00
1826	24STAT19127001.044	LCSA 5/2/19	LCS16122	5/8/19 7:35	191220016A	2.00
1826	24STAT19127001.045	1043309	ANC03	5/8/19 8:02	191220016A	2.00
1826	24STAT19127001.046	1043310MS	ANC03	5/8/19 8:31	191220016A	2.00
1826	24STAT19127001.047	1043311MSD	ANC03	5/8/19 8:59	191220016A	2.00
1826	24STAT19127001.048	1043313	ANC06	5/8/19 9:26	191220016A	2.00
1826	24STAT19127001.049	1043315	ANC09	5/8/19 9:55	191220016A	2.00
1826	24STAT19127001.050	1043317	ANC08	5/8/19 10:22	191220016A	2.00
1826	24STAT19127001.051	1043318	ANC07	5/8/19 10:50	191220016A	2.00
1826	24STAT19127001.052	1043319	ANC10	5/8/19 11:19	191220016A	2.00
1826	24STAT19127001.053	1043320	ANCFD	5/8/19 11:46	191220016A	2.00
1826	24STAT19127001.054	1044736	FLAEB	5/8/19 12:14	191220016A	2.00
1826	24STAT19127001.055	1044737	FLA14	5/8/19 12:42	191220016A	2.00
1826	24STAT19127001.056	1044738	FLA13	5/8/19 13:10	191220016A	2.00

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	24STAT19127001.057	1044739	FLAM8	5/8/19 13:38	191220016A	2.00
1826	24STAT19127001.058	4ADCX1932A	4ADCXUK	5/8/19 14:07	1912699999	1.00
1826	24STAT19127001.060	BLANKA 5/1/19 S	PBLK07121	5/8/19 15:02	191210007A	2.00
1826	24STAT19127001.061	LCSA 5/1/19 S	LCS07121	5/8/19 15:30	191210007A	2.00

Sample Data

TPH-DRO by GC

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043306 ANCEB Sample ID: AA **Batchnumber:** 191200032A
Sample Amount: 243. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/3/2019 04:55:51
Instrument : CP24--19871A
Result file : 24STAT19122001.038.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 104% (50-150) Conc.: 0.021316

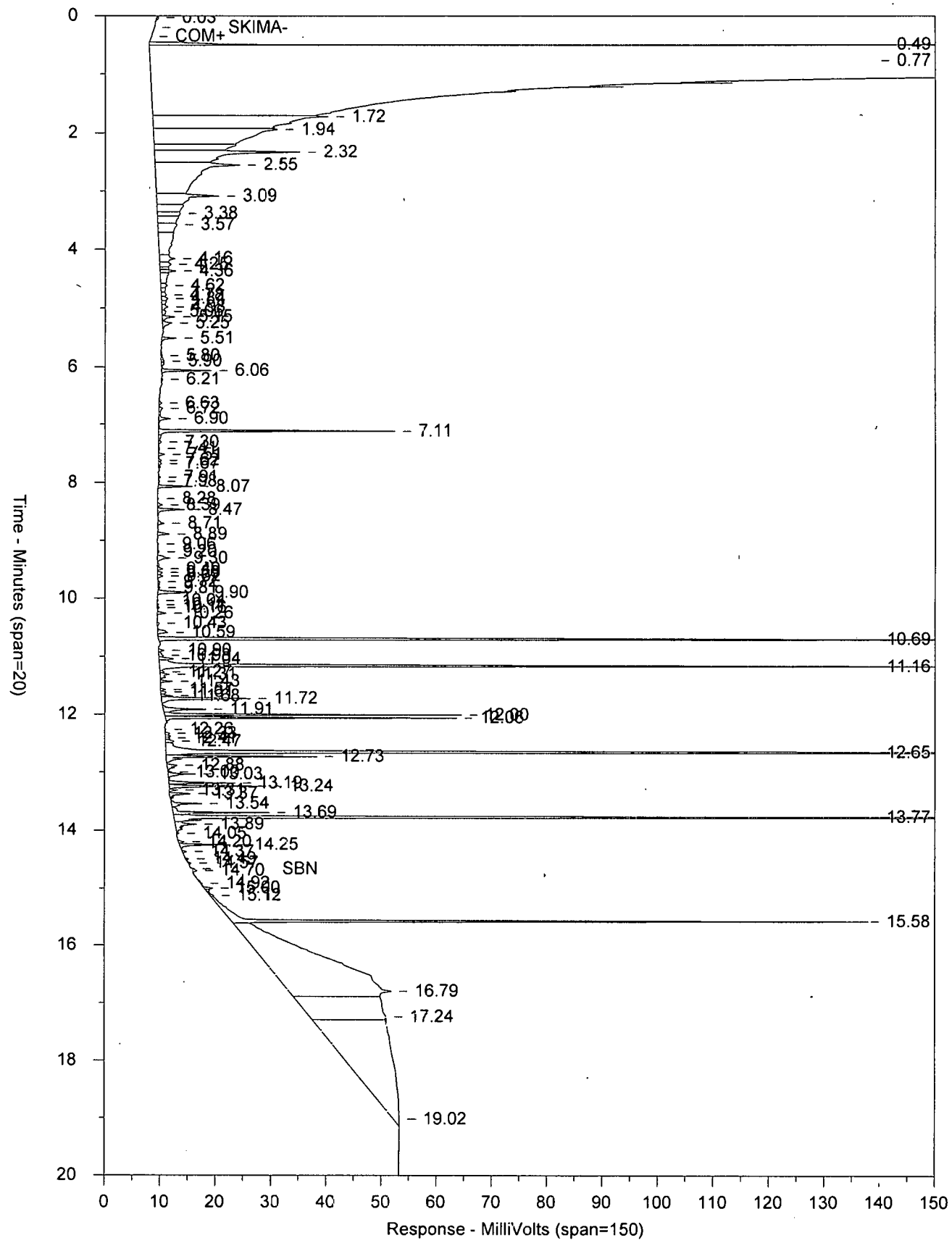
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	1495504	0.1390	<0.2572	0.0514	J	ppm
o-Terphenyl SURR	10.69 (10.67 - 10.77)	243218	0.0213				ppm
Capric Acid	7.30 (7.13 - 7.33)	528	0.0001				ppm

Comments: _____

Reviewed by: Heather E. Williams Group Leader
Date: MAY 08 2019

Verified by: Jamie L. Brillhart Senior Chemist
Date: MAY 09 2019

Sample: 1043306 AAANCEB T 191200032A 13025 AK 102-SV 4/8/02
File: 24STAT19122001.038.RAW



Sample: 1043306 AAANCEB T 191200032A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 243
Analyst: 1826

Injected on: 5/3/2019 4:55:51 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
30	7.30	Capric Acid	0.18	998.3618
58	10.69	o-Terphenyl SURR	21.32	243217.8
81	13.03	C25	0.00	8202.237

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	5.223	1495504.0
o-Terphenyl SURR	10.67	10.77	5.180	243217.8

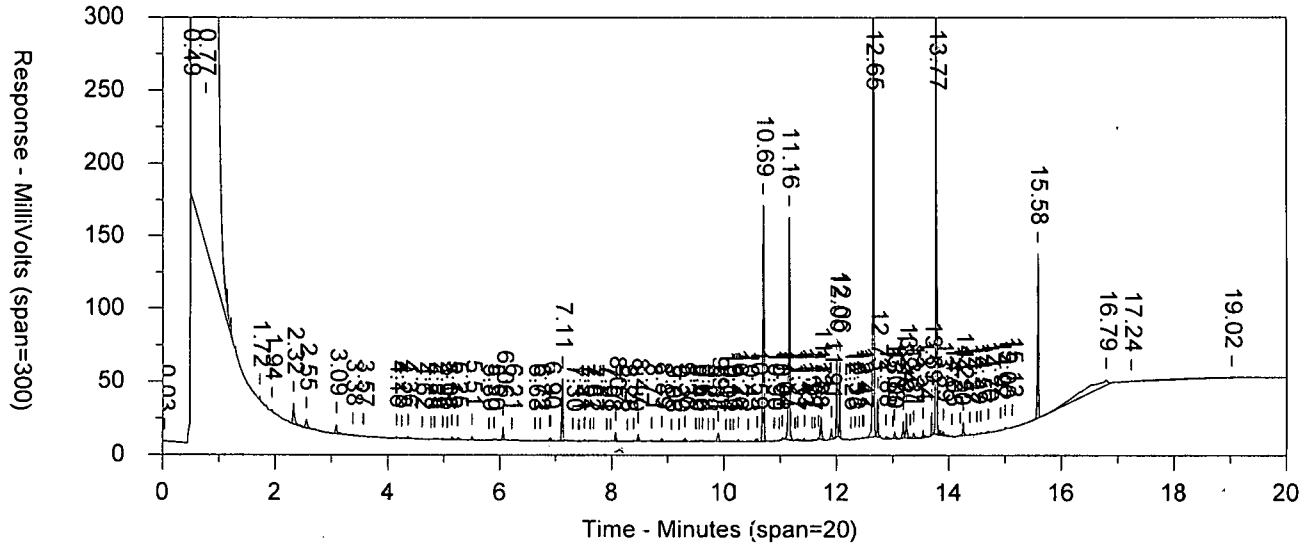
********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 1252286
C10-<C25 PRELIMINARY AMT = 0.139

FILES:

Area File: 24STAT19122001.038.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/3/2019 5:19:53 AM
File reported on: 5/8/2019 at 2:17:09 PM

Replot: 1043306 AAANCEB T 191200032A 13025 AK 102-SV 4/8/02
File: 24STAT19122001.038.RAW



Instrument ID:CP24-19871A
Injected on: 5/3/2019 4:55:51 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 243
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
30	7.30	Capric Acid	0.000	527.8412
58	10.69	o-Terphenyl SURR	0.021	243217.8
81	13.03	C25	0.000	6979.962

O-TERPHENYL % RECOVERY = 103.5937 %

FILES:

Area File: 24STAT19122001.038.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/3/2019 5:19:53 AM
File reported on: 5/8/2019 at 2:23:11 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043306R ANCEB Sample ID: AA **Batchnumber:** 191260013A
Sample Amount: 241. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/7/2019 23:39:12
Instrument : CP24--19871A
Result file : 24STAT19127001.027.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

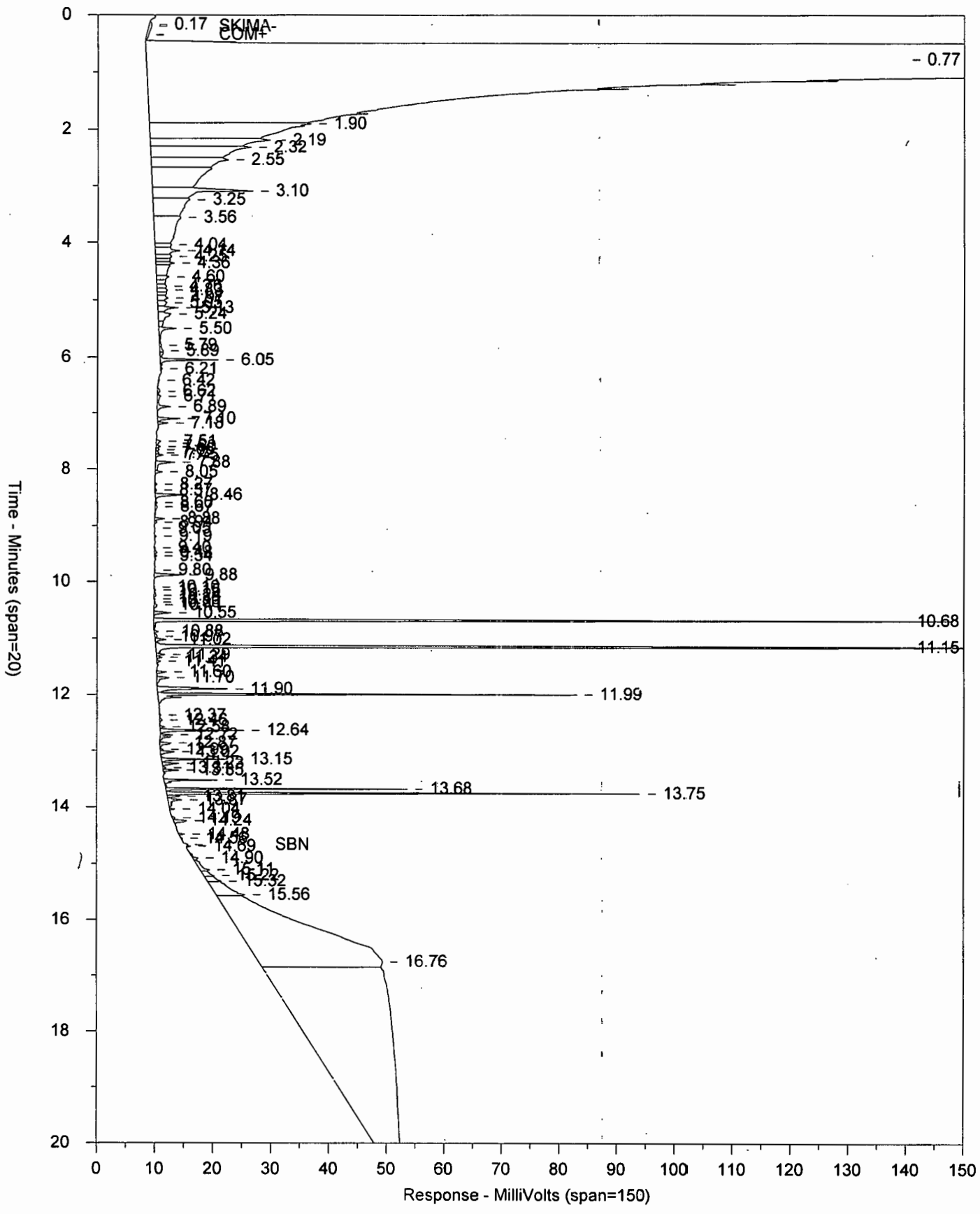
O-TERPHENYL SURR 88% (50-150) Conc.: 0.018179

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	1130222	0.1035	<0.2593	0.0519	J	ppm
o-Terphenyl SURR	10.68 (10.67 - 10.77)	205717	0.0182				ppm
Capric Acid	7.18 (7.13 - 7.33)	2283	0.0004				ppm

Comments: _____

Reviewed by: Heather E. Williams Verified by: Jamie L. Brillhart
Heather E. Williams, Group Leader Jamie L. Brillhart, Senior Chemist
Date: MAY 08 2019 Date: MAY 09 2019

Sample: 1043306R AAANCEB T 191260013A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.027.RAW



Sample: 1043306R AAANCEB T 191260013A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 241
Analyst: 1826

Injected on: 5/7/2019 11:39:12 PM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
8	3.25	C10	0.00	102151.9
31	7.18	Capric Acid	0.49	2765.513
60	10.68	o-Terphenyl SURR	18.18	205716.8
79	13.02	C25	0.00	4961.886

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	4.500	1130222.0
o-Terphenyl SURR	10.67	10.77	4.381	205716.8

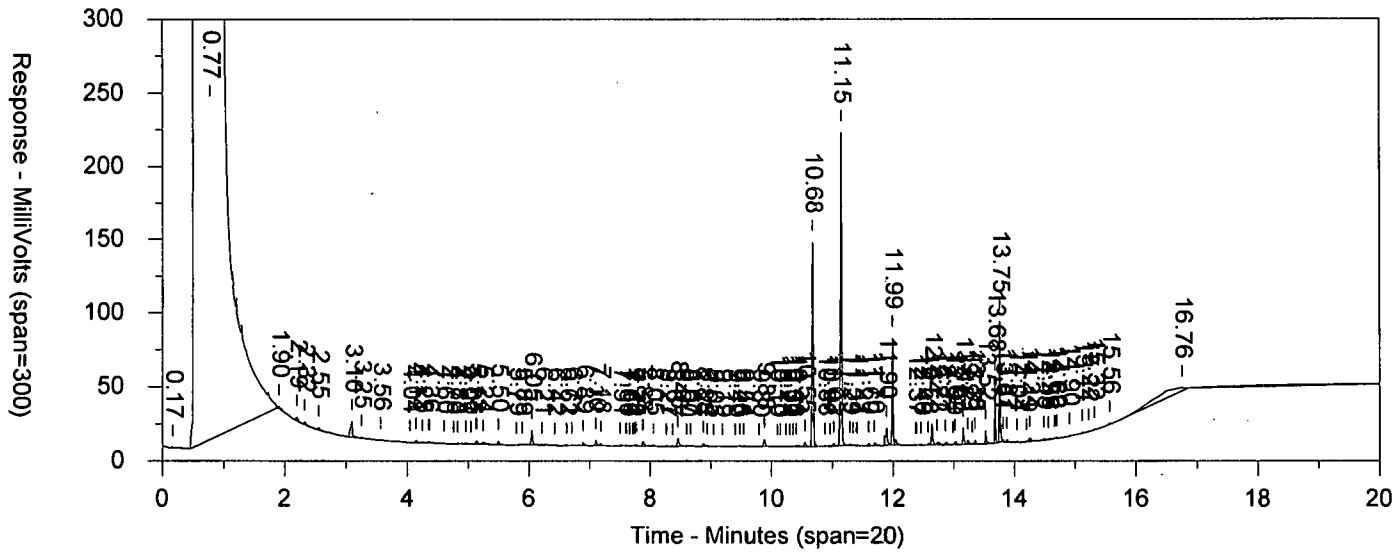
********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 924505.4
C10-<C25 PRELIMINARY AMT = 0.103

FILES:

Area File: 24STAT19127001.027.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 8:29:55 AM
File reported on: 5/8/2019 at 8:34:11 AM

Replot: 1043306R AAANCEB T 191260013A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.027.RAW



Instrument ID:CP24-19871A
Injected on: 5/7/2019 11:39:12 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 241
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
8	3.25	C10	0.000	1099.192
31	7.18	Capric Acid	0.000	2282.712
60	10.68	o-Terphenyl SURR	0.018	205716.8
79	13.02	C25	0.000	4210.656

O-TERPHENYL % RECOVERY = 87.6209 %

FILES:

Area File: 24STAT19127001.027.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 8:29:55 AM
File reported on: 5/8/2019 at 8:44:30 AM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043307 RI DF2 ANC02 Sample ID: AB **Batchnumber:** 191200032A
Sample Amount: 227. Total Volume: 4. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/10/2019 03:18:01
Instrument : CP24--19871A
Result file : 24STAT19129001.029.RAW
Calibration files : 24ADL41823509.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823509(V)

Surrogate Recoveries

O-TERPHENYL SURR 75% (50-150) Conc.: 0.016448

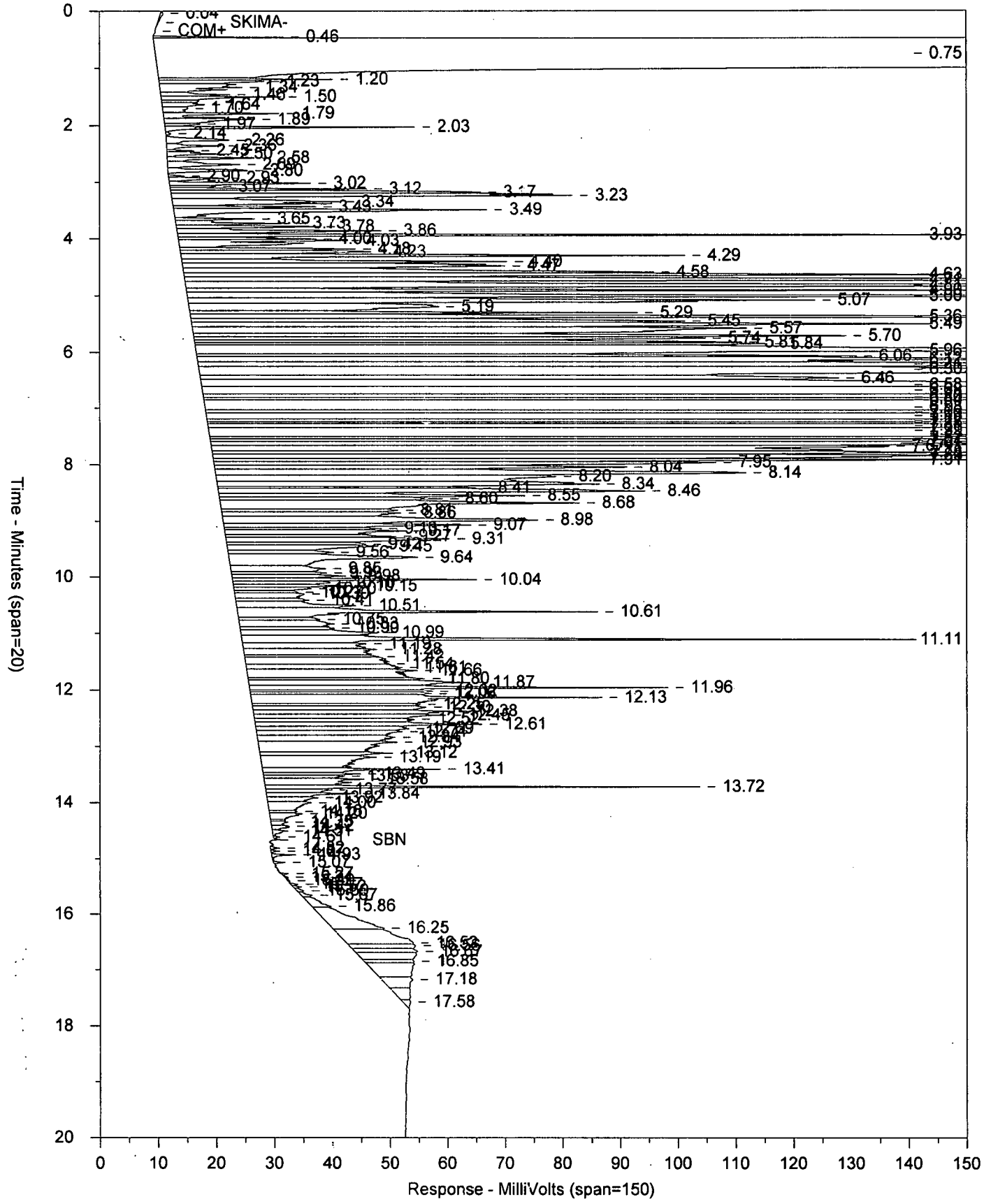
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.03 - 12.93	41692294	9.8856	0.5507	0.1101		ppm
o-Terphenyl SURR	10.61 (10.59 - 10.69)	87659	0.0164				ppm
Capric Acid	6.84 (6.81 - 7.01)	18760	0.0071				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brillhart Senior Chemist
Date: MAY 10 2019

Sample: 1043307 RI DF2 ABANC02 T 191200032A 13025 AK 102-SV 4/8/02
File: 24STAT19129001.029.RAW



Sample: 1043307 RI DF2 ABANC02 T 191200032A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/10/2019 3:18:01 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 227
Dilution Factor: 4
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
27	3.12	C10	0.00	54073.48
71	6.84	Capric Acid	266.33	701983.7
119	10.61	o-Terphenyl SURR	44.74	238426.7

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.03	12.93	70.612	41692300.0
o-Terphenyl SURR	10.59	10.69	10.155	238426.7

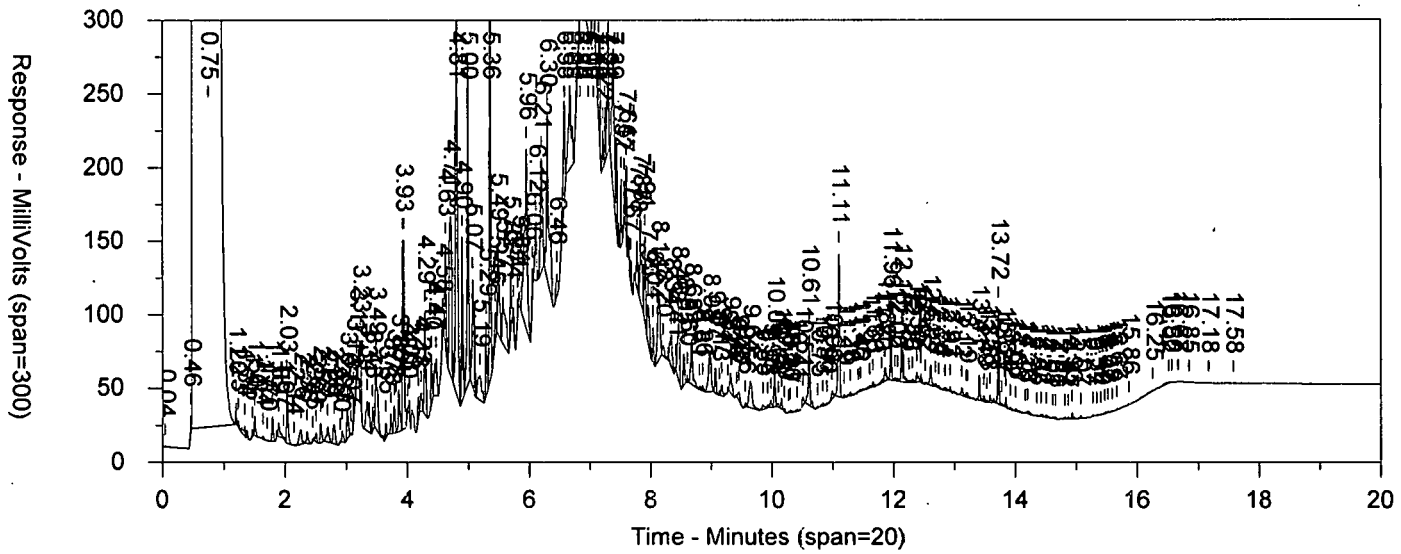
********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 4.145387E+07
C10-<C25 PRELIMINARY AMT = 9.850

FILES:

Area File: 24STAT19129001.029.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24adl41823509.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/10/2019 3:42:05 AM
File reported on: 5/10/2019 at 3:42:11 AM

Replot: 1043307 RI DF2 ABANC02 T 191200032A 13025 AK 102-SV 4/8/02
File: 24STAT19129001.029.RAW



Instrument ID:CP24-19871A
Injected on: 5/10/2019 3:18:01 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 227
Dilution Factor: 4
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
27	3.12	C10	0.000	18377.33
71	6.84	Capric Acid	0.007	18760.14
119	10.61	o-Terphenyl SURR	0.016	87659.04

O-TERPHENYL % RECOVERY = 74.67319 %

FILES:

Area File: 24STAT19129001.029.RAW
Method File: 4REAKDL.MET
Calibration File: 24adl41823509.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/10/2019 3:42:05 AM
File reported on: 5/10/2019 at 3:42:22 AM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043309 ANC03 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 230. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 08:59:01
Instrument : CP24--19871A
Result file : 24STAT19127001.047.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 89% (50-150) Conc.: 0.019219

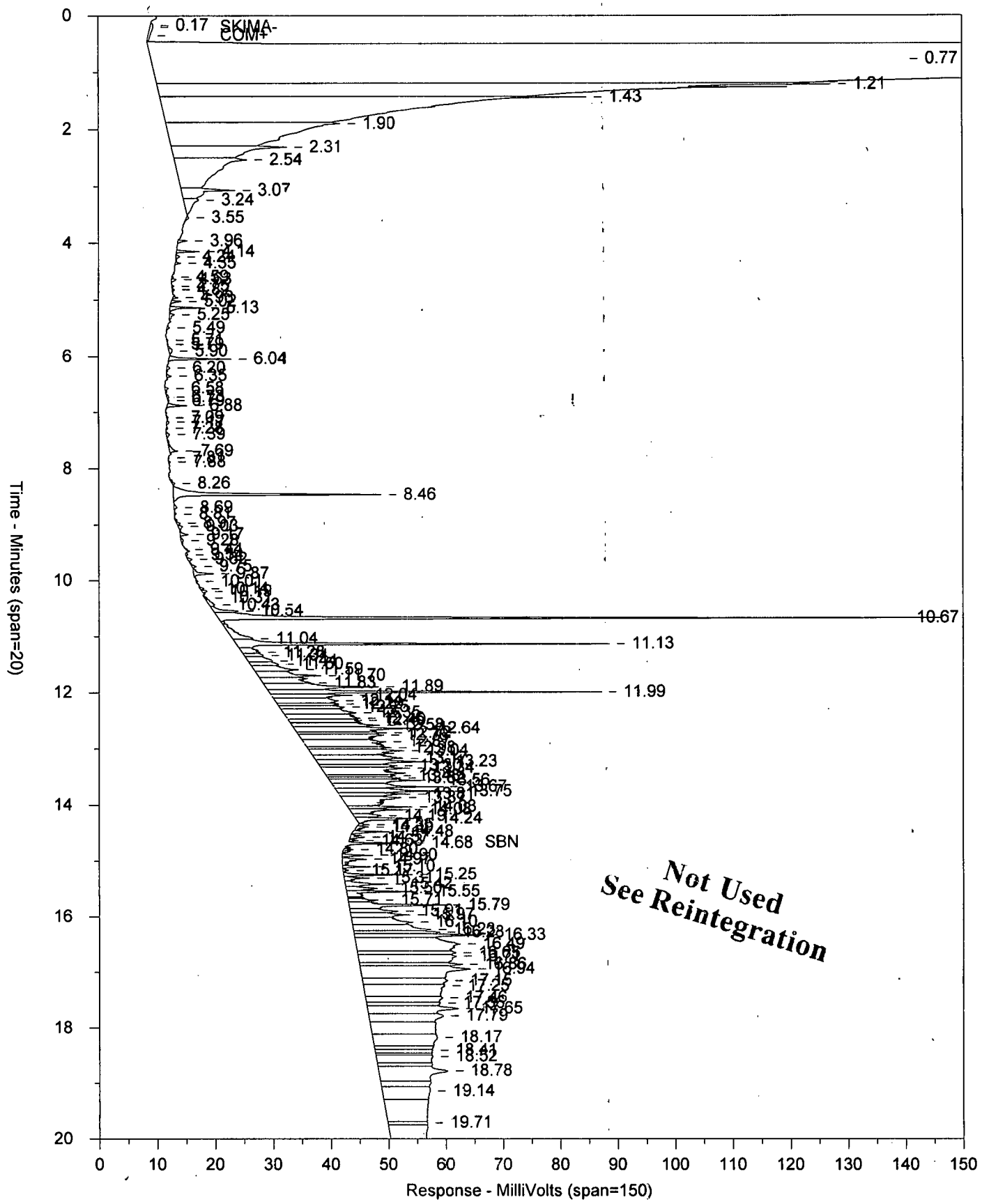
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	3394205	0.3736	0.2717	0.0543		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	207564	0.0192				ppm
Capric Acid	7.28 (7.13 - 7.33)	490	0.0001				ppm

Comments: _____

Reviewed by: Nicholas Rossi Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brillhart Jamie L. Brillhart Senior Chemist
Date: MAY 10 2019

Sample: 1043309 AAANC03 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.047.RAW



Sample: 1043309 AAANC03 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 8:59:01 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 230
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
9	3.24	C10	0.00	22277.52
36	7.28	Capric Acid	0.09	490.054
85	13.04	C25	0.00	83008.58

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.021	1656324.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

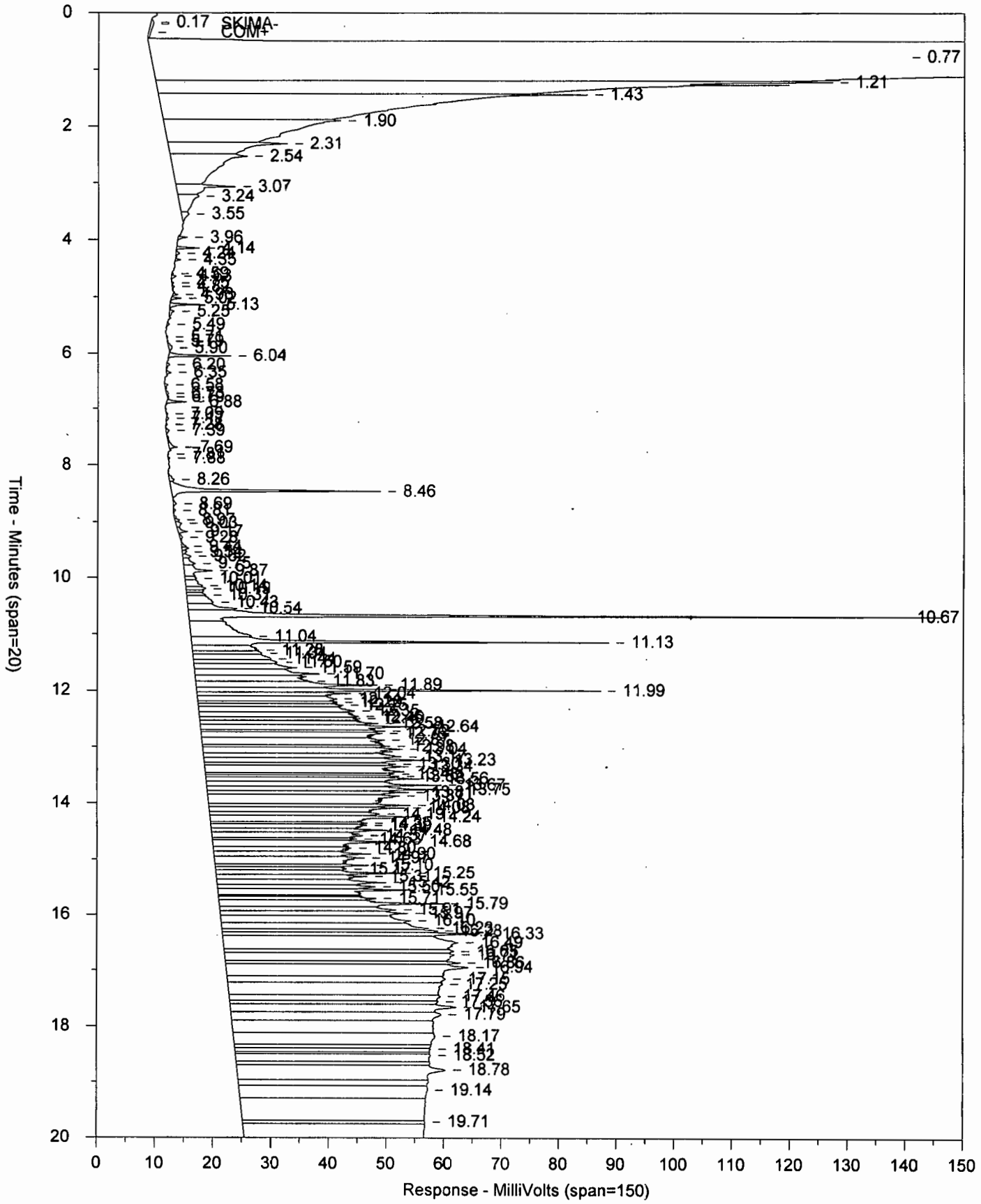
C10-<C25 ADJUSTED DRO AREA = 1656324
C10-<C25 PRELIMINARY AMT = 0.194

FILES:

Area File: 24STAT19127001.047.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 1:39:12 PM
File reported on: 5/9/2019 at 1:43:48 PM

Not Used
See Reintegration

Sample: 1043309 AAANC03 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.047.RAW



Sample: 1043309 AAANC03 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 230
Analyst: 1826

Injected on: 5/8/2019 8:59:01 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
9	3.24	C10	0.00	41528.66
36	7.28	Capric Acid	0.09	490.054
85	13.04	C25	0.00	196296.5

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.021	3394205.0 M
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

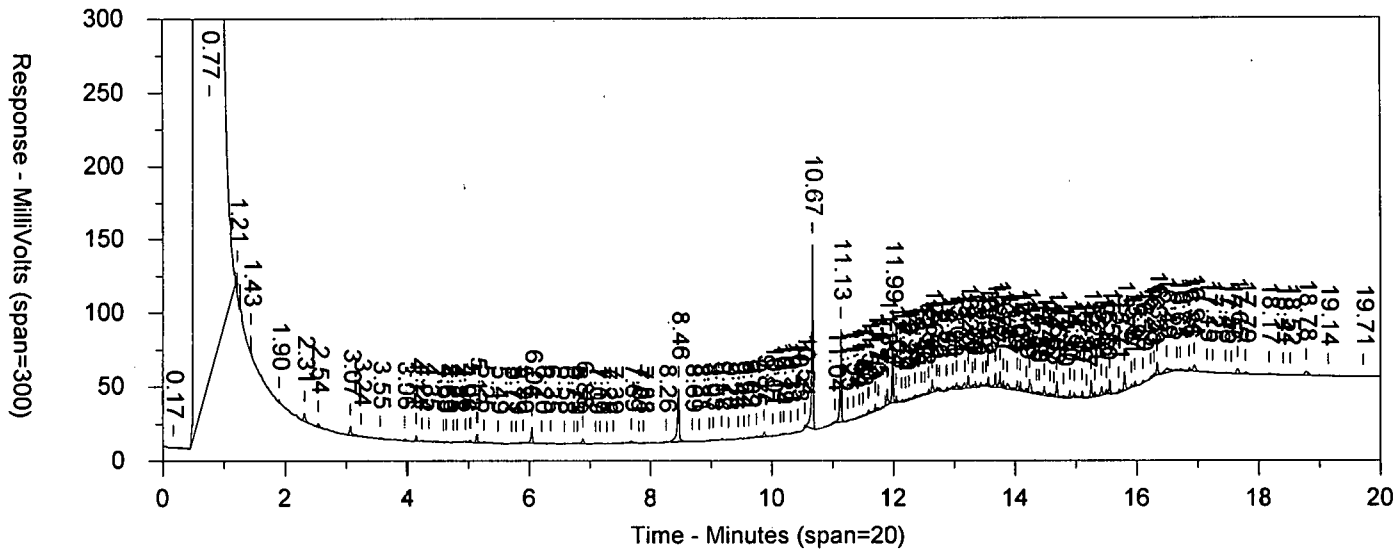
C10-<C25 ADJUSTED DRO AREA = 3394205
C10-<C25 PRELIMINARY AMT = 0.398

FILES:

Area File: 24stat19127001.047.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 1:55:32 PM
File reported on: 5/9/2019 at 1:55:35 PM

M = Manually Integrated
Analyst 1826 5/9/19
Approved by 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: 1043309 AAANC03 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.047.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 230
Analyst: 1826

Injected on: 5/8/2019 8:59:01 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
9	3.24	C10	0.000	1561.502
36	7.28	Capric Acid	0.000	490.054
85	13.04	C25	0.000	10842.07

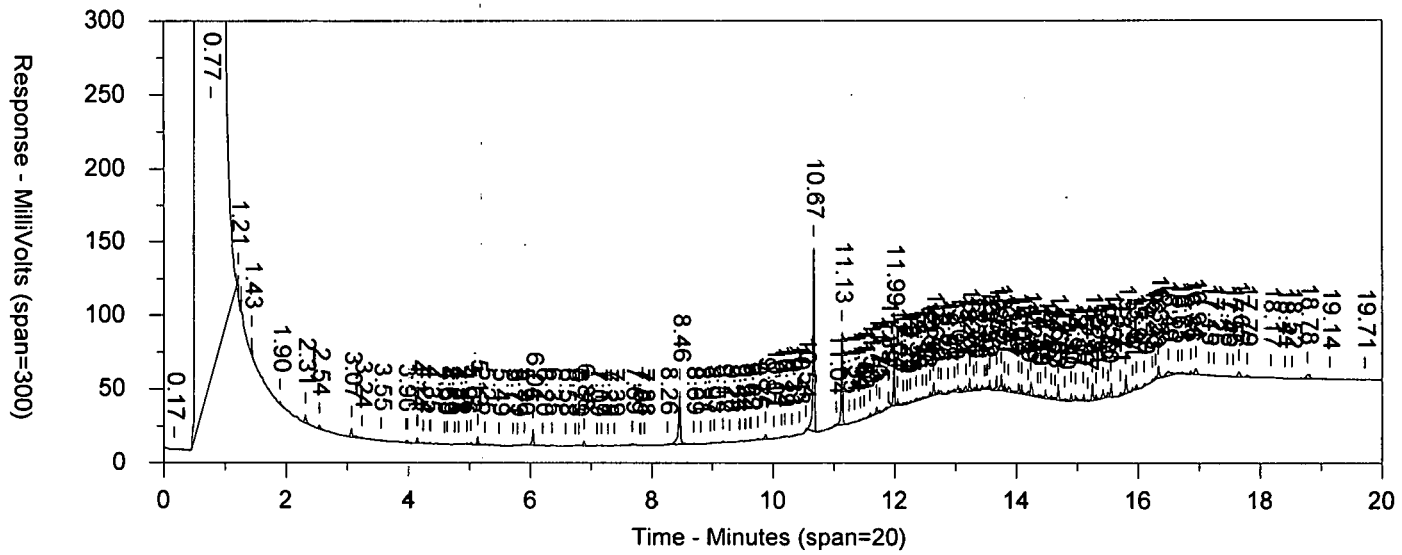
O-TERPHENYL % RECOVERY = 0 %

FILES:

Area File: 24STAT19127001.047.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 1:39:12 PM
File reported on: 5/9/2019 at 1:44:24 PM

Not Used
See Reintegration

Replot: 1043309 AAANC03 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.047.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 8:59:01 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 230
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area	
9	3.24	C10	0.000	1561.502	
36	7.28	Capric Acid	0.000	490.054	
60	10.67	o-Terphenyl SURR	0.019	207564.4	M
85	13.04	C25	0.000	10842.07	

O-TERPHENYL % RECOVERY = 88.40787 %

M = Manually Integrated
Analyst TM 826 5/9/19
Approved by [illegible] 5-10-19
Circle Reason (1) 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other _____

FILES:

Area File: 24stat19127001.047.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 1:57:39 PM
File reported on: 5/9/2019 at 1:57:40 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043313 ANC06 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 234. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 09:26:59
Instrument : CP24--19871A
Result file : 24STAT19127001.048.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 93% (50-150) Conc.: 0.01985

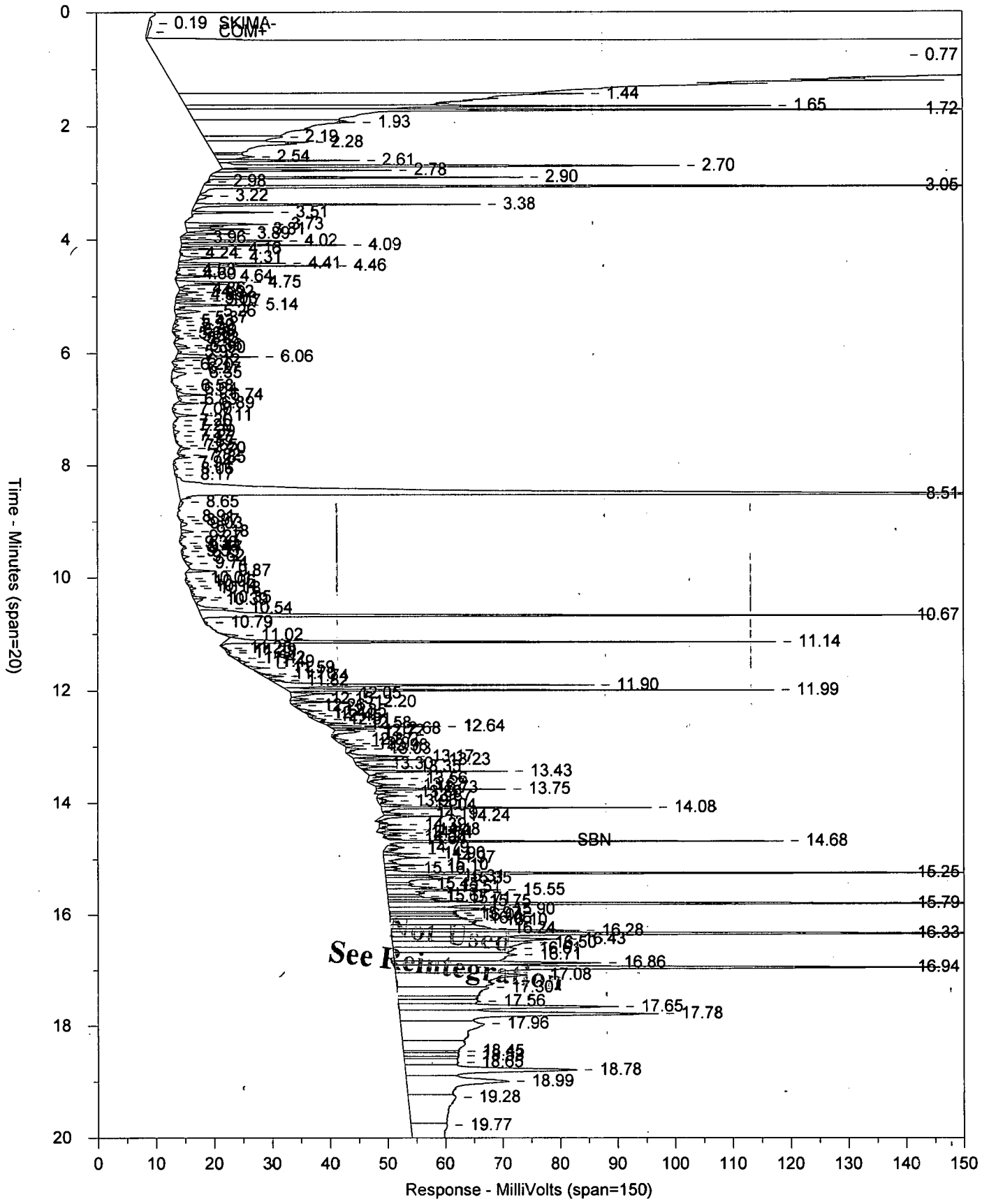
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	4435877	0.4861	0.2671	0.0534		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	218104	0.0198				ppm
Capric Acid	7.20 (7.13 - 7.33)	410	0.0001				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brillhart Senior Chemist
Date: MAY 10 2019

Sample: 1043313 AAANC06 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.048.RAW



Sample: 1043313 AAANC06 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 234
Analyst: 1826

Injected on: 5/8/2019 9:26:59 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
16	3.22	C10	0.00	6753.751
63	7.20	Capric Acid	0.08	409.9019
126	13.03	C25	0.00	8172.82

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.018	2075854.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

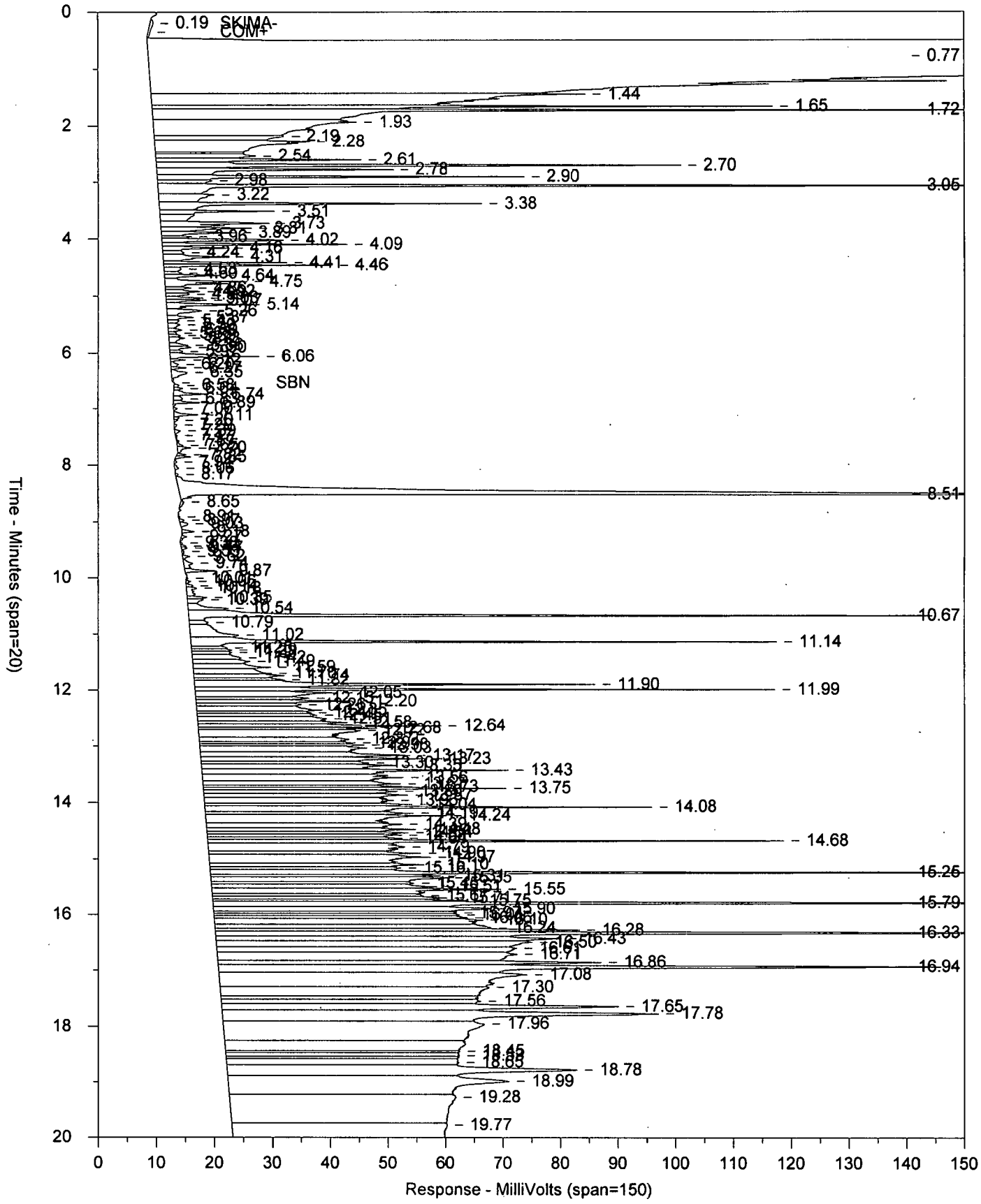
C10-<C25 ADJUSTED DRO AREA = 2075854
C10-<C25 PRELIMINARY AMT = 0.239

FILES:

Area File: 24STAT19127001.048.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 9:51:06 AM
File reported on: 5/8/2019 at 9:51:14 AM

Not Used
See Reintegration

Sample: 1043313 AAANC06 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.048.RAW



Sample: 1043313 AAANC06 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 9:26:59 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 234
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
16	3.22	C10	0.00	67764.38
63	7.20	Capric Acid	0.22	1173.783
126	13.03	C25	0.00	173716.8

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.051	4435877.0 M
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

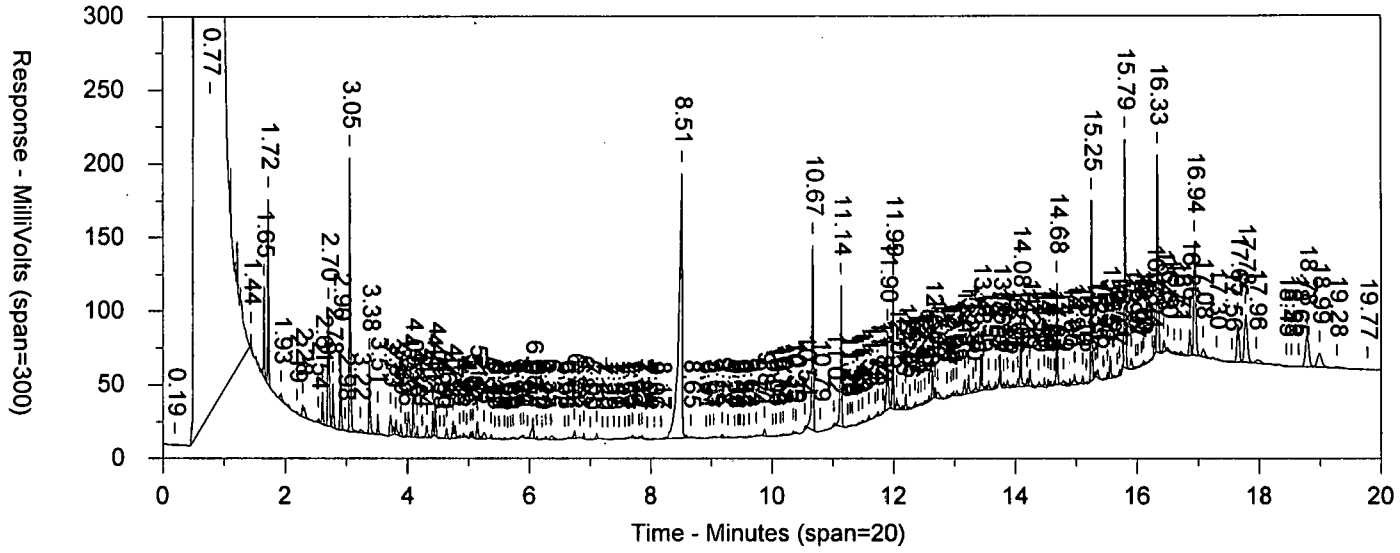
C10-<C25 ADJUSTED DRO AREA = 4435877
C10-<C25 PRELIMINARY AMT = 0.511

FILES:

Area File: 24stat19127001.048.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 2:00:12 PM
File reported on: 5/9/2019 at 2:00:15 PM

M = Manually Integrated
Analyst DM 1826 5/9/19
Approved by 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: 1043313 AAANC06 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.048.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 234
Analyst: 1826

Injected on: 5/8/2019 9:26:59 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
16	3.22	C10	0.000	6753.751
63	7.20	Capric Acid	0.000	409.9019
126	13.03	C25	0.000	8172.82

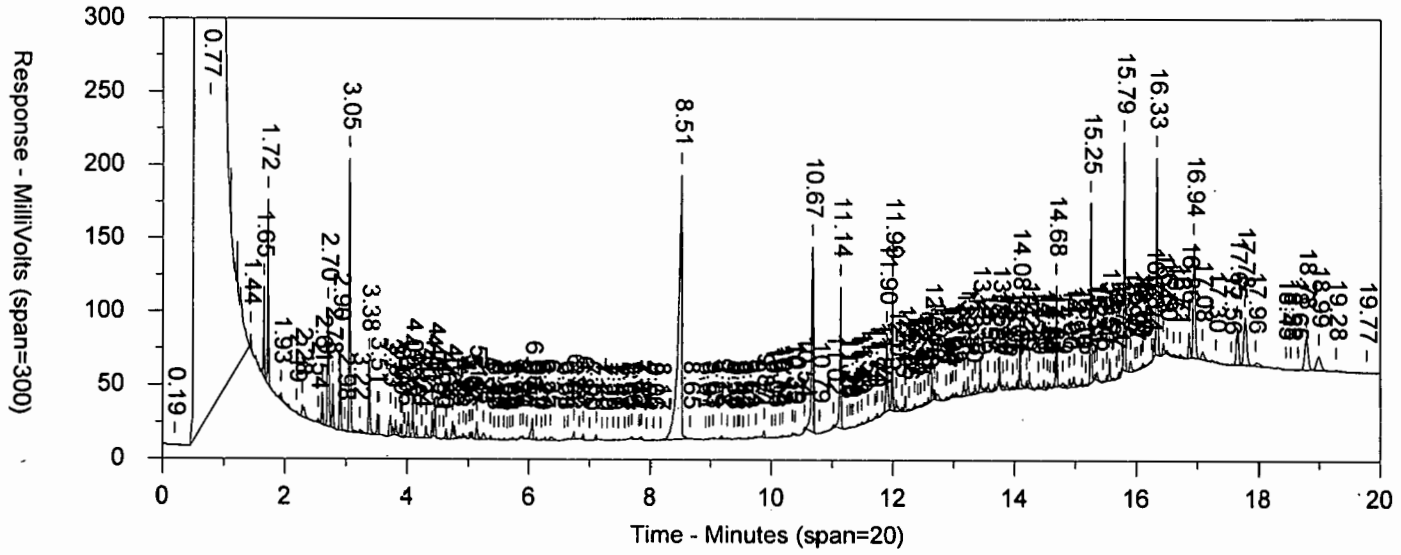
O-TERPHENYL % RECOVERY = 0 %

FILES:

Area File: 24STAT19127001.048.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 1:39:13 PM
File reported on: 5/9/2019 at 1:59:11 PM

Not Used
See Reintegration

Replot: 1043313 AAANC06 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.048.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 234
Analyst: 1826

Injected on: 5/8/2019 9:26:59 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
16	3.22	C10	0.000	6753.751
63	7.20	Capric Acid	0.000	409.9019
96	10.67	o-Terphenyl SURR	0.020	218104 M
126	13.03	C25	0.000	8172.82

O-TERPHENYL % RECOVERY = 92.89697 %

FILES:

Area File: 24stat19127001.048.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 2:01:19 PM
File reported on: 5/9/2019 at 2:01:22 PM

M = Manually Integrated
Analyst 1826 5/6/19
Approved by [illegible] 5-10-19
Circle Reason (1) 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other _____

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043315 ANC09 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 236. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 09:55:02
Instrument : CP24--19871A
Result file : 24STAT19127001.049.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 97% (50-150) Conc.: 0.020481

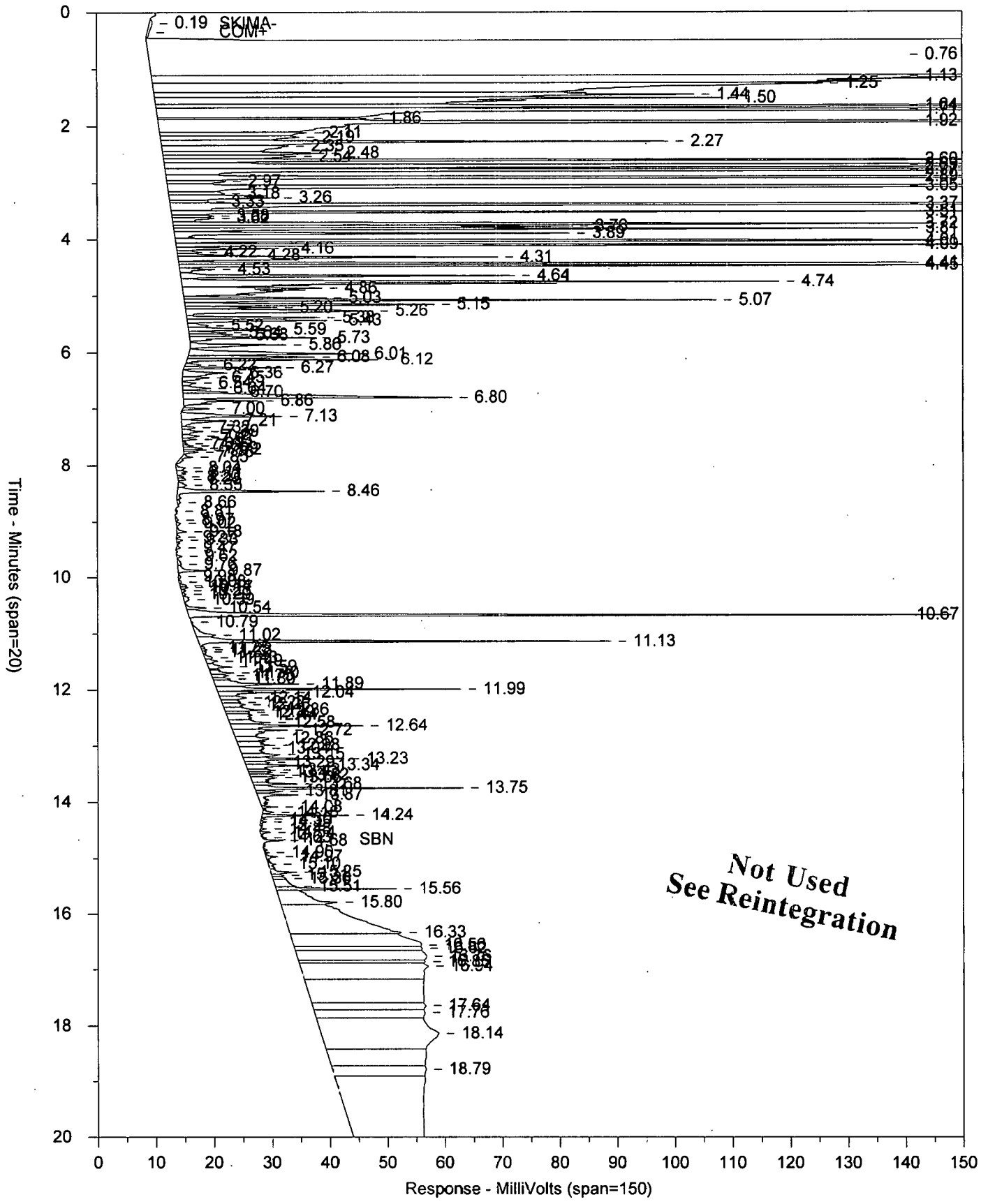
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	6568585	0.7247	0.2648	0.053		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	226966	0.0205				ppm
Capric Acid	7.21 (7.13 - 7.33)	12338	0.0023				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brillhart Senior Chemist
Date: MAY 10 2019

Sample: 1043315 AAANC09 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.049.RAW



Sample: 1043315 AAANC09 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 9:55:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 236
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
23	3.18	C10	0.00	32817.63
73	7.21	Capric Acid	3.38	18540.38
136	13.04	C25	0.00	27740.56

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.798	5531806.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

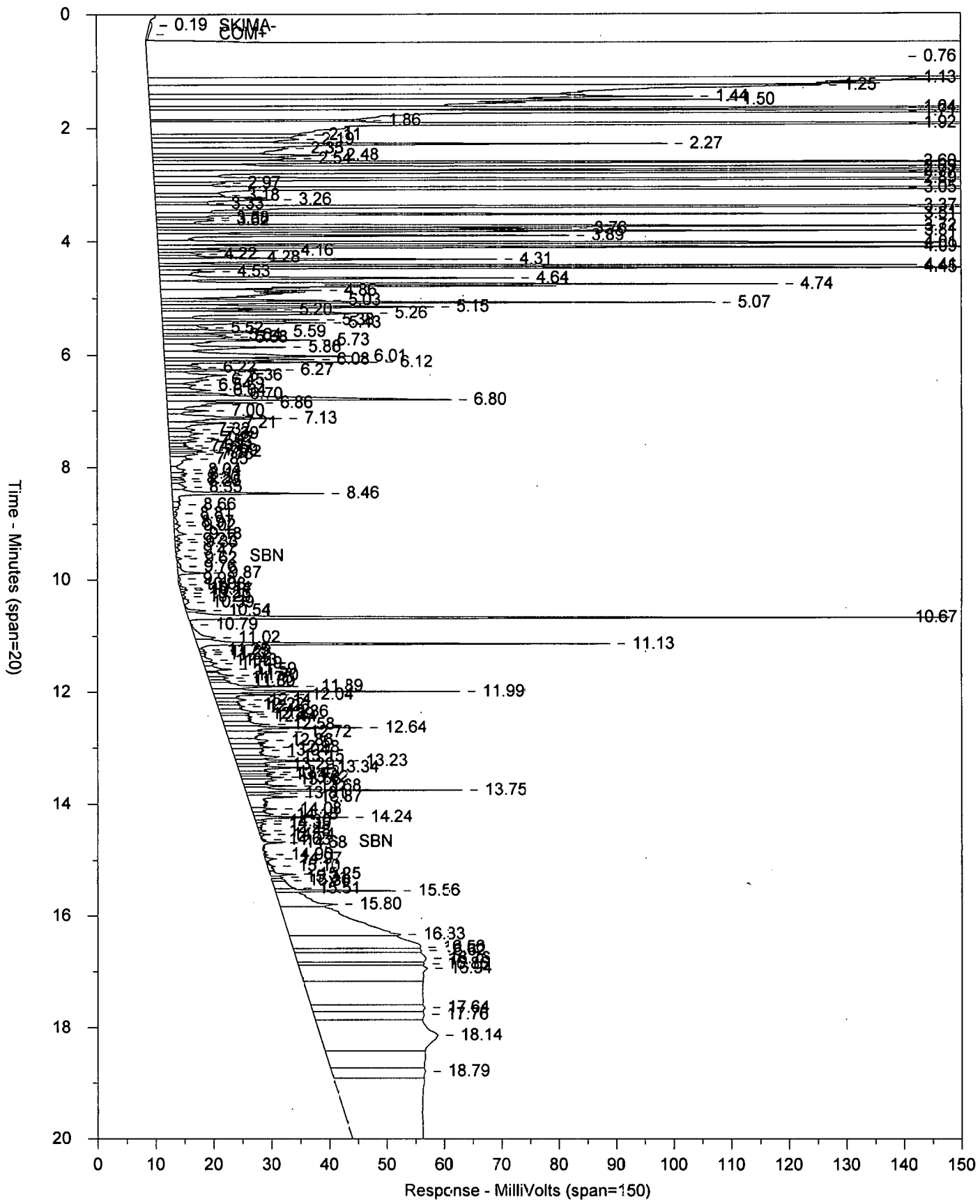
C10-<C25 ADJUSTED DRO AREA = 5531806
C10-<C25 PRELIMINARY AMT = 0.632

FILES:

Area File: 24STAT19127001.049.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 10:19:06 AM
File reported on: 5/8/2019 at 10:19:12 AM

Not Used
See Reintegration

Sample: 1043315 AAANC09 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.049.RAW



Sample: 1043315 AAANC09 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 236
Analyst: 1826

Injected on: 5/8/2019 9:55:02 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
23	3.18	C10	0.00	41170.1
73	7.21	Capric Acid	6.24	34179.66
136	13.04	C25	0.00	36301.21

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area	
C10-<C25 DRO	3.10	12.97	1.472	6568585.0	M
o-Terphenyl SURR	10.67	10.77	0.000	0.0	

********** RESULTS TABLE **********

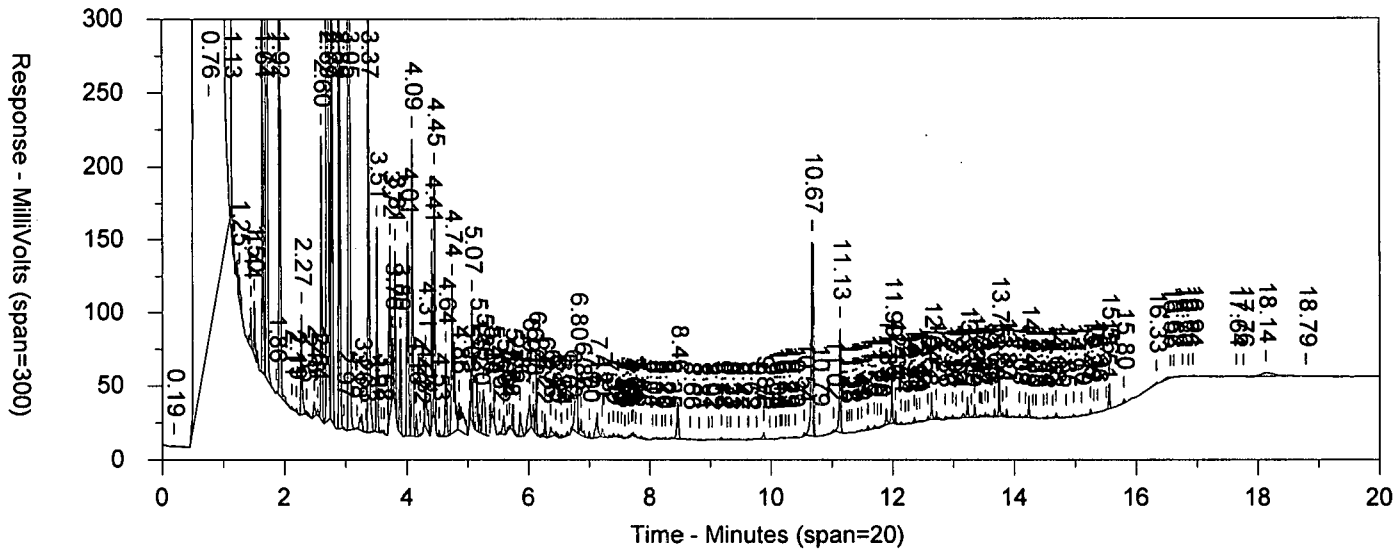
C10-<C25 ADJUSTED DRO AREA = 6568585
C10-<C25 PRELIMINARY AMT = 0.751

FILES:

Area File: 24stat19127001.049.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 2:02:54 PM
File reported on: 5/9/2019 at 2:02:56 PM

M = Manually Integrated
Analyst LSV 1826 5/9/19
Approved by [illegible] 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: 1043315 AAANC09 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.049.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 9:55:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 236
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
23	3.18	C10	0.000	1985.631
73	7.21	Capric Acid	0.002	12337.59
136	13.04	C25	0.000	2248.528

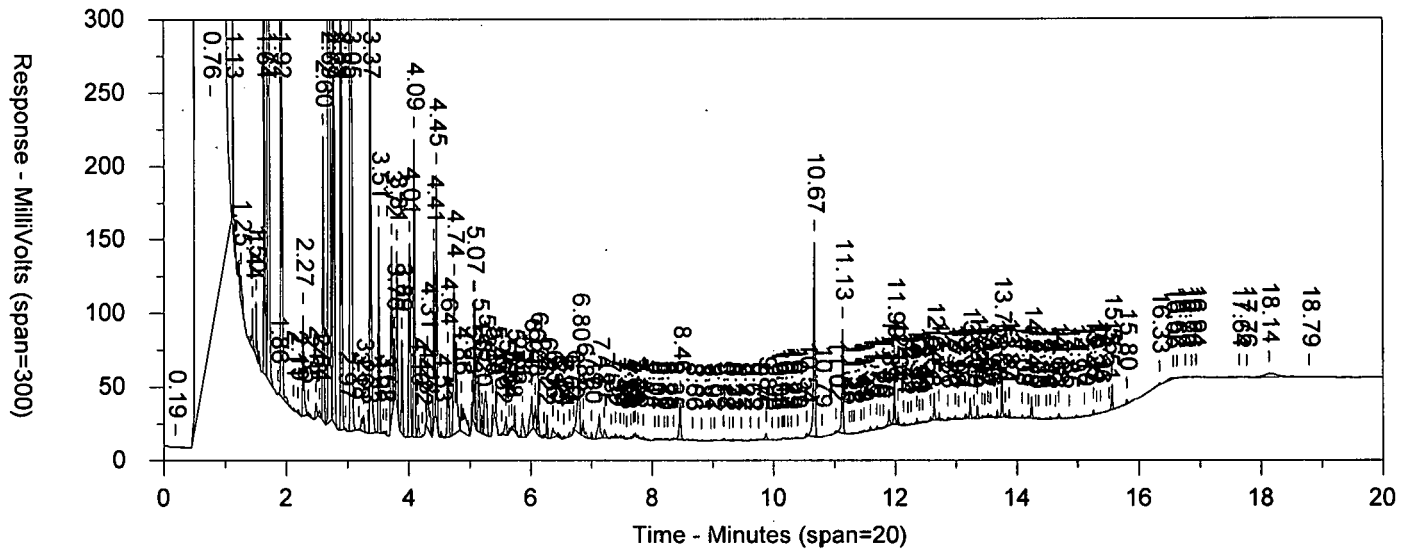
O-TERPHENYL % RECOVERY = 0 %

FILES:

Area File: 24STAT19127001.049.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 10:19:06 AM
File reported on: 5/8/2019 at 10:19:24 AM

Not Used
See Reintegration

Replot: 1043315 AAANC09 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.049.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 9:55:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 236
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area	
23	3.18	C10	0.000	1985.631	
73	7.21	Capric Acid	0.002	12337.59	
109	10.67	o-Terphenyl SURR	0.020	226966.1	M
136	13.04	C25	0.000	2248.528	

O-TERPHENYL % RECOVERY = 96.67162 %

M = Manually Integrated
Analyst JTR KAB 5/9/19
Approved by KAB JTR 5-10-19
Circle Reason (1) 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other _____

FILES:

Area File: 24stat19127001.049.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 2:03:53 PM
File reported on: 5/9/2019 at 2:03:55 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043317 ANC08 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 238. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 10:22:58
Instrument : CP24--19871A
Result file : 24STAT19127001.050.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR *43% (50-150) Conc.: 0.008919

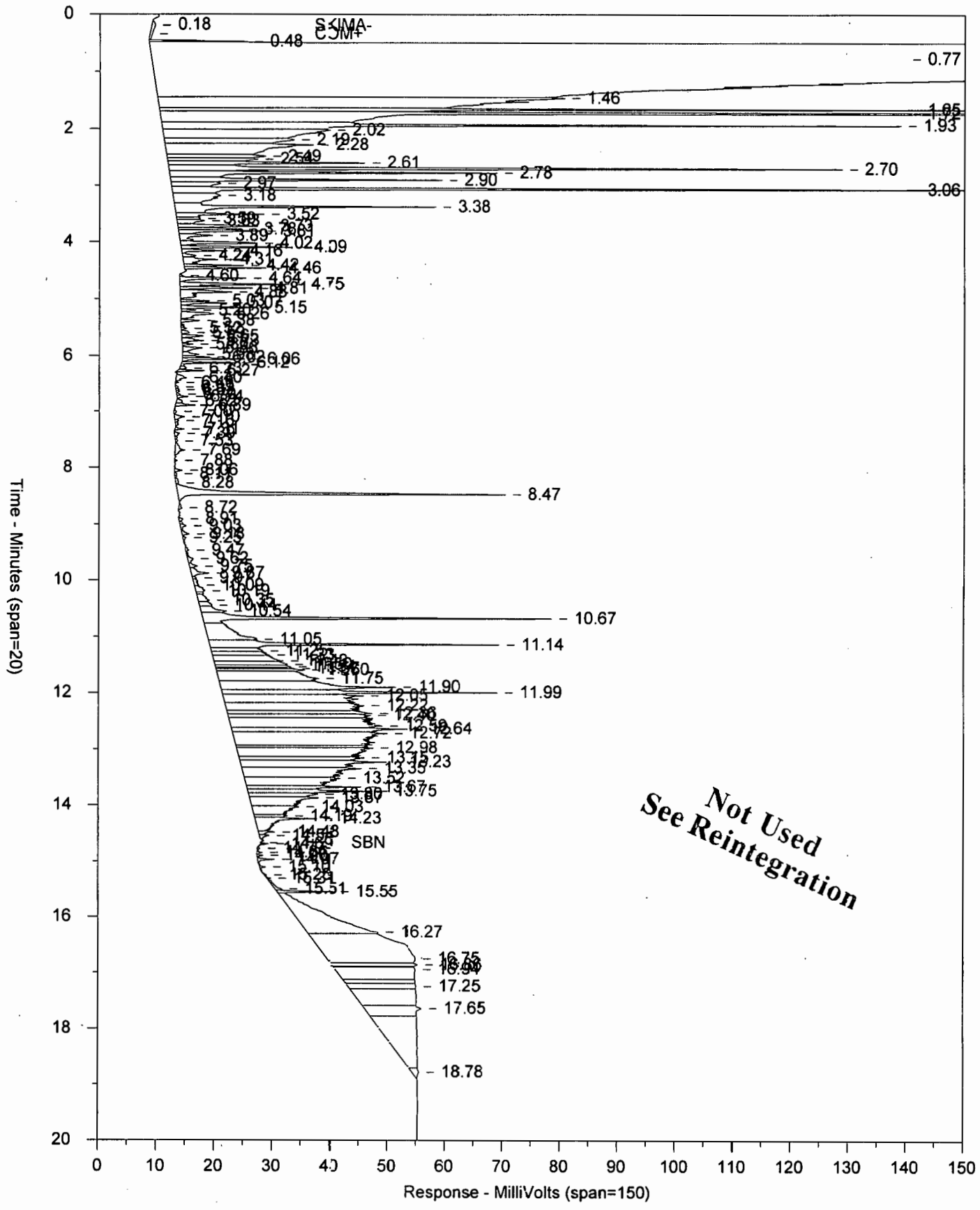
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	4069410	0.4498	0.2626	0.0525		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	99680	0.0089				ppm
Capric Acid	7.16 (7.13 - 7.33)	641	0.0001				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brillhart Senior Chemist
Date: MAY 13 2019

Sample: 1043317 AAANC08 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.050.RAW



Sample: 1043317 AAANC08 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 10:22:58 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 238
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
19	3.18	C10	0.00	70012.87
68	7.16	Capric Acid	0.44	2431.005

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.105	3425270.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

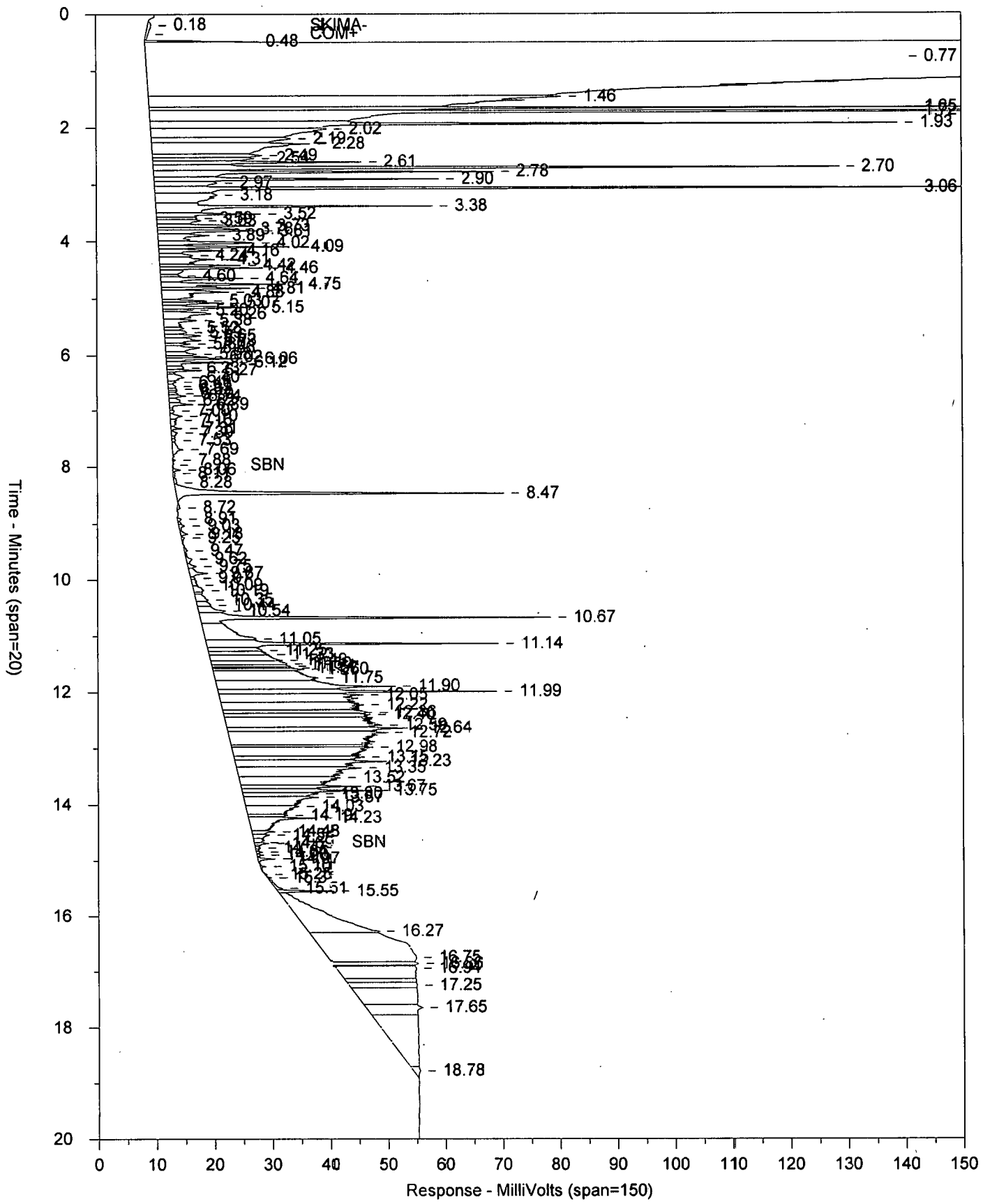
C10-<C25 ADJUSTED DRO AREA = 3425270
C10-<C25 PRELIMINARY AMT = 0.388

FILES:

Area File: 24STAT19127001.050.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 10:47:01 AM
File reported on: 5/8/2019 at 10:47:08 AM

Not Used
See Reintegration

Sample: 1043317 AAANC08 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.050.RAW



Sample: 1043317 AAANC08 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 238
Analyst: 1826

Injected on: 5/8/2019 10:22:58 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
19	3.18	C10	0.00	96796.09
68	7.16	Capric Acid	1.09	5998.491

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.258	4069411.0 M
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

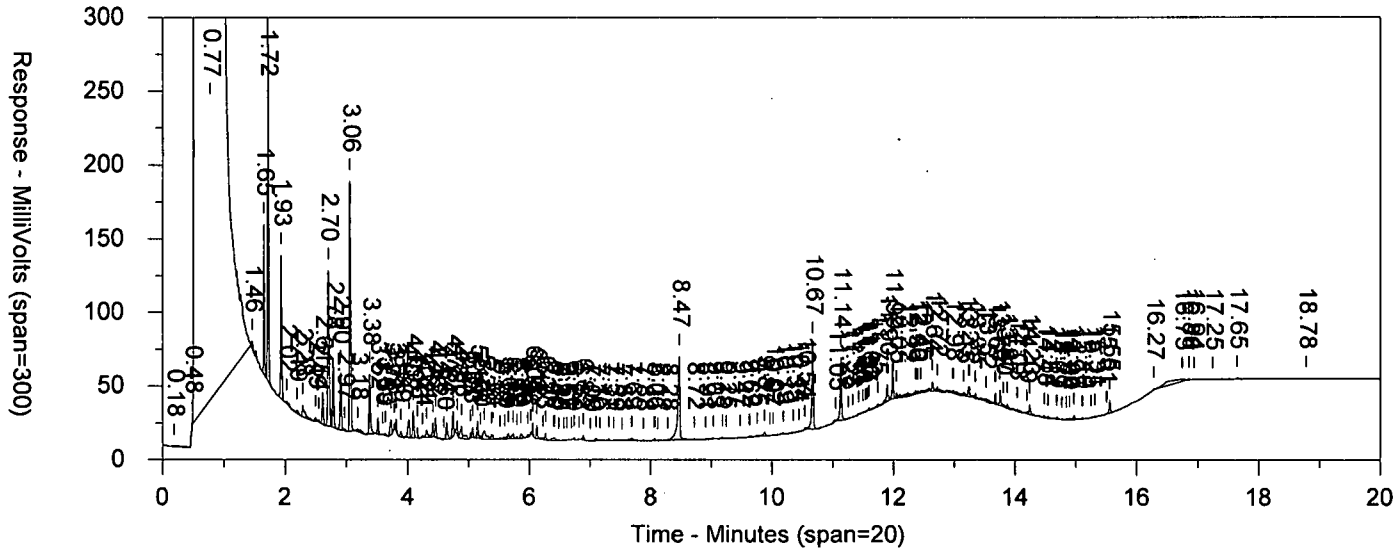
C10-<C25 ADJUSTED DRO AREA = 4069411
C10-<C25 PRELIMINARY AMT = 0.461

FILES:

Area File: 24stat19127001.050.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 2:05:13 PM
File reported on: 5/9/2019 at 2:05:28 PM

M = Manually Integrated
Analyst LSM 1826 5/9/19
Approved by [illegible] 5-13-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other _____

Replot: 1043317 AAANC08 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.050.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 10:22:58 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 238
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
19	3.18	C10	0.000	8747.031
68	7.16	Capric Acid	0.000	640.7227

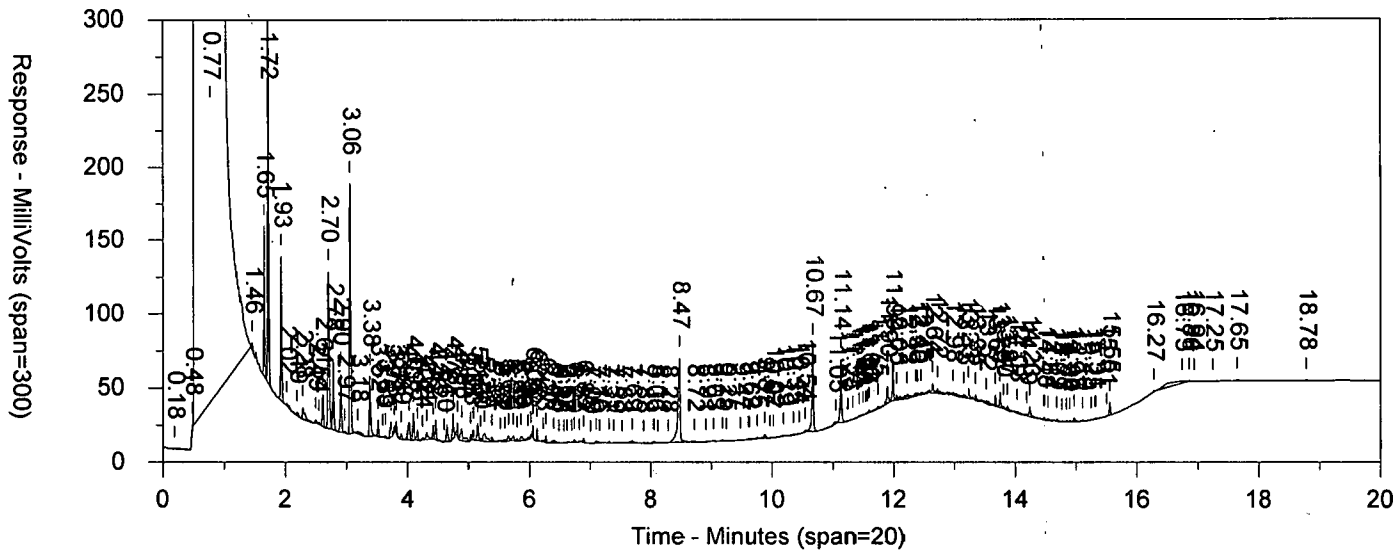
O-TERPHENYL % RECOVERY = 0 %

Not Used
See Reintegration

FILES:

Area File: 24STAT19127001.050.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 10:47:01 AM
File reported on: 5/8/2019 at 10:47:19 AM

Replot: 1043317 AAANC08 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.050.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 10:22:58 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 238
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
19	3.18	C10	0.000	8747.031
68	7.16	Capric Acid	0.000	640.7227
93	10.67	o-Terphenyl SURR	0.009	99679.88 M

O-TERPHENYL % RECOVERY = 42.45663 %

FILES:

Area File: 24stat19127001.050.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 2:06:37 PM
File reported on: 5/9/2019 at 2:06:50 PM

M = Manually Integrated
Analyst 1826 5/9/19
Approved by 5/13/19
Circle Reason (1) 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043318 ANC07 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 222. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 10:50:53
Instrument : CP24--19871A
Result file : 24STAT19127001.051.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 81% (50-150) Conc.: 0.01822

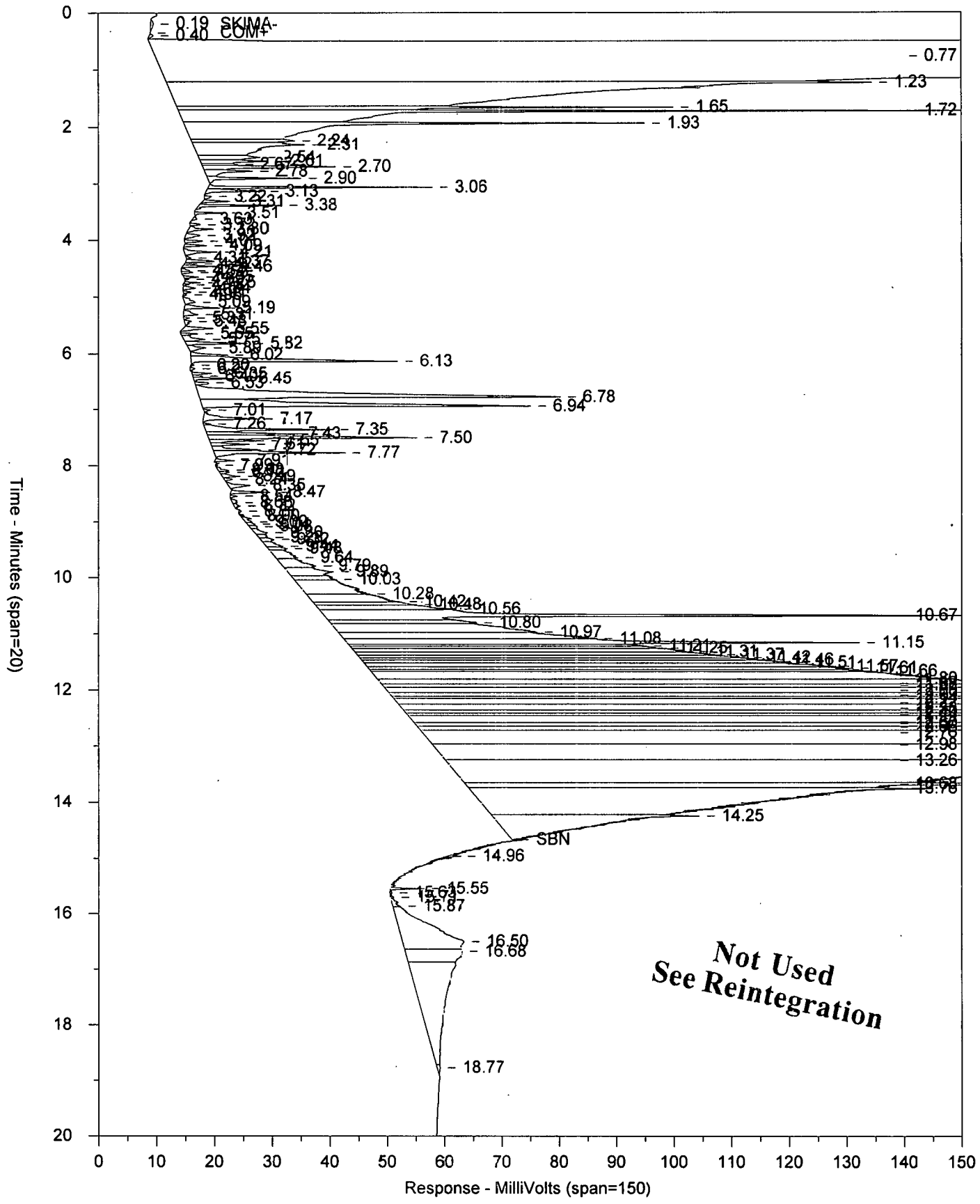
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	20837160	2.5082	0.2815	0.0563		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	189925	0.0182				ppm
Capric Acid	7.26 (7.13 - 7.33)	604	0.0001				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brillhart Senior Chemist
Date: MAY 10 2019

Sample: 1043318 AAANC07 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.051.RAW



Sample: 1043318 AAANC07 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 10:50:53 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 222
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
18	3.22	C10	0.00	2916.265
64	7.26	Capric Acid	0.34	1763.667

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.076	15094840.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

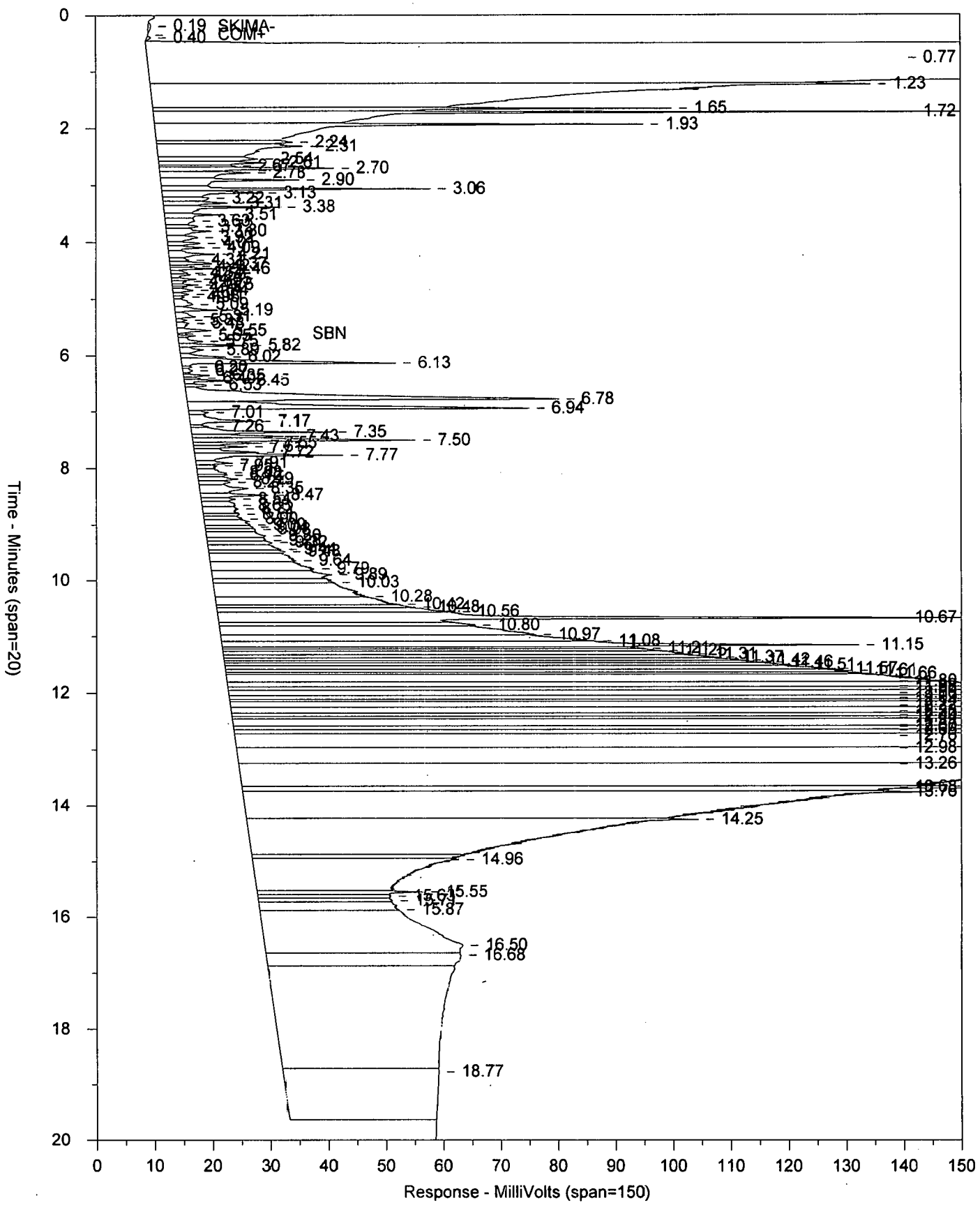
C10-<C25 ADJUSTED DRO AREA = 1.509484E+07
C10-<C25 PRELIMINARY AMT = 1.834

FILES:

Area File: 24STAT19127001.051.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 11:14:55 AM
File reported on: 5/8/2019 at 11:15:00 AM

Not Used
See Reintegration

Sample: 1043318 AAANC07 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.051.RAW



Sample: 1043318 AAANC07 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 222
Analyst: 1826

Injected on: 5/8/2019 10:50:53 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
18	3.22	C10	0.00	31770.99
64	7.26	Capric Acid	1.22	6313.041

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.272	20837160.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

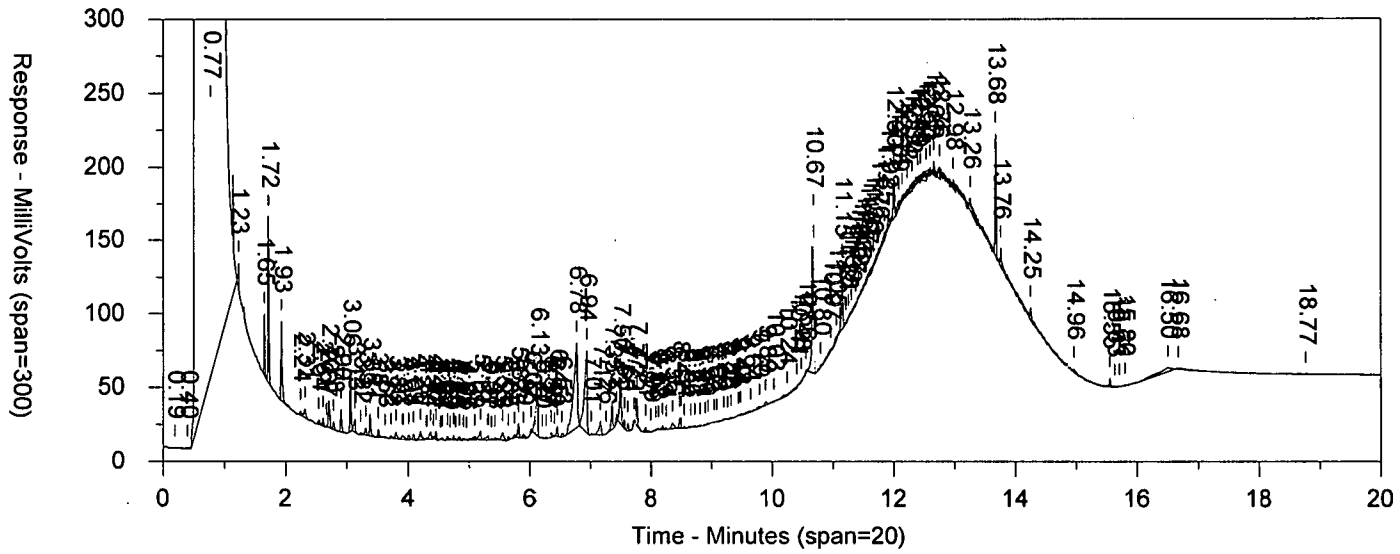
C10-<C25 ADJUSTED DRO AREA = 2.083716E+07
C10-<C25 PRELIMINARY AMT = 2.531

FILES:

Area File: 24stat19127001.051.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 2:10:07 PM
File reported on: 5/9/2019 at 2:10:09 PM

M = Manually Integrated
Analyst 1826 5/9/19
Approved by 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: 1043318 AAANC07 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.051.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 222
Analyst: 1826

Injected on: 5/8/2019 10:50:53 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
18	3.22	C10	0.000	2916.265
64	7.26	Capric Acid	0.000	604.324

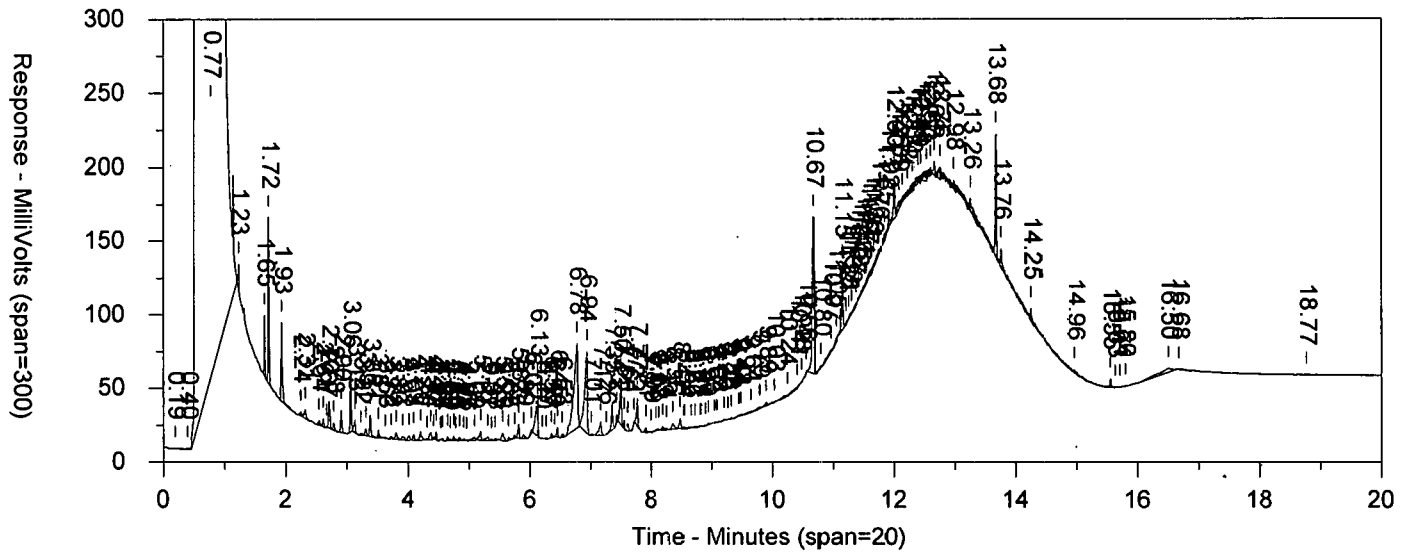
O-TERPHENYL % RECOVERY = 0 %

FILES:

Area File: 24STAT19127001.051.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 11:14:55 AM
File reported on: 5/8/2019 at 11:15:11 AM

Not Used
See Reintegration

Replot: 1043318 AAANC07 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.051.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 10:50:53 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 222
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
18	3.22	C10	0.000	2916.265
64	7.26	Capric Acid	0.000	604.324
101	10.67	o-Terphenyl SURR	0.018	189924.9 M

O-TERPHENYL % RECOVERY = 80.89469 %

M = Manually Integrated
Analyst 1826 5/9/19
Approved by [illegible] 5-10-19
Circle Reason (1) (2) 3 4
1 = Missed Peak
2 = Improper Baseline (3) 1826 5/9/19
3 = RT Update
4 = Other

FILES:

Area File: 24stat19127001.051.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 2:11:06 PM
File reported on: 5/9/2019 at 2:11:09 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043319 ANC10 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 240. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 11:19:02
Instrument : CP24--19871A
Result file : 24STAT19127001.052.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 102% (50-150) Conc.: 0.021126

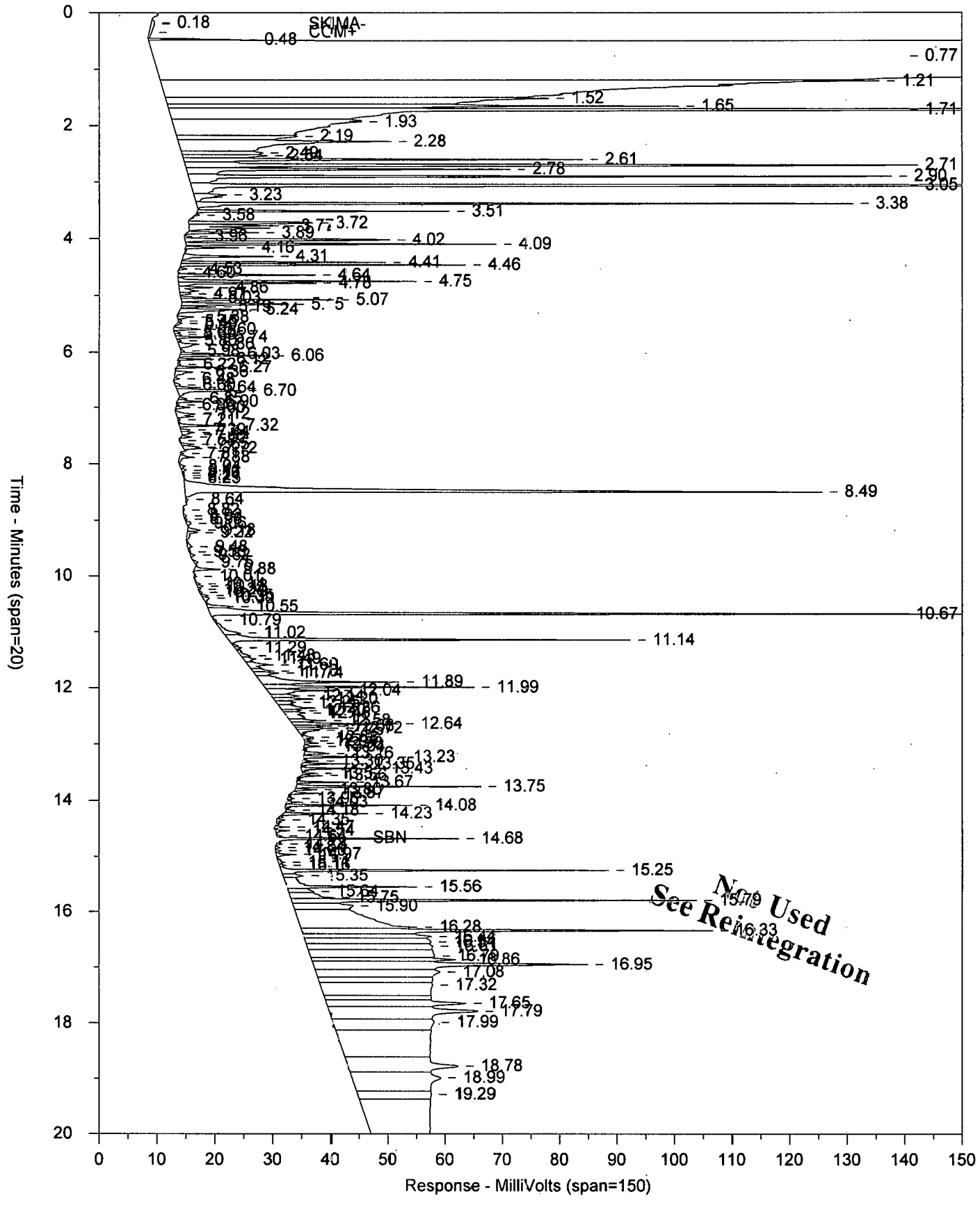
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	3690564	0.3880	0.2604	0.0521		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	238084	0.0211				ppm
Capric Acid	7.21 (7.13 - 7.33)	722	0.0001				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist
Date: MAY 10 2019

Verified by: Jamie L. Brilhart Senior Chemist
Date: MAY 10 2019

Sample: 1043319 AAANC10 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.052.RAW



Now Used
See Reintegration

Sample: 1043319 AAANC10 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 11:19:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 240
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
18	3.23	C10	0.00	22832.1
69	7.21	Capric Acid	0.13	722.1813
132	13.04	C25	0.00	4332.453

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.031	2283439.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

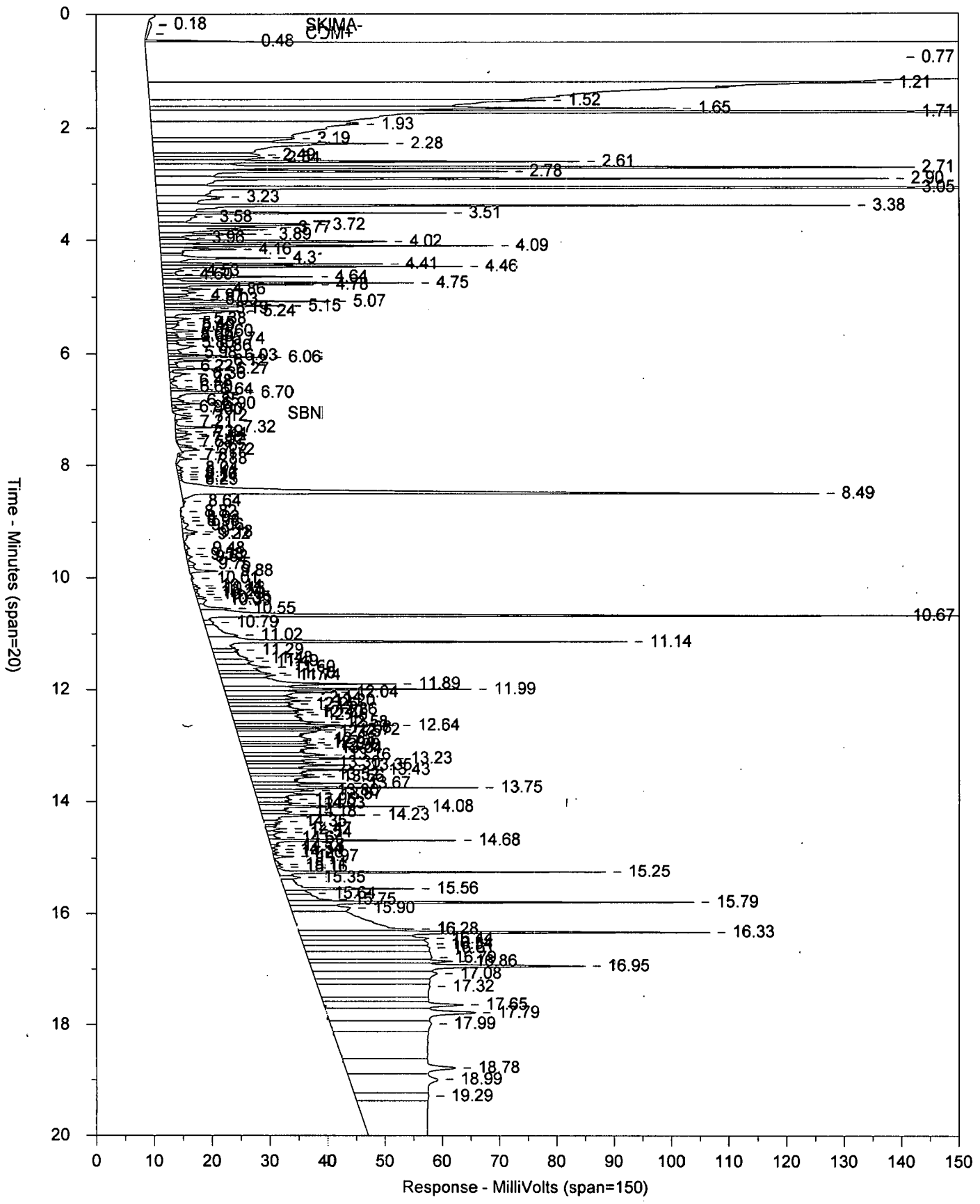
C10-<C25 ADJUSTED DRO AREA = 2283439
C10-<C25 PRELIMINARY AMT = 0.257

FILES:

Area File: 24STAT19127001.052.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 11:43:01 AM
File reported on: 5/8/2019 at 11:47:06 AM

Not Used
See Reintegration

Sample: 1043319 AAANC10 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.052.RAW



Sample: 1043319 AAANC10 T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 11:19:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 240
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
18	3.23	C10	0.00	73318.02
69	7.21	Capric Acid	0.13	722.1813
132	13.04	C25	0.00	76210.24

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.031	3690565.0
o-Terphenyl SURR	10.67	10.77	0.000	0.0

h

********** RESULTS TABLE **********

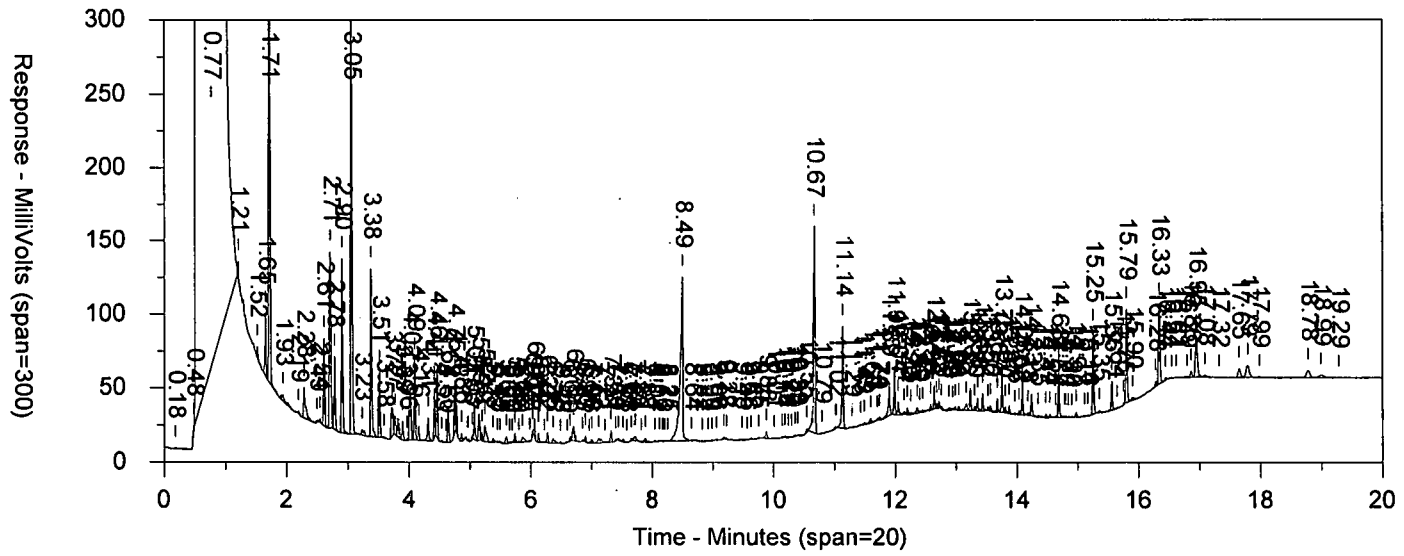
C10-<C25 ADJUSTED DRO AREA = 3690565
C10-<C25 PRELIMINARY AMT = 0.415

FILES:

Area File: 24stat19127001.052.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 2:12:28 PM
File reported on: 5/9/2019 at 2:12:29 PM

M = Manually Integrated
Analyst JTR 1st 5/9/19
Approved by DLB 2nd 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: 1043319 AAANC10 T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.052.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 11:19:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 240
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
18	3.23	C10	0.000	10309.74
69	7.21	Capric Acid	0.000	722.1813
132	13.04	C25	0.000	4332.453

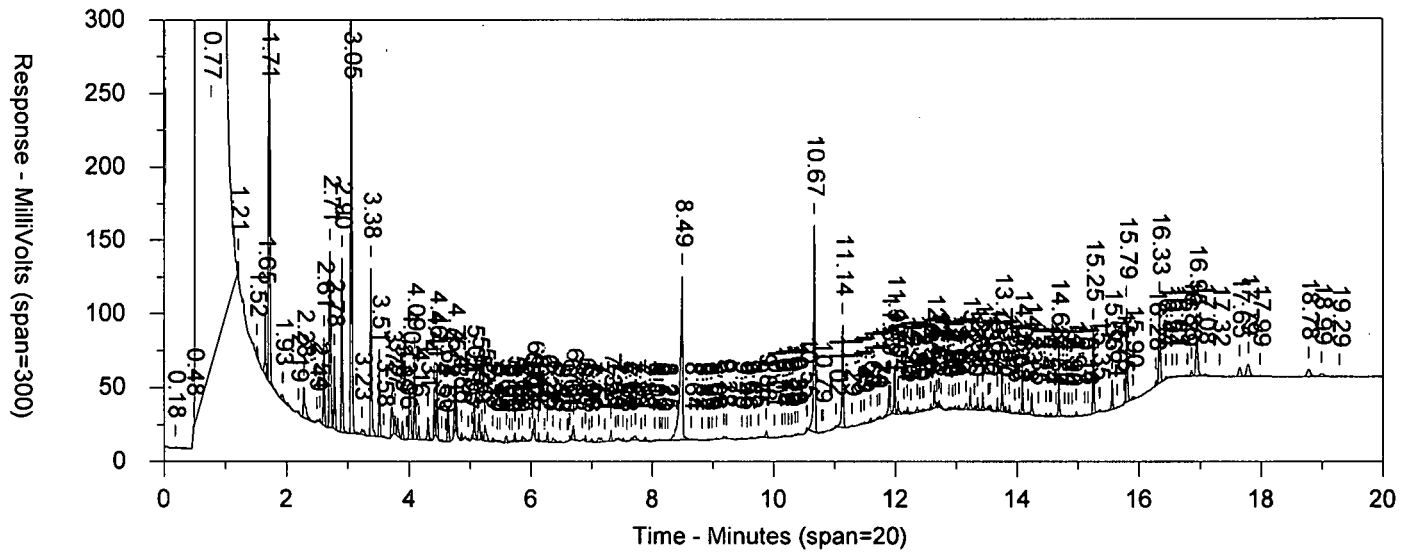
O-TERPHENYL % RECOVERY = 0 %

FILES:

Area File: 24STAT19127001.052.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 11:43:01 AM
File reported on: 5/8/2019 at 11:47:26 AM

Not Used
See Reintegration

Replot: 1043319 AAANC10 T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.052.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 11:19:02 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 240
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area	
18	3.23	C10	0.000	10309.74	
69	7.21	Capric Acid	0.000	722.1813	
105	10.67	o-Terphenyl SURR	0.021	238083.5	M
132	13.04	C25	0.000	4332.453	

O-TERPHENYL % RECOVERY = 101.4068 %

M = Manually Integrated
Analyst NM MG 5/9/19
Approved by NB MG 5-10-19
Circle Reason (1) 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

FILES:

Area File: 24stat19127001.052.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 2:13:37 PM
File reported on: 5/9/2019 at 2:13:40 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1043320 ANCFD Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 220. Total Volume: 2. ml Analyst: 1826 SDG: LSV49 State: AK
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 11:46:54
Instrument : CP24--19871A
Result file : 24STAT19127001.053.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 64% (50-150) Conc.: 0.014587

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	77693618	9.5056	0.2841	0.0568		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	150694	0.0146				ppm
Capric Acid	7.20 (7.13 - 7.33)	207381	0.0406				ppm

Comments: _____

Jamie L. Brillhart
Senior Chemist

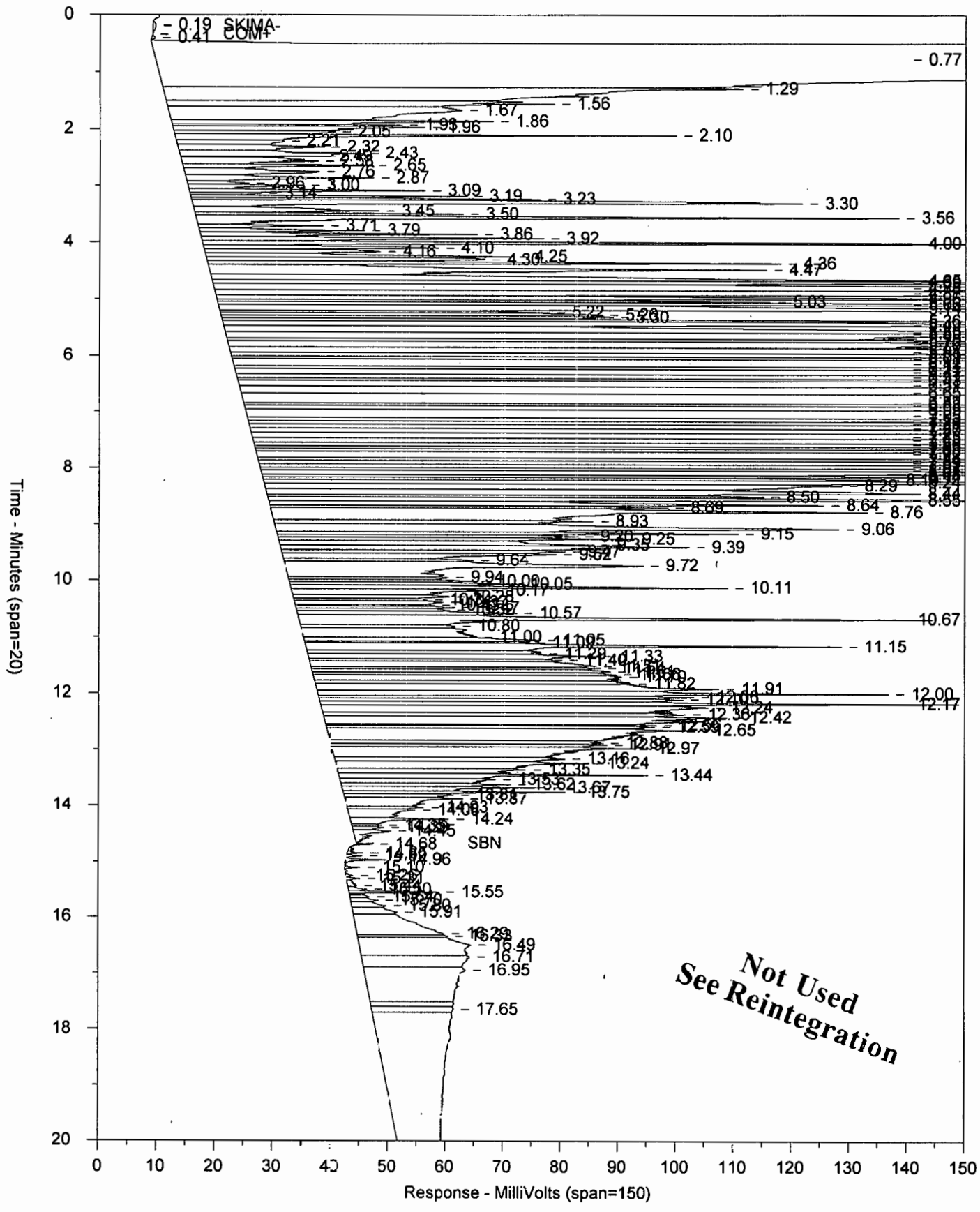
Reviewed by: Nicholas Rossi
Nicholas Rossi
Senior Chemist

Date: MAY 10 2019

Verified by: _____

Date: MAY 10 2019

Sample: 1043320 AAANCFD T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.053.RAW



Sample: 1043320 AAANCFD T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 11:46:54 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 220
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
24	3.19	C10	0.00	90305.66
73	7.20	Caprylic Acid	331.04	1691294
120	10.67	o-Terphenyl SURR	44.38	458499.3

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	82.594	70133920.0
o-Terphenyl SURR	10.67	10.77	9.764	458499.3

********** RESULTS TABLE **********

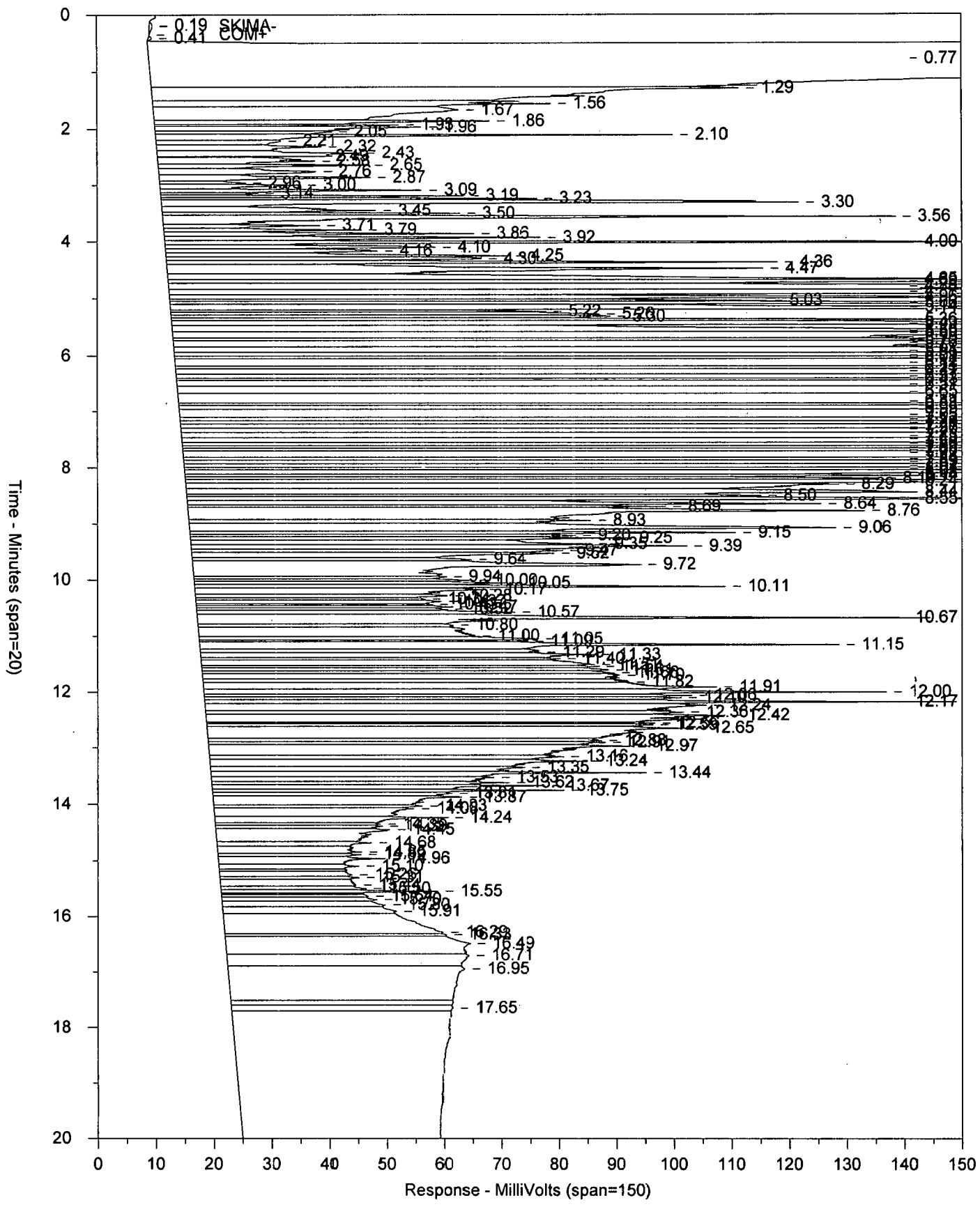
C10-<C25 ADJUSTED DRO AREA = 6.967542E+07
C10-<C25 PRELIMINARY AMT = 8.541

FILES:

Area File: 24STAT19127001.053.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 12:10:56 PM
File reported on: 5/8/2019 at 12:11:01 PM

Not Used
See Reintegration

Sample: 1043320 AAANCFD T 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.053.RAW



Sample: 1043320 AAANCFD T 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 220
Analyst: 1826

Injected on: 5/8/2019 11:46:54 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
24	3.19	C10	0.00	104202.6
73	7.20	Capric Acid	338.30	1728339
120	10.67	o-Terphenyl SURR	61.99	640401

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area	
C10-<C25 DRO	3.10	12.97	88.063	77693620.0	M
o-Terphenyl SURR	10.67	10.77	13.638	640401.0	

********** RESULTS TABLE **********

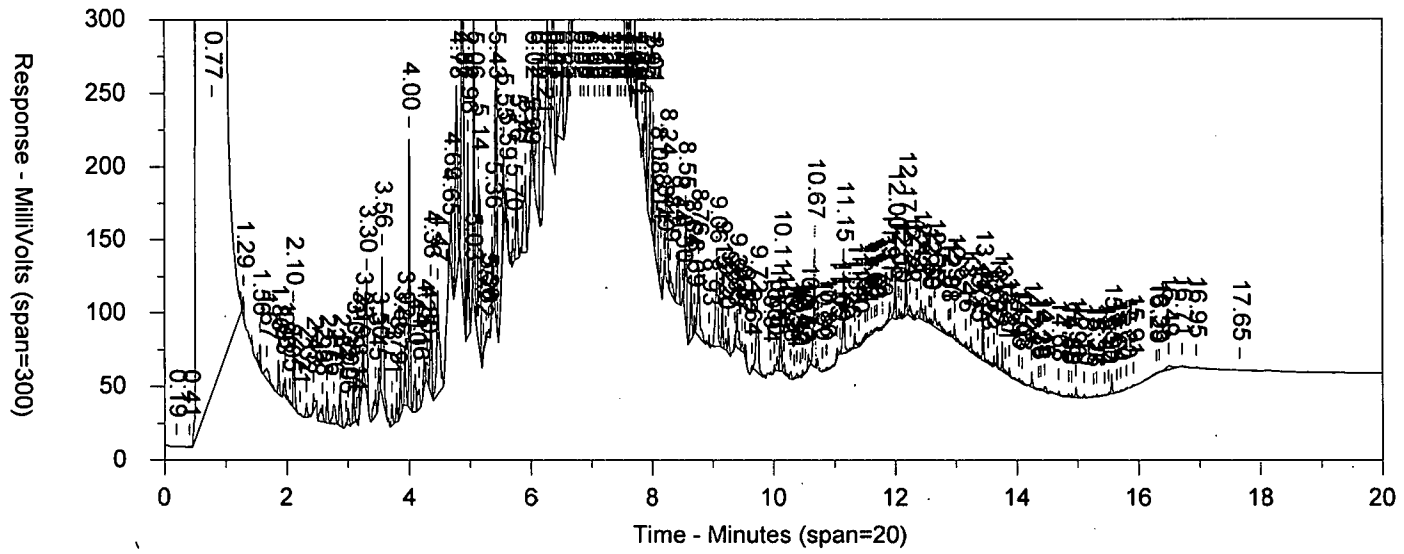
C10-<C25 ADJUSTED DRO AREA = 7.705322E+07
C10-<C25 PRELIMINARY AMT = 9.446

FILES:

Area File: 24stat19127001.053.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/9/2019 2:16:58 PM
File reported on: 5/9/2019 at 2:17:01 PM

M = Manually Integrated
Analyst DRM BZG SAVB
Approved by [illegible] 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: 1043320 AAANCFD T 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.053.RAW



Instrument ID:CP24-19871A
Injected on: 5/8/2019 11:46:54 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 220
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
24	3.19	C10	0.000	37084.66
73	7.20	Capric Acid	0.041	207381.4
120	10.67	o-Terphenyl SURR	0.015	150693.5

O-TERPHENYL % RECOVERY = 64.18484 %

FILES:

Area File: 24STAT19127001.053.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 12:10:56 PM
File reported on: 5/8/2019 at 12:11:13 PM

Raw QC Data

TPH-DRO by GC

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: BLANKA 5/1/19 PBLK32120 Sample ID: AA **Batchnumber:** 191200032A
Sample Amount: 250. Total Volume: 2. ml Analyst: 1826 SDG: State:
Analyses: 13025

Injection Summary

Injected on : 5/3/2019 00:43:42
Instrument : CP24--19871A
Result file : 24STAT19122001.029.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 103% (50-150) Conc.: 0.020583

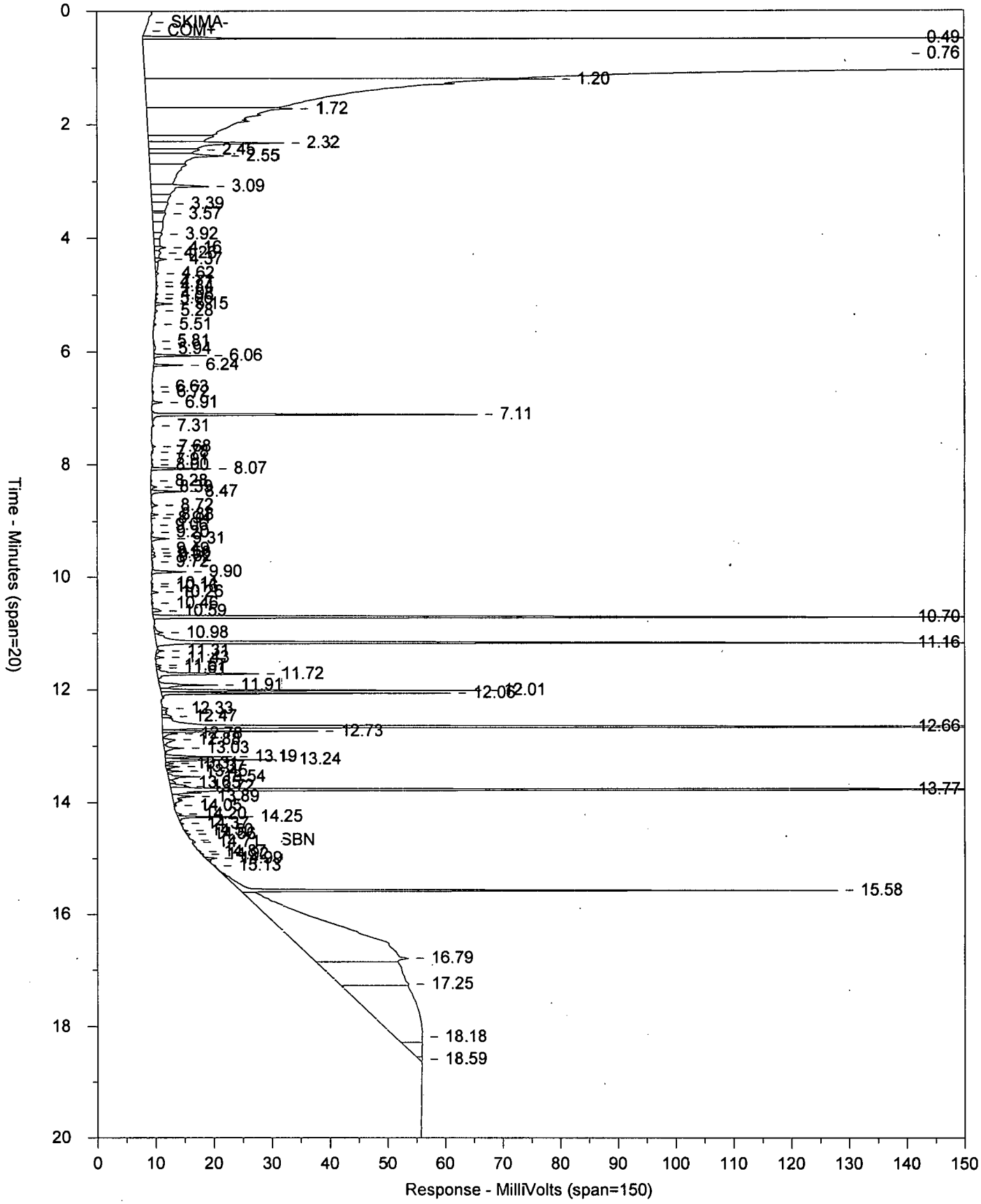
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	1536979	0.1397	<0.25	0.05	J	ppm
o-Terphenyl SURR	10.70 (10.67 - 10.77)	241626	0.0206				ppm
Capric Acid	7.31 (7.13 - 7.33)	482	0.0001				ppm

Comments: _____

Reviewed by: Heather E. Williams
Heather E. Williams
Group Leader
Date: MAY 08 2019

Verified by: Jamie L. Brillhart
Jamie L. Brillhart
Senior Chemist
Date: MAY 09 2019

Sample: BLANKA 5/1/19 AAPBLK32120 BLK 191200032A 13025 AK 102-SV 4/8/02
File: 24STAT19122001.029.RAW



Sample: BLANKA 5/1/19 AAPBLK32120 BLK 191200032A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/3/2019 12:43:42 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
31	7.31	Capric Acid	0.08	481.8713
56	10.70	o-Terphenyl SURR	20.58	241626
73	13.03	C25	0.00	8237.016

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	5.167	1536979.0
o-Terphenyl SURR	10.67	10.77	5.146	241626.0

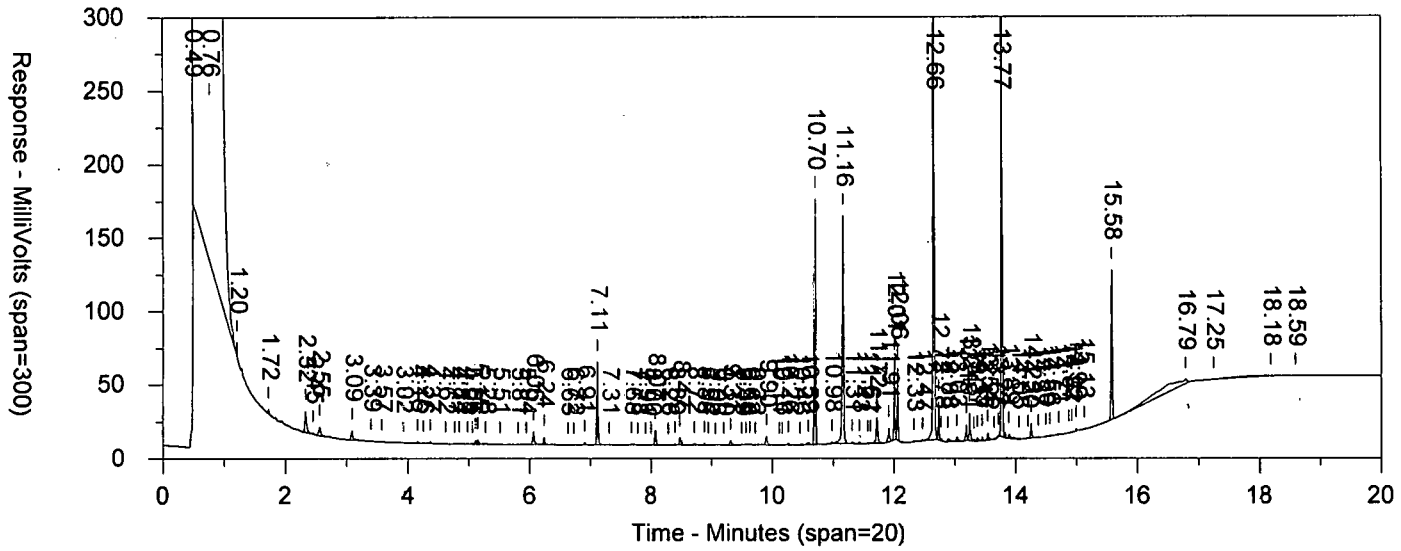
********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 1295353
C10-<C25 PRELIMINARY AMT = 0.140

FILES:

Area File: 24STAT19122001.029.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/3/2019 1:07:44 AM
File reported on: 5/3/2019 at 2:22:22 PM

Replot: BLANKA 5/1/19 AAPBLK32120 BLK 191200032A 13025 AK 102-SV 4/8/02
File: 24STAT19122001.029.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Analyst: 1826

Injected on: 5/3/2019 12:43:42 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
31	7.31	Capric Acid	0.000	481.8713
56	10.70	o-Terphenyl SURR	0.021	241626
73	13.03	C25	0.000	6749.249

O-TERPHENYL % RECOVERY = 102.9157 %

FILES:

Area File: 24STAT19122001.029.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/3/2019 1:07:44 AM
File reported on: 5/3/2019 at 2:22:32 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: BLANKA 5/2/19 PBLK16122 Sample ID: AA **Batchnumber:** 191220016A
Sample Amount: 250. Total Volume: 2. ml Analyst: 1826 SDG: State:
Analyses: 13025

Injection Summary

Injected on : 5/8/2019 07:07:06
Instrument : CP24--19871A
Result file : 24STAT19127001.043.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

O-TERPHENYL SURR 100% (50-150) Conc.: 0.019876

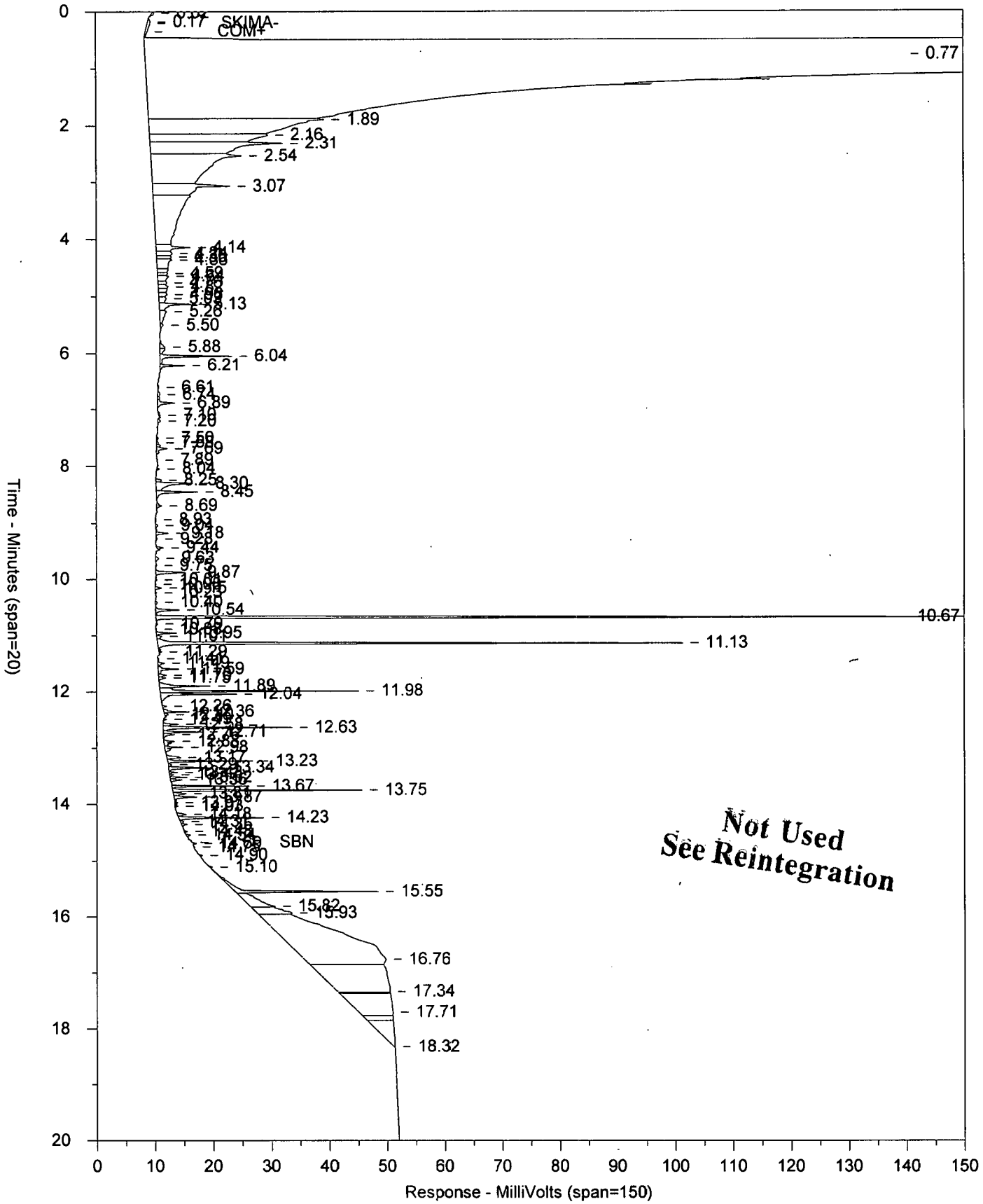
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	680852	0.0483	<0.25	<0.05		ppm
o-Terphenyl SURR	10.67 (10.67 - 10.77)	233331	0.0199				ppm
Capric Acid	7.20 (7.13 - 7.33)	1081	0.0002				ppm

Comments: _____

Reviewed by: Nicholas Rossi, Senior Chemist Date: MAY 10 2019

Verified by: Jamie L. Brillhart, Senior Chemist Date: MAY 10 2019

Sample: BLANKA 5/2/19 AAPBLK16122 BLK 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.043.RAW



Sample: BLANKA 5/2/19 AAPBLK16122 BLK 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 7:07:06 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
29	7.20	Capric Acid	0.19	1081.447

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.047	784246.8
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

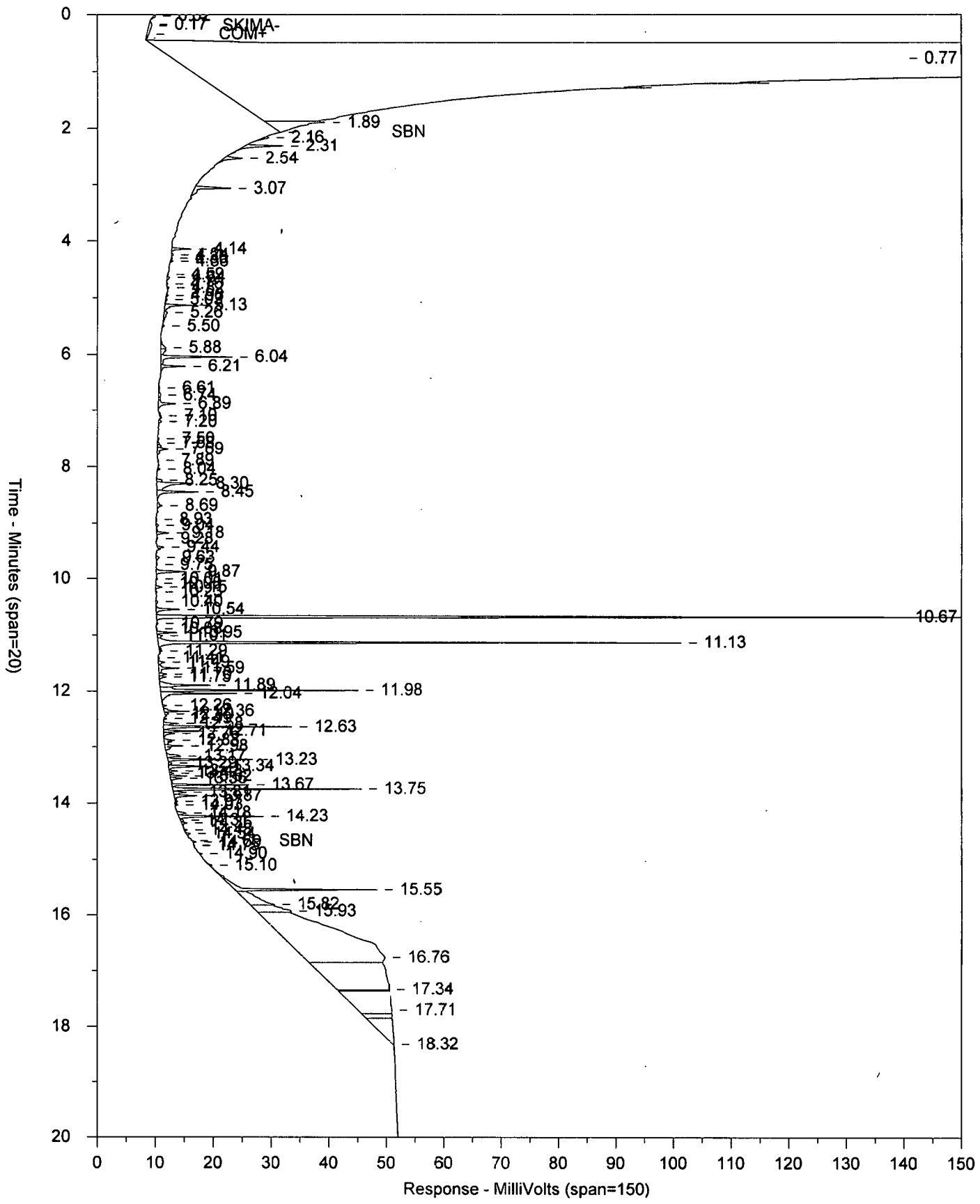
C10-<C25 ADJUSTED DRO AREA = 784246.8
C10-<C25 PRELIMINARY AMT = 0.085

FILES:

Area File: 24STAT19127001.043.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 8:30:00 AM
File reported on: 5/8/2019 at 8:39:37 AM

Not Used
See Reintegration

Sample: BLANKA 5/2/19 AAPBLK16122 BLK 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.043.RAW



Sample: BLANKA 5/2/19 AAPBLK16122 BLK 191220016A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Injected on: 5/8/2019 7:07:06 AM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Dilution Factor: 2
Analyst: 1826

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
29	7.20	Capric Acid	0.19	1081.447

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	0.047	680852.1 M
o-Terphenyl SURR	10.67	10.77	0.000	0.0

********** RESULTS TABLE **********

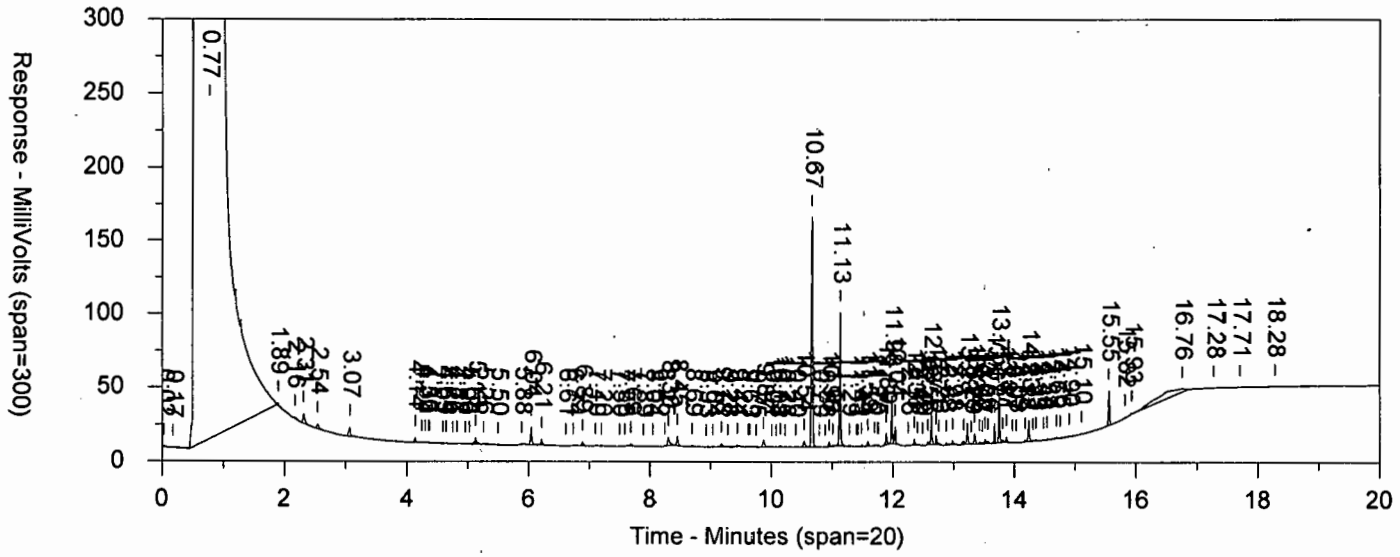
C10-<C25 ADJUSTED DRO AREA = 680852.1
C10-<C25 PRELIMINARY AMT = 0.073

FILES:

Area File: 24stat19127001.043.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/10/2019 8:31:22 AM
File reported on: 5/10/2019 at 8:31:25 AM

M = Manually Integrated
Analyst 1826 5/10/19
Approved by 5-10-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other

Replot: BLANKA 5/2/19 AAPBLK16122 BLK 191220016A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.043.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Analyst: 1826

Injected on: 5/8/2019 7:07:06 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
29	7.20	Capric Acid	0.000	1081.447

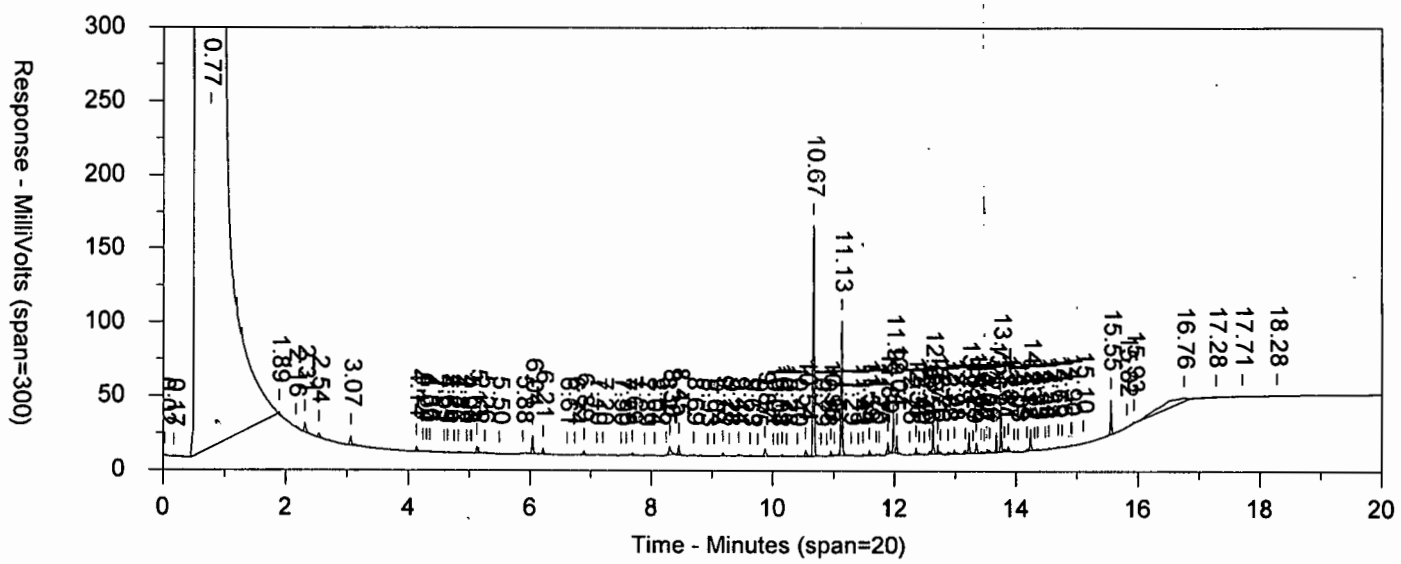
O-TERPHENYL % RECOVERY = 0 %

FILES:

Area File: 24STAT19127001.043.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 8:30:00 AM
File reported on: 5/8/2019 at 8:49:37 AM

Not Used
See Reintegration

Replot: BLANKA 5/2/19 AAPBLK16122 BLK 191220016A 13025 AK 102-SV 4/8/02
File: 24stat19127001.043.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Analyst: 1826

Injected on: 5/8/2019 7:07:06 AM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
29	7.20	Capric Acid	0.000	1081.447
53	10.67	o-Terphenyl SURR	0.020	233330.5 M

O-TERPHENYL % RECOVERY = 99.38242 %

M = Manually Integrated
Analyst JRR MLG 5/9/19
Approved by [illegible] 5-10-19
Circle Reason (1) 2 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other _____

FILES:

Area File: 24stat19127001.043.RAW
Method File: 4reAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/9/2019 1:23:43 PM
File reported on: 5/9/2019 at 1:23:44 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: BLANKA 5/6/19 PBLK13126 Sample ID: AA **Batchnumber:** 191260013A
Sample Amount: 250. Total Volume: 2. ml Analyst: 1826 SDG: State:
Analyses: 13025

Injection Summary

Injected on : 5/7/2019 19:55:10
Instrument : CP24--19871A
Result file : 24STAT19127001.019.RAW
Calibration files : 24ADL41823508.CAL
Method files : 4AKDLSUM.MET 4REAKDL.MET
Setting : 24ADL41823508(V)

Surrogate Recoveries

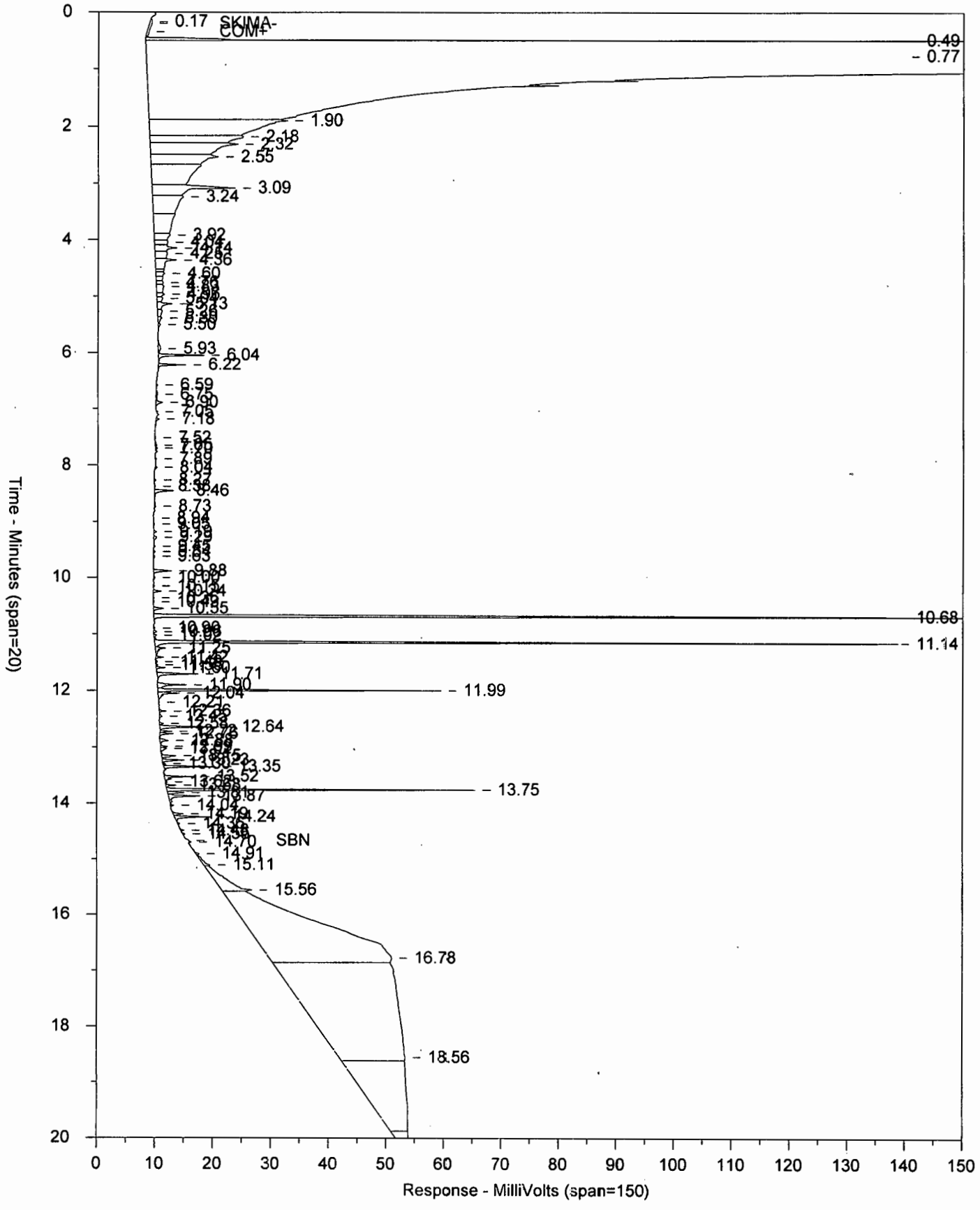
O-TERPHENYL SURR 104% (50-150) Conc.: 0.020777

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	3.10 - 12.97	819810	0.0621	<0.25	0.05	J	ppm
o-Terphenyl SURR	10.68 (10.67 - 10.77)	243903	0.0208				ppm
Capric Acid	7.18 (7.13 - 7.33)	1335	0.0002				ppm

Comments: _____

Reviewed by: Heather E. Williams Verified by: Jamie L. Billhart
Heather E. Williams
Group Leader
Jamie L. Billhart
Senior Chemist
Date: MAY 08 2019 Date: MAY 09 2019

Sample: BLANKA 5/6/19 AAPBLK13126 BLK 191260013A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.019.RAW



Sample: BLANKA 5/6/19 AAPBLK13126 BLK 191260013A 13025 AK 102-SV 4/8/02

Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Analyst: 1826

Injected on: 5/7/2019 7:55:10 PM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (ppb)	Area
9	3.24	C10	0.00	86126.87
31	7.18	Capric Acid	0.23	1334.843
55	10.68	o-Terphenyl SURR	20.78	243903.3
78	13.02	C25	0.00	2504.742

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
C10-<C25 DRO	3.10	12.97	5.252	819809.7
o-Terphenyl SURR	10.67	10.77	5.194	243903.3

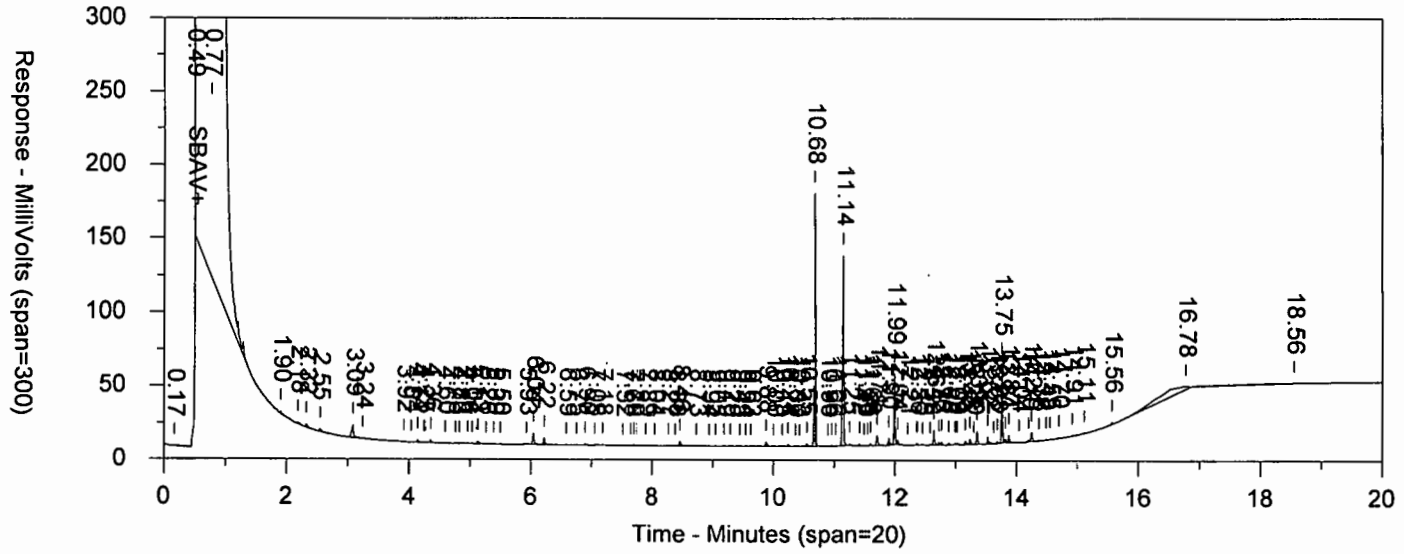
********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 575906.4
C10-<C25 PRELIMINARY AMT = 0.062

FILES:

Area File: 24STAT19127001.019.RAW
Method File: 4AKDLSUM.MET
Calibration File: 24ADL41823508.CAL
Format File: 4AKDLSUM.FMT
Area file created on: 5/8/2019 8:29:52 AM
File reported on: 5/8/2019 at 8:31:24 AM

Replot: BLANKA 5/6/19 AAPBLK13126 BLK 191260013A 13025 AK 102-SV 4/8/02
File: 24STAT19127001.019.RAW



Instrument ID:CP24-19871A
Volume Inj. per Column: 4uL
Oven Parameters: 50C for 2mins; 15C/min to 180C; 30C/min to 340C; hold 8.5mins
Sample Amount: 250
Analyst: 1826

Injected on: 5/7/2019 7:55:10 PM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak	Ret Time (min)	Peak Name	Amount (PPM)	Area
9	3.24	C10	0.000	967.6669
31	7.18	Capric Acid	0.000	1334.843
55	10.68	o-Terphenyl SURR	0.021	243903.3
78	13.02	C25	0.000	1825.397

O-TERPHENYL % RECOVERY = 103.8857 %

FILES:

Area File: 24STAT19127001.019.RAW
Method File: 4REAKDL.MET
Calibration File: 24ADL41823508.CAL
Format File: 4REAKDL.FMT
Area file created on: 5/8/2019 8:29:52 AM
File reported on: 5/8/2019 at 8:42:25 AM

Extraction/Distillation/Digestion Logs

TPH-DRO by GC

Organic Extraction Batchlog Assigned to: 26557 Logan Brosemer Reviewed by: DTL HLB Start Date: 5-1-19 Start time: 9:00

191200032A

Tech 1: LMB 26557 Tech 2: JMV16568

Dept: 32 Prep Analysis: 13027 Mini-Ext. AK 102-SV DRO AK 102-SV DRO

QC	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments
1041683MS	NLAM3	234	SS1909532D	0.25	MS1909632A	0.25	2		2	030a	Clear
1041684MSD	NLAM3	227	SS1909532D		MS1909632A	0.25	2		2	030a	Clear
BLANKA	PBLK32120	256	SS1909532D		—	—	2		2		DI H2O
LCSA	LCS32120	250	SS1909532D		MS1909632A	0.25	2		2		

Solvent Used	Lot No.
1:1 HCL	14317-14
Methylene Chloride	191108
Sodium Sulfate	19119A
—	—

Spike Solutions: Witness:
MS1909632A MINI AK 102 SPIKE
SS1909532D MINI AK SURROGATE

Sample #	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments	Analyses	List	Due Date	Prio
1 1041682BKG	NLAM3	243	SS1909532D	0.25	2		2	30A	Clear	13025		05/03/2019	N
2 1041685	NLAM9	232	SS1909532D		2		2	30A	Cloudy	13025		05/03/2019	N
3 1041686	NLAM6	241	SS1909532D		2		2	30A	Clear	13025		05/03/2019	N
4 1041687	NLAM7	236	SS1909532D		2		2	30A	Clear	13025		05/03/2019	N
5 1041688	NLAFD	232	SS1909532D		2		2	30A	Clear	13025		05/03/2019	N
6 1043306	ANCEB	243	SS1909532D		2		2	30A	Clear	13025		05/07/2019	N
7 1043307	ANC02	227	SS1909532D		2		2	30A	Clear	13025		05/07/2019	N

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NA

Bench#	~~Bench#~~	~~Bench#~~		
Rack ID:		Work Station	Tumble	Micro Temp 100?
Internal Standard		Balance #	25996	

R-VAP ID 2	80 C	R-VAP ID 3	80 C	R-VAP ID 4	80 C			
S-bath ID	C	~~S-bath ID~~	C	N-Evap	C	M-vap	C	191200032A

DF = Dilution Factor FV = Final Volume Page 1 of 1 Documented temps are NIST corrected.

Organic Extraction Batchlog Assigned to: 11067 Osvaldo Sanchez Reviewed by: NTR 5/8/19 Start Date: 5/7/19 Start time: 21:51

191220016A

Tech 1: OS11067 Tech 2: LCD28104

Dept: 32 Prep Analysis: 13027 Mini-Ext. AK 102-SV DRO AK 102-SV DRO

QC	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH 2	BC	Comments
1043310MS	ANC03	234	SS1909532D	+0	MS1909632A	+0	2		2	030a	Clear
1043311MSD	ANC03	237	SS1909532D	(6)	MS1909632A	(6)	2		2	030a	Clear
BLANKA	PBLK16122	250	SS1909532D				2		2	2	D;H2O
LCSA	LCS16122	250	SS1909532D	↓	MS1909632A	+0	2		2	2	D;H2O

Solvent Used	Lot No.
1:1 HCL	H317-14
Methylene Chloride	191108
Sodium Sulfate	191198

(6) .25mL OS11067 5/2/19

Spike Solutions: Witness: NA

MS1909632A MINI AK 102 SPIKE

SS1909532D MINI AK SURROGATE

Sample #	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH 2	BC	Comments	Analyses	List	Due Date	Prio
1 1043309BKG	ANC03	230	SS1909532D	1.0	2		2	30A	Clear	13025		05/07/2019	N
2 1043313	ANC06	234	SS1909532D		2		2	30A	tan tint	13025		05/07/2019	N
3 1043315	ANC09	236	SS1909532D		2		2	30A	tan tint	13025		05/07/2019	N
4 1043317	ANC08	238	SS1909532D	(6)	2		2	30A	White Cloudy	13025		05/07/2019	N
5 1043318	ANC07	222	SS1909532D		2		2	30A	Clear	13025		05/07/2019	N
6 1043319	ANC10	240	SS1909532D		2		2	30A	Clear	13025		05/07/2019	N
7 1043320	ANCFD	220	SS1909532D		2		2	30A	Clear	13025		05/07/2019	N
8 1044736	FLAEB	225	SS1909532D		2		2	30A	Clear	13025		05/08/2019	N
9 1044737	FLA14	235	SS1909532D		2		2	30A	Brown Cloudy	13025		05/08/2019	N
10 1044738	FLA13	236	SS1909532D		2		2	30A	Clear	13025		05/08/2019	N
11 1044739	FLAM8	224	SS1909532D	↓	2		2	30A	Brown Cloudy	13025		05/08/2019	N

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N/A OS11067 5/2/19

Bench#	Bench#	Bench#
Rack ID:		Work Station: tumble
Internal Standard		Balance #: 25986

Micro Temp 100?

R-VAP ID 1	90 C	R-VAP ID 2	90 C	R-VAP ID	C
S-bath ID	C	S-bath ID	C	N-Evap	C
M-vap	C				

191220016A

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

Organic Extraction Batchlog Assigned to: 11067 Osvaldo Sanchez Reviewed by: NRR 1126 Start Date: 5/6/19 Start time: 18:00

191260013A

Tech 1: OSilguin Tech 2: LCD28104

Dept: 32 Prep Analysis: 13027 Mini-Ext. AK 102-SV DRO . AK 102-SV DRO

QC	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH 2	BC	Comments
BLANKA	PBLK13126	250	SS1912332B	.25			2	2	2	2	DI H2O
LCSA	LCS13126	250	SS1912332B	↓	MS1909632A	.25	2		2		DI H2O
LCSDA	LCSD13126	250	SS1912332B	↓	MS1909632A	.25	2		2		DI H2O

Solvent Used	Lot No.
1:1 HCL	H317-14
Methylene Chloride	190729
Sodium Sulfate	191231

Spike Solutions: Witness: NA
MS1909632A MINI AK 102 SPIKE
SS1912332B MINI AK SURROGATE

@No sample remaining to prep MS/MSD Known 5/6/19

Sample #		Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH 2	BC	Comments	Analyses	List	Due Date	Prio
1	1041682RKG@	NLAM3	237	SS1912332B	.25	2		2	030B	white tint	13025		05/03/2019	N
2	1041685 R	NLAM9	229	SS1912332B	↓	2		2	030B	yellow tint, cloudy	13025		05/03/2019	N
3	1041686 R	NLAM6	231	SS1912332B		2		2	030B	tan tint	13025		05/03/2019	N
4	1041687 R	NLAM7	230	SS1912332B		2		2	030B	tan tint w/sed.	13025		05/03/2019	N
5	1041688 R	NLAFD	236	SS1912332B		2		2	030B	white tint	13025		05/03/2019	N
6	1043306 R	ANCEB	241	SS1912332B		2		2	030B	clear	13025		05/07/2019	N
7	1043307 R	ANC02	224	SS1912332B	↓	2		2	030B	white tint	13025		05/07/2019	N

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NA OSilguin 5/6/19

Bench#	Bench#	Bench#		
Rack ID:		Work Station	tumbler	Micro Temp 100?
Internal Standard		Balance #	25996	

R-VAP ID 6	8 C	R-VAP ID	C	R-VAP ID	C
S-bath ID	C	S-bath ID	C	N Evap	C

M-vap C

191260013A

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

Volatile Headspace Hydrocarbons by GC Data

Case Narrative/Conformance Summary

Volatile Headspace Hydrocarbons by GC

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

EPH/Miscellaneous GC

Fraction: Volatile Headspace Hydrocarbons by GC

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1043307	MW-2-W-190424	X		1	
1043308	MW-1-W-190424	X		1	
1043309	MW-3-W-190424	X		1	
1043313	MW-6-W-190424	X		20	
1043314	MW-5-W-190424	X		1	
1043315	MW-9-W-190424	X		5	
1043316	MW-4-W-190424	X		1	
1043317	MW-8-W-190424	X		1	
1043318	MW-7-W-190424	X		1	
1043319	MW-10-W-190424	X		10	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

EPH/Miscellaneous GC

Fraction: Volatile Headspace Hydrocarbons by GC

SAMPLE ANALYSIS:

(Sample number(s): 1043318: Analysis: 07105)
The container used for the testing had headspace at the time of analysis.

No other problems were encountered with the analysis of the samples.

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Volatile Headspace Hydrocarbons by GC

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Quality Control Reference List
EPH/Miscellaneous GC

CLIENT: Chevron
SDG: LSV49

Fraction: Volatile Headspace Hydrocarbons by GC

Analysis	Batch Number	Sample Number	Analysis Date
Volatile Headspace Hydrocarbon	191190003A	PBLK03119	04/29/2019 09:32
		LCS03119	04/29/2019 09:50
		LCSD03119	04/29/2019 10:08
		1043307	04/29/2019 11:39
		1043308	04/29/2019 11:57
		1043309	04/29/2019 12:33
		1043313	04/30/2019 02:09
		1043314	04/29/2019 13:10
		1043315	04/30/2019 02:27
		1043316	04/29/2019 13:47
		1043317	04/29/2019 14:05
		1043318	04/29/2019 14:28
		1043319	04/30/2019 02:45

Quality Control Summary
Method Blank
EPH/Miscellaneous GC
SDG: LSV49
Matrix: LIQUID

Fraction: Volatile Headspace Hydrocarbons by GC

191190003A / PBLK03119 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Methane	04/29/19	N.D.	ug/l	3.0	5.0

Quality Control Summary
Surrogates
EPH/Miscellaneous GC
SDG: LSV49
Matrix: LIQUID

Fraction: Volatile Headspace Hydrocarbons by GC

191190003A	Propene	
	Spike Added	20.94189 ug/l
Sample	% Recovery	Limits
PBLK03119	104	46 - 135
LCS03119	99	46 - 135
LCSD03119	94	46 - 135
1043307	59	46 - 135
1043308	52	46 - 135
1043309	66	46 - 135
1043313	88	46 - 135
1043314	58	46 - 135
1043315	82	46 - 135
1043316	56	46 - 135
1043317	55	46 - 135
1043318	57	46 - 135
1043319	92	46 - 135

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Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: LSV49
Matrix: LIQUID

EPH/Miscellaneous GC

Fraction: Volatile Headspace Hydrocarbons by GC

LCS: LCS03119 LCSD: LCSD03119 **Analyte**	Batch: **191190003A** (Sample number(s): 1043307-1043309, 1043313-1043319)							
	Spike Added ug/l	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Methane	59.83	62.85	65.93	105	110	85-115	5	20

Fraction: Volatile Headspace Hydrocarbons by GC

07105: Volatile Headspace Hydrocarbon Analyte Name	Default MDL	Default LOQ	Units
Methane	3.0	5.0	ug/l

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Calibration File: 2071051910601

GC Column (1) : HP-AL/S ID: 0.53 (mm)

ICAL Date(s) Analyzed: 4/16/2019 4/16/2019

COMPOUND	RT OF STANDARDS						MIDPOINT	RT WINDOW	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	RT	FROM	TO
METHANE	.78	.78	.78	.77	.78	.78	.78	.75	.81
ETHANE	.91	.91	.91	.91	.91	.91	.91	.88	.94
ETHENE	1.18	1.17	1.18	1.17	1.18	1.17	1.18	1.15	1.21
PROPANE	1.61	1.61	1.61	1.60	1.61	1.60	1.61	1.58	1.64
PROPENE	2.65	2.65	2.65	2.65	2.65	2.64	2.65	2.62	2.68
Isobutane	2.98	2.98	2.98	2.97	2.97	2.96	2.98	2.95	3.01
n-Butane	3.13	3.13	3.13	3.12	3.13	3.12	3.13	3.10	3.16
Acetylene	3.50	3.50	3.48	3.48	3.47		3.48	3.43	3.53

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Calibration File: 2071051910601

GC Column (1) : HP-AL/S ID: 0.53 (mm)

ICAL Date(s) Analyzed: 4/16/2019 4/16/2019

COMPOUND	CALIBRATION FACTORS							%RSD
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	MEAN	
METHANE	2.13E+03	1.52E+03	1.20E+03	1.25E+03	1.21E+03	1.13E+03	1.41E+03	27
ETHANE	1.09E+03	1.12E+03	1.13E+03	1.20E+03	1.19E+03	1.11E+03	1.14E+03	4
ETHENE	1.21E+03	1.23E+03	1.18E+03	1.26E+03	1.27E+03	1.16E+03	1.22E+03	3
PROPANE	1.21E+03	1.24E+03	1.26E+03	1.34E+03	1.36E+03	1.26E+03	1.28E+03	4
PROPENE	1.41E+03	1.94E+03	1.69E+03	1.72E+03	1.69E+03	1.54E+03	1.67E+03	11
Isobutane	1.27E+03	1.39E+03	1.42E+03	1.54E+03	1.53E+03	1.37E+03	1.42E+03	7
n-Butane	1.14E+03	1.24E+03	1.34E+03	1.44E+03	1.43E+03	1.31E+03	1.32E+03	9
Acetylene	1.18E+03	1.10E+03	9.94E+02	9.50E+02	8.31E+02		1.01E+03	13

Diane Carlson 4/17/19

File Name: Y:\CP20\2071051910601.CAL
Version: 2

Creator:
Description:
Reason for change:

Johanna C. Kennedy
Chemist

APR 18 2019

External standard calibration
Standard injection volume: 1
Standard sample weight: 1
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units:
No default component

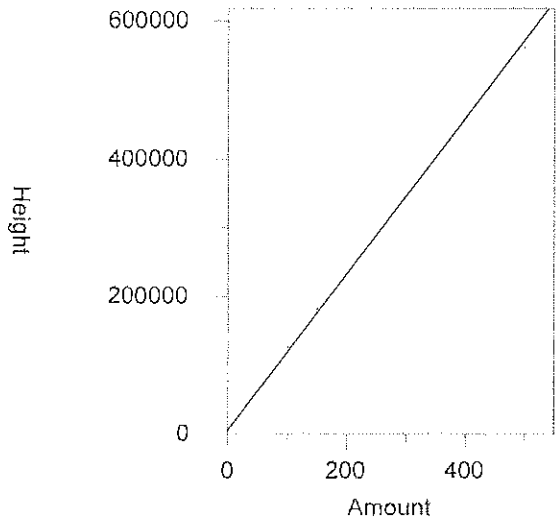
Jamie L. Brillhart
Senior Chemist

APR 18 2019

Method of calculating data point averages: Current update equal to cal data
No calibration update report

All levels are normal data points.

1 Methane



Expected retention time (frozen): 0.78 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

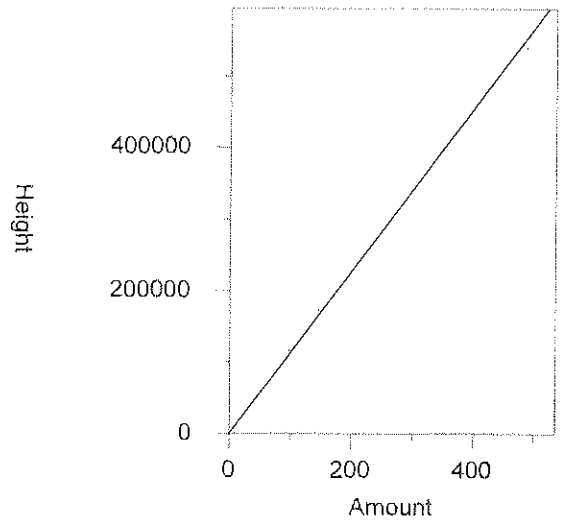
Single peak quantification by height

Y = 1137.168 X + 5371.539

Linear fit with 1/X weighting
Coefficient of determination: 0.9991481
Average error: 2.932%
Average CF: 1407.54
RSD: 26.959%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	5	10654.62	2130.924	-3.642	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\207105191060018.005.BND	4/16/2019 9:33:58 AM
2	15	22830.78	1522.052	1.791	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\207105191060018.006.BND	4/16/2019 9:52:09 AM
3	60	72141.57	1202.359	-1.984	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\207105191060018.007.BND	4/16/2019 10:09:53 AM
4	100	125049.4	1250.494	5.006	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\207105191060018.008.BND	4/16/2019 10:28:06 AM
5	150	181847.7	1212.318	3.354	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\207105191060018.009.BND	4/16/2019 10:46:57 AM
6	499	562417.8	1127.09	-1.816	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\207105191060018.010.BND	4/16/2019 11:05:01 AM

2 Ethane



Expected retention time (frozen): 0.91 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

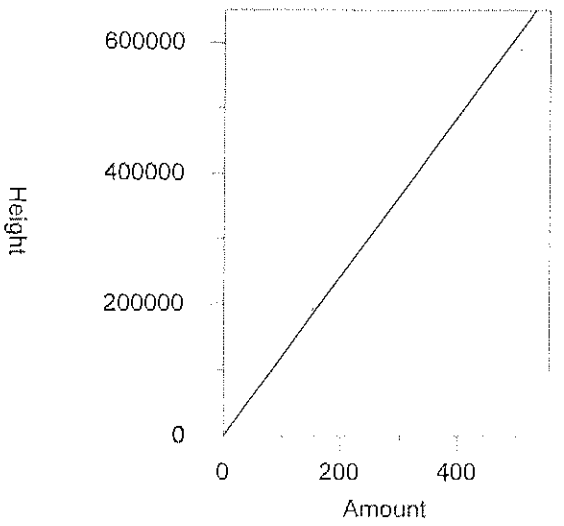
Single peak quantification by height

Y = 1138.223 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9986421
Average error: 3.342%
Average CF: 1138.223
RSD: 4.054%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	5	5431.367	1086.273	-4.564	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	15	16747.62	1116.508	-1.908	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	58	65255.96	1125.103	-1.153	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	97	116405.1	1200.053	5.432	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:(
5	146	173813.3	1190.502	4.593	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	487	541007.1	1110.898	-2.401	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.010.BND	4/16/2019 11:05:(

3 Ethene



Expected retention time (frozen): 1.18 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

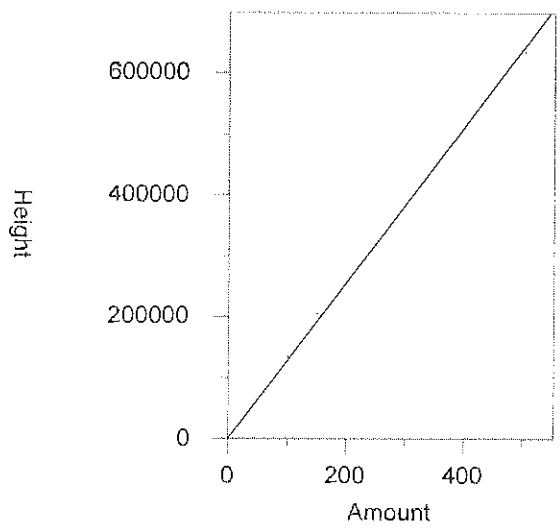
Single peak quantification by height

Y = 1218.261 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9965683
Average error: 2.731%
Average CF: 1218.261
RSD: 3.356%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	5	6035.803	1207.161	-0.911	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	15	18430.13	1228.675	0.855	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	61	72182.98	1183.328	-2.867	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	101	127220.6	1259.61	3.394	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:(
5	152	192476.9	1266.295	3.943	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	507	590399.6	1164.496	-4.413	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.010.BND	4/16/2019 11:05:(

4 Propane



Expected retention time (frozen): 1.61 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

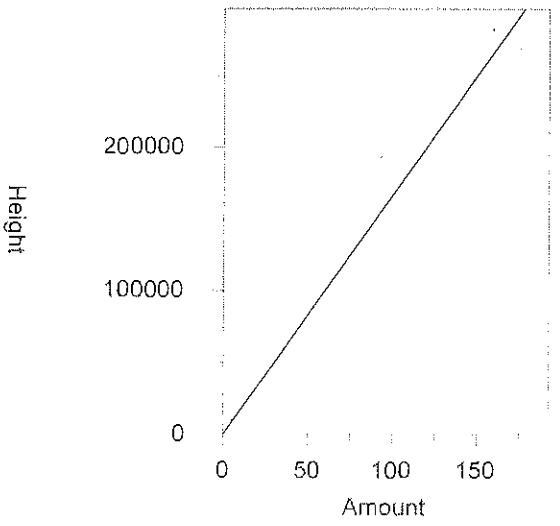
Single peak quantification by height

Y = 1279.204 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9990856
Average error: 3.603%
Average CF: 1279.204
RSD: 4.431%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	5	6073.057	1214.611	-5.049	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	15	18619.84	1241.323	-2.961	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	60	75601.3	1260.022	-1.500	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	101	135038.3	1337.013	4.519	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:
5	151	205309	1359.662	6.290	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	503	635084.9	1262.594	-1.298	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.010.BND	4/16/2019 11:05:

5 Propene



Expected retention time (frozen): 2.65 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

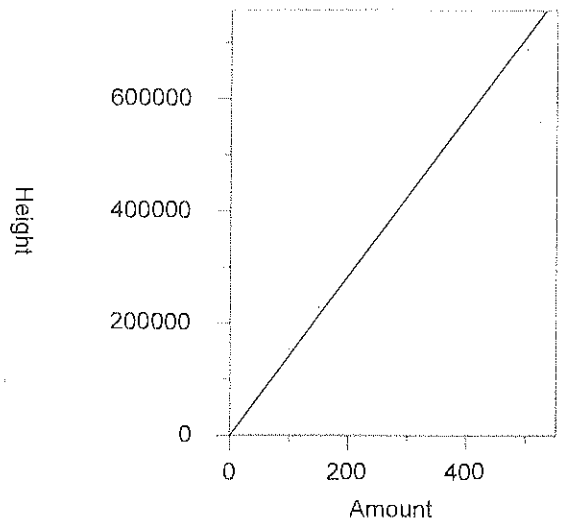
Single peak quantification by height

Y = 1666.079 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9900652
Average error: 7.669%
Average CF: 1666.079
RSD: 10.811%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	2	2816.177	1408.089	-15.485	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	5	9703.476	1940.695	16.483	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	21	35502.15	1690.578	1.470	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	35	60270.69	1722.02	3.358	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:
5	52	88105.67	1694.34	1.696	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	175	269632.2	1540.755	-7.522	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.010.BND	4/16/2019 11:05:

6 Isobutane



Expected retention time (frozen): 2.98 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

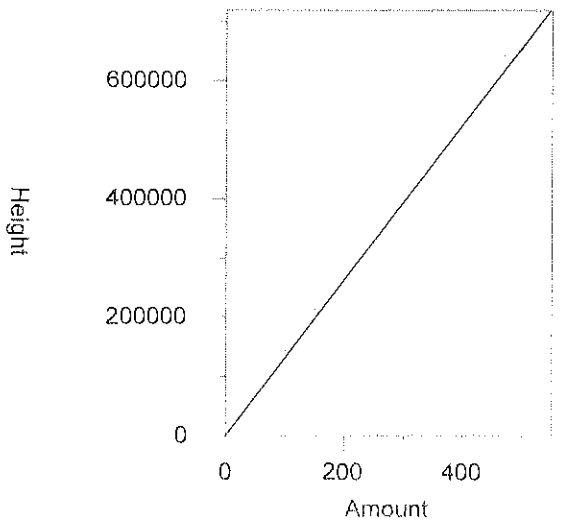
Single peak quantification by height

Y = 1420.642 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9970146
Average error: 5.288%
Average CF: 1420.642
RSD: 7.044%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	5	6371.506	1274.301	-10.301	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	15	20854.67	1390.311	-2.135	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	60	85176.45	1419.608	-0.073	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	100	153906.7	1539.067	8.336	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:
5	150	229135.7	1527.571	7.527	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	502	689241.7	1372.991	-3.354	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.010.BND	4/16/2019 11:05:

7 N-butane



Expected retention time (frozen): 3.13 minutes
Search window: 0.03 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

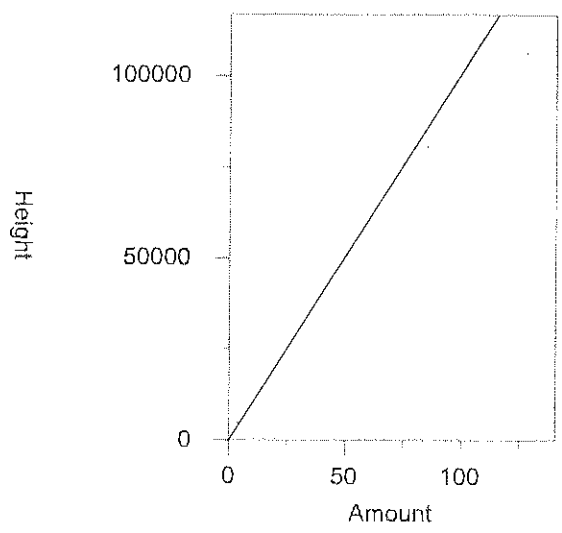
Single peak quantification by height

Y = 1317.839 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9984077
Average error: 6.672%
Average CF: 1317.839
RSD: 8.844%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	5	5683.909	1136.782	-13.739	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	15	18629.11	1241.941	-5.759	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	60	80527.05	1342.117	1.842	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	100	144284.3	1442.843	9.486	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:
5	150	214852.8	1432.352	8.689	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	499	654187.6	1310.997	-0.519	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.010.BND	4/16/2019 11:05:

8 Acetylene



Expected retention time (frozen):	3.48 minutes
Search window:	0.05 minutes
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

Single peak quantification by height

$Y = 1011.137\ X + 0$

Average CF fit with equal weighting, forced to origin

Coefficient of determination:	0.9244125
Average error:	10.255%
Average CF:	1011.137
RSD:	13.446%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	4	4736.583	1184.146	17.110	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.005.BND	4/16/2019 9:33:5
2	13	14265.57	1097.352	8.526	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.006.BND	4/16/2019 9:52:0
3	51	50679.31	993.7119	-1.723	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.007.BND	4/16/2019 10:09:
4	85	80713.27	949.5679	-6.089	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.008.BND	4/16/2019 10:28:
5	128	106356.4	830.9094	-17.824	\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106001B.009.BND	4/16/2019 10:46:
6	(426)	(268206)	--	--	Manual	4/18/2019 8:06:5

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Date Analyzed: 04/16/19

GC Column (1) : HP-AL/S ID: .53 (mm) Time Analyzed: 12:07

Lab File ID: 20710519106001B.014.RAW Initial Calibration: 2071051910601

Lab Standard ID: HICVXAA Init. Calib Date(s): 04/16/19 04/16/19

Calibration: 2071051910601

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (ug/l)	NOM AMOUNT (ug/l)	%D
METHANE	0.78	0.75	0.81	63.99	59.83	7
ETHANE	0.91	0.88	0.94	62.43	59.03	6
ETHENE	1.18	1.15	1.21	64.36	60.57	6
PROPANE	1.61	1.58	1.64	65.98	60.60	9
PROPENE	2.65	2.62	2.68	21.22	20.94	1
Isobutane	2.98	2.95	3.01	66.38	59.90	11
n-Butane	3.13	3.10	3.16	66.30	59.90	11
Acetylene	3.49	3.43	3.53	47.10	51.12	-8

Compounds 8

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Date Analyzed: 04/29/19

GC Column (1) : HP-AL/S ID: .53 (mm) Time Analyzed: 8:55

Lab File ID: 20710519106010B.005.RAW Initial Calibration: 2071051910601

Lab Standard ID: 71053GH Init. Calib Date(s): 04/16/19 04/16/19

Calibration: 2071051910601

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ug/l)	NOM AMOUNT (ug/l)	%D
METHANE	0.78	0.75	0.81	65.17	59.83	9
ETHANE	0.91	0.88	0.94	61.75	58.44	6
ETHENE	1.17	1.15	1.21	64.52	60.85	6
PROPANE	1.60	1.58	1.64	62.69	60.39	4
PROPENE	2.63	2.62	2.68	22.35	20.94	7
Isobutane	2.96	2.95	3.01	61.41	60.19	2
n-Butane	3.11	3.10	3.16	61.01	59.90	2
Acetylene	3.46	3.44	3.54	48.64	51.12	-5

Compounds 8

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Date Analyzed: 04/29/19

GC Column (1) : HP-AL/S ID: .53 (mm) Time Analyzed: 12:15

Lab File ID: 20710519106010B.016.RAW Initial Calibration: 2071051910601

Lab Standard ID: 71053GH Init. Calib Date(s): 04/16/19 04/16/19

Calibration: 2071051910601

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (ug/l)	NOM AMOUNT (ug/l)	%D
METHANE	0.78	0.75	0.81	64.97	59.83	9
ETHANE	0.91	0.88	0.94	63.45	58.44	9
ETHENE	1.17	1.15	1.21	65.62	60.85	8
PROPANE	1.60	1.58	1.64	66.65	60.39	10
PROPENE	2.64	2.62	2.68	21.51	20.94	3
Isobutane	2.97	2.95	3.01	66.85	60.19	11
n-Butane	3.12	3.10	3.16	67.06	59.90	12
Acetylene	3.48	3.44	3.54	48.79	51.12	-5

Compounds 8

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Date Analyzed: 04/29/19

GC Column (1) : HP-AL/S ID: .53 (mm) Time Analyzed: 15:04

Lab File ID: 20710519106010B.025.RAW Initial Calibration: 2071051910601

Lab Standard ID: 71053GH Init. Calib Date(s): 04/16/19 04/16/19

Calibration: 2071051910601

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (ug/l)	NOM AMOUNT (ug/l)	%D
METHANE	0.78	0.75	0.81	63.79	59.83	7
ETHANE	0.91	0.88	0.94	62.19	58.44	6
ETHENE	1.17	1.15	1.21	63.22	60.85	4
PROPANE	1.60	1.58	1.64	64.73	60.39	7
PROPENE	2.65	2.62	2.68	21.47	20.94	2
Isobutane	2.97	2.95	3.01	66.40	60.19	10
n-Butane	3.12	3.10	3.16	68.08	59.90	14
Acetylene	3.50	3.44	3.54	50.59	51.12	-1

Compounds 8

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Date Analyzed: 04/30/19

GC Column (1) : HP-AL/S ID: .53 (mm) Time Analyzed: 0:52

Lab File ID: 20710519106010B.057.RAW Initial Calibration: 2071051910601

Lab Standard ID: 71053GH Init. Calib Date(s): 04/16/19 04/16/19

Calibration: 2071051910601

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (ug/l)	NOM AMOUNT (ug/l)	%D
METHANE	0.78	0.75	0.81	61.90	59.83	3
ETHANE	0.91	0.88	0.94	59.98	58.44	3
ETHENE	1.18	1.15	1.21	61.05	60.85	0
PROPANE	1.61	1.58	1.64	61.83	60.39	2
PROPENE	2.65	2.62	2.68	19.78	20.94	-6
Isobutane	2.97	2.95	3.01	63.37	60.19	5
n-Butane	3.13	3.10	3.16	61.39	59.90	2
Acetylene	3.49	3.44	3.54	52.26	51.12	2

Compounds 8

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Instrument: H3145B Date Analyzed: 04/30/19

GC Column (1) : HP-AL/S ID: .53 (mm) Time Analyzed: 3:03

Lab File ID: 20710519106010B.064.RAW Initial Calibration: 2071051910601

Lab Standard ID: 71053GH Init. Calib Date(s): 04/16/19 04/16/19

Calibration: 2071051910601

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (ug/l)	NOM AMOUNT (ug/l)	%D
METHANE	0.78	0.75	0.81	60.41	59.83	1
ETHANE	0.91	0.88	0.94	59.08	58.44	1
ETHENE	1.17	1.15	1.21	60.18	60.85	-1
PROPANE	1.61	1.58	1.64	60.71	60.39	1
PROPENE	2.65	2.62	2.68	19.45	20.94	-7
Isobutane	2.97	2.95	3.01	62.39	60.19	4
n-Butane	3.12	3.10	3.16	59.27	59.90	-1
Acetylene	3.49	3.44	3.54	52.07	51.12	2

Compounds 8

Eurofins Lancaster Laboratories
EPH/Miscellaneous GC
Runlog for 20710519106001B
Instrument CP20--H3145B

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
9051	20710519106001B.001	CONDITIONER		4/16/19 8:12	1910599999	1.00
9051	20710519106001B.002	CONDITIONER		4/16/19 8:30	1910599999	1.00
9051	20710519106001B.003	CONDITIONER		4/16/19 8:48	1910599999	1.00
9051	20710519106001B.004	IBLKX1932AN	PIBLKAA	4/16/19 9:06	1910599999	1.00
9051	20710519106001B.005	710511932R	71051AA	4/16/19 9:23	1910599999	1.00
9051	20710519106001B.006	710521932Q	71052AA	4/16/19 9:42	1910599999	1.00
9051	20710519106001B.007	710531932BZ	71053AA	4/16/19 9:59	1910599999	1.00
9051	20710519106001B.008	710541932Q	71054AA	4/16/19 10:18	1910599999	1.00
9051	20710519106001B.009	710551932R	71055AA	4/16/19 10:35	1910599999	1.00
9051	20710519106001B.010	710561932R	71056AA	4/16/19 10:54	1910599999	1.00
9051	20710519106001B.011	IBLKX1932AN	PIBLKAA	4/16/19 11:12	1910599999	1.00
9051	20710519106001B.012	HSMDX1932CO	HSMDXAA	4/16/19 11:30	1910599999	1.00
9051	20710519106001B.013	HSMDX1932CP	HSMDXAA	4/16/19 11:49	1910599999	1.00
9051	20710519106001B.014	HICVX1932P	HICVXAA	4/16/19 12:07	1910599999	1.00
9051	20710519106001B.015	BLANKA 4/15/19 J	PBLK01105	4/16/19 13:32	191050001A	5.00
9051	20710519106001B.016	1032370 DF50	GALEN	4/16/19 13:50	191050001A	250.00
9051	20710519106001B.017	BLANKA 4/15/19 J	PBLK03105	4/16/19 14:08	191050003A	5.00
9051	20710519106001B.018	1032611 DF5	TY-21	4/16/19 14:27	191050003A	25.00
9051	20710519106001B.019	1032612 DF5	TY21D	4/16/19 14:45	191050003A	25.00
9051	20710519106001B.020	1032613 DF20	TY008	4/16/19 15:03	191050003A	100.00
9051	20710519106001B.021	1032614 DF20	TY08D	4/16/19 15:22	191050003A	100.00
9051	20710519106001B.022	1032617 DF5	TY003	4/16/19 15:40	191050003A	25.00
9051	20710519106001B.023	710531932BZ	71053FM	4/16/19 15:58	1910599999	1.00

Eurofins Lancaster Laboratories
EPH/Miscellaneous GC
Runlog for 20710519106010B
Instrument CP20--H3145B

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
9051	20710519106010B.001	CONDITIONER		4/29/19 7:44	1911899999	1.00
9051	20710519106010B.002	CONDITIONER		4/29/19 8:02	1911899999	1.00
9051	20710519106010B.003	CONDITIONER		4/29/19 8:20	1911899999	1.00
9051	20710519106010B.004	CONDITIONER		4/29/19 8:38	1911899999	1.00
9051	20710519106010B.005	710531932CI	71053GH	4/29/19 8:55	1911899999	1.00
9051	20710519106010B.006	HSMDX1932CY	HSMDXXX	4/29/19 9:14	1911899999	1.00
9051	20710519106010B.007	BLANKA 4/29/19	PBLK03119	4/29/19 9:32	191190003A	5.00
9051	20710519106010B.008	LCSA 4/29/19	LCS03119	4/29/19 9:50	191190003A	5.00
9051	20710519106010B.009	LCSDA 4/29/19	LCSD03119	4/29/19 10:08	191190003A	5.00
9051	20710519106010B.010	1043244	87E15	4/29/19 10:26	191190003A	5.00
9051	20710519106010B.011	1043241	87E12	4/29/19 10:44	191190003A	5.00
9051	20710519106010B.012	1043242	87E13	4/29/19 11:02	191190003A	5.00
9051	20710519106010B.013	1043243	87E14	4/29/19 11:20	191190003A	5.00
9051	20710519106010B.014	1043307	ANC02	4/29/19 11:39	191190003A	5.00
9051	20710519106010B.015	1043308	ANC01	4/29/19 11:57	191190003A	5.00
9051	20710519106010B.016	710531932CI	71053GH	4/29/19 12:15	1911899999	1.00
9051	20710519106010B.017	1043309	ANC03	4/29/19 12:33	191190003A	5.00
9051	20710519106010B.018	1043313	ANC06	4/29/19 12:52	191190003A	5.00
9051	20710519106010B.019	1043314	ANC05	4/29/19 13:10	191190003A	5.00
9051	20710519106010B.020	1043315	ANC09	4/29/19 13:28	191190003A	5.00
9051	20710519106010B.021	1043316	ANC04	4/29/19 13:47	191190003A	5.00
9051	20710519106010B.022	1043317	ANC08	4/29/19 14:05	191190003A	5.00
9051	20710519106010B.023	1043318	ANC07	4/29/19 14:28	191190003A	5.00
9051	20710519106010B.024	1043319	ANC10	4/29/19 14:46	191190003A	5.00
9051	20710519106010B.025	710531932CI	71053GH	4/29/19 15:04	1911899999	1.00
9051	20710519106010B.026	BLANKA 4/29/19	PBLK01119	4/29/19 15:27	191190001A	5.00
9051	20710519106010B.027	LCSA 4/29/19	LCS01119	4/29/19 15:45	191190001A	5.00
9051	20710519106010B.028	1043183	BET21	4/29/19 16:04	191190001A	5.00
9051	20710519106010B.029	1043184	BET22	4/29/19 16:22	191190001A	5.00
9051	20710519106010B.030	1043177	BELL1	4/29/19 16:40	191190001A	5.00
9051	20710519106010B.031	1043178MS	BELL1	4/29/19 16:58	191190001A	5.00
9051	20710519106010B.032	1043179MSD	BELL1	4/29/19 17:16	191190001A	5.00
9051	20710519106010B.033	1042760	OT862	4/29/19 17:35	191190001A	5.00
9051	20710519106010B.034	1042761	OT863	4/29/19 17:53	191190001A	5.00
9051	20710519106010B.035	1042762	OT864	4/29/19 18:11	191190001A	5.00
9051	20710519106010B.036	710531932CI	71053GH	4/29/19 18:29	1911899999	1.00
9051	20710519106010B.037	1043168	B16SA	4/29/19 18:47	191190001A	5.00
9051	20710519106010B.038	1043170	B16DA	4/29/19 19:06	191190001A	5.00
9051	20710519106010B.039	1043172	B17SA	4/29/19 19:24	191190001A	5.00
9051	20710519106010B.040	1043176	BELL2	4/29/19 19:42	191190001A	5.00
9051	20710519106010B.041	1043181	BELE3	4/29/19 20:00	191190001A	5.00
9051	20710519106010B.042	1043883	WSHR5	4/29/19 20:19	191190001A	5.00
9051	20710519106010B.043	1043887	WSH09	4/29/19 20:37	191190001A	5.00
9051	20710519106010B.044	1043890	WSH12	4/29/19 20:55	191190001A	5.00
9051	20710519106010B.045	1043174	B17DA	4/29/19 21:13	191190001A	5.00
9051	20710519106010B.046	710531932CI	71053GH	4/29/19 21:32	1911899999	1.00
9051	20710519106010B.047	BLANKA 4/26/19 J	PBLK02116	4/29/19 21:50	191160002A	5.00
9051	20710519106010B.048	1042493 DF50	SS-79	4/29/19 22:08	191160002A	250.00
9051	20710519106010B.049	1042495 DF10	SS-77	4/29/19 22:26	191160002A	50.00
9051	20710519106010B.050	1042497 DF50	SS-63	4/29/19 22:44	191160002A	250.00
9051	20710519106010B.051	1042499 DF50	SS-81	4/29/19 23:03	191160002A	250.00
9051	20710519106010B.052	1042501 DF50	SS77E	4/29/19 23:21	191160002A	250.00
9051	20710519106010B.053	1042505 DF20	CASFD	4/29/19 23:39	191160002A	100.00
9051	20710519106010B.054	1042508 DF5	SS77B	4/29/19 23:58	191160002A	25.00
9051	20710519106010B.055	1042510 DF20	SS77A	4/30/19 0:16	191160002A	100.00
9051	20710519106010B.056	1042512 DF20	SS77D	4/30/19 0:33	191160002A	100.00

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
9051	20710519106010B.057	710531932CI	71053GH	4/30/19 0:52	1911899999	1.00
9051	20710519106010B.058	1042514 DF5	SS77C	4/30/19 1:15	191160002A	25.00
9051	20710519106010B.059	1043241 DF50	87E12	4/30/19 1:33	191190003A	250.00
9051	20710519106010B.060	1043242 DF20	87E13	4/30/19 1:51	191190003A	100.00
9051	20710519106010B.061	1043313 DF20	ANC06	4/30/19 2:09	191190003A	100.00
9051	20710519106010B.062	1043315 DF5	ANC09	4/30/19 2:27	191190003A	25.00
9051	20710519106010B.063	1043319 DF10	ANC10	4/30/19 2:45	191190003A	50.00
9051	20710519106010B.064	710531932CI	71053GH	4/30/19 3:03	1911899999	1.00

Sample Data

Volatile Headspace Hydrocarbons by GC

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Data Summary

Sample Name: 1043307 ANC02 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 11:39:26
Instrument H3145B
Result file 20710519106010B.014.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 59% (46 - 135) Conc: 12.45538

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	8168	2.459434
PROPENE	2.62	2.64	2.68	20752	12.45538

Single Component Summary

	Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑	Methane			<5	<3			
☐	Ethane			<5	<1			
☐	Ethene			<5	<1			
☐	Propane			<5	<1			
☑	PROPENE	A	12.45538					
☐	Isobutane			<5	<1			
☐	n-butane			<5	<1			
☐	Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:35

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043307** ANC02 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 11:39:26
Instrument : CP20--H3145B
Result file : 20710519106010B.014.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 59% (46-135) Conc.: 12.45538

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	8168	2.459435
Propene	2.62	2.64	2.68	20752	12.455380

Summary Report

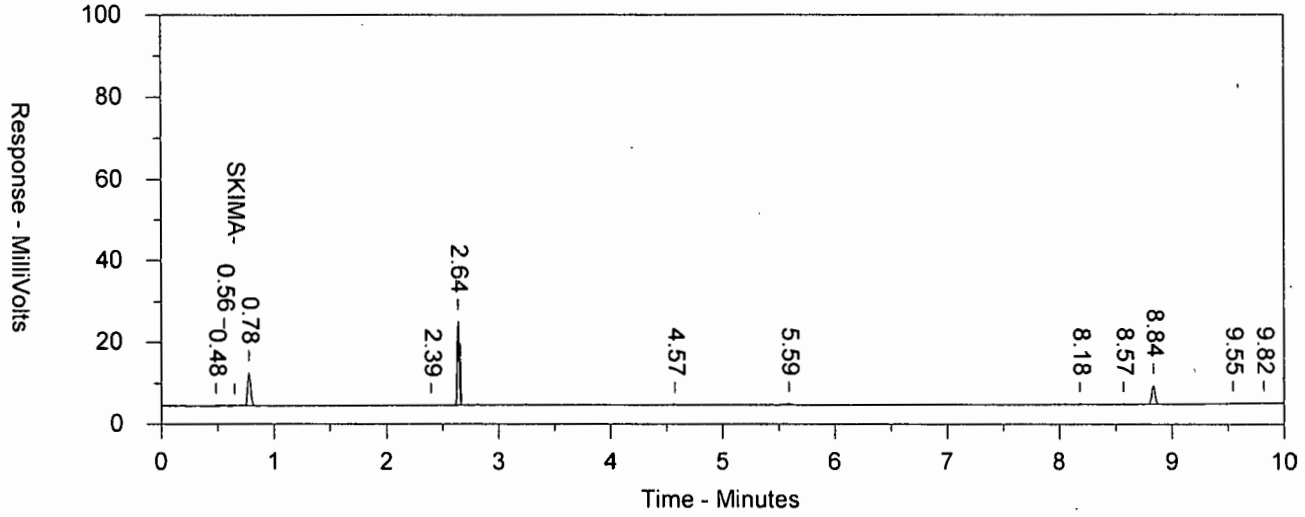
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	2.459435	<5	<3		
☐ Ethane			<5	<1		
☐ Ethene			<5	<1		
☐ Propane			<5	<1		
☐ Propene	B	12.455380				
☐ Isobutane			<5	<1		
☐ N-butane			<5	<1		
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043307 AAANC02 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.014.RAW



Sample Name = 1043307 AAANC02 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.014.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/29/2019 11:39:26 AM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.777	2.459	15402	8168
Propene	2.639	12.455	24554	20752

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Data Summary

Sample Name: 1043308 ANC01 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 11:57:50
Instrument H3145B
Result file 20710519106010B.015.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 52% (46 - 135) Conc: 10.7892

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	297579	256.9608
PROPENE	2.62	2.64	2.68	17976	10.7892

Single Component Summary

	Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑	Methane	A	256.9608	5	3			
☐	Ethane			<5	<1			
☐	Ethene			<5	<1			
☐	Propane			<5	<1			
☑	PROPENE	A	10.7892					
☐	Isobutane			<5	<1			
☐	n-butane			<5	<1			
☐	Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:37

APR 30 2019

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043308** ANC01 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 11:57:50
Instrument : CP20--H3145B
Result file : 20710519106010B.015.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET
%SSR(Propene) : 52% (46-135) Conc.: 10.7892

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	297579	256.960800
Propene	2.62	2.64	2.68	17976	10.789200

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	256.960800	5	3		
☐ Ethane			<5	<1		
☐ Ethene			<5	<1		
☐ Propane			<5	<1		
☐ Propene	B	10.789200				
☐ Isobutane			<5	<1		
☐ N-butane			<5	<1		
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043308 AAANC01 T 191190003A 07105 SW-846 8015B modified

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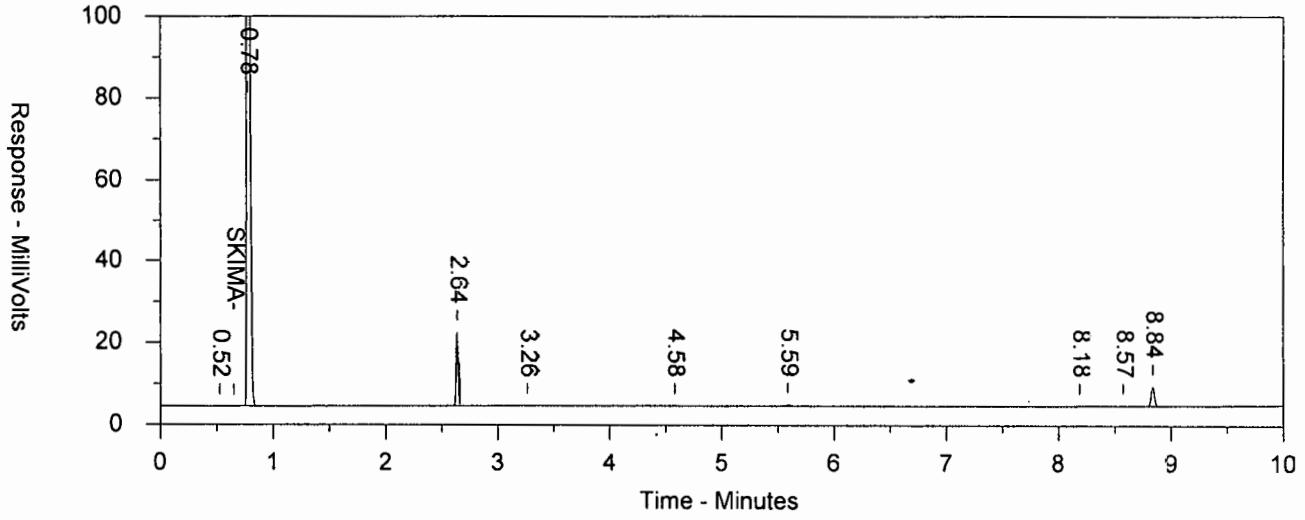

Sample Name = 1043308 AAANC01 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.015.RAW
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Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/29/2019 11:57:50 AM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.777	256.961	506655	297579
Propene	2.637	10.769	22057	17976

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Data Summary

Sample Name: 1043309 ANC03 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 12:33:43
Instrument H3145B
Result file 20710519106010B.017.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 66% (46 - 135) Conc: 13.83518

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	6414	0.916825
Ethane	0.88	0.92	0.94	90	0.079288
Propane	1.58	1.60	1.64	76	0.059602
PROPENE	2.62	2.64	2.68	23051	13.83518

Single Component Summary

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑ Methane			<5	<3			
☐ Ethane			<5	<1			
☐ Ethene			<5	<1			
☐ Propane			<5	<1			
☑ PROPENE	A	13.83518					
☐ Isobutane			<5	<1			
☐ n-butane			<5	<1			
☐ Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:39

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043309** ANC03 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 12:33:43
Instrument : CP20--H3145B
Result file : 20710519106010B.017.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 66% (46-135) Conc.: 13.83518

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	6414	0.916825
Ethane	0.88	0.92	0.94	90	0.079288
Propane	1.58	1.60	1.64	76	0.059602
Propene	2.62	2.64	2.68	23051	13.835180

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	0.916825	<5	<3		
☐ Ethane	B	0.079288	<5	<1		
☐ Ethene			<5	<1		
☐ Propane	B	0.059602	<5	<1		
☐ Propene	B	13.835180				
☐ Isobutane			<5	<1		
☐ N-butane			<5	<1		
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043309 AAANC03 T 191190003A 07105 SW-846 8015B modified

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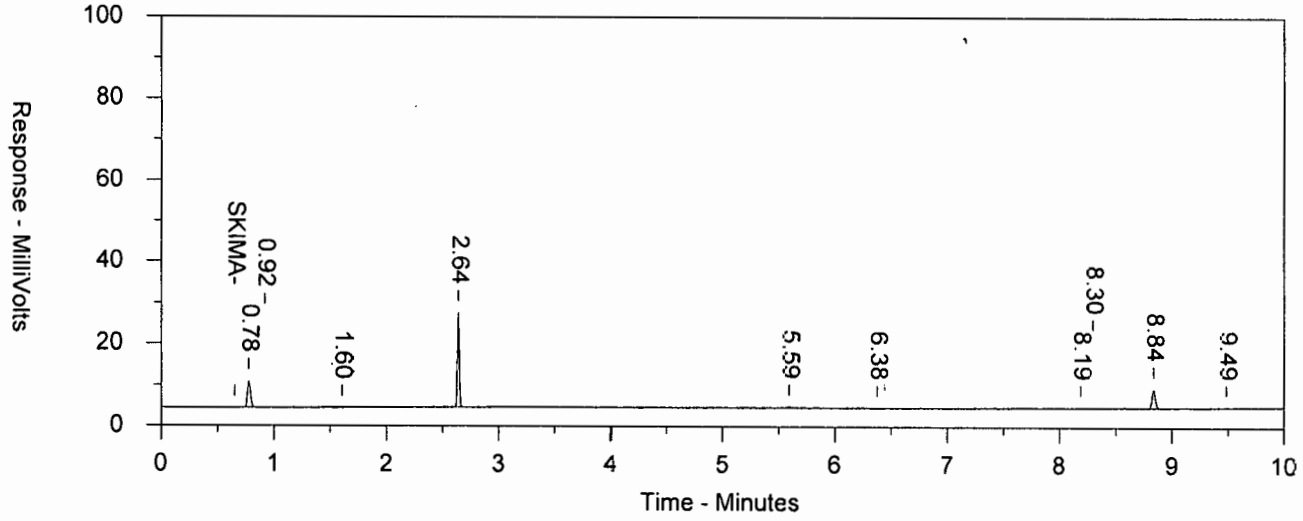

Sample Name = 1043309 AAANC03 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.017.RAW
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Time injected= 4/29/2019 12:33:43 PM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.776	0.917	12235	6414
Ethane	0.916	0.079	197	90
Propane	1.603	0.060	167	76
Propene	2.640	13.835	27072	23051

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Data Summary

Sample Name: 1043313 DF20 ANC06 Sample ID: AB **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 100 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on Apr 30, 2019 02:09:17
Instrument H3145B
Result file 20710519106010B.061.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 88% (46 - 135) Conc: 370.3805

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	203357	3482.085
Propane	1.58	1.61	1.64	55	0.861582
PROPENE	2.62	2.65	2.68	30854	370.3805
n-butane	3.10	3.13	3.16	227	3.445726

Single Component Summary

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑ Methane	A	3482.085	100	60			
☐ Ethane			<100	<20			
☐ Ethene			<100	<20			
☐ Propane			<100	<20			
☑ PROPENE	A	370.3805					
☐ Isobutane			<100	<20			
☐ n-butane			<100	<20			
☐ Acetylene			<100	<20			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:50

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043313** DF20 ANC06 ID: AB **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 100 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 30, 2019 02:09:17
Instrument : CP20--H3145B
Result file : 20710519106010B.061.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 88% (46-135) Conc.: 370.3805

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	203357	3482.085000
Propane	1.58	1.61	1.64	55	0.861582
Propene	2.62	2.65	2.68	30854	370.380500
N-butane	3.10	3.13	3.16	227	3.445726

Summary Report

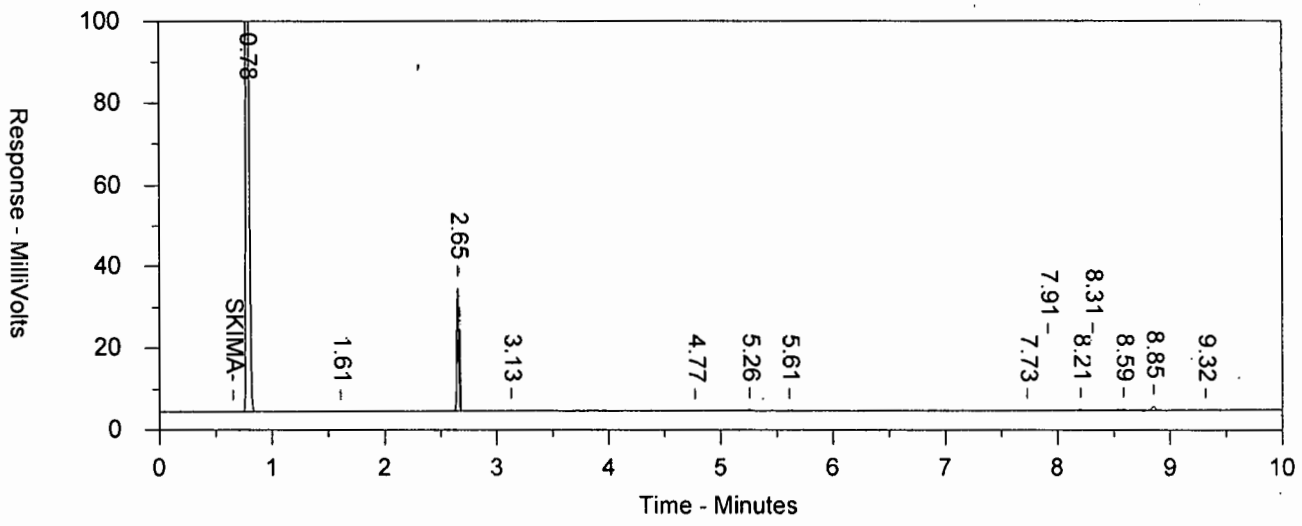
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	3482.085000	100	60		
☐ Ethane			<100	<20		
☐ Ethene			<100	<20		
☐ Propane	B	0.861582	<100	<20		
☐ Propene	B	370.380500				
☐ Isobutane			<100	<20		
☐ N-butane	B	3.445726	<100	<20		
☐ Acetylene			<100	<20		

Units: ug/l

* Recovery outside QC Limits

1043313 DF20 ABANC06 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.061.RAW



Sample Name = **1043313 DF20 ABANC06 T 191190003A 07105 SW-846 8015B modified**

Instrument = CP20
Detector = H3145B

Raw File Name = **\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.061.RAW**
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/30/2019 2:09:17 AM
Run Time = 10
Dilution Factor = 100
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.779	3482.085	351922	203357
Propane	1.607	0.862	653	55
Propene	2.652	370.381	33619	30854
N-butane	3.129	3.446	446	227

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Data Summary

Sample Name: 1043314 ANC05 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 13:10:31
Instrument H3145B
Result file 20710519106010B.019.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 58% (46 - 135) Conc: 12.064145

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	150997	128.0593
Ethane	0.88	0.91	0.94	85	0.075011
PROPENE	2.62	2.64	2.68	20100	12.064145

Single Component Summary

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑ Methane	A	128.0593	5	3			
☐ Ethane			<5	<1			
☐ Ethene			<5	<1			
☐ Propane			<5	<1			
☑ PROPENE	A	12.064145					
☐ Isobutane			<5	<1			
☐ n-butane			<5	<1			
☐ Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:41

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043314** ANC05 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 13:10:31
Instrument : CP20--H3145B
Result file : 20710519106010B.019.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 58% (46-135) Conc.: 12.064145

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	150997	128.059300
Ethane	0.88	0.91	0.94	85	0.075011
Propene	2.62	2.64	2.68	20100	12.064145

Summary Report

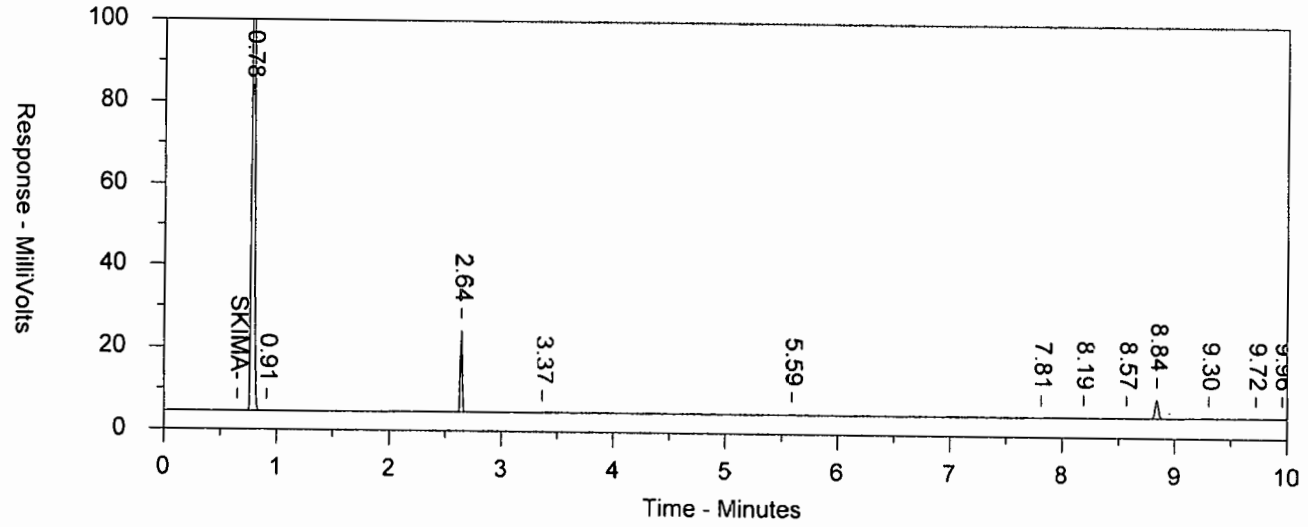
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	128.059300	5	3		
☐ Ethane	B	0.075011	<5	<1		
☐ Ethene			<5	<1		
☐ Propane			<5	<1		
☐ Propene	B	12.064145				
☐ Isobutane			<5	<1		
☐ N-butane			<5	<1		
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043314 AAANC05 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.019.RAW



Sample Name = **1043314** **AAANC05** **T** **191190003A** **07105** **SW-846 8015B modified**

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.019.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Run Time = 10
Amount Injected = 1
Peak Width = 0.05
Operator = 9051

Time injected= 4/29/2019 1:10:31 PM
Dilution Factor = 5
Peak Threshold = 0

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.778	128.059	258299	150997
Ethane	0.912	0.075	333	85
Propene	2.642	12.064	23745	20100

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Data Summary

Sample Name: 1043315 DF5 ANC09 Sample ID: AB **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 25 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on Apr 30, 2019 02:27:11
Instrument H3145B
Result file 20710519106010B.062.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 82% (46 - 135) Conc: 86.18985

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	203643	871.7755
PROPENE	2.62	2.65	2.68	28720	86.18985
Isobutane	2.95	2.98	3.01	444	1.56309
n-butane	3.10	3.13	3.16	1985	7.530395

Single Component Summary

	Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑	Methane	A	871.7755	25	15			
☐	Ethane			<25	<5			
☐	Ethene			<25	<5			
☐	Propane			<25	<5			
☑	PROPENE	A	86.18985					
☐	Isobutane			<25	<5			
☐	n-butane	A	7.530395	<25	5	J		
☐	Acetylene			<25	<5			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:53

Jamie L. Brithart
Senior Chemist

APR 30 2019

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043315** DF5 ANC09 ID: AB **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 25 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 30, 2019 02:27:11
Instrument : CP20--H3145B
Result file : 20710519106010B.062.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 82% (46-135) Conc.: 86.18985

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	203643	871.775500
Propene	2.62	2.65	2.68	28720	86.189850
Isobutane	2.95	2.98	3.01	444	1.563091
N-butane	3.10	3.13	3.16	1985	7.530395

Summary Report

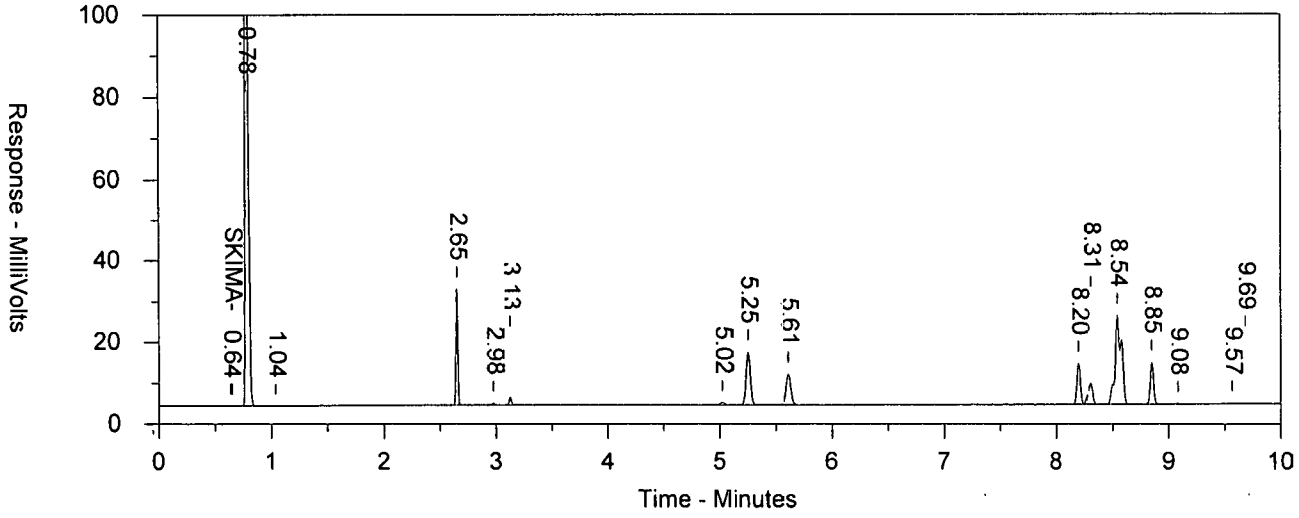
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	871.775500	25	15		
☐ Ethane			<25	<5		
☐ Ethene			<25	<5		
☐ Propane			<25	<5		
☐ Propene	B	86.189850				
☐ Isobutane	B	1.563091	<25	<5		
☐ N-butane	B	7.530395	<25	5	J	
☐ Acetylene			<25	<5		

Units: ug/l

* Recovery outside QC Limits

1043315 DF5 ABANC09 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.062.RAW



Sample Name = 1043315 DF5 ABANC09 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.062.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/30/2019 2:27:11 AM
Run Time = 10
Dilution Factor = 25
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.780	871.775	351803	203643
Propene	2.651	86.190	31271	28720
Isobutane	2.977	1.563	601	444
N-butane	3.127	7.530	2673	1985

Data Summary

Sample Name: 1043316 ANC04 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 13:47:02
Instrument H3145B
Result file 20710519106010B.021.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 56% (46 - 135) Conc: 11.67593

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	13839	7.446295
Ethane	0.88	0.91	0.94	72	0.06287
PROPENE	2.62	2.64	2.68	19453	11.67593
n-butane	3.10	3.12	3.16	52	0.039142

Single Component Summary

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑ Methane	A	7.446295	5	3			
☐ Ethane			<5	<1			
☐ Ethene			<5	<1			
☐ Propane			<5	<1			
☑ PROPENE	A	11.67593					
☐ Isobutane			<5	<1			
☐ n-butane			<5	<1			
☐ Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:44

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043316** ANC04 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 13:47:02
Instrument : CP20--H3145B
Result file : 20710519106010B.021.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET
%SSR(Propene) : 56% (46-135) Conc.: 11.67593

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	13839	7.446295
Ethane	0.88	0.91	0.94	72	0.062870
Propene	2.62	2.64	2.68	19453	11.675930
N-butane	3.10	3.12	3.16	52	0.039142

Summary Report

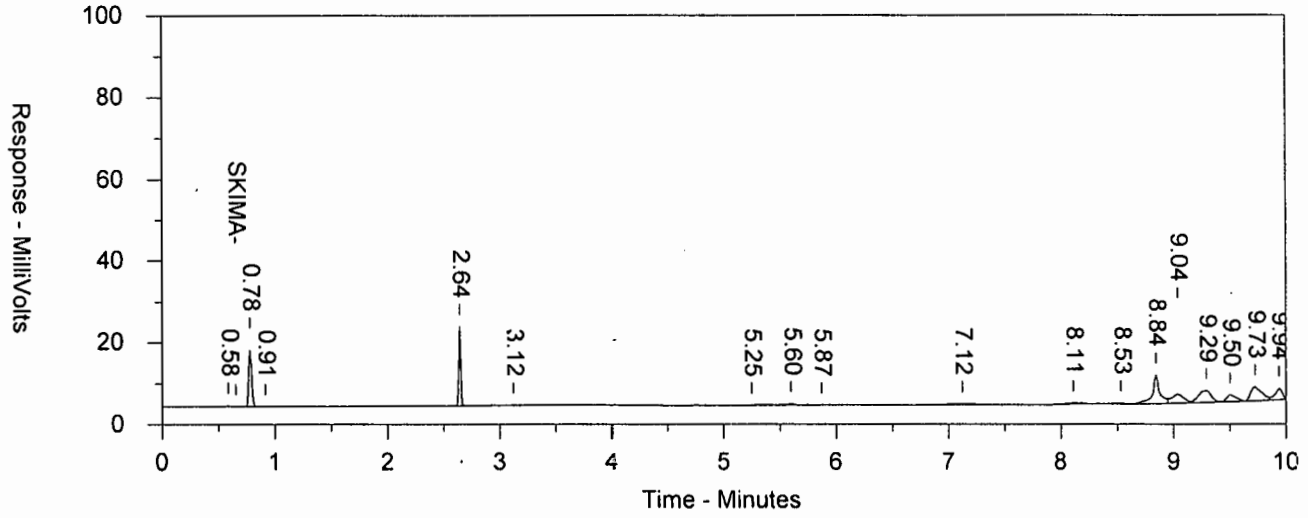
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	7.446295	5	3		
☐ Ethane	B	0.062870	<5	<1		
☐ Ethene			<5	<1		
☐ Propane			<5	<1		
☐ Propene	B	11.675930				
☐ Isobutane			<5	<1		
☐ N-butane	B	0.039142	<5	<1		
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043316 AAANC04 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.021.RAW



Sample Name = 1043316 AAANC04 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.021.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/29/2019 1:47:02 PM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.777	7.446	25206	13839
Ethane	0.914	0.063	257	72
Propene	2.644	11.676	22891	19453
N-butane	3.122	0.039	246	52

Data Summary

Sample Name: 1043317 ANC08 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 14:05:05
Instrument H3145B
Result file 20710519106010B.022.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 55% (46 - 135) Conc: 11.47284

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	30867	22.41973
Propane	1.58	1.60	1.64	55	0.04309
PROPENE	2.62	2.65	2.68	19115	11.47284
Isobutane	2.95	2.97	3.01	454	0.319233
n-butane	3.10	3.12	3.16	1433	1.087384

Single Component Summary

	Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑	Methane	A	22.41973	5	3			
☐	Ethane			<5	<1			
☐	Ethene			<5	<1			
☐	Propane			<5	<1			
☑	PROPENE	A	11.47284					
☐	Isobutane			<5	<1			
☐	n-butane	A	1.087384	<5	1	J		
☐	Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:46

APR 30 2019

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043317** ANC08 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 14:05:05
Instrument : CP20--H3145B
Result file : 20710519106010B.022.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 55% (46-135) Conc.: 11.47284

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	30867	22.419730
Propane	1.58	1.60	1.64	55	0.043090
Propene	2.62	2.65	2.68	19115	11.472840
Isobutane	2.95	2.97	3.01	454	0.319233
N-butane	3.10	3.12	3.16	1433	1.087384

Summary Report

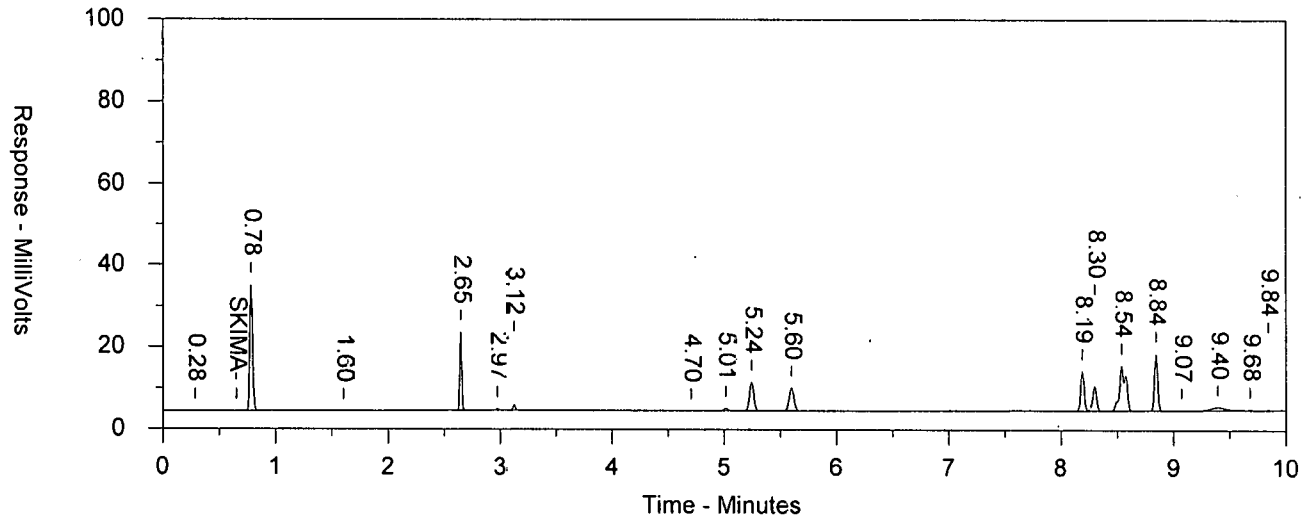
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	22.419730	5	3		
☐ Ethane			<5	<1		
☐ Ethene			<5	<1		
☐ Propane	B	0.043090	<5	<1		
☐ Propene	B	11.472840				
☐ Isobutane	B	0.319233	<5	<1		
☐ N-butane	B	1.087384	<5	1	J	
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043317 AAANC08 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.022.RAW



Sample Name = 1043317 AAANC08 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.022.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/29/2019 2:05:05 PM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.778	22.420	53940	30867
Propane	1.602	0.043	117	55
Propene	2.646	11.473	22945	19115
Isobutane	2.974	0.319	616	454
N-butane	3.124	1.087	1852	1433

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Data Summary

Sample Name: 1043318 ANC07 Sample ID: AA **Batchnumber: 191190003A**

Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK

Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 14:28:08
Instrument H3145B
Result file 20710519106010B.023.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 57% (46 - 135) Conc: 12.03954

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	510695	444.37025
Ethane	0.88	0.91	0.94	121	0.106539
Propane	1.58	1.60	1.64	105	0.08233
PROPENE	2.62	2.64	2.68	20059	12.03954
Isobutane	2.95	2.97	3.01	746	0.525057
n-butane	3.10	3.12	3.16	2102	1.595379

Single Component Summary

	Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑	Methane	A	444.37025	5	3			
☐	Ethane			<5	<1			
☐	Ethene			<5	<1			
☐	Propane			<5	<1			
☑	PROPENE	A	12.03954					
☐	Isobutane			<5	<1			
☐	n-butane	A	1.595379	<5	1	J		
☐	Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24 48

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043318** ANC07 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 14:28:08
Instrument : CP20--H3145B
Result file : 20710519106010B.023.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET
%SSR(Propene) : 57% (46-135) Conc.: 12.03954

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	510695	444.370250
Ethane	0.88	0.91	0.94	121	0.106539
Propane	1.58	1.60	1.64	105	0.082330
Propene	2.62	2.64	2.68	20059	12.039540
Isobutane	2.95	2.97	3.01	746	0.525057
N-butane	3.10	3.12	3.16	2102	1.595379

Summary Report

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	444.370250	5	3		
☐ Ethane	B	0.106539	<5	<1		
☐ Ethene			<5	<1		
☐ Propane	B	0.082330	<5	<1		
☐ Propene	B	12.039540				
☐ Isobutane	B	0.525057	<5	<1		
☐ N-butane	B	1.595379	<5	1	J	
☐ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

1043318 AAANC07 T 191190003A 07105 SW-846 8015B modified

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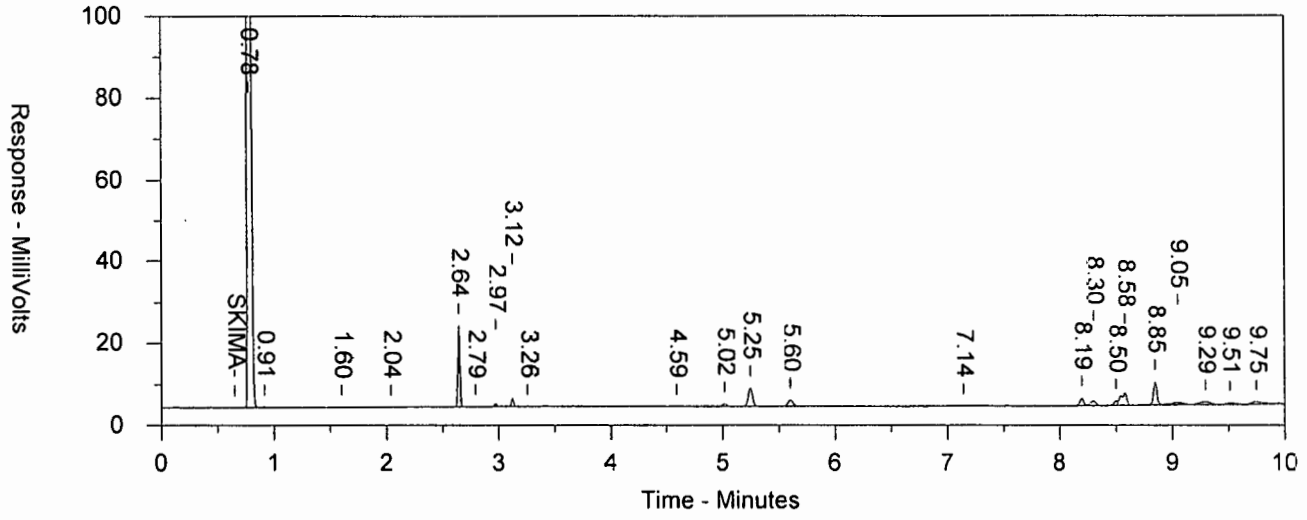

Sample Name = 1043318 AAANC07 T 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.023.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/29/2019 2:28:08 PM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.778	444.370	870140	510695
Ethane	0.913	0.107	224	121
Propane	1.597	0.082	291	105
Propene	2.644	12.040	23841	20059
Isobutane	2.972	0.525	1202	746
N-butane	3.122	1.595	2693	2102

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Data Summary

Sample Name: 1043319 DF10 ANC10 Sample ID: AB **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 50 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on Apr 30, 2019 02:45:27
Instrument H3145B
Result file 20710519106010B.063.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 92% (46 - 135) Conc: 192.695

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.78	0.81	276546	2384.65
Propane	1.58	1.61	1.64	118	0.922991
PROPENE	2.62	2.65	2.68	32105	192.695
Isobutane	2.95	2.98	3.01	341	2.399519
n-butane	3.10	3.13	3.16	1131	8.57886

Single Component Summary

	Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☑	Methane	A	2384.65	50	30			
☐	Ethane			<50	<10			
☐	Ethene			<50	<10			
☐	Propane			<50	<10			
☑	PROPENE	A	192.695					
☐	Isobutane			<50	<10			
☐	n-butane			<50	<10			
☐	Acetylene			<50	<10			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 30 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:55

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **1043319** DF10 ANC10 ID: AB **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 50 ml Analyst: 9051 SDG: LSV49 State: AK
Analyses: 07105

Analysis Report (A)

Injected on : Apr 30, 2019 02:45:27
Instrument : CP20--H3145B
Result file : 20710519106010B.063.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET
%SSR(Propene) : 92% (46-135) Conc.: 192.695

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.78	0.81	276546	2384.650000
Propane	1.58	1.61	1.64	118	0.922992
Propene	2.62	2.65	2.68	32105	192.695000
Isobutane	2.95	2.98	3.01	341	2.399520
N-butane	3.10	3.13	3.16	1131	8.578860

Summary Report

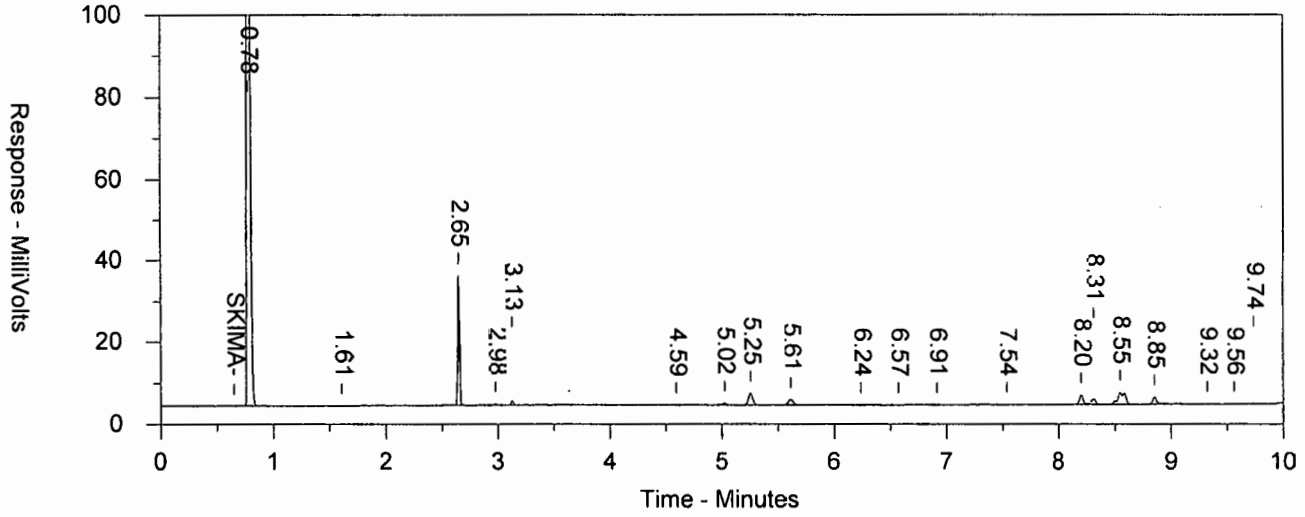
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	2384.650000	50	30		
☐ Ethane			<50	<10		
☐ Ethene			<50	<10		
☐ Propane	B	0.922992	<50	<10		
☐ Propene	B	192.695000				
☐ Isobutane	B	2.399520	<50	<10		
☐ N-butane	B	8.578860	<50	<10		
☐ Acetylene			<50	<10		

Units: ug/l

* Recovery outside QC Limits

1043319 DF10 ABANC10 T 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.063.RAW



Sample Name = **1043319 DF10 ABANC10 T 191190003A 07105 SW-846 8015B modified**

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.063.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/30/2019 2:45:27 AM
Run Time = 10
Dilution Factor = 50
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.779	2384.650	475984	276546
Propane	1.608	0.923	547	118
Propene	2.649	192.695	35834	32105
Isobutane	2.976	2.400	481	341
N-butane	3.126	8.579	1488	1131

Raw QC Data

Volatile Headspace Hydrocarbons by GC

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Data Summary

Sample Name: BLANKA 4/29/19 PBLK03119 BLK Sample ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: State:
Analyses: 07105

Analysis Report (A)

Injected on Apr 29, 2019 09:32:32
Instrument H3145B
Result file 20710519106010B.007.RAW
Calibration file 2071051910601
Method file HSS3

%SSR(PROP) 104% (46 - 135) Conc: 21.778235

Single Component Data

Compound	Min	RT	Max	Height	Amount
Methane	0.75	0.77	0.81	5793	0.370373
PROPENE	2.62	2.63	2.68	36284	21.778235

Single Component Summary

Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	%RPD	Comments
☐ Methane			<5	<3			
☐ Ethane			<5	<1			
☐ Ethene			<5	<1			
☐ Propane			<5	<1			
☐ PROPENE	A	21.778235					
☐ Isobutane			<5	<1			
☐ n-butane			<5	<1			
☐ Acetylene			<5	<1			

Units: ug/l

%RPD = High - Low Amount divided by the Average times 100

Jamie L. Brillhart
Senior Chemist

APR 3 0 2019

Reviewed and digitally signed by Johanna C Kennedy on 4/30/2019 12:24:26

Eurofins Lancaster Laboratories-Single Component Data Summary

Sample Name: **BLANKA** 4/29/19 PBLK03119 ID: AA **Batchnumber: 191190003A**
Sample Amount: 5 ml Total Volume: 5 ml Analyst: 9051 SDG: State:
Analyses: 07105

Analysis Report (A)

Injected on : Apr 29, 2019 09:32:32
Instrument : CP20--H3145B
Result file : 20710519106010B.007.RAW
Calibration file : 2071051910601.CAL
Method file : HSS3.MET

%SSR(Propene) : 104% (46-135) Conc.: 21.778235

Peak name	Min	R.T.	Max	Height	Amount
Methane	0.75	0.77	0.81	5793	0.370373
Propene	2.62	2.63	2.68	36284	21.778235

Summary Report

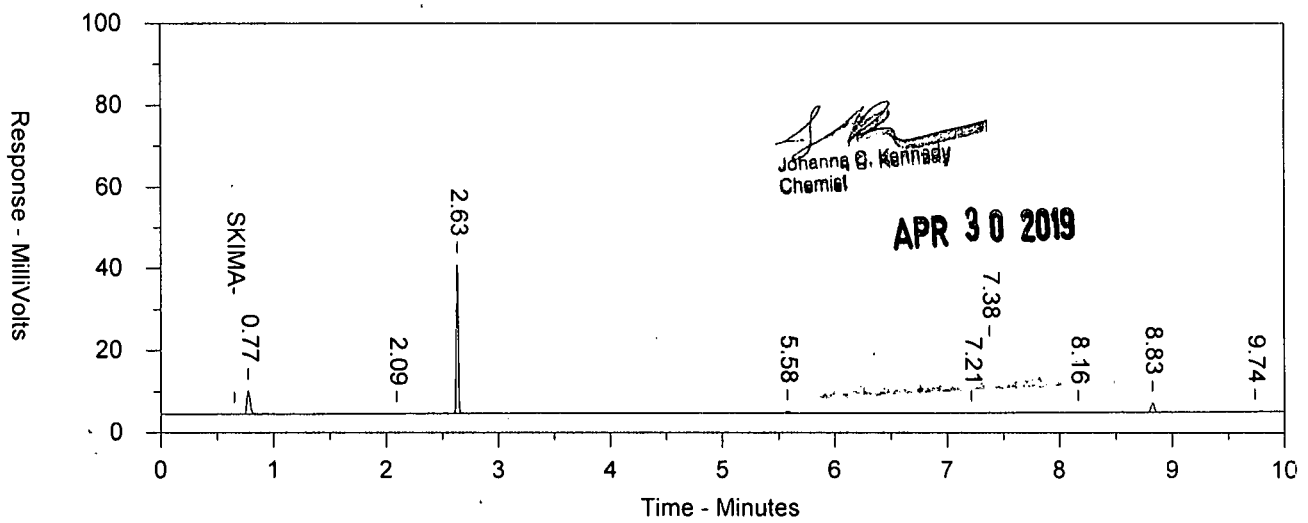
Compound Name	Column	Amount Found	LOQ	MDL	Qualifiers	Comments
☑ Methane	B	0.370373	<5	<3		
☑ Ethane			<5	<1		
☑ Ethene			<5	<1		
☑ Propane			<5	<1		
☐ Propene	B	21.778235				
☑ Isobutane			<5	<1		
☑ N-butane			<5	<1		
☑ Acetylene			<5	<1		

Units: ug/l

* Recovery outside QC Limits

BLANKA 4/29/19 AAPBLK03119 BLK 191190003A 07105 SW-846 8015B modified

\\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.007.RAW



Johanna B. Kennedy
Chemist

APR 30 2019

Sample Name = BLANKA 4/29/19 AAPBLK03119 BLK 191190003A 07105 SW-846 8015B modified

Instrument = CP20
Detector = H3145B

Raw File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\20710519106010B.007.RAW
Method File Name = \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP20\HSS3.MET
Calibration File Name = Y:\CP20\2071051910601.CAL
Time injected= 4/29/2019 9:32:32 AM
Run Time = 10
Dilution Factor = 5
Amount Injected = 1
Peak Threshold = 0
Peak Width = 0.05
Operator = 9051

Incubate 5 minutes at 35C; 40C for 1 minute; 30C/min to 100C; Hold 3 min, 20C/min to 190C
Column: HP-AL/S 50MX.530mm I.D. 15 um film

	Ret. Time	Amount	Area	Height
Methane	0.774	0.370	11308	5793
Propene	2.634	21.778	40207	36284

Extraction/Distillation/Digestion Logs

Volatile Headspace Hydrocarbons by GC

Organic Extraction Batchlog

191190003A

Assigned to: 15284 Connor Lent

Reviewed by: [signature] Start Date: 4/29/19 Start time: 8:33a

Tech 1: [signature] Tech 2: [signature]

Solvent Used	Lot No.
DI H_2O	In House

Dept: 32 Prep Analysis: 00000 Volatile Headspace Hydrocarbon

QC	Sample Code	Amt ( )	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments
BLANKA	PBLK03119	5	SS1906632B	.06	—	—	5				
LCSA	LCS03119	5	SS1906632B	.06	MS1903032A	.06	5				
LCSDA	LCSD03119	5	SS1906632B	.06	MS1903032A	.06	5				

Spike Solutions: MS1903032A 7105 Matrix Spike; SS1906632B 7105 Surrogate

Witness: ______

① Sample not located taken off batch [initials] 4/30/19

Sample #	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments	Analyses	List	Due Date	Prio
1 ~~1042604~~ ①	B8703	5	SS1906632B		5					07105	743	05/06/2019	P
2 1043241	87E12	5	SS1906632B	.06	5		<2	S7A	DFS7B pH<2	07105	743	05/07/2019	P
3 1043242	87E13	5	SS1906632B	.06	5		<2	S7A	DFS7B pH<2	07105	743	05/07/2019	P
4 1043243	87E14	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	P
5 1043244	87E15	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	P
6 1043307	ANC02	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	N
7 1043308	ANC01	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	N
8 1043309BKG	ANC03	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	N
9 1043313	ANC06	5	SS1906632B	.06	5		<2	S7A	DFS7B pH<2	07105	743	05/07/2019	N
10 1043314	ANC05	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	N
11 1043315	ANC09	5	SS1906632B	.06	5		<2	S7A	DFS7B pH<2	07105	743	05/07/2019	N
12 1043316	ANC04	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	N
13 1043317	ANC08	5	SS1906632B	.06	5		<2	S7A		07105	743	05/07/2019	N
14 1043318	ANC07	5	SS1906632B	.06	5		<2	S7A	HS	07105	743	05/07/2019	N
15 1043319	ANC10	5	SS1906632B	.06	5		<2	S7A	DFS7B pH<2	07105	743	05/07/2019	N

Bench#	Bench#	Bench#		
Rack ID:		Work Station		Micro Temp 100?
Internal Standard		Balance #		

R-VAP ID	C	R-VAP ID	C	R-VAP ID	C		
S-bath ID	C	S-bath ID	C	N-Evap	C	M-vap	C

191190003A

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

Prep-Process Worksheet

Dilution

Prep Analysis # 00000

Prep Group #

Verified: JB 7/3

Start Date: 04/29/2019

Start Time:

Tech 1: JTL(QAR)

Tech 2:

BATCH NO: 191190003A

	Sample #	Aliquot (ml)	Parent ID	Final Volume (ml)	Dilution Factor	Comments	Analyses
1	1043241 (AB)	0.1	AB	5	0.2		7105
2	1043242 (AB)	0.25	AB	5	0.2		7105
3	1043313 (AB)	0.25	AB	5	0.2		7105
4	1043315 (AB)	1	AB	5	0.2		7105
5	1043319 (AB)	0.5	AB	5	0.2		7105

Additional Comment:

Solvent Used	Lot No.	Solvent Used	Lot No!

Metals in Liquid Data

Case Narrative/Conformance Summary

Metals in Liquid

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

ICP Metals

Fraction: Metals in Liquid

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1043306	QA-O-190424	X		1	Equipment Blank
1043307	MW-2-W-190424	X		1	
1043308	MW-1-W-190424	X		1	
1043309	MW-3-W-190424	X		1	Background/Unspiked
1043310	MW-3-W-190424 MS	X		1	Matrix Spike
1043311	MW-3-W-190424 MSD	X		1	Matrix Spike Duplicate
1043312	MW-3-W-190424 DUP	X		1	Duplicate
1043313	MW-6-W-190424	X		1	
1043314	MW-5-W-190424	X		1	
1043315	MW-9-W-190424	X		1	
1043316	MW-4-W-190424	X		1	
1043317	MW-8-W-190424	X		1	
1043318	MW-7-W-190424	X		1	
1043319	MW-10-W-190424	X		1	
1043320	BD-1-WD-190424	X		1	Field Duplicate Sample

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

ICP Metals

Fraction: Metals in Liquid

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

Abbreviation Key

BKG – Background	AF - Cold Vapor Atomic Fluorescence
DUP – Duplicate	U - Below MDL
MS - Matrix Spike	B - Below LOQ
MSD - Matrix Spike Dup	N - Matrix Spike out of specifications
B – Blank	* - Duplicate out of specifications
Q - Laboratory Control Sample	E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution
Y - Laboratory Control Sample Duplicate	A - Post Digestion Spike
P - ICP Atomic Emission Spectrometer	L - Serial Dilution
MS - ICP Mass Spectrometry	R - Internal Standard Relative Intensity OOS
CV - Cold Vapor	NR - Not Required

Sample Data

Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043306 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043307 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.4	B		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043308 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043309BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

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METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043310MS % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	163			P

Comments:

_____
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_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043311MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	158			P

Comments:

_____
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METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043312DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043313 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043314 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043315 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043316 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043317 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043318 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043319 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1043320 % Solids: 0.0
Concentration Units: UG/L Date Received: 04/26/2019

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7.1	U		P

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

Quality Control and Calibration Summary Forms

Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: LSV49
Matrix: WATER

Analyte	Batch Number	Lab Sample ID
Lead	191191404402	1043308
		1043309BKG
		1043310MS
		1043311MSD
		1043312DUP
		1043313
		1043314
		1043315
		1043316
		1043317
		1043318
		1043319
		P11904BB
		P11904BQ

LEGEND:

BKG = Background	B = Blank
DUP = Duplicate	Q = Laboratory Control Sample
MS = Matrix Spike	Y = Laboratory Control Sample Duplicate
MSD = Matrix Spike Duplicate	

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QUALITY CONTROL REFERENCE LIST

SDG No.: LSV49
Matrix: WATER

Analyte	Batch Number	Lab Sample ID
Lead	191191404407	*42901BKG
		1043306
		1043307
		1043320
		P11904GB
		P11904GQ

LEGEND:

BKG = Background	B = Blank
DUP = Duplicate	Q = Laboratory Control Sample
MS = Matrix Spike	Y = Laboratory Control Sample Duplicate
MSD = Matrix Spike Duplicate	

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QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912005T72
Calibration Date(s): 04/30/2019
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead		600.0	575.13	95.9	500.0	498.61	99.7	500.0	503.57	100.7

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912005T72
Calibration Date(s): 04/30/2019
Concentration Units: UG/L

Analyte	Mass	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(2)	True	Found	%R(2)
Lead					500.0	504.05	100.8	500.0	491.19	98.2

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912102T75
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead		600.0	584.15	97.4	500.0	493.03	98.6	500.0	499.31	99.9

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912102T75
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

Analyte	Mass	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(2)	True	Found	%R(2)
Lead					500.0	496.03	99.2			

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912105T70
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead		600.0	571.23	95.2	500.0	473.66	94.7	500.0	462.46	92.5

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912105T70
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

Analyte	Mass	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(2)	True	Found	%R(2)
Lead					500.0	476.08	95.2	500.0	477.30	95.5

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912105T70
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

Analyte	Mass	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(2)	True	Found	%R(2)
Lead					500.0	470.02	94.0	500.0	467.67	93.5

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912501T71
Calibration Date(s): 05/05/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead		600.0	577.68	96.3	500.0	489.23	97.8	500.0	490.93	98.2

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912501T71
Calibration Date(s): 05/05/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead					500.0	483.59	96.7			

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912508T72
Calibration Date(s): 05/05/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead		600.0	577.24	96.2	500.0	492.87	98.6	500.0	486.72	97.3

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: LSV49

Method: P
Run Name: 1912508T72
Calibration Date(s): 05/05/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Lead					500.0	492.07	98.4			

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: LSV49

Method: P
Run Name: 1912005T72
Calibration Date(s): 04/30/2019
Concentration Units: UG/L

Analyte	Mass	Initial True	Initial Found	Initial %R	Final Found	Final %R
Lead		15.0	13.85	92.3		

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: LSV49

Method: P
Run Name: 1912102T75
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

		Initial			Final	
Analyte	Mass	True	Found	%R	Found	%R
Lead		15.0	14.11	94.1		

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: LSV49

Method: P
Run Name: 1912105T70
Calibration Date(s): 05/01/2019
Concentration Units: UG/L

Analyte	Mass	Initial True	Initial Found	Initial %R	Final Found	Final %R
Lead		15.0	7.36	49.1	10.79	71.9

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: LSV49

Method: P
Run Name: 1912501T71
Calibration Date(s): 05/05/2019
Concentration Units: UG/L

		Initial			Final	
Analyte	Mass	True	Found	%R	Found	%R
Lead		15.0	11.86	79.1		

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: LSV49

Method: P
Run Name: 1912508T72
Calibration Date(s): 05/05/2019
Concentration Units: UG/L

		Initial			Final	
Analyte	Mass	True	Found	%R	Found	%R
Lead		15.0	16.21	108.1		

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912005T72
Calibration Date(s): 04/30/2019

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead		4.3	U	4.3	U	4.3	U	4.3	U				

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below IDL/MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912005T72
Calibration Date(s): 04/30/2019

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead				4.3	U								

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	U= Below IDL/MDL B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912102T75
Calibration Date(s): 05/01/2019
Preparation Blank Matrix: WATER

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead		4.5	B	4.3	U	4.3	U	4.3	U		7.100	U	191191404402

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below IDL/MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912105T70
Calibration Date(s): 05/01/2019

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead		-4.3	B	-4.6	B	-5.9	B	-5.0	B				

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	U= Below IDL/MDL B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912105T70
Calibration Date(s): 05/01/2019

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead				-4.5	B	4.3	U	-5.5	B				

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	U= Below IDL/MDL B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912501T71
Calibration Date(s): 05/05/2019

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead		4.3	U	4.3	U	4.3	U	4.3	U				

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below IDL/MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: LSV49

Method: P
Run Name: 1912508T72
Calibration Date(s): 05/05/2019
Preparation Blank Matrix: WATER

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)							Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Lead		4.3	U	4.3	U	4.3	U	7.6	B		7.100	U	191191404407

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below IDL/MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: LSV49

Instrument ID: 16417
Run Name: 1912005T72
Concentration Units: ug/L

Analyte	True		Initial Found				Final Found			
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500000	500000	483274	96.7	495217.3	99.0				
Calcium	500000	500000	485272	97.1	488435.1	97.7				
Iron	200000	200000	188422	94.2	192425.8	96.2				
Lead	0	550	20		526.0	95.6				
Magnesium	500000	500000	460520	92.1	464400.1	92.9				

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: LSV49

Instrument ID: 23290
Run Name: 1912102T75
Concentration Units: ug/L

Analyte	True		Initial Found				Final Found			
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500000	500000	491856	98.4	505054.3	101.0				
Calcium	500000	500000	496096	99.2	513532.2	102.7				
Iron	200000	200000	196432	98.2	201524.1	100.8				
Lead	0	550	5		519.6	94.5				
Magnesium	500000	500000	526078	105.2	542013.9	108.4				

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: LSV49

Instrument ID: 11016
Run Name: 1912105T70
Concentration Units: ug/L

Analyte	True		Initial Found				Final Found			
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500000	500000	518667	103.7	513333.6	102.7	512374	102.5	515275.5	103.1
Calcium	500000	500000	519863	104.0	505363.3	101.1	499440	99.9	512935.9	102.6
Iron	200000	200000	206579	103.3	205229.9	102.6	201178	100.6	201982.8	101.0
Lead	0	550	-9		495.2	90.0	-11		493.2	89.7
Magnesium	500000	500000	521884	104.4	503658.2	100.7	494977	99.0	501759.0	100.4

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: LSV49

Instrument ID: 16315
Run Name: 1912501T71
Concentration Units: ug/L

Analyte	True		Initial Found				Final Found			
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500000	500000	488436	97.7	495163.9	99.0				
Calcium	500000	500000	491295	98.3	497983.4	99.6				
Iron	200000	200000	193771	96.9	196602.5	98.3				
Lead	0	550	-1		519.4	94.4				
Magnesium	500000	500000	489726	97.9	497468.1	99.5				

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 4A
ICP-AES INTERFERENCE CHECK SAMPLE
SDG No.: LSV49

Instrument ID: 16417
Run Name: 1912508T72
Concentration Units: ug/L

Analyte	True		Initial Found				Final Found			
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500000	500000	483430	96.7	483844.5	96.8				
Calcium	500000	500000	487795	97.6	488704.0	97.7				
Iron	200000	200000	190080	95.0	190477.8	95.2				
Lead	0	550	11		533.0	96.9				
Magnesium	500000	500000	472367	94.5	471797.2	94.4				

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 1043309BKG Matrix Spike Lab Sample ID: 1043310MS Matrix Spike Duplicate Lab Sample ID: 1043311MSD
Batch Number(s): 191191404402

		BKG Sample		MS Sample		MSD Sample		MS Spike	MSD Spike		MS		MSD				Control Limit		
Analyte	Mass	Result	C	Result	C	Result	C	Added	Added	Units	%R	Q	%R	Q	RPD	Q	%R	RPD	M
Lead		7.1000	U	163.2400		157.8700		150.0000	150.0000	UG/L	109		105		3		75 - 125	20	P

Note: Results shown are reported on an as-received basis.
If Matrix Spike/ Matrix Spike Duplicate were out of specification, see Post Digestion Spike form.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 1043309BKG 1043312DUP
Batch Number(s): 1911914044
02
Concentration Units: UG/L

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Max RPD	Q	M
Lead			7.1000	U	7.1000	U		20		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > Max OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	FLAGS:
AF = Cold Vapor Atomic Fluorescence	* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: LSV49
Matrix: WATER

Analyte	Mass	Batch Number	Units	True	Found	C	Control Limits (%)	%R	M	In Spec
Lead		191191404402	UG/L	150.000	152.870		87 - 113	102	P	Yes

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	U= Below MDL B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: LSV49
Matrix: WATER

Analyte	Mass	Batch Number	Units	True	Found	C	Control Limits (%)	%R	M	In Spec
Lead		191191404407	UG/L	150.000	156.140		87 - 113	104	P	Yes

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	U= Below MDL B= Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: LSV49
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 1043309BKG Serial Dilution Lab Sample ID: 1043309L
Batch Number(s): 191191404402
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Lead		7.1000	U	35.5000	U			P

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS
SDG No.: LSV49

Method: P
Instrument ID: 11016
Date: 07/2018

Analyte	Wavelength (nm)	Background	IDL (UG/L)
Lead	220.35		4.3

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: P
Instrument ID: 16315
Date: 07/2018

Analyte	Wavelength (nm)	Background	IDL (UG/L)
Lead	220.35		4.0

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS
SDG No.: LSV49

Method: P
Instrument ID: 16417
Date: 07/2018

Analyte	Wavelength (nm)	Background	IDL (UG/L)
Lead	220.35		4.2

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS
SDG No.: LSV49

Method: P
Instrument ID: 23290
Date: 07/2018

Analyte	Wavelength (nm)	Background	IDL (UG/L)
Lead	220.35		3.7

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: LSV49
Matrix: WATER

Method: P
Date: 09/2018

Analyte	Wavelength (nm)	Background	LOQ (UG/L)	MDL (UG/L)
Lead	220.35		15.0	7.1

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Preparation and Run Logs

Metals in Liquid

Method: P
Batch Number: 191191404402

Lab Sample ID	Date	Initial Volume(ml)	Final Volume(ml)
1043308	04/29/2019	50.00	50
1043313	04/29/2019	50.00	50
1043314	04/29/2019	50.00	50
1043315	04/29/2019	50.00	50
1043316	04/29/2019	50.00	50
1043317	04/29/2019	50.00	50
1043318	04/29/2019	50.00	50
1043319	04/29/2019	50.00	50
1043309BKG	04/29/2019	50.00	50
1043312DUP	04/29/2019	50.00	50
1043311MSD	04/29/2019	50.00	50
1043310MS	04/29/2019	50.00	50
P11904BB	04/29/2019	50.00	50
P11904BQ	04/29/2019	1.00	1

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: P
Batch Number: 191191404407

Lab Sample ID	Date	Initial Volume(ml)	Final Volume(ml)
1043306	04/30/2019	50.00	50
1043307	04/30/2019	50.00	50
1043320	04/30/2019	50.00	50
*42901BKG	04/30/2019	50.00	50
P11904GB	04/30/2019	50.00	50
P11904GQ	04/30/2019	1.00	1

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 16417
Run Name: 1912005T72

Run Start Date: 04/30/2019
Run End Date: 04/30/2019

Lab Sample ID	D/F	Time	Analytes: P B
S0	1.00	15:17	X
S	1.00	15:20	
S	1.00	15:23	X
S	1.00	15:27	
ICV	1.00	15:30	X
ICB	1.00	15:33	X
LLC	1.00	15:37	X
ICSA	1.00	15:40	X
ICSAB	1.00	15:44	X
CCV	1.00	15:47	X
CCB	1.00	15:50	X
LRS2	1.00	15:54	X
LRS4	1.00	15:58	X
LRS3	1.00	16:01	X
LRS5	1.00	16:05	X
CCV	1.00	16:08	X
CCB	1.00	16:12	X
P11904BB	1.00	16:15	
P11904BQ	1.00	16:18	
1043309BKG	1.00	16:22	X
1043309A	1.00	16:25	
1043312DUP	1.00	16:29	X
1043310MS	1.00	16:32	X
1043311MSD	1.00	16:35	X
1043309L	5.00	16:39	X
1043315	1.00	16:42	X
1043308	1.00	16:46	X
CCV	1.00	16:49	X
CCB	1.00	16:52	X
1043313	1.00	16:56	X
1043316	1.00	16:59	X
1043318	1.00	17:02	X
1043314	1.00	17:06	X
1043317	1.00	17:09	X
1043319	1.00	17:13	X
ZZZZZZ	1.00	17:16	
ZZZZZZ	1.00	17:19	
ZZZZZZ	1.00	17:23	

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 16417
Run Name: 1912005T72

Run Start Date: 04/30/2019
Run End Date: 04/30/2019

Lab Sample ID	D/F	Time	Analytes																															
			P B																																	
ZZZZZZ	1.00	17:26																																	
CCV	1.00	17:30	X																																
CCB	1.00	17:33	X																																

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 23290
Run Name: 1912102T75

Run Start Date: 05/01/2019
Run End Date: 05/01/2019

Lab Sample ID	D/F	Time	Analytes: P B
S0	1.00	07:27	X
S	1.00	07:31	
S	1.00	07:34	X
S	1.00	07:37	
ICV	1.00	07:40	X
ICB	1.00	07:43	X
LLC	1.00	07:46	X
ICSA	1.00	07:49	X
ICSAB	1.00	07:53	X
CCV	1.00	07:56	X
CCB	1.00	07:59	X
LRS2	1.00	08:02	X
LRS4	1.00	08:06	X
LRS3	1.00	08:10	X
LRS5	1.00	08:13	X
CCV	1.00	08:16	X
CCB	1.00	08:19	X
P11904BB	1.00	08:23	X
P11904BQ	1.00	08:26	X
P11904BQ	1.00	08:29	
ZZZZZZ	5.00	08:32	
ZZZZZZ	10.00	08:35	
ZZZZZZ	1.00	08:39	
ZZZZZZ	1.00	08:42	
CCV	1.00	08:45	X
CCB	1.00	08:48	X

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 11016
Run Name: 1912105T70

Run Start Date: 05/01/2019
Run End Date: 05/01/2019

Lab Sample ID	D/F	Time	Analytes
			P B
S0	1.00	19:24	X
S	1.00	19:27	
S	1.00	19:30	X
S	1.00	19:33	
ICV	1.00	19:35	X
ICB	1.00	19:38	X
LLC	1.00	19:41	X
ICSA	1.00	19:44	X
ICSAB	1.00	19:47	X
CCV	1.00	19:50	X
CCB	1.00	19:53	X
LRS2	1.00	19:56	X
LRS4	1.00	19:59	X
LRS3	1.00	20:02	X
LRS5	1.00	20:05	X
CCV	1.00	20:08	X
CCB	1.00	20:11	X
P11904GB	1.00	20:14	
P11904GQ	1.00	20:16	X
*42901BKG	1.00	20:19	X
ZZZZZZ	1.00	20:22	
ZZZZZZ	1.00	20:25	
ZZZZZZ	1.00	20:28	
ZZZZZZ	1.00	20:31	
ZZZZZZ	5.00	20:34	
ZZZZZZ	1.00	20:36	
ZZZZZZ	1.00	20:39	
CCV	1.00	20:42	X
CCB	1.00	20:45	X
ZZZZZZ	1.00	20:48	
ZZZZZZ	1.00	20:50	
ZZZZZZ	1.00	20:53	
ZZZZZZ	1.00	20:56	
ZZZZZZ	1.00	20:59	
ZZZZZZ	1.00	21:01	
ZZZZZZ	1.00	21:04	
ZZZZZZ	1.00	21:07	
ZZZZZZ	1.00	21:10	

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 11016
Run Name: 1912105T70

Run Start Date: 05/01/2019
Run End Date: 05/01/2019

Lab Sample ID	D/F	Time	Analytes: P B
ZZZZZZ	1.00	21:13	
CCV	1.00	21:15	X
CCB	1.00	21:18	X
ZZZZZZ	1.00	21:21	
ZZZZZZ	1.00	21:24	
ZZZZZZ	1.00	21:26	
ZZZZZZ	1.00	21:29	
ZZZZZZ	1.00	21:32	
ZZZZZZ	1.00	21:35	
ZZZZZZ	1.00	21:37	
CCV	1.00	21:40	X
CCB	1.00	21:43	X
LLC	1.00	21:46	X
ICSA	1.00	21:49	X
ICSAB	1.00	21:52	X
CCV	1.00	21:55	X
CCB	1.00	21:57	X

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 16315
Run Name: 1912501T71

Run Start Date: 05/05/2019
Run End Date: 05/05/2019

Lab Sample ID	D/F	Time	Analytes: PB
S0	1.00	04:42	X
S	1.00	04:45	
S	1.00	04:47	X
S	1.00	04:50	
ICV	1.00	04:52	X
ICB	1.00	04:55	X
LLC	1.00	04:58	X
ICSA	1.00	05:00	X
ICSAB	1.00	05:03	X
CCV	1.00	05:05	X
CCB	1.00	05:08	X
LRS2	1.00	05:10	X
LRS4	1.00	05:13	X
LRS3	1.00	05:16	X
LRS5	1.00	05:19	X
CCV	1.00	05:21	X
CCB	1.00	05:23	X
P11904GB	1.00	05:26	
P11904GQ	1.00	05:29	
ZZZZZZ	1.00	05:31	
ZZZZZZ	1.00	05:34	
1043307	1.00	05:36	X
1043306	1.00	05:39	X
ZZZZZZ	1.00	05:42	
ZZZZZZ	1.00	05:44	
ZZZZZZ	1.00	05:47	
1043320	1.00	05:49	X
CCV	1.00	05:52	X
CCB	1.00	05:54	X

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: LSV49

Method: P
Instrument ID: 16417
Run Name: 1912508T72

Run Start Date: 05/05/2019
Run End Date: 05/05/2019

Lab Sample ID	D/F	Time	Analytes: PB
S0	1.00	21:18	X
S	1.00	21:21	
S	1.00	21:25	X
S	1.00	21:28	
ICV	1.00	21:31	X
ICB	1.00	21:35	X
LLC	1.00	21:38	X
ICSA	1.00	21:42	X
ICSAB	1.00	21:45	X
CCV	1.00	21:48	X
CCB	1.00	21:52	X
LRS2	1.00	21:55	X
LRS4	1.00	21:59	X
LRS3	1.00	22:02	X
LRS5	1.00	22:06	X
CCV	1.00	22:10	X
CCB	1.00	22:13	X
P11904GB	1.00	22:16	X
P11904GQ	1.00	22:20	
ZZZZZZ	1.00	22:23	
ZZZZZZ	1.00	22:27	
ZZZZZZ	1.00	22:30	
ZZZZZZ	1.00	22:33	
ZZZZZZ	1.00	22:37	
ZZZZZZ	1.00	22:40	
ZZZZZZ	1.00	22:43	
ZZZZZZ	1.00	22:46	
CCV	1.00	22:50	X
CCB	1.00	22:53	X

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

Instrumental Wet Chemistry Data

Case Narrative/Conformance Summary

Instrumental Wet Chemistry

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

Sample #	Client ID	Matrix Liquid	Solid	Comments
1043307	MW-2-W-190424	X		
1043308	MW-1-W-190424	X		
1043309	MW-3-W-190424	X		
1043313	MW-6-W-190424	X		
1043314	MW-5-W-190424	X		
1043315	MW-9-W-190424	X		
1043316	MW-4-W-190424	X		
1043317	MW-8-W-190424	X		
1043318	MW-7-W-190424	X		
1043319	MW-10-W-190424	X		

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

(Sample number(s): 1043307-1043309, 1043313: Analysis: 00368)
The holding time was not met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

Method defined actions are taken for any failed matrix QC.

Batch#: 19124127102A (Sample number(s): 1043309, 1043315-1043319, UNSPK: 1043309, BKG: 1043309)
The recovery(ies) for the following analyte(s) in the MS exceeded the acceptance window indicating a positive bias: Ferrous Iron

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

Batch#: 19116987117B (Sample number(s): 1043309, UNSPK: 1043309, BKG: 1043309)
The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: Nitrate Nitrogen, Sulfate

SAMPLE ANALYSIS:

Samples	Ferrous Iron	Nitrate Nitrogen	Sulfate
1043307	DF1	DF5	DF5
1043308	DF1	DF5	DF5
1043309	UNSPK/BKG/ DF1	UNSPK/BKG/ DF5	UNSPK/BKG/ DF5
1043313	DF10	DF5	DF5
1043314	DF1	UNSPK,MS,D/ DF5	UNSPK,MS,D/ DF5
1043315	DF5	DF5	DF5
1043316	DF1	DF5	DF5
1043317	DF5	DF5	DF5
1043318	DF1	DF5	DF5
1043319	DF10	DF5	DF10

No problems were encountered with the analysis of the samples.

Abbreviation Key

U = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
R = Matrix Spike (MS)	MDL = Method Detection Limit
M = Matrix Spike Duplicate (MSD)	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	NA = Not Applicable
HS = High Spike	ME = Method
LS = Low Spike	CO = Colorimetric
SS = Soluble Spike	G = Gravimetric
IS = Insoluble Spike	IR = Infrared Spectrophotometry
ISD = Insoluble Spike Duplicate	MTR = Meter
PDS = Post Digestion Spike	OD = Oven Dried
* = Out of Specification	TI = Titration
V = Visual	TOC = Total Organic Carbon
AK = Alpkem	IC = Ion Chromatography
TC = Total Carbon	RA = Rapid Analyzer

Quality Control and Calibration Summary Forms

Instrumental Wet Chemistry

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Quality Control Reference List
Instrumental Water Quality

CLIENT: Chevron
SDG: LSV49

Fraction: Instrumental Wet Chemistry

Analysis	Batch Number	Sample Number	Analysis Date
Ferrous Iron	19124127101A	P12427AB	05/04/2019 17:08
		P12427AQ	05/04/2019 17:08
		1043307	05/04/2019 15:01
		1043308	05/04/2019 15:01
		1043313	05/04/2019 15:26
		1043314	05/04/2019 15:01
Ferrous Iron	19124127102A	P12427BB	05/04/2019 15:02
		P12427BQ	05/04/2019 17:13
		1043309 UNSPK/BKG,MS,MSD	05/04/2019 15:02
		1043309 DUP	05/04/2019 15:04
		1043315	05/04/2019 15:16
		1043316	05/04/2019 15:04
		1043317	05/04/2019 15:17
		1043318	05/04/2019 15:05
		1043319	05/04/2019 15:29

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Quality Control Reference List
Instrumental Water Quality

CLIENT: Chevron
SDG: LSV49

Fraction: Instrumental Wet Chemistry

Batch Number	Sample Number	Analysis Date	Nitrate Nitrogen	Sulfate
19116987117A	1043307	04/26/2019 17:51:00	X	X
	1043308	04/26/2019 18:08:00	X	X
	1043313	04/26/2019 18:43:00	X	X
	1043314 BKG	04/26/2019 15:35:00	X	X
	1043314 DUP	04/26/2019 20:48:00	X	X
	1043314 MS	04/26/2019 21:05:00	X	X
	1043315	04/26/2019 15:52:00	X	X
	1043316	04/26/2019 16:09:00	X	X
	1043317	04/26/2019 16:26:00	X	X
	1043318	04/26/2019 16:43:00	X	X
	1043319	04/26/2019 17:00:00	X	
	1043319	04/26/2019 22:14:00		X
	P11687QB	04/26/2019 10:56:00	X	X
	P11687QQ	04/26/2019 10:39:00	X	X
19116987117B	1043309 UNSPK/BKG	04/26/2019 18:26:00	X	X
	1043309 DUP	04/26/2019 22:31:00	X	X
	1043309 MS	04/26/2019 22:48:00	X	X

Quality Control Summary
Method Blank
Instrumental Water Quality
SDG: LSV49
Matrix: LIQUID

Fraction: Instrumental Wet Chemistry

19116987117A / P11687QB Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Nitrate Nitrogen	IC	04/26/19	N.D.	mg/l	0.050	0.10
Sulfate	IC	04/26/19	N.D.	mg/l	0.30	1.0

19124127101A / P12427AB Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Ferrous Iron	CO	05/04/19	N.D.	mg/l	0.0150	0.100

19124127102A / P12427BB Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Ferrous Iron	CO	05/04/19	N.D.	mg/l	0.0150	0.100

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

UNSPK: 1043314	Batch: **19116987117A** (Sample number(s): 1043307-1043308, 1043313-1043319)									
MS: 1043314 **Parameter**	**ME**	**Spike Added mg/l**	**Unspiked Conc mg/l**	**MS Conc mg/l**	**MSD Conc mg/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Nitrate Nitrogen	IC	2.50	1.48	4.01	NA	101	NA	90-110	NA	NA
Sulfate	IC	25	11.25	37.06	NA	103	NA	90-110	NA	NA

UNSPK: 1043309	Batch: **19116987117B** (Sample number(s): 1043309)									
MS: 1043309 **Parameter**	**ME**	**Spike Added mg/l**	**Unspiked Conc mg/l**	**MS Conc mg/l**	**MSD Conc mg/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Nitrate Nitrogen	IC	2.50	1.60	3.65	NA	82 *	NA	90-110	NA	NA
Sulfate	IC	25	16.29	38.16	NA	87 *	NA	90-110	NA	NA

UNSPK: 1043309	Batch: **19124127102A** (Sample number(s): 1043309, 1043315-1043319)									
MS: 1043309 MSD: 1043309 **Parameter**	**ME**	**Spike Added mg/l**	**Unspiked Conc mg/l**	**MS Conc mg/l**	**MSD Conc mg/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Ferrous Iron	CO	1.00	0.116	1.24	1.22	113 *	110	90-110	2	10

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

BKG: 1043314 DUP: 1043314 **Parameter**	Batch: **19116987117A** (Sample number(s): 1043307-1043308, 1043313-1043319) **ME**	**Unspiked Conc mg/l**	**DUP Conc mg/l**	**%RPD**	**%RPD Limits**
Nitrate Nitrogen	IC	1.48	1.47	0 (1)	15
Sulfate	IC	11.25	11.38	1 (1)	15

BKG: 1043309 DUP: 1043309 **Parameter**	Batch: **19116987117B** (Sample number(s): 1043309) **ME**	**Unspiked Conc mg/l**	**DUP Conc mg/l**	**%RPD**	**%RPD Limits**
Nitrate Nitrogen	IC	1.6	1.58	1 (1)	15
Sulfate	IC	16.29	16.36	0 (1)	15

BKG: 1043309 DUP: 1043309 **Parameter**	Batch: **19124127102A** (Sample number(s): 1043309, 1043315-1043319) **ME**	**Unspiked Conc mg/l**	**DUP Conc mg/l**	**%RPD**	**%RPD Limits**
Ferrous Iron	CO	0.12	0.12	7 (1)	10

Comments:
(1) The sample and/or duplicate result is less than five times the LOQ.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: LSV49
Matrix: LIQUID

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

LCS: P11687QQ	Batch: **19116987117A** (Sample number(s): 1043307-1043308, 1043313-1043319) Batch: **19116987117B** (Sample number(s): 1043309)								
Parameter	**ME**	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Nitrate Nitrogen	IC	0.750	0.744	NA	99	NA	90-110	NA	NA
Sulfate	IC	7.50	7.44	NA	99	NA	90-110	NA	NA

LCS: P12427AQ	Batch: **19124127101A** (Sample number(s): 1043307-1043308, 1043313-1043314)								
Parameter	**ME**	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Ferrous Iron	CO	1.00	1.08	NA	108	NA	90-110	NA	NA

LCS: P12427BQ	Batch: **19124127102A** (Sample number(s): 1043309, 1043315-1043319)								
Parameter	**ME**	**Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Ferrous Iron	CO	1.00	1.10	NA	110	NA	90-110	NA	NA

Instrument ID: 10385
Calibration Date: 05/04/2019

Analysis	AUTO CAL1	AUTO CAL2	AUTO CAL3	AUTO CAL4	AUTO CAL5	AUTO CAL6	AUTO CAL7	CC
Ferrous Iron	0.0030	0.0119	0.0239	0.0543	0.1064	0.1348	0.2121	0.9999

Acceptance Range:
ICV/CCV: +/- 10%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 19124127101A, 19124127102A
Run Start Dates: 05/04/2019
Run Names: 1912401C09

	Ferrous Iron		
Sample	True	Result	%Rec
ICVFe+2	1	1.04653	105
ICBFe+2	0	ND	NA
CCVFe+2	1	1.04599	105
CCBFe+2	0	ND	NA
CCVFe+2	1	1.04655	105
CCBFe+2	0	0.04386*	NA
CCVFe+2	1	1.03879	104
CCBFe+2	0	ND	NA
CCVFe+2	1	1.02130	102
CCBFe+2	0	ND	NA
CCVFe+2	1	1.03350	103
CCBFe+2	0	ND	NA
CCVFe+2	1	1.02343	102
CCBFe+2	0	ND	NA
CCVFe+2	1	1.04577	105
CCBFe+2	0	ND	NA
CCVFe+2	1	1.02964	103
CCBFe+2	0	ND	NA
CCVFe+2	1	1.01262	101
CCBFe+2	0	ND	NA
CCVFe+2	1	1.04815	105
CCBFe+2	0	ND	NA
CCVFe+2	1	1.04907	105
CCBFe+2	0	ND	NA
CCVFe+2	1	1.03744	104
CCBFe+2	0	ND	NA

* = Out of Specifications

Quality Control Summary
Initial And Continuing Calibration
Instrumental Analysis/Anion Scan

SDG: LSV49

Instrument ID: 24811
Calibration Date: 03/07/2019

Analysis	AUTO CAL1	AUTO CAL2	AUTO CAL3	AUTO CAL4	AUTO CAL5	R^2	CC
Nitrate Nitrogen	0.202572	0.804724	2.044142	4.260710	6.509858	0.9997	0.9999
Sulfate	0.406554	0.800790	2.038838	4.216338	6.532267	0.9997	0.9998

Acceptance Range:
ICV/CCV: 90%-110%
ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 19116987117A, 19116987117B
Run Start Dates: 04/26/2019
Run Names: 1911601D17

	Sulfate			Nitrate Nitrogen		
Sample	True	Result	%Rec	True	Result	%Rec
ICV	7.5	7.5234	100	0.75	0.7418	99
ICB	0	ND	NA	0	ND	NA
CCV2	7.5	7.4966	100	0.75	0.7476	100
CCB	0	ND	NA	0	ND	NA
CCV2	7.5	7.6573	102	0.75	0.7458	99
CCB	0	ND	NA	0	ND	NA
CCV2	7.5	7.6809	102	0.75	0.7508	100
CCB	0	ND	NA	0	ND	NA
CCV2	7.5	7.6522	102	0.75	0.7447	99
CCB	0	ND	NA	0	ND	NA

* = Out of Specifications

Fraction: Instrumental Wet Chemistry

14855: Ferrous Iron Analyte Name	Default MDL	Default LOQ	Units
Ferrous Iron	0.0150	0.100	mg/l

00368: Nitrate Nitrogen Analyte Name	Default MDL	Default LOQ	Units
Nitrate Nitrogen	0.050	0.10	mg/l

00228: Sulfate Analyte Name	Default MDL	Default LOQ	Units
Sulfate	0.30	1.0	mg/l

Wet Chemistry Data

Case Narrative/Conformance Summary

Wet Chemistry

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

Water Quality

Fraction: Wet Chemistry

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1043307	MW-2-W-190424	X		1	
1043308	MW-1-W-190424	X		1	
1043309	MW-3-W-190424	X		1	
1043313	MW-6-W-190424	X		1	
1043314	MW-5-W-190424	X		1	
1043315	MW-9-W-190424	X		1	
1043316	MW-4-W-190424	X		1	
1043317	MW-8-W-190424	X		1	
1043318	MW-7-W-190424	X		1	
1043319	MW-10-W-190424	X		1	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

SAMPLE ANALYSIS:

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV49

Water Quality

Fraction: Wet Chemistry

No problems were encountered with the analysis of the samples.

Abbreviation Key

U = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
R = Matrix Spike (MS)	MDL = Method Detection Limit
M = Matrix Spike Duplicate (MSD)	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	NA = Not Applicable
HS = High Spike	ME = Method
LS = Low Spike	CO = Colorimetric
SS = Soluble Spike	G = Gravimetric
IS = Insoluble Spike	IR = Infrared Spectrophotometry
ISD = Insoluble Spike Duplicate	MTR = Meter
PDS = Post Digestion Spike	OD = Oven Dried
* = Out of Specification	TI = Titration
V = Visual	TOC = Total Organic Carbon
AK = Alpkem	IC = Ion Chromatography
TC = Total Carbon	RA = Rapid Analyzer

QC Summary

Wet Chemistry

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Quality Control Reference List
Water Quality

CLIENT: Chevron
SDG: LSV49

Fraction: Wet Chemistry

Batch Number	Sample Number	Analysis Date	Phenolphthalein Alk. to pH 8.3	Total Alkalinity to pH 4.5
19120005202A	1043307	04/30/2019 19:48:00	X	X
	1043308	04/30/2019 19:13:00	X	X
	1043309	04/30/2019 20:02:00	X	X
	1043313	04/30/2019 19:20:00	X	X
	1043314	04/30/2019 19:42:00	X	X
	1043315	04/30/2019 18:54:00	X	X
	1043316	04/30/2019 19:07:00	X	X
	1043317	04/30/2019 19:01:00	X	X
	1043318	04/30/2019 19:26:00	X	X
	1043319	04/30/2019 19:55:00	X	X
	P005202B	04/30/2019 17:56:00		X
	P005202Q	04/30/2019 18:03:00		X

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Quality Control Summary
Method Blank
Water Quality
SDG: LSV49
Matrix: LIQUID

Fraction: Wet Chemistry

19120005202A / P005202B Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Total Alkalinity to pH 4.5	TI	04/30/19	N.D.	mg/l as CaCO3	1.7	5.0

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Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: LSV49
Matrix: LIQUID

Water Quality
Fraction: Wet Chemistry

LCS: P005202Q	Batch: **19120005202A** (Sample number(s): 1043307-1043309, 1043313-1043319)								
Parameter	**ME**	**Spike Added mg/l as CaCO3**	**LCS Conc mg/l as CaCO3**	**LCSD Conc mg/l as CaCO3**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Total Alkalinity to pH 4.5	TI	188	177.87	NA	95	NA	77-109	NA	NA

Fraction: Wet Chemistry

12707: Phenolphthalein Alk. to pH 8.3 Analyte Name	Default MDL	Default LOQ	Units
Phenolphthalein Alk. to pH 8.3	1.7	5.0	mg/l as CaCO3

12150: Total Alkalinity to pH 4.5 Analyte Name	Default MDL	Default LOQ	Units
Total Alkalinity to pH 4.5	1.7	5.0	mg/l as CaCO3

APPENDIX D

ADEC Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Suresh PR

Title:

Project Chemist

Date:

July 11, 2019

CS Report Name:

First Semiannual 2019 Groundwater Monitoring Report

Report Date:

May 15, 2019

Consultant Firm:

ARCADIS U.S., Inc

Laboratory Name:

Eurofins Lancaster Laboratory, Lancaster, Pennsylvania

Laboratory Report Number:

2040850 – LSV49

ADEC File Number:

2100.38.503

Hazard Identification Number:

4692

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

Yes.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

Samples were not transferred to another lab.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

Yes.

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

Yes.

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

Yes.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

Yes.

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☑ Yes ☐ No Comments:

Yes.

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

   ☐ Yes ☑ No Comments:

No discrepancies.

e. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

Yes.

b. Discrepancies, errors, or QC failures identified by the lab?

☒ Yes ☐ No Comments:

Yes.

c. Were all corrective actions documented?

☒ Yes ☐ No Comments:

Yes

d. What is the effect on data quality/usability according to the case narrative?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No Comments:

Yes.

b. All applicable holding times met?

☐ Yes ☒ No Comments:

Nitrate Nitrogen analysis was performed beyond the required holding time of 48 hours in samples MW-2-W-190424, MW-1-W-190424, MW-3-W-190424 and MW-6-W-190424. These results were qualified (J) as estimated.

c. All soils reported on a dry weight basis?

☐ Yes ☒ No Comments:

No soil samples were submitted for analysis.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No Comments:

Yes.

e. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No Comments:

Yes.

ii. All method blank results less than Method Detection Limit (MDL)?

☐ Yes ☒ No Comments:

The compound DRO C10-C25 was detected (0.14 J mg/l) below the limit of quantitation in a method blank batch 191200032A. A blank action level was established at five times of the detected blank concentration. The compound DRO C10-C25 result in samples from the corresponding batch were reported greater than the action level and therefore no qualification was required.

iii. If above MDL, what samples are affected?

☐ Yes ☒ No Comments:

No.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

None of the samples affected.

v. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒ Yes ☐ No Comments:

Yes.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

Yes.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

The RPDs between LCS/LCSD were within the control limits.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☑ No Comments:

None of the sample affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

No.

vii. Data quality or usability affected?

☐ Yes ☑ No Comments:

Data quality/usability was not affected.

c. Matrix spike/Matrix Spike Duplicate (MS/MSD)

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

Sample MW-3-W-190424 was used as the MS/MSD analysis.

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

The MSD (72%) recovery for DRO C10-C25 in sample MW-3-W-190424 was less than the control limit and associated result was qualified (J) as estimated.

The MS recoveries for nitrate nitrogen (82%) and sulfate (87%) in sample MW-3-W-190424 was less than the control limit and associated results were qualified (J) as estimated.

The MS recovery (113%) for ferrous iron in sample MW-3-W-190424 was greater than the control limit and associated results were qualified (J) as estimated.

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

Yes.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☑ No Comments:

None of the samples affected.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

No.

vi. Data quality or usability affected? (use comment box to explain)

☑ Yes ☐ No Comments:

MS/MSD recoveries were high and/or low in sample MW-3-W-190424. The associated results were qualified as estimated.

d. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

Yes

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No Comments:

Surrogate orthoterphenyl recovery (43%) was less than the control limit in sample MW-8-W-190424. The result for compound DRO C10-C25 qualified as estimated.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No Comments:

Yes.

iv. Data quality or usability affected? (use comment box to explain)

☒ Yes ☐ No Comments:

The result for compound DRO C10-C25 in sample MW-8-W-190424 was qualified as estimated due to low surrogate recovery.

e. Trip blank – Volatile analyses only (GRO, BTEX, etc): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

☒ Yes ☐ No Comments:

Yes.

ii. All results less than MDL?

☑ Yes ☐ No Comments:

Yes.

iii. If above MDL, what samples are affected?

☐ Yes ☑ No Comments:

None of the data affected.

iv. Data quality or usability affected?

☐ Yes ☑ No Comments:

Data quality/usability was not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Yes.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

BD-1-WD-190424 was collected from MW-2-W-190424.

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☑ Yes ☐ No Comments:

The RPDs between parent and duplicate samples were acceptable.

iv. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☒ Yes ☐ No

Equipment blank sample was collected as QA-O-190424.

i. If above MDL, what samples are affected?

☐ Yes ☒ No Comments:

The compound toluene was detected (1 ug/l) in an equipment blank sample QA-O-190424 for method SW8260. A blank action level was established at five times of the detected blank concentration. The compound toluene result in samples MW-6-W-190424 and MW-10-W-190424 were reported less than the action level and qualified as non-detect (UB) at the reporting limit. The compound DRO C10-C25 was detected (0.14 J mg/l) below the reporting limit in an equipment blank sample QA-O-190424 for method AK-102. A blank action level was established at five times of the detected blank concentration. The compound DRO C10-C25 result in samples MW-3-W-190424, MW-6-W-190424, MW-8-W-190424 and MW-10-W-190424 were reported greater than reporting limit and less than the action level, therefore qualified as non-detect (UB) at the detected concentration.

ii. Data quality or usability affected?

The compounds toluene and DRO C10-C25 results in few samples were qualified as non-detect. The reported data should still be considered as usable.

7. <u>Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)</u>

a. Defined and appropriate?

☒ Yes ☐ No Comments:

Yes.