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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 12, 2019

Contact:
Nicole Monroe

Phone:
503.785.9414

Email:
nicole.monroe@arcadis.com

Our ref:
30015184

Dear Mr. Weimer,

On behalf of Chevron Environmental Management Company (Chevron), Arcadis US, Inc. (Arcadis) has prepared the attached *2019 First Semi-Annual 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
91252	2107.26.003	23705	11836 Old Glenn Highway, Eagle River, 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 (*electronic copy*)
Mark Engelke

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska
ADEC File No. 2107.26.003

December 13, 2019

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Chevron-Branded Service Station 91252

11836 Old Glenn Highway
Eagle River, Alaska

ADEC File No: 2107.26.003
HAZARD ID No: 23705

Evan Wujcik
Environmental Engineer

Max Elias
Environmental Scientist

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EV-149409

Prepared for:

Chevron Environmental Management Company

Prepared by:

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Our Ref.

30015184

Date:

December 13, 2019

CONTENT

TABLES

FIGURES

APPENDICES

SEMI-ANNUAL STATUS REPORT
FIRST HALF 2019
December 13, 2019

Facility No:	Chevron-Branded Service Station 91252	Address:	11836 Old Glenn Highway, Eagle River, AK

Arcadis Contact Person / Phone No.:	Nicole Monroe / (503) 785-9414
Arcadis Project No.:	30015184
Primary Agency/Regulatory ID No.:	Alaska Department of Environmental Conservation (ADEC) / Robert Weimer /ADEC file ID: 2107.26.003

WORK CONDUCTED THIS PERIOD [First Half 2019]:

1. Conducted semi-annual groundwater monitoring activities on April 8, 2019.
2. Monitoring wells MW-2, MW-4, and MW-6 were repaired on May 13, 2019.
3. Monitoring well Survey conducted on June 6, 2019
4. Prepared the *Semi-Annual Status Report, First Half 2019*.

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 LNAPL Present On-site:	None	
Cumulative LNAPL Recovered to Date:	0.00	(gallons)
Approximate Depth to Groundwater:	30.35 to 33.43	(feet below top of casing)
Approximate Groundwater Elevation:	273.13 to 277.23	(feet relative to corresponding datum)
Groundwater Flow Direction	North-northwest	

Groundwater Gradient	0.03	(feet per foot)
Current Remediation Techniques:	None	
Permits for Discharge:	None	
Summary of Unusual Activity:	Well repairs to MW-2, MW-4, and MW-6	
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 events of 2019 for Chevron facility 91252, located at 11836 Old Glenn Highway in Eagle River, Alaska (the site). The site location map and site plan are shown as 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)]. Site background and history summaries are attached as Appendix A and field notes, data sheets, and general procedures are included as Attachment B.

2 WELL REPAIR ACTIVITES

On May 13, 2019 Arcadis field staff performed well repairs at MW-2, MW-4, and MW-6. New well monuments and vaults were installed at all three wells.

3 GROUNDWATER MONITORING

3.1 Groundwater Gauging Methods

The 2019 first semi-annual groundwater gauging events was conducted on April 8, 2019. Site monitoring wells were gauged with an oil/water interface probe to determine depth-to-water and to ascertain if LNAPL was present. Monitoring wells were resurveyed on June 6, 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.

3.2 Groundwater Elevation and Flow Direction

During the 2019 first semi-annual event, monitoring wells MW-1R, MW-2, MW-3, MW-4, MW-5 and MW-6 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 first semi-annual 2019 monitoring events is to the north-northwest 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. A groundwater contour map is presented as Figure 3.

3.3 Groundwater Sampling Methods

The first semi-annual groundwater monitoring event were conducted on April 8, 2019. Groundwater samples were scheduled to be collected from monitoring wells MW-2, MW-3, and MW-5. Samples were collected from monitoring wells MW-2 and MW-5 using a low-flow purge sampling method. MW-3 was damaged due to an earthquake and unable to be sampled.

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.

Groundwater samples collected from monitoring wells MW-2 and MW-5 were submitted to the analytical laboratory for the following analysis:

- Diesel range organics (DRO) by Alaska method AK102

A groundwater duplicate sample was collected from monitoring wells MW-2. The duplicate samples were analyzed for DRO. The duplicate samples were submitted blind with the sample set to Eurofins.

3.4 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. PAHs analytical results are summarized in Table 3.

4 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 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.

4.1 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 duplicates (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.

4.2 Accuracy

The percent recoveries for LCS/LCSD and MS/MSD were within the control limits.

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

4.3 Representativeness

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

4.4 Comparability

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

4.5 Completeness

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

4.6 Sensitivity

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

5 CONCLUSIONS AND RECOMMENDATIONS

The groundwater data collected during the first semi-annual 2019 events indicate groundwater flow directions (north-northwest) 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-2 and MW-5. 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.

6 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-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft)	Datum	DTW* (ft bTOC)	LNAPL Thickness (ft)	GW Elev (ft)	TPH-d (mg/L)	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
ADEC Groundwater Cleanup Levels[a]								**1.5**	**2.2**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**
MW-1R	4/8/2019	--	307.58	NAVD88	30.35	0.00	277.23	--	--	--	--	--	--	--
MW-2 [BD]	4/8/2019	--	306.78	NAVD88	31.81	0.00	274.97	<0.25 B[1] [<0.25 B[1]]	--	--	--	--	--	--
MW-3	4/8/2019	--	306.56	NAVD88	33.43	0.00	273.13	--	--	--	--	--	--	--
MW-4	4/8/2019	--	307.41	NAVD88	31.56	0.00	275.85	--	--	--	--	--	--	--
MW-5	4/8/2019	--	307.78	NAVD88	31.53	0.00	276.25	**0.92**	--	--	--	--	--	--
MW-6	4/8/2019	--	306.64	NAVD88	31.20	0.00	275.44	--	--	--	--	--	--	--
Equipment Blank	4/8/2019	--	--	--	--	--	--	0.071 J	--	--	--	--	--	--

Notes:

ID = Identification
MW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet
[BD] = Duplicate Sample Results
GW Elev = Groundwater elevation
mg/L = Milligrams per liter
ADEC = Alaska Department of Environmental Conservation
a = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)
Bold = At or above the method detection limit (MDL)
Bold and Shade = value exceeds ADEC cleanup levels
<0.25 = Not detected at or above the method detection limit (MDL)
* = Depth to water taken from well survey dated June 6, 2019
LNAPL = Light non-aqueous phase liquid

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to United States Environmental Protection Agency (USEPA) Method AK 101
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to Alaska Series Method AK 102-SV 4/8/02
Samples analyzed by USEPA Method 8260B:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
[1] = Non detect reported to Limit of Quantitation (LOQ)
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
UB {represented as < [MDL] B} = Compound is considered non-detect at the listed value due to associated blank contamination
-- = Not sampled/not measured/not available

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 2003 to Current
Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW*** (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (mg/L)	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels[a]							**1.5**	**2.2**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**0.000075**	**0.0017**	
MW-1	10/6/2003	--	301.20	16.00	--	285.20	**0.77**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	--	--	
MW-1	12/17/2003	--	301.20	21.93	--	279.27	--	--	--	--	--	--	--	--	--	
MW-1	3/26/2004	--	301.20	22.04	--	279.16	--	--	--	--	--	--	--	--	--	
MW-1	6/5/2004	--	301.20	19.74	--	281.46	**2.3**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-1	9/27/2004	--	301.20	16.07	--	285.13	**0.68**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-1	12/9/2004	--	301.20	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	3/24/2005	--	301.20	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	5/17/2005	--	301.20	20.46	--	280.74	**3.9**	**0.017**	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-1	9/25/2005	--	301.20	16.06	--	285.14	**0.6**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	<0.0025	--	--	
MW-1	5/17/2006	--	301.20	21.73	--	279.47	--	--	--	--	--	--	--	--	--	
MW-1	9/26/2006	--	301.20	20.24	--	280.96	**0.52**	--	--	--	--	--	--	--	--	
MW-1	5/18/2007	--	301.20	20.50	--	280.70	**2.6**	--	--	--	--	--	--	--	--	
MW-1	9/20/2007	--	301.20	21.96	--	279.24	--	--	--	--	--	--	--	--	--	
MW-1	3/28/2008	--	301.20	22.21	--	278.99	<0.391	--	--	--	--	--	--	--	--	
MW-1	6/9/2008	--	301.20	21.00	--	280.20	--	--	--	--	--	--	--	--	--	
MW-1	9/15/2008	--	301.20	19.49	--	281.71	--	--	--	--	--	--	--	--	--	
MW-1R	10/28/2008	--	--	30.55	--	--	**0.22 [0.24]**	<0.01 [<0.01]	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	<0.002 [<0.002]	--	--	--	
MW-1R	5/6/2009	--	--	30.63	--	--	**0.065**	--	--	--	--	--	--	--	--	
MW-1R	9/14/2009	--	--	30.68	--	--	<0.050	--	--	--	--	--	--	--	--	
MW-1R	4/21/2010	--	301.73	30.30	--	271.43	<0.050	--	--	--	--	--	--	--	--	
MW-1R	7/22/2010	--	301.73	38.23	--	271.23	<0.051	--	--	--	--	--	--	--	--	
MW-1R	8/3/2011	--	301.73	30.67	--	271.06	**0.058 J**	--	--	--	--	--	--	--	--	
MW-1R	5/30/2012	--	301.73	29.95	--	271.78	**0.10 J**	--	--	--	--	--	--	<0.0000096	<0.0005	
MW-1R	8/23/2012	--	301.73	30.25	--	271.48	<0.050	--	--	--	--	--	--	--	--	
MW-1R	5/6/2013	--	301.73	29.96	--	271.77	--	--	--	--	--	--	--	--	--	
MW-1R	5/8/2013	--	--	--	--	--	<0.076 J	--	--	--	--	--	--	--	--	
MW-1R	5/8/2013	--	--	--	--	--	**0.21 J**	--	--	--	--	--	--	--	--	collected via hydrosleeve
MW-1R	9/16/2013	--	301.73	30.09	--	271.64	<0.21	--	--	--	--	--	--	--	--	
MW-1R	4/29/2014	--	301.73	30.27	--	271.46	--	--	--	--	--	--	--	--	--	
MW-1R	04/30/2014	--	--	--	--	--	<0.065	--	--	--	--	--	--	--	--	
MW-1R	10/1/2014	--	301.73	30.20	--	271.53	**0.081 J**	--	--	--	--	--	--	--	--	
MW-1R	5/6/2015	--	301.73	30.50	--	271.23	<0.051 J	<0.010	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-1R	10/20/2015	--	301.73	30.29	--	271.44	<0.053	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-1R	5/19/2016	--	301.73	31.50	--	270.23	**0.26**	--	--	--	--	--	--	--	--	
MW-1R	9/28/2016	--	301.73	30.36	--	271.37	<0.051	--	--	--	--	--	--	--	--	
MW-1R	5/22/2017	--	301.73	30.33	--	271.40	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
MW-1R	10/16/2017	--	301.73	30.34	--	271.39	--	--	--	--	--	--	--	--	--	
MW-1R	4/19/2018	--	301.63*	30.27	--	271.36	--	--	--	--	--	--	--	--	--	
MW-1R	9/4/2018	--	299.23*	30.34	--	268.89	--	--	--	--	--	--	--	--	--	
MW-1R	4/8/2019	--	307.58	30.35	0.00	277.23	--	--	--	--	--	--	--	--	--	
MW-2	10/6/2003	--	300.92	32.39	--	268.53	**1.9** [0.88]	<0.01 [<0.01	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.002 [<0.002]	--	--	
MW-2	12/17/2003	--	300.92	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	3/26/2004	--	300.92	32.45	--	268.47	**0.14 [0.2]**	<0.01 [<0.01]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	
MW-2	6/5/2004	--	300.92	31.97	--	268.95	<0.24 [0.27]	<0.01 [<0.01]	<0.0005 [<0.0005	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	--	
MW-2	9/27/2004	--	300.92	32.43	--	268.49	**0.43**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-2	12/9/2004	--	300.92	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	3/24/2005	--	300.92	36.67	--	264.25	--	--	--	--	--	--	--	--	--	
MW-2	5/17/2005	--	300.92	32.27	--	268.65	**0.64 [0.56]**	<0.01 [<0.01]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-2	9/25/2005	--	300.92	32.21	--	268.71	**0.034**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	<0.0025	--	--	
MW-2	5/17/2006	--	300.92	32.09	--	268.83	<0.12	--	--	--	--	--	--	--	--	

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Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW*** (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (mg/L)	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels[a]							**1.5**	**2.2**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**0.000075**	**0.0017**	
MW-2	9/26/2006	--	300.92	32.14	--	268.78	<0.24	--	--	--	--	--	--	--	--	
MW-2	3/29/2007	--	300.92	32.22	--	268.70	**0.1**	--	--	--	--	--	--	--	--	
MW-2	5/18/2007	--	300.92	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	9/20/2007	--	300.92	32.32	--	268.60	**0.061**	--	--	--	--	--	--	--	--	
MW-2	3/28/2008	--	300.92	32.17	--	268.75	<0.391	--	--	--	--	--	--	--	--	
MW-2	6/9/2008	--	300.92	31.95	--	268.97	**0.049**	--	--	--	--	--	--	--	--	
MW-2	9/15/2008	--	300.92	32.24	--	268.68	<0.049	--	--	--	--	--	--	--	--	
MW-2	10/28/2008	--	300.92	32.26	--	268.66	--	--	--	--	--	--	--	--	--	
MW-2	05/06/2009	--	300.92	32.20	--	268.72	**0.053**	--	--	--	--	--	--	--	--	
MW-2	09/14/2009	--	300.92	32.38	--	268.54	<0.050	--	--	--	--	--	--	--	--	
MW-2	04/21/2010	--	300.91	31.40	--	269.51	**0.21 J**	--	--	--	--	--	--	--	--	
MW-2	7/22/2010	--	300.91	31.82	--	269.09	**0.12 J**	--	--	--	--	--	--	--	--	
MW-2	8/3/2011	--	300.91	32.10	--	268.81	**0.13 J**	--	--	--	--	--	--	--	--	
MW-2	5/30/2012	--	300.91	31.36	--	269.55	**0.36**	--	--	--	--	--	--	**0.0000097 J**	<0.0005	
MW-2	8/23/2012	--	300.91	31.82	--	269.09	<0.051	--	--	--	--	--	--	--	--	
MW-2	5/6/2013	--	300.91	31.16	--	269.75	--	--	--	--	--	--	--	--	--	
MW-2	5/8/2013	--	--	--	--	--	**0.46 J**	--	--	--	--	--	--	--	--	
MW-2	5/8/2013	--	--	--	--	--	**0.56 J**	--	--	--	--	--	--	--	--	collected via hydrosleeve
MW-2	9/16/2013	--	300.91	31.50	--	269.41	**0.52**	--	--	--	--	--	--	--	--	
MW-2	4/29/2014	--	300.91	31.00	--	269.91	--	--	--	--	--	--	--	--	--	
MW-2	4/30/2014	--	--	--	--	--	<0.068	--	--	--	--	--	--	--	--	
MW-2	10/1/2014	--	300.91	31.78	--	269.13	**0.071 J**	--	--	--	--	--	--	--	--	
MW-2	5/6/2015	--	300.91	31.97	--	268.94	**0.054 J**	<0.010	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-2	10/20/2015	--	300.91	31.81	--	269.10	<0.050	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-2	5/19/2016	--	300.91	32.09	--	268.82	<0.052	--	--	--	--	--	--	--	--	
MW-2	9/28/2016	--	300.91	31.89	--	269.02	**0.060 J**	--	--	--	--	--	--	--	--	
MW-2	5/22/2017	--	300.91	31.67	--	269.24	**0.33**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
MW-2	10/16/2017	--	300.91	31.87	--	269.04	**0.092 J**	--	--	--	--	--	--	--	--	
MW-2	4/19/2018	--	300.91	31.49	--	269.42	**0.30 J**	--	--	--	--	--	--	--	--	
MW-2	9/4/2018	--	300.91	31.82	--	269.09	**0.068 J**	--	--	--	--	--	--	--	--	
MW-2 [BD]	4/8/2019	--	306.78	31.81	0.00	274.97	<0.25 B[1] [<0.25 B[1]]	--	--	--	--	--	--	--	--	
MW-3	10/6/2003	--	300.69	33.80	--	266.89	**2.9**	**0.016**	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	--	--	
MW-3	12/17/2003	--	300.69	34.00	--	266.69	**2.3**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	--	--	
MW-3	3/26/2004	--	300.69	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	6/5/2004	--	300.69	32.96	--	267.73	**1.5**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-3	9/27/2004	--	300.69	34.02	--	266.67	**0.73**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-3	12/9/2004	--	300.69	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	3/24/2005	--	300.69	32.94	--	267.75	**1.1 [0.77]**	<0.01 [<0.01]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-3	5/17/2005	--	300.69	32.27	--	268.42	**0.41**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-3	9/25/2005	--	300.69	33.62	--	267.07	**1.2**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	<0.0025	--	--	
MW-3	5/17/2006	--	300.69	33.40	--	267.29	**0.55**	--	--	--	--	--	--	--	--	
MW-3	9/26/2006	--	300.69	33.69	--	267.00	**1**	--	--	--	--	--	--	--	--	
MW-3	3/29/2007	--	300.69	34.08	--	266.61	**0.61**	--	--	--	--	--	--	--	--	
MW-3	5/18/2007	--	300.69	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	9/20/2007	--	300.69	33.92	--	266.77	**0.69**	--	--	--	--	--	--	--	--	
MW-3	3/28/2008	--	300.69	33.85	--	266.84	<0.391	--	--	--	--	--	--	--	--	
MW-3	6/9/2008	--	300.69	33.08	--	267.61	**0.32**	--	--	--	--	--	--	--	--	
MW-3	9/15/2008	--	300.69	33.81	--	266.88	**0.63**	--	--	--	--	--	--	--	--	
MW-3	10/28/2008	--	300.69	33.90	--	266.79	--	--	--	--	--	--	--	--	--	
MW-3	5/6/2009	--	300.69	33.72	--	266.97	**1.5**	--	--	--	--	--	--	--	--	
MW-3	9/14/2009	--	300.69	34.17	--	266.52	**1.1**	--	--	--	--	--	--	--	--	
MW-3	4/21/2010	--	300.69	33.04	--	267.68	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 2003 to Current
Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW*** (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (mg/L)	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels[a]							**1.5**	**2.2**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**0.000075**	**0.0017**	
MW-3	7/22/2010	--	300.72	33.23	--	267.49	--	--	--	--	--	--	--	--	--	
MW-3	7/23/2010	--	300.72	--	--	--	**0.76**	--	--	--	--	--	--	--	--	
MW-3	8/3/2011	--	300.72	33.71	--	267.01	**1.7**	--	--	--	--	--	--	--	--	
MW-3	5/30/2012	--	300.72	31.61	--	269.11	**0.23 J**	--	--	--	--	--	--	<0.0000097	<0.0005	
MW-3	8/23/2012	--	300.72	33.28	--	267.44	**0.35**	--	--	--	--	--	--	--	--	
MW-3	5/6/2013	--	300.72	32.09	--	268.63	--	--	--	--	--	--	--	--	--	
MW-3	5/8/2013	--	--	--	--	--	**0.29 J**	--	--	--	--	--	--	--	--	
MW-3	5/8/2013	--	--	--	--	--	**0.42 J**	--	--	--	--	--	--	--	--	collected via hydrosleeve
MW-3	9/16/2013	--	300.72	32.59	--	268.13	**0.31 J**	--	--	--	--	--	--	--	--	
MW-3	4/29/2014	--	300.72	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	10/1/2014	--	300.72	32.92	--	267.80	**0.38 J**	--	--	--	--	--	--	--	--	
MW-3	5/6/2015	--	300.72	33.56	--	267.16	**0.52 J**	<0.010	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-3	10/20/2015	--	300.72	33.24	--	267.48	**0.35**	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-3	5/19/2016	--	300.72	33.69	--	267.03	**0.4**	--	--	--	--	--	--	--	--	
MW-3	9/28/2016	--	300.72	33.56	--	267.16	**0.49**	--	--	--	--	--	--	--	--	
MW-3	5/22/2017	--	300.72	32.94	--	267.78	**0.3**	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
MW-3	10/16/2017	--	300.72	33.41	--	267.31	**0.093 J**	--	--	--	--	--	--	--	--	
MW-3	4/19/2018	--	300.72	32.72	--	268.00	**0.16 J**	--	--	--	--	--	--	--	--	
MW-3	9/4/2018	--	298.32*	33.34	--	264.98	**0.27**	--	--	--	--	--	--	--	--	
MW-3	4/8/2019	--	306.56	33.43	0.00	273.13	--	--	--	--	--	--	--	--	--	
MW-4	10/6/2003	--	301.09	32.25	--	268.84	**0.23**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	--	--	
MW-4	12/17/2003	--	301.09	31.75	--	269.34	**0.16 [0.13]**	<0.01 [<0.01]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.002 [<0.002]	--	--	
MW-4	3/26/2004	--	301.09	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/5/2004	--	301.09	31.37	--	269.72	**3.2**	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-4	9/27/2004	--	301.09	31.03	--	270.06	**1.8 [2.0]**	<0.01 [<0.01]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	--	
MW-4	12/9/2004	--	301.09	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/24/2005	--	301.09	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/17/2005	--	301.09	30.89	--	270.20	**0.56**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-4	9/25/2005	--	301.09	31.51	--	269.58	**0.25**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	<0.0025	--	--	
MW-4	5/17/2006	--	301.09	31.30	--	269.79	**0.09**	--	--	--	--	--	--	--	--	
MW-4	9/26/2006	--	301.09	31.51	--	269.58	**1.5**	--	--	--	--	--	--	--	--	
MW-4	3/29/2007	--	301.09	31.63	--	269.46	**0.11**	--	--	--	--	--	--	--	--	
MW-4	5/18/2007	--	301.09	31.04	--	270.05	**0.98**	--	--	--	--	--	--	--	--	
MW-4	9/20/2007	--	301.09	31.60	--	269.49	**0.21**	--	--	--	--	--	--	--	--	
MW-4	3/28/2008	--	301.09	31.22	--	269.87	<0.391	--	--	--	--	--	--	--	--	
MW-4	6/9/2008	--	301.09	31.24	--	269.85	**0.026**	--	--	--	--	--	--	--	--	
MW-4	9/15/2008	--	301.09	31.31	--	269.78	**0.075**	--	--	--	--	--	--	--	--	
MW-4	10/28/2008	--	301.09	32.07	--	269.02	--	--	--	--	--	--	--	--	--	
MW-4	5/6/2009	--	301.09	31.41	--	269.68	--	--	--	--	--	--	--	--	--	
MW-4	4/21/2010	--	301.11	31.23	--	269.88	--	--	--	--	--	--	--	--	--	
MW-4	7/22/2010	--	301.11	31.44	--	269.67	--	--	--	--	--	--	--	--	--	
MW-4	8/3/2011	--	301.11	31.50	--	269.61	--	--	--	--	--	--	--	--	--	
MW-4	5/30/2012	--	301.11	30.44	--	270.67	--	--	--	--	--	--	--	--	--	
MW-4	8/23/2012	--	301.11	31.25	--	269.86	--	--	--	--	--	--	--	--	--	
MW-4	5/6/2013	--	301.11	30.59	--	270.52	--	--	--	--	--	--	--	--	--	
MW-4	9/16/2013	--	301.11	31.09	--	270.02	--	--	--	--	--	--	--	--	--	
MW-4	4/29/2014	--	301.11	31.12	--	269.99	--	--	--	--	--	--	--	--	--	
MW-4	10/1/2014	--	301.11	30.96	--	270.15	--	--	--	--	--	--	--	--	--	
MW-4	5/6/2015	--	301.11	31.41	--	269.70	**0.11 J**	<0.010	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-4	10/20/2015	--	301.11	30.25	--	270.86	**0.10 J**	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-4	5/19/2016	--	301.11	31.49	--	269.62	--	--	--	--	--	--	--	--	--	
MW-4	9/28/2016	--	301.11	31.14	--	269.97	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 2003 to Current
Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW*** (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (mg/L)	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels[a]							**1.5**	**2.2**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**0.000075**	**0.0017**	
MW-4	5/22/2017	--	301.11	31.12	--	269.99	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
MW-4	10/16/2017	--	301.11	31.41	--	269.70	--	--	--	--	--	--	--	--	--	
MW-4	4/19/2018	--	301.11	31.01	--	270.10	--	--	--	--	--	--	--	--	--	
MW-4	9/4/2018	--	301.11	31.19	--	269.92	--	--	--	--	--	--	--	--	--	
MW-4	4/8/2019	--	307.41	31.56	0.00	275.85	--	--	--	--	--	--	--	--	--	
MW-5	9/25/2005	--	301.54	31.61	--	269.93	**1.9**	<0.01	<0.0005	<0.0005	<0.0005	<0.0015	<0.0025	--	--	
MW-5	5/17/2006	--	301.54	31.49	--	270.05	<0.12 [0.22]	<0.01 [<0.01]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	9/26/2006	--	301.54	31.53	--	270.01	<0.24 [<0.24]	--	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	3/29/2007	--	301.54	31.76	--	269.78	**0.091 [0.1]**	--	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	5/18/2007	--	301.54	31.34	--	270.20	0.39 [<0.24]	--	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	<0.002 [<0.002]	--	--	--	
MW-5	9/20/2007	--	301.54	31.70	--	269.84	**0.23 [0.23]**	--	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	<0.002 [<0.002]	--	--	--	
MW-5	3/28/2008	--	301.54	31.48	--	270.06	<0.391 [<0.391]	--	<0.005 [<0.0005]	<0.0005 [<0.005]	<0.005 [<0.0005]	<0.0015 [<0.015]	--	--	--	
MW-5	6/9/2008	--	301.54	31.45	--	270.09	**0.12 [0.11]**	<0.01 [<0.01]	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	<0.002 [<0.002]	--	--	--	
MW-5	9/15/2008	--	301.54	31.58	--	269.96	**0.36 [0.30]**	0.01 [<0.01]	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	<0.002 [<0.002]	--	--	--	
MW-5	10/28/2008	--	301.54	31.61	--	269.93	--	--	--	--	--	--	--	--	--	
MW-5	5/6/2009	--	301.54	31.68	--	269.86	**0.13 J [0.059 J]**	--	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	9/14/2009	--	301.54	31.76	--	269.78	**0.19 J [0.61 J]**	0.010 J [<0.010]	--	--	--	--	--	--	--	
MW-5	4/21/2010	--	301.54	30.51	--	271.03	<0.05 [0.27 J]	<0.010 [0.012 J]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	7/22/2010	--	301.54	31.49	--	270.05	**0.80 J [0.44 J]**	<0.010 [<0.010]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	8/3/2011	--	301.54	31.70	--	269.84	**1.2 [1.2 J]**	<0.010 [0.014 J]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	5/30/2012	--	301.54	31.07	--	270.47	1.2 **[1.6]**	<0.010 [<0.010]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	<0.0000096 [<0.0000095]	<0.0005 [<0.0005]	
MW-5	8/23/2012	--	301.54	31.39	--	270.15	**1.1 [1.1]**	<0.010 [<0.010]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	--	
MW-5	5/6/2013	--	301.54	31.04	--	270.50	--	--	--	--	--	--	--	--	--	
MW-5	5/8/2013	--	--	--	--	--	**1.4 [1.5]**	**0.0090 J [0.012 J]**	**0.00068 J [0.00070 J]**	<0.000077 [<0.000077]	**0.000096 J [0.00010 J]**	<0.00022 [<0.00022]	--	--	--	
MW-5	5/8/2013	--	--	--	--	--	**1.6 [1.8]**	**0.013 J [0.0076 J]**	**0.00055 J [0.00067 J]**	<0.000077 [<0.000077]	<0.000081 [<0.000081]	<0.00022 [<0.00022]	--	--	--	collected via hydrosleeve
MW-5	9/16/2013	--	301.54	31.16	--	270.38	**0.80 [0.85]**	<0.050 [<0.050]	**0.00038 J [0.00036 J]**	<0.00023 [<0.00023]	<0.00024 [<0.00024]	<0.00072 [<0.00072]	--	--	--	
MW-5	4/29/2014	--	301.54	31.39	--	270.15	--	--	--	--	--	--	--	--	--	
MW-5	4/30/2014	--	--	--	--	--	**0.79 [0.74]**	<0.050 [<0.050]	<0.00015 [<0.00015]	<0.00011 [<0.00011]	<0.00016 [<0.00016]	<0.00040 [<0.00040]	--	--	--	
MW-5	10/1/2014	--	301.54	31.38	--	270.16	**1.0 [0.97]**	<0.050 J [<0.050 J]	**0.00056 J [0.00058 J]**	<0.00011 J [<0.00011]	<0.00016 J [<0.00016]	<0.00040 J [<0.00040]	--	--	--	
MW-5	5/6/2015	--	301.54	31.59	--	269.95	**1.3 J [1.2 J]**	<0.010 [<0.010]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	--	
MW-5	10/20/2015	--	301.54	30.94	--	271.14	**2.0 [1.9]**	**0.012 J [0.017 J]**	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	--	--	--	
MW-5	5/19/2016	--	301.54	31.61	--	269.93	**1.5 [1.6]**	**0.014 J [0.011 J]**	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	--	
MW-5	9/28/2016	--	301.54	31.46	--	270.08	**1.5 [1.8]**	<0.010 [<0.010]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	--	--	--	
MW-5	5/22/2017	--	301.54	31.33	--	270.21	**2.3 [2.3]**	--	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0005 [<0.0005]	
MW-5	10/16/2017	--	301.54	31.39	--	270.15	**1.8 J [1.7 J]**	--	--	--	--	--	--	--	--	
MW-5	4/19/2018	--	301.54	31.25	--	270.29	1.2 J **[1.5 J]**	--	--	--	--	--	--	--	--	
MW-5	9/4/2018	--	300.34**	31.44	--	268.90	**1.6 J [3.4 J]**	--	--	--	--	--	--	--	--	
MW-5	4/8/2019	--	307.78	31.53	0.00	276.25	**0.92**	--	--	--	--	--	--	--	--	
MW-6	9/25/2005	--	300.30	31.14	--	269.16	<0.24 [0.42]	**0.01 [0.01]**	**0.0005 [0.0005]**	<0.0005 [<0.0005]	<0.0005 [<0.0005]	<0.0015 [<0.0015]	<0.0025 [<0.0025]	--	--	
MW-6	5/17/2006	--	300.30	31.04	--	269.26	**0.27**	--	--	--	--	--	--	--	--	
MW-6	9/26/2006	--	300.30	31.11	--	269.19	<0.24	--	--	--	--	--	--	--	--	
MW-6	3/29/2007	--	300.30	31.15	--	269.15	**2.3**	--	--	--	--	--	--	--	--	
MW-6	5/18/2007	--	300.30	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/20/2007	--	300.30	31.24	--	269.06	**0.19**	--	--	--	--	--	--	--	--	
MW-6	3/28/2008	--	300.30	31.13	--	269.17	<0.391	--	--	--	--	--	--	--	--	
MW-6	6/9/2008	--	300.30	30.94	--	269.36	<0.69	--	--	--	--	--	--	--	--	
MW-6	9/15/2008	--	300.30	31.18	--	269.12	**0.11**	--	--	--	--	--	--	--	--	
MW-6	10/28/2008	--	300.30	31.19	--	269.11	--	--	--	--	--	--	--	--	--	
MW-6	5/6/2009	--	300.30	31.13	--	269.17	**0.11**	--	--	--	--	--	--	--	--	
MW-6	9/14/2009	--	300.30	31.31	--	268.99	**0.13 J**	--	--	--	--	--	--	--	--	
MW-6	4/21/2010	--	300.30	31.30	--	269.00	**1.1**	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 2003 to Current
Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW*** (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (mg/L)	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels[a]							**1.5**	**2.2**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**0.000075**	**0.0017**	
MW-6	7/22/2010	--	300.30	30.92	--	269.38	**0.27**	--	--	--	--	--	--	--	--	
MW-6	8/3/2011	--	300.30	31.14	--	269.16	**0.24 J**	--	--	--	--	--	--	--	--	
MW-6	5/30/2012	--	300.30	30.55	--	269.75	**0.21 J**	--	--	--	--	--	--	<0.0000096	<0.0005	
MW-6	8/23/2012	--	300.30	30.99	--	269.31	**0.050 J**	--	--	--	--	--	--	--	--	
MW-6	5/6/2013	--	300.30	30.42	--	269.88	--	--	--	--	--	--	--	--	--	
MW-6	5/8/2013	--	--	--	--	--	**0.40 J**	--	--	--	--	--	--	--	--	
MW-6	5/8/2013	--	--	--	--	--	**0.51 J**	--	--	--	--	--	--	--	--	collected via hydrosleeve
MW-6	9/16/2013	--	300.30	30.68	--	269.62	**0.5**	--	--	--	--	--	--	--	--	
MW-6	4/29/2014	--	300.30	30.81	--	269.49	--	--	--	--	--	--	--	--	--	
MW-6	4/30/2014	--	--	--	--	--	**0.10 J**	--	--	--	--	--	--	--	--	
MW-6	10/1/2014	--	300.30	30.99	--	269.31	**0.20 J**	--	--	--	--	--	--	--	--	
MW-6	5/6/2015	--	300.30	31.08	--	269.22	**0.11 J**	<0.010	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	
MW-6	10/20/2015	--	300.30	30.94	--	269.36	**0.24 J**	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	
MW-6	5/19/2016	--	300.30	31.20	--	269.10	**0.053 J**	--	--	--	--	--	--	--	--	
MW-6	9/28/2016	--	300.30	30.94	--	269.36	**0.29**	--	--	--	--	--	--	--	--	
MW-6	5/22/2017	--	300.30	30.86	--	269.44	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
MW-6	10/16/2017	--	300.30	31.01	--	269.29	--	--	--	--	--	--	--	--	--	
MW-6	4/19/2018	--	300.30	30.56	--	269.74	--	--	--	--	--	--	--	--	--	
MW-6	9/4/2018	--	300.30	31.03	--	269.27	--	--	--	--	--	--	--	-	-	
MW-6	4/8/2019	--	306.64	31.20	0.00	275.44	--	--	--	--	--	--	--	--	--	

Notes:

ID = Identification
MW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet
[BD] = Duplicate Sample Results
GW Elev = Groundwater elevation
mg/L = Milligrams per liter
ADEC = Alaska Department of Environmental Conservation
a = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)
Bold = At or above the method detection limit (MDL)
Bold and Shaded Value exceeds ADEC Groundwater Cleanup Level
<0.25 = Not detected at or above the method detection limit (MDL)
-- = Not sampled/not measured/not available
* TOC adjusted for 2.4" cut in order for lid to be placed back on.
** TOC adjusted for 1.15" cut in order for lid to be placed back on.
*** = Depth to water taken from Recent Well Survey 6/6/2019
LNAPL = Light non-aqueous phase liquid
Groundwater data from 2003 through 2007 provided by Gettler-Ryan Inc.

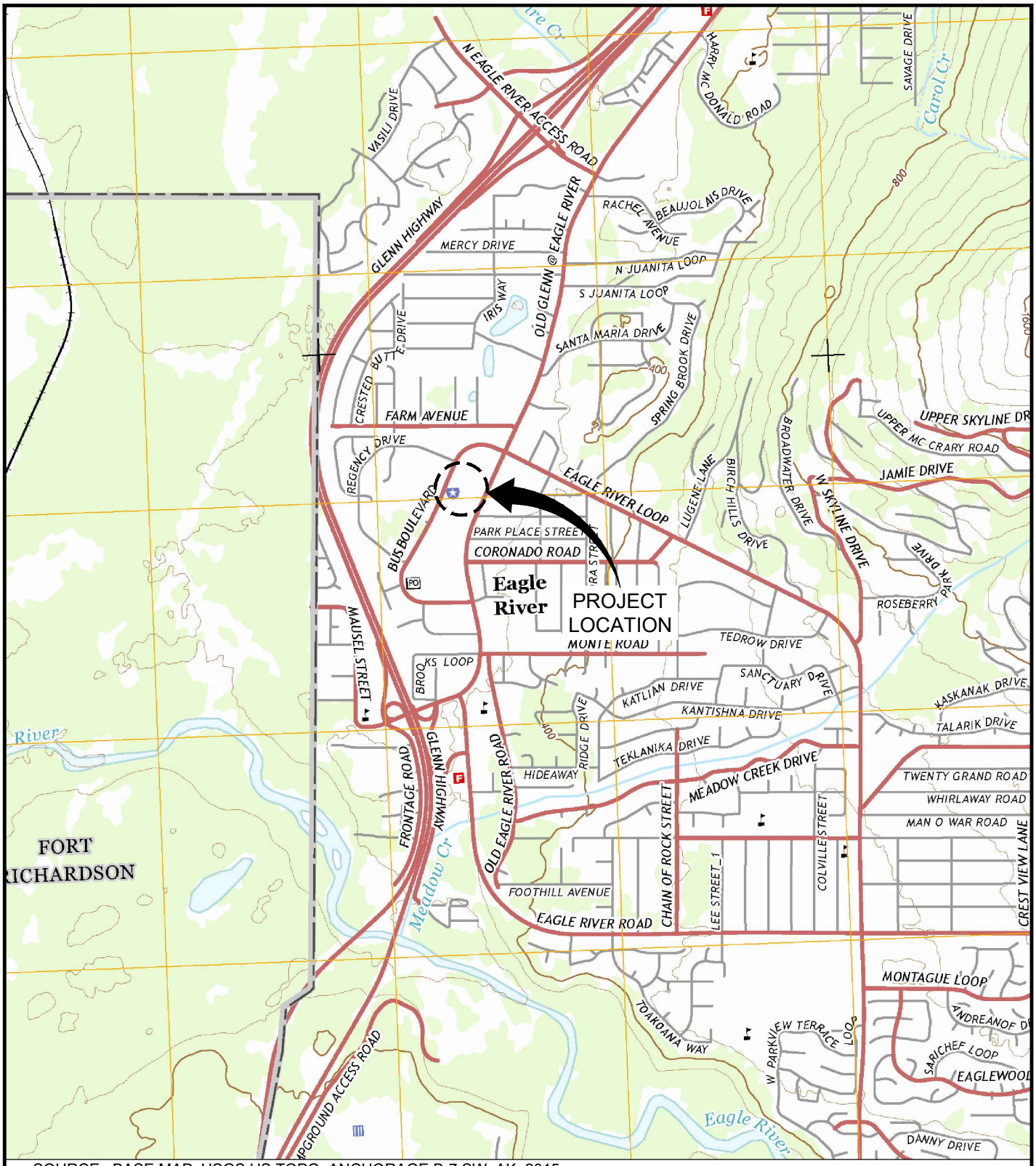
TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to United States Environmental Protection Agency (USEPA) Method AK 101
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to Alaska Series Method AK 102-SV 4/8/02
Samples analyzed by USEPA Method 524.2:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
EDB = 1,2-Dibromoethane
EDC = Ethylene Dichloride
[1] = Non detect reported to Limit of Quantitation (LOQ)
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
UB {represented as < [MDL] B} = Compound is considered non-detect at the listed value due to associated blank contamination

Table 3. Historical Groundwater Poly Aromatic Hydrocarbons (PAHs) Analytical Data
Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, 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)	Ethene (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[a]		**0.534**	**0.261**	**0.0434**	**0.0003**	**0.00025**	**0.0025**	**0.602**	**0.0008**	**0.002**	**0.00025**		**0.26**	**0.294**	**0.00019**	**0.00165**	**0.175**	**0.121**
MW-1R	5/22/2017	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	**0.00012 J**	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.00029	<0.00029	**0.00015 J**
MW-2	5/22/2017	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.000029	<0.000029	<0.0000096
MW-3	5/22/2017	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.00029	<0.00029	<0.000095
MW-4	5/22/2017	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.000029	<0.000029	<0.0000096
MW-5	5/22/2017	**0.00024 [0.00026]**	**0.000083 [0.000091]**	**0.00013 [0.00014]**	**0.000011 J [0.000010 J]**	**0.000010 J** [<0.0000098]	**0.000027 J [0.000027 J]**	**0.000025 J [0.000023 J]**	<0.0000097[<0.0000098]	**0.000040 J [0.000039 J]**	<0.0000097 [<0.0000098]	**0.000041 J [0.000040 J]**	**0.000041 J [0.000040 J]**	**0.0018 [0.0020]**	0.000010 J [<0.0000098]	**0.0014 [0.00082]**	**0.0012 [0.0013]**	**0.000068 [0.000065]**
MW-6	5/22/2017	<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	**0.00059**	<0.000029	<0.0000097

Notes:
ID = Identification
MW = Groundwater monitoring well
PAHs = Poly aromatic hydrocarbons by Method SW8270
ADEC = Alaska Department of Environmental Conservation
[a] = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)
Bold = At or above the method detection limit (MDL)
Bold and Shaded Value exceeds ADEC Groundwater Cleanup Level
mg/L = milligrams per liter
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
- = Not measured / not analyzed
<0.000097= Constituent not detected above method detection limit (MDL)
[BD] = Duplicate Sample Results

FIGURES



SOURCE : BASE MAP USGS US TOPO; ANCHORAGE B-7 SW, AK, 2015.

N

0 2,000' 4,000'

APPROXIMATE SCALE 1 in. = 2,000 ft.

AREA LOCATION

ALASKA

CHEVRON-BRANDED SERVICE STATION 91252
11836 OLD GLENN HIGHWAY
EAGLE RIVER, ALASKA

SITE LOCATION MAP

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FIGURE 1

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\nb8986\BIM 360\Arcadis\ANA - CHEVRON CORPORATION\Project Files\91252 EAGLE RIVER, AK\2019\GWRAK000.1252\01-DWG\GWM - Fig 1 - Site Location Map.dwg LAYOUT: 1 SAVED: 11/18/2019 3:15 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB
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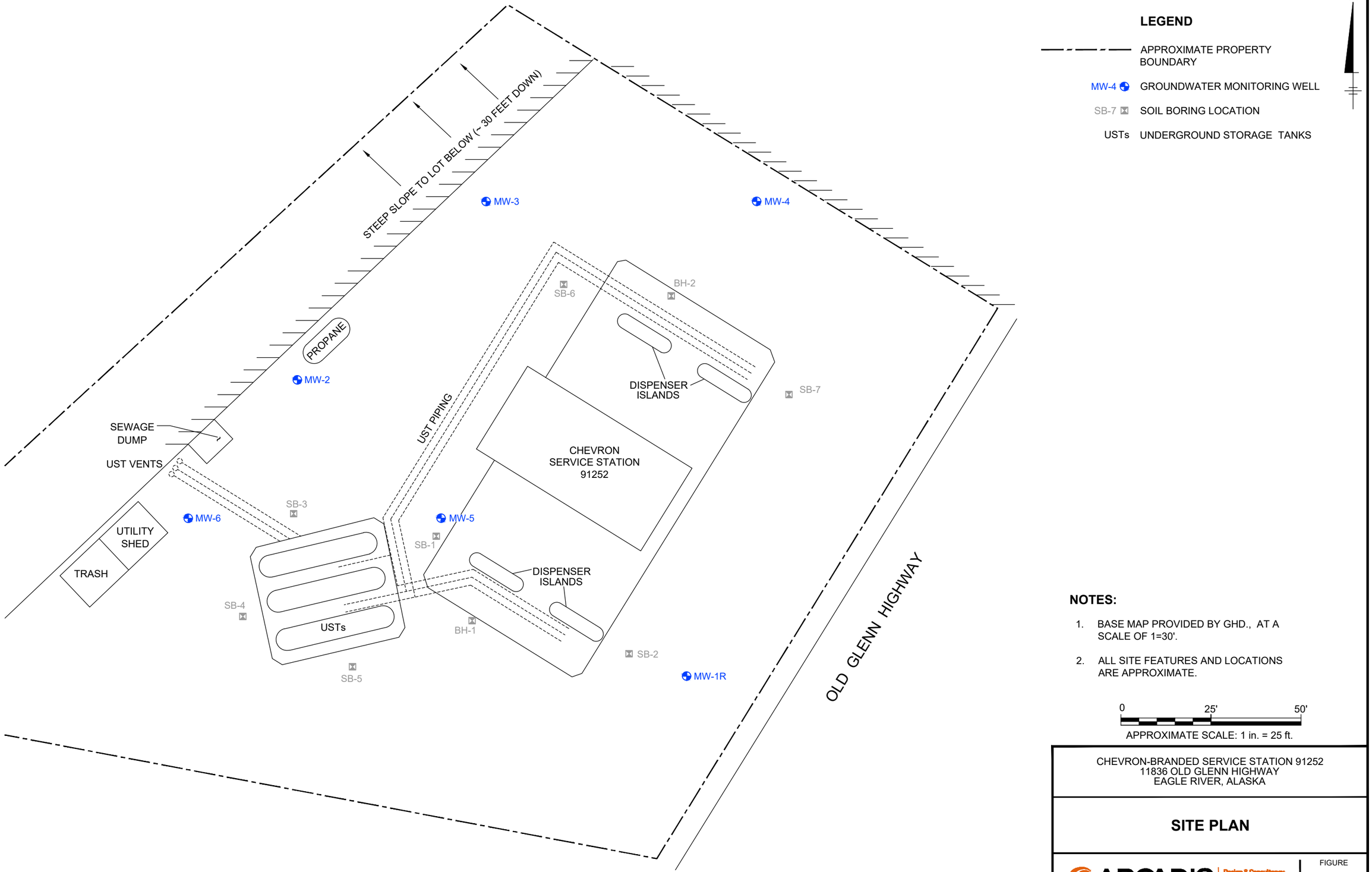


NOTES:

1. BASE MAP PROVIDED BY GHD., AT A SCALE OF 1=30'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 25' 50'

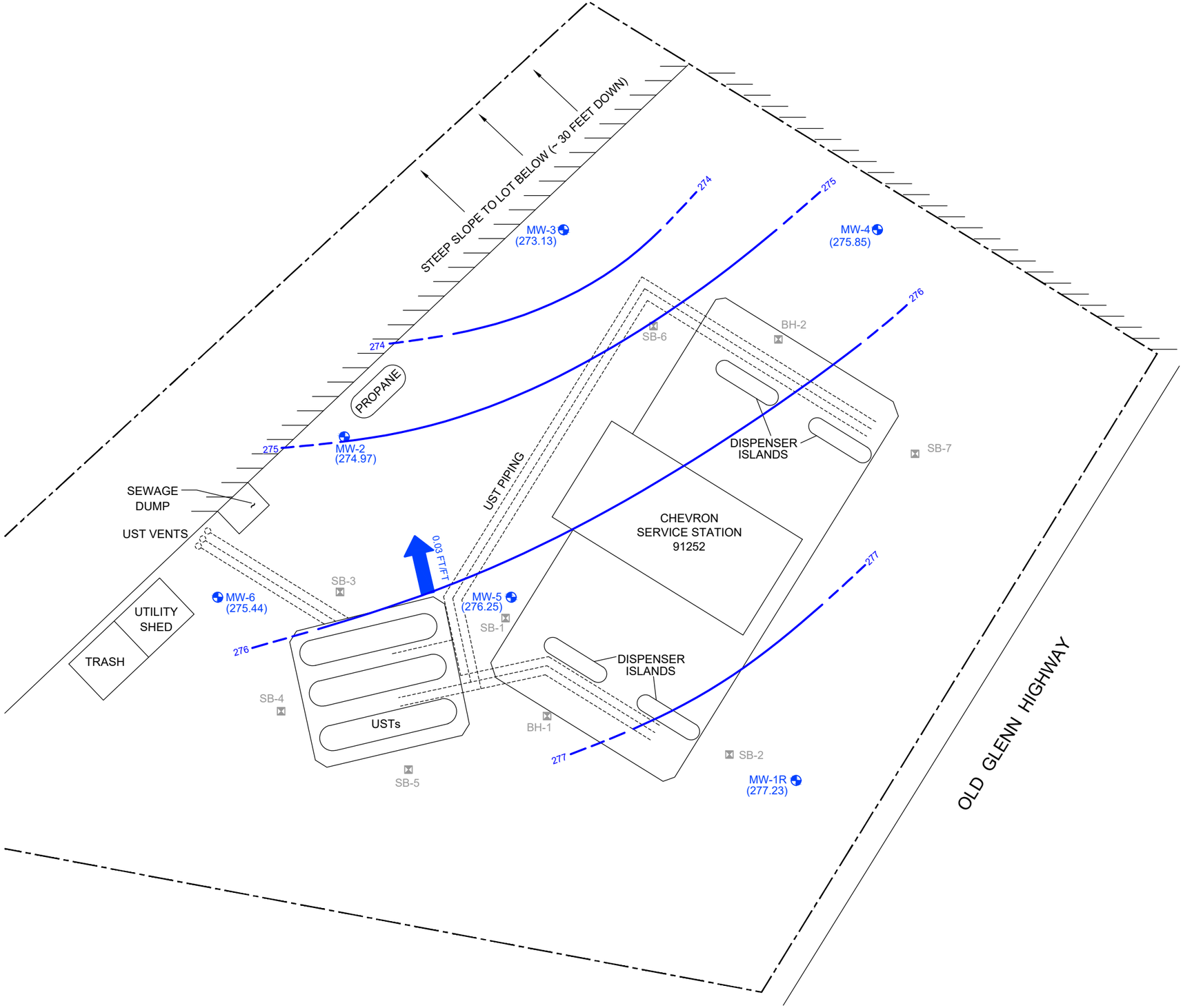
APPROXIMATE SCALE: 1 in. = 25 ft.

CHEVRON-BRANDED SERVICE STATION 91252
11836 OLD GLENN HIGHWAY
EAGLE RIVER, ALASKA

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

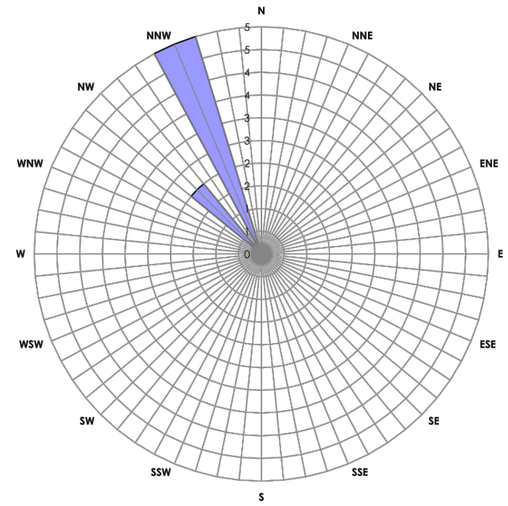
FIGURE 2



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW-4 — GROUNDWATER MONITORING WELL
- SB-7 — SOIL BORING LOCATION
- (277.23) — GROUNDWATER ELEVATION (FEET)
- 277 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- 0.03 FT/FT — APPROXIMATE HYDRAULIC GRADIENT (FEET/FOOT)

N



NOTES:

1. BASE MAP PROVIDED BY GHD., AT A SCALE OF 1=30'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 25' 50'

APPROXIMATE SCALE: 1 in. = 25 ft.

CHEVRON-BRANDED SERVICE STATION 91252
11836 OLD GLENN HIGHWAY
EAGLE RIVER, ALASKA

GROUNDWATER ELEVATION CONTOUR MAP JUNE 6, 2019

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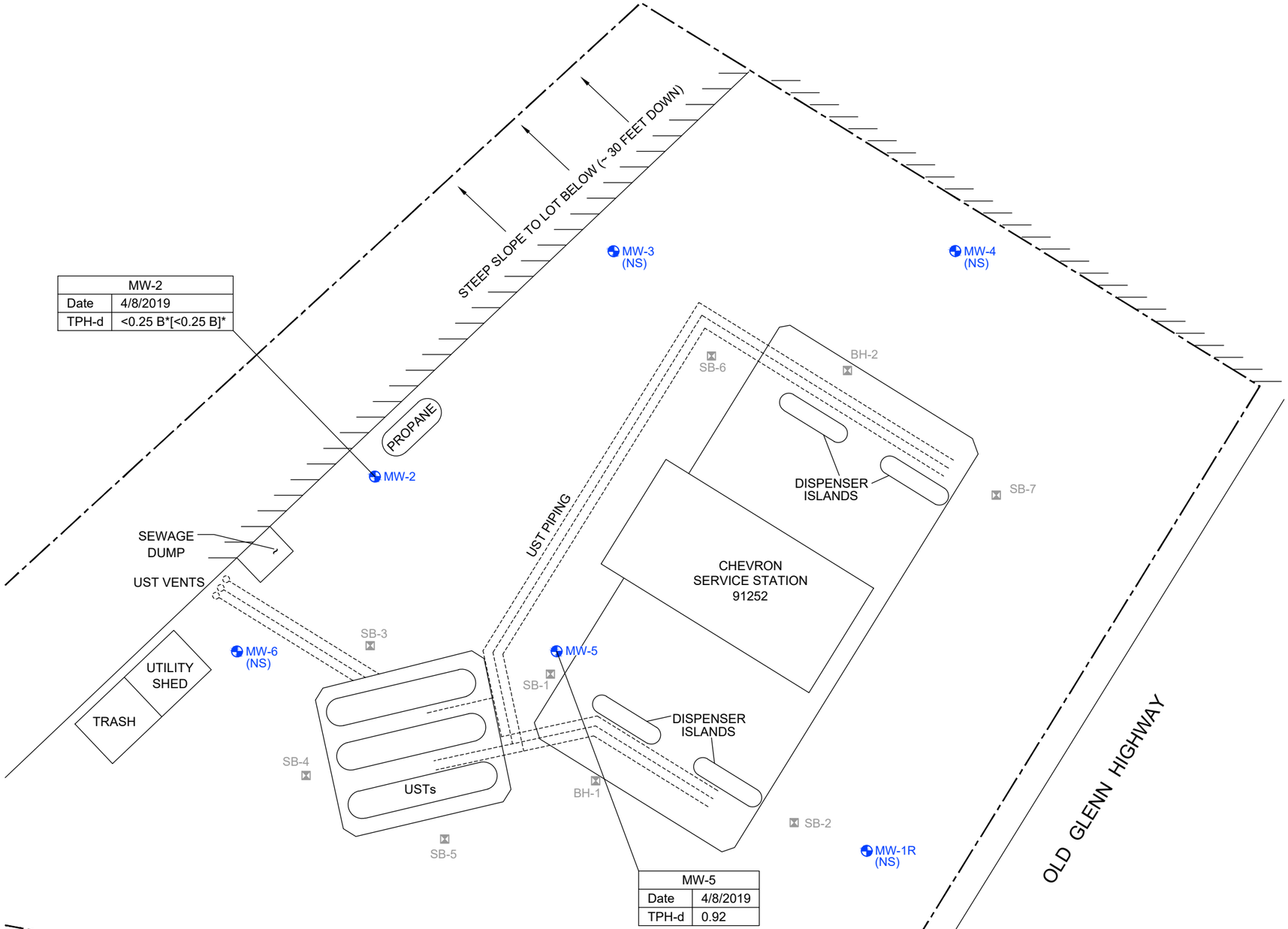
FIGURE 3



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW-4 — GROUNDWATER MONITORING WELL
- SB-7 — SOIL BORING LOCATION
- TPH-d — TOTAL PETROLEUM HYDROCARBONS AS DIESEL
- UB {REPRESENTED... AS < [MDL] B} — COMPOUND IS CONSIDERED NON-DETECT AT THE LISTED VALUE DUE TO ASSOCIATED BLANK. CONTAMINATION
- [ ] — BLIND DUPLICATE SAMPLE
- * — NON DETECT REPORTED TO LIMIT OF QUANTITATION (LOQ)

N

NOTES:

1. BASE MAP PROVIDED BY GHD., AT A SCALE OF 1=30'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. ALL VALUES REPORTED IN MILLIGRAMS PER LITER (mg/L)

0 25' 50'

APPROXIMATE SCALE: 1 in. = 25 ft.

CHEVRON SERVICE STATION 91252
11836 OLD GLENN HIGHWAY
EAGLE RIVER, ALASKA

GROUNDWATER ANALYTICAL RESULT MAP APRIL 8, 2019

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FIGURE 4

APPENDIX A

Site Background and History

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Chevron Environmental Management Company

Appendix A:

Site History and Background

Chevron Facility 91252
11836 Old Glenn Highway
Eagle River, Alaska
ADEC File No: 2107.26.003
Hazard ID No: 23705

October 30, 2019

Appendix A: 91252 Site Description and Background

1 91252 SITE BACKGROUND AND HISTORY

1.1 Site Description and Vicinity

The Chevron facility 91252 (site) is currently a service station located at 11836 Old Glenn Highway in Eagle River, Alaska. Site facilities consist of three underground storage tanks (USTs), fuel dispenser islands, piping, and a station building. The surrounding properties are primarily commercial, and the site is bordered by businesses to the north, south, east and west.

1.2 Site History

The site was upgraded in August and September 1995, at which time three gasoline USTs, product lines, and dispenser islands were replaced.

2 CURRENT SITE MONITORING ACTIVITIES

The site currently has a network of 6 groundwater monitoring wells (MW-1R, and MW-2 through MW-6) which are monitored semiannually. Recent historical sampling had no detectable levels of diesel-range organics (DRO) above ADEC TLs for MW-2 and MW-3. Monitoring well MW-5 has historically had detections exceeding cleanup levels of DRO (1.5 mg/L).

3 GEOLOGY AND HYDROGEOLOGY

3.1 Site Hydrogeology

The site is in south-central Alaska, east of Cook Inlet and Eagle River. The static groundwater depths at the site have historically ranged between 16.00 and 33.56 feet below top of casing (ft btoc) and has historically flowed to the north.

REFERENCES

GHD Inc. 2018. First Semiannual 2018 Groundwater Monitoring Report, Chevron-Branded Service Station 91252, 11836 Old Glenn Highway, Eagle River, AK. June 12

APPENDIX B

Field Data Sheets

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Daily Log

Project Name 91252 Chevron Project Number 91252 Page 1 of 2

Site Location 11836 Old Glenn Hwy Eagle River, AK Date 4/8/19

Field Personnel David Beaudoin Evan Wojcik / Weather -30 - 40°F Mostly Sunny

Time	Description of Activities
7:00	Loaded vehicle with equipment
730	Completed vehicle inspection and JSA for driving
800	Depart office for Home Depot for cargo net and supplies
810	Arrive at Home Depot
820	Depart for site
900	Arrive at site and complete tailgate safety and meeting form
910	Perform site walk and clear off monitoring wells
	Well gauging table

Well ID	DTP (FT. BTOC)*	DTW (Ft BTOC)*	Notes	PID (ppm)≠
1005 MW-1R	NA	30.48	Well Vault Good ✓	0.0
0941 MW-2	NA	32.38	Well has Frost Jacked Vault No Bolts	0.0
0949 MW-3	NA	33.92	No Bolts on Vault concrete cracked	0.0
0954 MW-4	NA	31.77	Bolts dont thread	8.9
1010 MW-5	NA	31.71	well vault good	2.5
0935 MW-6	NA	31.45	~~Well top broke~~ bolt bb broken missing one bolt monument concrete cracked	0.0

Notes * BTOC - below top of casing
≠ ppm - parts per million
NA - Not Applicable

1100	Discussion with Brad (service station operator) in regards to earthquake damage that was and could have been done. Further communication needed for later visits / sample events / well repairs / etc. Received start work from Nicole Monroe.
12:00	Begin sampling MW-2 for DRO AK 102 using low flow bladder pump
125	MW-2 sampling finished - BD-1-W-190408 collected from MW-2 for DRO Analysis via AK 02

1245	Set up around MW-5 and began sampling using Low flow bladder pump sampling for DRO AK 102
1300	Finish sampling MW-5
1330	Set up around MW-3 and began sampling using Low flow bladder pump sampling for DRO AK 102 – MW-3 purged dry and was not sampled PM (Nicole Monroe) to notify her of inability to sample MW-3.
	All purge water was processed through a GAC bucket & discharge on site (grass area – North of parking lot)
	Samples preserved in cooler on ice until placed in cold storage @ Arcadis office @ 880 H Street Suite 100 Anchorage, AK 99501
1425	Depart site got approval to use dumpster for one bag of garbage. Approval
	from attendant.
1500	Arrive Back @ office place Samples in office refrigerator – Unload Vehicle – Scan Form / Note.

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. Chevron 91252 | Well ID MW-2 | Date 04/08/19

Project Name/Location 11836 Old Glenn Hwy Eagle River AK | Weather sunny 40°F

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) 25-40 | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 32.38 | Total Depth (ft-bmp) 39.1 | Water Column (ft) 6.7 | Gallons in Well 1.1

MP Elevation ——— | Pump Intake (ft-bmp) ~33.5 | Purge Method: Low Flow Pump Centrifugal Submersible Other Bladder | Sample Method Low Flow

Pump On/Off 1140 / 1217 | Volumes Purged ~~not set~~ ~1 volume

Sample Time: Label 1215 | Gallons Purged ~1.1 gallon

Purge Start 1158 | Purge End 1212 | Replicate/ Code No. BD-1-W-190408 | 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
1158	0	300	32.51	—	—	—	—	—	—	—	—	—
1200	2	300	32.55	0.2	8.01	1066	424.1	5.53	6.9	48.8	cloudy	—
1203	5	300	32.52	0.4	7.54	1037	322.1	5.18	6.8	55.2	cloudy	—
1206	8	300	32.54	0.6	7.32	1004	325.6	5.07	6.8	59.6	cloudy	—
1209	11	300	32.56	0.8	7.23	984	334.2	5.00	6.6	64.3	cloudy	—
1212	14	300	32.56	1.0	7.23	974	141.2	5.16	6.6	67.0	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
DRO AK 102	250 mL amber glass	2	HCl

Comments Blind Duplicate Sample Collected from MW-2 BD-1-W-190408 for DRO AK102

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: Service Station parking lot | Well Locked at Arrival: Yes / (No)

Condition of Well: needs repairs | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: N/A

GW Sample Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. Chevron 91252 | Well ID MW-3 | Date 04.08.2019

Project Name/Location 11836 Old Glen Hwy Eagle River, AK | Weather Mostly Sunny, 40s

Measuring Pt. Description Top of Casing | Screen Setting (ft-bmp) 29-39' | Casing Diameter (in.) 2 | Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 33.92 | Total Depth (ft-bmp) 38' | Water Column (ft) 4 | Gallons in Well 0.7

MP Elevation — | Pump Intake (ft-bmp) — | Purge Method: low flow pump ✓ Centrifugal ___ Submersible ___ Other Bladder | Sample Method low flow

Pump On/Off 1244 1355 | Volumes Purged ~~<0.5~~ ~~<1~~ <1

Sample Time: Label NA | Purge Start 1335 | Purge End 1345 | Gallons Purged <0.5 gallons | 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
1337	0	300	35.36	0.2	6.67	2841	2502.7	2.44	7.1	33.9	cloudy	—
1340	3	300	* —		6.55	2783	2034.9	2.75	7.2	36.2	cloudy	—
1343	6	300	* —		6.53	2783	1903.6	2.20	7.9	39.4	cloudy	—
Stabilization Calculations (±) Not Sampled												
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~~ DGB	~~250 ml Amber Glass~~ DGB	~~2~~ DGB	~~HCl~~ DGB

Well went Dry } Did not recharge to sampleable level.

Comments * initial purge rate 300 mL/min, drawdown dropped below pump, pump lowered approx. 1ft purge rate decreased to ≈200 mL/min, purge well dry no samples collected

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: Service Station Parking Lot | Well Locked at Arrival: Yes / (No)

Condition of Well: Need Repairs | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: NA

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. Chevron 91252 Well ID MW-5 Date 04.0

Project Name/Location 11836 Old Glen Hwy, Eagle River, AK Weather Mostly Sunny, 40s

Measuring Pt. Description Top of Casing Screen Setting (ft-bmp) 29-44 Casing Diameter (in.) 2 Well Material ✓ PVC ___ SS

Static Water Level (ft-bmp) 31.71 Total Depth (ft-bmp) 42.70 Water Column (ft) 10.99 Gallons in Well 1.76

MP Elevation ___ Pump Intake (ft-bmp) ~32.5 Purge Method: Low Flow Centrifugal Submersible Other Bladder Sample Method Low Flow

Pump On/Off 1240/1258 Volumes Purged <1 Volume

Sample Time: Label 1255 Gallons Purged <1 gal

Purge Start 1240 Replicate/ Code No. ___ Sampled by DGB

Purge End 1252

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
1243	0	300	31.88	0.2	6.78	4469	321.6	2.44	7.1	-12.8	cloudy	—
1246	3	300	31.93	0.4	6.74	4215	260.5	1.85	7.0	-14.7	cloudy	—
1249	6	300	31.95	0.6	6.75	3986	222.8	3.04	7.0	-17.6	cloudy	—
1252	9	300	31.96	0.8	6.77	3863	251.4	3.02	6.9	-18.5	cloudy	—
Stabilization Calculations (±)					0.04				<3%	1.9		
					0.01				<3%	2.9		
					0.02				<3%	0.9		
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 Glass	2	HCl

Comments GW parameter Stabilization based on pH, Temp. & Redox

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: Service Station Parking 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: NA

GW Samp Form

10/15/2018

ARCADIS | Design & Consultancy for natural and built assets

Daily Log

Project Name 91252 Project Number 91252 Page 1 of 1

Site Location 11836 Old Glenn Hwy Eagle River, AK Date 6/6/19

Field Personnel D. Beaudoin, E. Wojcik, McLane surveyors

Time	Description of Activities		
0730	Arrive on site		
	Well ID	DTW	notes
	MW-1R	30.35	
	MW-2	31.81	
	MW-3	33.43	
	MW-4	31.56	
	MW-6	31.20	
	MW-5	31.53	
1000	Depart site		

APPENDIX C

Laboratory Analytical Results

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Type III Data Package

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Project: 91252
Groundwater and Water Samples
Collected on 04/08/19

SDG# LSV38

GROUP	SAMPLE NUMBERS
2038286	1030699-1030702

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:** **05/09/2019**

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.

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Table of Contents for SDG# LSV38

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Sample Reference List for SDG Number LSV38 with a Data Package Type of III

11964 - Chevron

Project: 91252

Lab Sample Number	Client Sample ID	Collection Date	Date Received
1030699	MW-2-W-190408	04/08/2019 12:15	04/10/2019 10:20
1030700	MW-5-W-190408	04/08/2019 12:55	04/10/2019 10:20
1030701	EQB-W-1-190408	04/08/2019 11:00	04/10/2019 10:20
1030702	BD-1-WD-190408	04/08/2019 00:00	04/10/2019 10:20

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Sample pH Log

SDG: LSV38

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
1030699	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:58:05AM	1382
1030699	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:58:26AM	1382
1030700	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:58:18AM	1382
1030700	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:58:15AM	1382
1030701	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:57:54AM	1382
1030701	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:58:23AM	1382
1030702	030A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:56:52AM	1382
1030702	030B	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/11/2019 9:58:10AM	1382

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

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13222 AK 102/103-SV

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.

13225 Mini-Ext. AK 102/103SV,DRO/RRO

An aliquot of sample is extracted with methylene chloride using either separatory funnel extraction or micro extraction technique.

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

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 08, 2019 10:24

Project: 91252

Account #: 11964
Group Number: 2038286
SDG: LSV38
PO Number: 0015308801
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#
MW-2-W-190408 Grab Groundwater	04/08/2019 12:15	1030699
MW-5-W-190408 Grab Groundwater	04/08/2019 12:55	1030700
EQB-W-1-190408 Grab Water	04/08/2019 11:00	1030701
BD-1-WD-190408 Grab Groundwater	04/08/2019	1030702

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

Sample Description: **MW-2-W-190408 Grab Groundwater**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019 12:15
SDG#: LSV38-01

Chevron
ELLE Sample #: GW 1030699
ELLE Group #: 2038286
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.066 J	0.051	0.25	1

The recovery for the method blank surrogate and the sample surrogate(s) is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 20:04	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Sample Description: **MW-5-W-190408 Grab Groundwater**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019 12:55
SDG#: LSV38-02

Chevron
ELLE Sample #: GW 1030700
ELLE Group #: 2038286
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.92	0.051	0.26	1

The recovery for the method blank surrogate is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 20:30	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Sample Description: **EQB-W-1-190408 Grab Water**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019 11:00
SDG#: LSV38-03EB

Chevron
ELLE Sample #: **WW 1030701**
ELLE Group #: **2038286**
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.071 J	0.052	0.26	1

The recovery for the method blank surrogate and the sample surrogate(s) is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 20:57	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Sample Description: **BD-1-WD-190408 Grab Groundwater**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019
SDG#: LSV38-04FD

Chevron
ELLE Sample #: GW 1030702
ELLE Group #: 2038286
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.077 J	0.051	0.25	1

The recovery for the method blank surrogate and the sample surrogate(s) is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 21:24	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Quality Control Summary

Client Name: Chevron
Reported: 05/08/2019 10:24

Group Number: 2038286

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
	mg/l	mg/l	mg/l
Batch number: 191070024A	Sample number(s): 1030699-1030702		
C10-<C25 DRO	N.D.	0.050	0.25

LCS/LCSD

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
Batch number: 191070024A	Sample number(s): 1030699-1030702								
C10-<C25 DRO	1.00	0.851	1.00	0.822	85	82	75-125	4	20

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: AK 102-SV DRO
Batch number: 191070024A

	Orthoterphenyl	n-Triacontane-d62
1030699	103	30*
1030700	94	57
1030701	102	41*
1030702	101	38*
Limits:	50-150	50-150

	Orthoterphenyl	n-Triacontane-d62
Blank	96	21*
LCS	106	64
LCSD	103	61
Limits:	60-120	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

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Acct. # 119164 For Eurofins Lancaster Laboratories Environmental use only Group # 2058280 Sample # 10300699-702

Client Information

Facility # 91252 WBS 07.09-Groundwater Sampling/Monitoring

Site Address 11836 Old Glen Hwy Eagle River, AK

Chevron PM ~~Nicole Monroe~~ Erik Hetrick Lead Consultant Arcadis

Consultant/Office Arcadis

Consultant Project Mgr. Nicole Monroe

Sampler David Braudoin

State where samples were collected: AK For Compliance: Yes ☒ No ☐

Matrix

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

Analyses Requested

Preservation and Filtration Codes

SCR #: _____

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total Number of Containers	BTEX + MTBE 8021 ☐ 8260 ☐ Naphth ☐	8260 full scan	Oxygenates ____	TPH-GRO 8015 ☐ 8260 ☐	TPH-DRO without Silica Gel Cleanup ☐	TPH-DRO with Silica Gel Cleanup ☐	VPH ☐ EPH ☐ Method ____	Lead Total ☐ Diss. ☐ Method ____
MW-2-W-190408	04/08/19	1215	X		2					X			
MW-5-W-190408	04/08/19	~~1235~~ 1235	X		2					X			
EQB-W-1-190408	04/08/19	1100	X		2					X			
BD-1-W-190408	04/08/19	—	X		2					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
1	[signature]	4.08.19	1500	Arcadis Cold Storage	4.08.19	1500
2	[signature]	4.09.19	0900	FedEx		
3						

Relinquished by Commercial Carrier: UPS ____ FedEx X Other ____

Received by [signature] Date 4/10/19 Time 1020

Temperature Upon Receipt 1.2 °C

Custody Seals Intact? Yes No

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 245994

Group Number(s): 2038286

Client: Chevron c/o Arcadis

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	04/10/2019 10:20
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

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:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 14:21 on 04/10/2019

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	DT146	1.2	DT	Wet	Y	Bagged	N

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Lancaster, PA 17605-2425
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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.

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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.

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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.

DRO/RRO by GC Data

Case Narrative/Conformance Summary

DRO/RRO by GC

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Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV38

EPH/Miscellaneous GC

Fraction: DRO/RRO by GC

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1030699	MW-2-W-190408	X		1	
1030700	MW-5-W-190408	X		1	
1030701	EQB-W-1-190408	X		1	Equipment Blank
1030702	BD-1-WD-190408	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:

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.

Surrogate

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

Batch#: 191070024A (Sample number(s): 1030699-1030702)
The recovery(ies) for the following surrogate(s) were below the acceptance window: n-Triacontane-d62 (1030699, 1030701, 1030702, PBLK24107)

Case Narrative/Conformance Summary

CLIENT: Chevron
SDG: LSV38

EPH/Miscellaneous GC

Fraction: DRO/RRO by GC

(Sample number(s): 1030699, 1030700, 1030701-1030702: Analysis: 13222)
The recovery for the method blank surrogate is outside
the method acceptance limits as noted on the QC Summary.
Since the recovery is within our statistically derived
limits the data is reported.

SAMPLE ANALYSIS:

No 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

DRO/RRO by GC

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Quality Control Reference List
EPH/Miscellaneous GC

CLIENT: Chevron
SDG: LSV38

Fraction: DRO/RRO by GC

Analysis	Batch Number	Sample Number	Analysis Date
AK 102-SV DRO	191070024A	PBLK24107	04/22/2019 18:43
		LCS24107	04/22/2019 19:10
		LCSD24107	04/22/2019 19:37
		1030699	04/22/2019 20:04
		1030700	04/22/2019 20:30
		1030701	04/22/2019 20:57
		1030702	04/22/2019 21:24

Quality Control Summary
Method Blank
EPH/Miscellaneous GC
SDG: LSV38
Matrix: LIQUID

Fraction: DRO/RRO by GC

191070024A / PBLK24107 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
C10-<C25 DRO	04/22/19	N.D.	mg/l	0.050	0.25

Quality Control Summary
Surrogates
EPH/Miscellaneous GC
SDG: LSV38
Matrix: LIQUID

Fraction: DRO/RRO by GC

191070024A	n-Triacontane-d62		Orthoterphenyl	
	Spike Added	0.020048 mg/l	Spike Added	0.020001 mg/l
Sample	% Recovery	Limits	% Recovery	Limits
PBLK24107	21 *	60 - 120	96	60 - 120
LCS24107	64	60 - 120	106	60 - 120
LCSD24107	61	60 - 120	103	60 - 120
1030699	30 *	50 - 150	103	50 - 150
1030700	57	50 - 150	94	50 - 150
1030701	41 *	50 - 150	102	50 - 150
1030702	38 *	50 - 150	101	50 - 150

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

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

SDG: LSV38
Matrix: LIQUID

EPH/Miscellaneous GC
Fraction: DRO/RRO by GC

LCS: LCS24107 LCSD: LCSD24107 **Analyte**	Batch: **191070024A** (Sample number(s): 1030699-1030702) **Spike Added mg/l**	**LCS Conc mg/l**	**LCSD Conc mg/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
C10-<C25 DRO	1.00	0.851	0.822	85	82	75-125	4	20

Fraction: DRO/RRO by GC

13222: AK 102-SV DRO Analyte Name	Default MDL	Default LOQ	Units
C10-<C25 DRO	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: 19507A Calibration File: 304AKR1815601

GC Column (1) : DB5 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 6/5/2018 6/6/2018

COMPOUND	RT OF STANDARDS LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MIDPOINT RT	RT WINDOW FROM	TO
Capric Acid						6.61	6.51	6.71
o-Terphenyl	10.43	10.43	10.43	10.43	10.43	10.43	10.38	10.48
n-Triacontane-d62	14.08	14.08	14.08	14.08	14.08	14.09	14.04	14.14

No Capric Acid
Imvld
6/6/18

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Calibration File: 304AKR1815601

GC Column (1) : DB5 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 6/5/2018 6/6/2018

COMPOUND	CALIBRATION FACTORS						%RSD
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	
Capric Acid	5.03E+04	5.78E+04	6.92E+04	6.04E+04	6.45E+04	6.04E+04	12
o-Terphenyl	1.00E+05	1.00E+05	1.02E+05	1.01E+05	1.02E+05	1.01E+05	1
n-Triacontane-d62	6.77E+04	6.80E+04	6.85E+04	6.88E+04	6.95E+04	6.85E+04	1

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Calibration File: 304AKR1815601

GC Column (1) : DB5 ID: 0.32 (mm)

ICAL Date(s) Analyzed: 6/5/2018 6/6/2018

COMPOUND	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	AVERAGE CF	LEVEL	AMOUNT	PEAK AREA	%RSD
C10-C25	1		2.55	12.84	✓ 86341	88452	1	20	1726815	2.48
					87560		2	100	8755967	
					87854		3	225	19767090	
					88366		4	350	30928070	
					92142		5	500	46071020	
C25-C36 RRO	1		12.84	15.66	✓ 47744	51723	1	36	1718774	5.65
					50655		2	180	9117961	
					52295		3	400	20918050	
					52111		4	660	34393340	
					55811		5	900	50229850	

File Name: Y:\CP30\304AKR1815601.CAL
Version: 4

Creator: HEW02027
Description: ALASKA 102/103-Mini
Reason for change:

6/6/18

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

*No Capric Acid *

Method of calculating data point averages: Current update equal to cal data
Print calibration update report

All levels are normal data points.

1 C10-<C25 DRO
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: 88452.42

Single peak quantification by area

Y = 88452.42 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9972521
Average error: 1.669%
Average CF: 88452.42
RSD: 2.479%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	20	1726815	86340.75	-2.387	Manual	6/6/2018 1:12:15 PM
2	100	8755967	87559.67	-1.009	Manual	6/6/2018 1:12:24 PM
3	225	1.976709E+07	87853.73	-0.677	Manual	6/6/2018 1:12:34 PM
4	350	3.092807E+07	88365.91	-0.098	Manual	6/6/2018 1:12:43 PM
5	500	4.607102E+07	92142.04	4.171	Manual	6/6/2018 1:12:52 PM

2 C25-C36 RRO
Expected retention time: 0.002 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: 51723.25

Single peak quantification by area

Y = 51723.25 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9909853
Average error: 3.903%
Average CF: 51723.25
RSD: 5.650%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	36	1718774	47743.72	-7.694	Manual	6/6/2018 1:12:18 PM
2	180	9117961	50655.34	-2.065	Manual	6/6/2018 1:12:28 PM
3	400	2.091805E+07	52295.13	1.106	Manual	6/6/2018 1:12:37 PM
4	660	3.439334E+07	52111.12	0.750	Manual	6/6/2018 1:12:46 PM
5	900	5.022985E+07	55810.94	7.903	Manual	6/6/2018 1:12:55 PM

3 C10
Expected retention time (frozen): 2.65 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	12/30/2016 1:51:21 PM
2	(-1)	0	--	--	Manual	12/30/2016 1:51:20 PM
3	(-1)	0	--	--	Manual	12/30/2016 1:51:18 PM
4	(-1)	0	--	--	Manual	12/30/2016 1:51:17 PM
5	(-1)	0	--	--	Manual	12/30/2016 1:51:15 PM

4 Capric Acid
Expected retention time (frozen): 6.61 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: 60439.16

Single peak quantification by area

Y = 60439.16 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9903587
Average error: 8.519%
Average CF: 60439.16
RSD: 11.832%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	(25131.72)	50263.44	-16.836	Manual	9/26/2017 4:47:47 PM
2	1	(57786.3)	57786.3	-4.389	Manual	9/26/2017 4:47:55 PM
3	3	(207699.4)	69233.13	14.550	Manual	9/26/2017 4:48:05 PM
4	5	(301976.3)	60395.26	-0.073	Manual	9/26/2017 4:48:13 PM
5	10	(645176.4)	64517.64	6.748	Manual	9/26/2017 4:48:21 PM

5 o-Terphenyl SURR
Expected retention time (frozen): 10.43 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: 101063.7

Single peak quantification by area

Y = 101063.7 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9998091
Average error: 0.778%
Average CF: 101063.7
RSD: 0.904%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	50066.37	100132.7	-0.921	Manual	6/6/2018 5:18:01 PM
2	2	200986.5	100493.3	-0.564	Manual	6/6/2018 5:18:13 PM
3	4	408195.8	102049	0.975	Manual	6/6/2018 5:18:25 PM
4	8	804803.8	100600.5	-0.458	Manual	6/6/2018 5:18:36 PM
5	10	1020433	102043.3	0.969	Manual	6/6/2018 5:18:46 PM

6 C24
Expected retention time (frozen): 12.65 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	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0029.BND	6/8/2016 10:06:55 AM
2	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0030.BND	6/8/2016 10:07:01 AM
3	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0031.BND	6/8/2016 10:07:07 AM
4	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0032.BND	6/8/2016 10:07:13 AM
5	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0033.BND	6/8/2016 10:07:19 AM

7 C25
Expected retention time (frozen): 12.94 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	12/30/2016 1:51:04 PM
2	(-1)	0	--	--	Manual	12/30/2016 1:51:07 PM
3	(-1)	0	--	--	Manual	12/30/2016 1:51:09 PM
4	(-1)	0	--	--	Manual	12/30/2016 1:51:10 PM
5	(-1)	0	--	--	Manual	12/30/2016 1:51:14 PM

8 n-Triacontane-d62
Expected retention time (frozen): 14.09 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: 68518.55

Single peak quantification by area

Y = 68518.55 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9996455
Average error: 0.780%
Average CF: 68518.55
RSD: 1.034%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	33861.54	67723.08	-1.161	Manual	6/6/2018 5:18:06 PM

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
2	2	136044.7	68022.35	-0.724	Manual	6/6/2018 5:18:18 PM
3	4	273894.9	68473.73	-0.065	Manual	6/6/2018 5:18:29 PM
4	8	550759.6	68844.95	0.476	Manual	6/6/2018 5:18:40 PM
5	10	695286.2	69528.62	1.474	Manual	6/6/2018 5:18:52 PM

9 C36

Expected retention time (frozen): 15.56 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	12/30/2016 1:52:34 PM
2	(-1)	0	--	--	Manual	12/30/2016 1:52:33 PM
3	(-1)	0	--	--	Manual	12/30/2016 1:52:32 PM
4	(-1)	0	--	--	Manual	12/30/2016 1:52:30 PM
5	(-1)	0	--	--	Manual	12/30/2016 1:52:27 PM

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Calibration File: 304AKR1815605

GC Column (1) : DB5 ID: 0.32 (mm) ICAL 304AKR1815601

ICAL Date(s) Analyzed: 6/5/2018 6/6/2018

COMPOUND	RT OF STANDARDS LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MIDPOINT RT	RT WINDOW FROM	TO
Capric Acid						6.46	6.36	6.56
o-Terphenyl						10.02	9.97	10.07
n-Triacontane-d62						13.85	13.80	13.90

– not updated per lab 4/23/19

Retention time update only using file(s) 30ALSK18156016.005.RAW analyzed on 4/22/2019 18:17:1

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Calibration File: 304AKR1815605

GC Column (1) : DB5 ID: 0.32 (mm) ICAL 304AKR1815601

ICAL Date(s) Analyzed: 6/5/2018 6/6/2018

COMPOUND	CALIBRATION FACTORS						
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
Capric Acid	5.03E+04	5.78E+04	6.92E+04	6.04E+04	6.45E+04	6.04E+04	12
o-Terphenyl	1.00E+05	1.00E+05	1.02E+05	1.01E+05	1.02E+05	1.01E+05	1
n-Triacontane-d62	6.77E+04	6.80E+04	6.85E+04	6.88E+04	6.95E+04	6.85E+04	1

Retention time update only using file(s) 30ALSK18156016.005.RAW analyzed on 4/22/2019 18:17:1

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Calibration File: 304AKR1815605

GC Column (1) : DB5 ID: 0.32 (mm) ICAL 304AKR1815601

ICAL Date(s) Analyzed: 6/5/2018 6/6/2018

COMPOUND	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	AVERAGE CF	LEVEL	AMOUNT	PEAK AREA	%RSD
C10-C25	1		2.23	12.61	86341	88452	1	20	1726815	2.48
					87560	88452	2	100	8755967	2.48
					87854		3	225	19767090	
					88366		4	350	30928070	
					92142		5	500	46071020	
C25-C36 RRO	1		12.61	15.37	47744	51723	1	36	1718774	5.65
					50655	51723	2	180	9117961	5.65
					52295		3	400	20918050	
					52111		4	660	34393340	
					55811		5	900	50229850	

Retention time update only using file(s) 30ALSK18156016.005.RAW analyzed on 4/22/2019 18:17:1

File Name: Y:\CP30\304AKR18[illegible]5605.CAL
Version: 3

Creator: HEW02027
Description: ALASKA 102/103-Mini
Reason for change:

Nicholas Rossi
Nicholas Rossi
Senior Chemist

APR 2 3 2019

capric 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

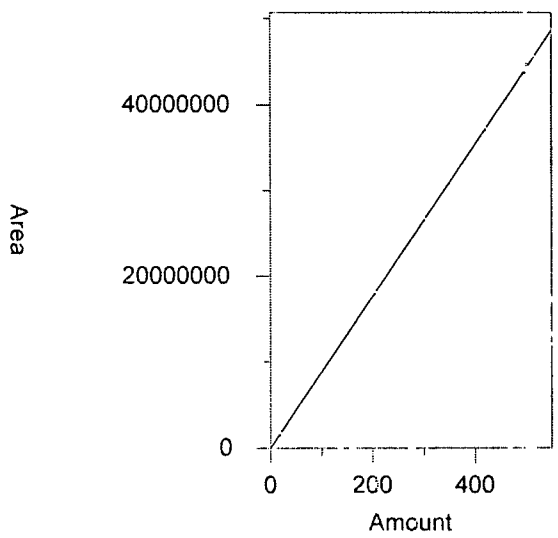
Jamie L. Brittain
Jamie L. Brittain
Senior Chemist

APR 2 9 2019

Method of calculating data point averages: Current update equal to cal data
Print calibration update report

All levels are normal data points.

1 C10-<C25 DRO



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: 88452.42

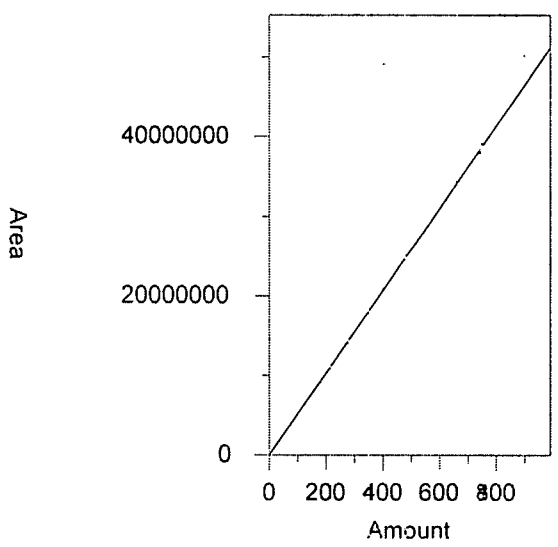
Single peak quantification by area

Y = 88452.42 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9972521
Average error: 1.669%
Average CF: 88452.42
RSD: 2.479%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	20	1726815	86340.75	-2.38	Manual	6/6/2018 1:12:15 PM
2	100	8755967	87559.67	-1.00	Manual	6/6/2018 1:12:24 PM
3	225	1.976709E+07	87853.73	-0.67	Manual	6/6/2018 1:12:34 PM
4	350	3.092807E+07	88365.91	-0.09	Manual	6/6/2018 1:12:43 PM
5	500	4.607102E+07	92142.04	4.17	Manual	6/6/2018 1:12:52 PM

2 C25-C36 RRO



Expected retention time: 0.002 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: 51723.25

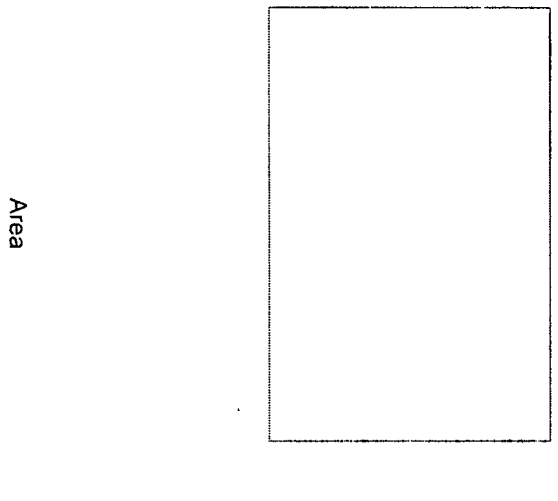
Single peak quantification by area

Y = 51723.25 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9909853
Average error: 3.903%
Average CF: 51723.25
RSD: 5.650%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	36	1718774	47743.72	-7.694	Manual	6/6/2018 1:12:18 PM
2	180	9117961	50655.34	-2.065	Manual	6/6/2018 1:12:28 PM
3	400	2.091805E+07	52295.13	1.106	Manual	6/6/2018 1:12:37 PM
4	660	3.439334E+07	52111.12	0.750	Manual	6/6/2018 1:12:46 PM
5	900	5.022985E+07	55810.94	7.903	Manual	6/6/2018 1:12:55 PM

3 C10



Expected retention time (frozen): 2.33 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

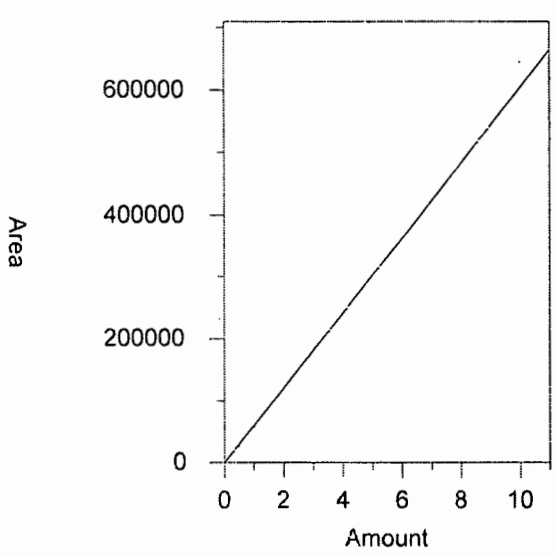
Single peak quantification by area

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	12/30/2016 1:51:21 PM
2	(-1)	0	--	--	Manual	12/30/2016 1:51:20 PM
3	(-1)	0	--	--	Manual	12/30/2016 1:51:18 PM
4	(-1)	0	--	--	Manual	12/30/2016 1:51:17 PM
5	(-1)	0	--	--	Manual	12/30/2016 1:51:15 PM

4 Capric Acid



Expected retention time (frozen): 6.46 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: 60439.16

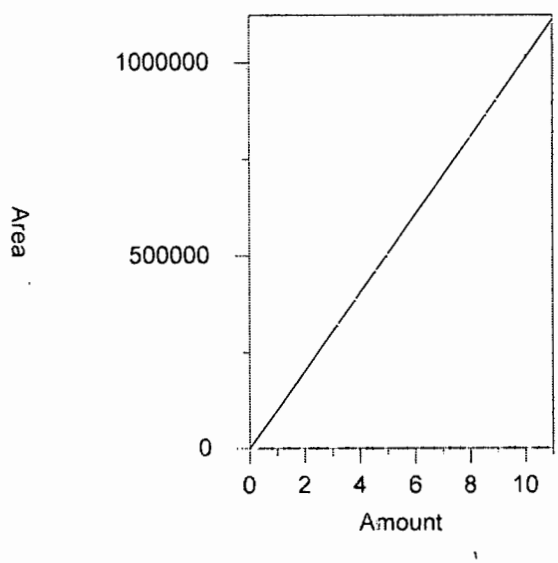
Single peak quantification by area

Y = 60439.16 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9903587
Average error: 8.519%
Average CF: 60439.16
RSD: 11.832%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	(25131.72)	50263.44	-16.836	Manual	9/26/2017 4:47:47 PM
2	1	(57786.3)	57786.3	-4.389	Manual	9/26/2017 4:47:55 PM
3	3	(207699.4)	69233.13	14.550	Manual	9/26/2017 4:48:05 PM
4	5	(301976.3)	60395.26	-0.073	Manual	9/26/2017 4:48:13 PM
5	10	(645176.4)	64517.64	6.748	Manual	9/26/2017 4:48:21 PM

5 o-Terphenyl SURR



Expected retention time (frozen): 10.02 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: 101063.7

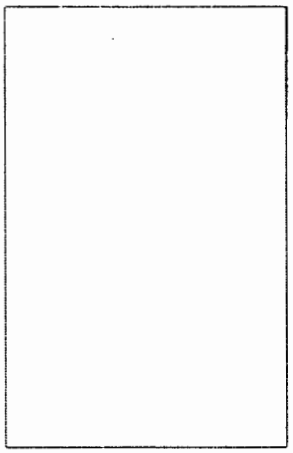
Single peak quantification by area

Y = 101063.7 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9998091
Average error: 0.778%
Average CF: 101063.7
RSD: 0.904%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	50066.37	100132.7	-0.921	Manual	6/6/2018 5:18:01 PM
2	2	200986.5	100493.3	-0.564	Manual	6/6/2018 5:18:13 PM
3	4	408195.8	102049	0.975	Manual	6/6/2018 5:18:25 PM
4	8	804803.8	100600.5	-0.458	Manual	6/6/2018 5:18:36 PM
5	10	1020433	102043.3	0.969	Manual	6/6/2018 5:18:46 PM

6 C24



Expected retention time (frozen): 12.41 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

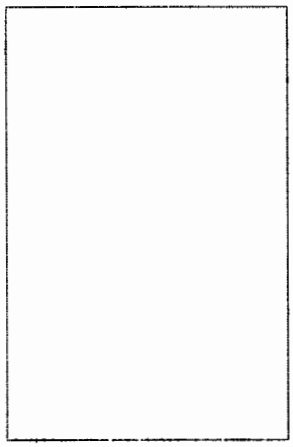
Single peak quantification by area

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	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0029.BND	6/8/2016 10:06:55 AM
2	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0030.BND	6/8/2016 10:07:01 AM
3	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0031.BND	6/8/2016 10:07:07 AM
4	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0032.BND	6/8/2016 10:07:13 AM
5	(-1)	0	--	--	\\USLAN-CHROMPERF\ACTIVE-DATA\CP30\A30160.0033.BND	6/8/2016 10:07:19 AM

7 C25



Expected retention time (frozen): 12.71 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

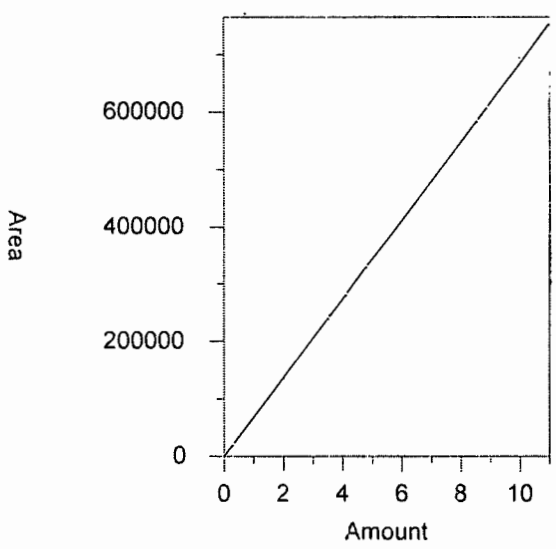
Single peak quantification by area

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	12/30/2016 1:51:04 PM
2	(-1)	0	--	--	Manual	12/30/2016 1:51:07 PM
3	(-1)	0	--	--	Manual	12/30/2016 1:51:09 PM
4	(-1)	0	--	--	Manual	12/30/2016 1:51:10 PM
5	(-1)	0	--	--	Manual	12/30/2016 1:51:14 PM

8 n-Triacontane-d62



Expected retention time (frozen): 13.85 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: 68518.55

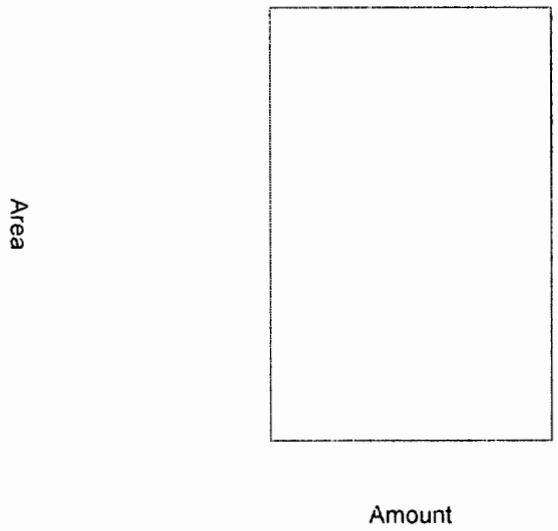
Single peak quantification by area

Y = 68518.55 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9996455
Average error: 0.780%
Average CF: 68518.55
RSD: 1.034%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	0.5	33861.54	67723.08	-1.161	Manual	6/6/2018 5:18:06 PM
2	2	136044.7	68022.35	-0.724	Manual	6/6/2018 5:18:18 PM
3	4	273894.9	68473.73	-0.065	Manual	6/6/2018 5:18:29 PM
4	8	550759.6	68844.95	0.476	Manual	6/6/2018 5:18:40 PM
5	10	695286.2	69528.62	1.474	Manual	6/6/2018 5:18:52 PM

9 C36



Expected retention time (frozen): 15.27 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	12/30/2016 1:52:34 PM
2	(-1)	0	--	--	Manual	12/30/2016 1:52:33 PM
3	(-1)	0	--	--	Manual	12/30/2016 1:52:32 PM
4	(-1)	0	--	--	Manual	12/30/2016 1:52:30 PM
5	(-1)	0	--	--	Manual	12/30/2016 1:52:27 PM

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Date Analyzed: 06/06/18

GC Column (1) : DB5 ID: .32 (mm) Time Analyzed: 15:57

Lab File ID: 30ALSK18156001.0025.RAW Initial Calibration: 304AKR1815601

Lab Standard ID: 4AKCRBC Init. Calib Date(s): 06/05/18 06/05/18

Calibration: 304AKR1815601

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)		NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.43	10.38	10.48	4.91		5.03	-2
n-Triacontane-d62	14.08	14.04	14.14	4.29		5.01	-14
C25-C36 RRO		12.84	15.66	375.32	✓	402.50	-7
C10-C25		2.55	12.84	231.81	✓	225.50	3

Compounds 4

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Date Analyzed: 04/22/19

GC Column (1) : DB5 ID: .32 (mm) Time Analyzed: 18:17

Lab File ID: 30ALSK18156016.005.RAW Initial Calibration: 304AKR1815601

Lab Standard ID: 4ARCXJL Init. Calib Date(s): 06/05/18 06/06/18

Calibration: 304AKR1815605

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.02	9.97	10.07	5.12	5.05	2
n-Triacontane-d62	13.85	13.80	13.90	3.41	5.01	-32
C10-C25		2.23	12.61	186.11	225.84	-18
C25-C36 RRO		12.61	15.37	335.38	400.01	-16

Compounds 4

Retention time update only using file(s) 30ALSK18156016.005.RAW analyzed on 4/22/2019 18:17:1

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories Contract:

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

Instrument: 19507A Date Analyzed: 04/22/19

GC Column (1) : DB5 ID: .32 (mm) Time Analyzed: 21:51

Lab File ID: 30ALSK18156016.013.RAW Initial Calibration: 304AKR1815601

Lab Standard ID: 4ARCXJM Init. Calib Date(s): 06/05/18 06/06/18

Calibration: 304AKR1815605

COMPOUND	RT	RT WINDOW FROM	TO	CALC AMOUNT (mg/l)	NOM AMOUNT (mg/l)	%D
o-Terphenyl	10.02	9.97	10.07	4.60	5.05	-9
n-Triacontane-d62	13.84	13.80	13.90	3.56	5.01	-29
C25-C36 RRO		12.61	15.37	385.65	400.01	-4
C10-C25		2.23	12.61	179.79	225.84	-20

Compounds 4

Retention time update only using file(s) 30ALSK18156016.005.RAW analyzed on 4/22/2019 18:17:1

Eurofins Lancaster Laboratories
EPH/Miscellaneous GC
Runlog for 30ALSK18156001
Instrument CP30--19507A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP30\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
2027	30ALSK18156001.0001	CONDITIONER		6/5/18 14:06	1815599999	1.00
2027	30ALSK18156001.0002	CONDITIONER		6/5/18 14:34	1815599999	1.00
2027	30ALSK18156001.0003	CONDITIONER		6/5/18 15:02	1815599999	1.00
2027	30ALSK18156001.0004	IBLKX1832BB	PIBLKAA	6/5/18 15:29	1815599999	2.00
2027	30ALSK18156001.0005	AKRTX1832A	AKRTXZX	6/5/18 15:57	1815599999	1.00
2027	30ALSK18156001.0006	4AKS11832A	4AKS1AA	6/5/18 16:25	1815599999	1.00
2027	30ALSK18156001.0007	4AKS21832A	4AKS2AA	6/5/18 16:53	1815599999	1.00
2027	30ALSK18156001.0008	4AKS31832A	4AKS3AA	6/5/18 17:20	1815599999	1.00
2027	30ALSK18156001.0009	4AKS41832A	4AKS4AA	6/5/18 17:48	1815599999	1.00
2027	30ALSK18156001.0010	4AKS51832A	4AKS5AA	6/5/18 18:16	1815599999	1.00
2027	30ALSK18156001.0011	4AKR11832A	4AKR1AA	6/5/18 18:44	1815599999	1.00
2027	30ALSK18156001.0012	4AKR21832A	4AKR2AA	6/5/18 19:11	1815599999	1.00
2027	30ALSK18156001.0013	4AKR31832A	4AKR3AA	6/5/18 19:39	1815599999	1.00
2027	30ALSK18156001.0014	4AKR41832A	4AKR4AA	6/5/18 20:07	1815599999	1.00
2027	30ALSK18156001.0015	4AKR51832A	4AKR5AA	6/5/18 20:34	1815599999	1.00
2027	30ALSK18156001.0016	MECL2	AA	6/5/18 21:02	1815599999	1.00
2027	30ALSK18156001.0017	4AKMDX1832A	4AKMDAW	6/5/18 21:30	1815599999	1.00
2027	30ALSK18156001.0018	4AKCRX1832A	4AKCRBB	6/5/18 21:58	1815599999	1.00
2027	30ALSK18156001.0019	AKRTX1832A	AKRTXZY	6/5/18 22:25	1815599999	1.00
2027	30ALSK18156001.0020	CONDITIONER		6/6/18 13:39	1815599999	1.00
2027	30ALSK18156001.0021	CONDITIONER		6/6/18 14:06	1815599999	1.00
2027	30ALSK18156001.0022	AKRTX1832A	AKRTXZX	6/6/18 14:34	1815599999	1.00
2027	30ALSK18156001.0023	4AKS11832A	4AKS1AA	6/6/18 15:02	1815699999	1.00
2027	30ALSK18156001.0024	4AKMDX1832A	4AKMDAX	6/6/18 15:29	1815699999	1.00
2027	30ALSK18156001.0025	4AKCRX1832A	4AKCRBC	6/6/18 15:57	1815699999	1.00
2027	30ALSK18156001.0026	AKRTX1832A	AKRTXZX	6/6/18 16:25	1815599999	1.00

Eurofins Lancaster Laboratories
EPH/Miscellaneous GC
Runlog for 30ALSK18156016
Instrument CP30--19507A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP30\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	30ALSK18156016.001	CONDITIONER		4/22/19 16:30	1911199999	1.00
1826	30ALSK18156016.002	CONDITIONER		4/22/19 16:57	1911199999	1.00
1826	30ALSK18156016.003	CONDITIONER		4/22/19 17:23	1911199999	1.00
1826	30ALSK18156016.004	AKRTX1832G	AKRTXKA	4/22/19 17:50	1911199999	1.00
1826	30ALSK18156016.005	4ARCX1832D	4ARCXJL	4/22/19 18:17	1911199999	1.00
1826	30ALSK18156016.006	BLANKA 4/17/19	PBLK24107	4/22/19 18:43	191070024A	2.00
1826	30ALSK18156016.007	LCSA 4/17/19	LCS24107	4/22/19 19:10	191070024A	2.00
1826	30ALSK18156016.008	LCSDA 4/17/19	LCSD24107	4/22/19 19:37	191070024A	2.00
1826	30ALSK18156016.009	1030699	L3801	4/22/19 20:04	191070024A	2.00
1826	30ALSK18156016.010	1030700	L3802	4/22/19 20:30	191070024A	2.00
1826	30ALSK18156016.011	1030701	L3803	4/22/19 20:57	191070024A	2.00
1826	30ALSK18156016.012	1030702	L3804	4/22/19 21:24	191070024A	2.00
1826	30ALSK18156016.013	4ARCX1832D	4ARCXJM	4/22/19 21:51	1911199999	1.00
1826	30ALSK18156016.014	AKRTX1832G	AKRTXKB	4/22/19 22:17	1911199999	1.00

Eurofins Lancaster Laboratories
EPH/Miscellaneous GC
Runlog for 30ALSK18156016
Instrument CP30--19507A

Data Directory Path is - \\USLAN-CHROMPERFECT\ACTIVE-DATA\CP30\

Operator	File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1826	30ALSK18156016.001	CONDITIONER		4/22/19 16:30	1911199999	1.00
1826	30ALSK18156016.002	CONDITIONER		4/22/19 16:57	1911199999	1.00
1826	30ALSK18156016.003	CONDITIONER		4/22/19 17:23	1911199999	1.00
1826	30ALSK18156016.004	AKRTX1832G	AKRTXKA	4/22/19 17:50	1911199999	1.00
1826	30ALSK18156016.005	4ARCX1832D	4ARCXJL	4/22/19 18:17	1911199999	1.00
1826	30ALSK18156016.006	BLANKA 4/17/19	PBLK24107	4/22/19 18:43	191070024A	2.00
1826	30ALSK18156016.007	LCSA 4/17/19	LCS24107	4/22/19 19:10	191070024A	2.00
1826	30ALSK18156016.008	LCSDA 4/17/19	LCSD24107	4/22/19 19:37	191070024A	2.00
1826	30ALSK18156016.009	1030699	L3801	4/22/19 20:04	191070024A	2.00
1826	30ALSK18156016.010	1030700	L3802	4/22/19 20:30	191070024A	2.00
1826	30ALSK18156016.011	1030701	L3803	4/22/19 20:57	191070024A	2.00
1826	30ALSK18156016.012	1030702	L3804	4/22/19 21:24	191070024A	2.00
1826	30ALSK18156016.013	4ARCX1832D	4ARCXJM	4/22/19 21:51	1911199999	1.00
1826	30ALSK18156016.014	AKRTX1832G	AKRTXKB	4/22/19 22:17	1911199999	1.00

Sample Data

DRO/RRO by GC

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1030699 L3801 Sample ID: AA **Batchnumber:** 191070024A
Sample Amount: 247. Total Volume: 2. ml Analyst: 1826 SDG: LSV38 State: AK
Analyses: 13222

Injection Summary

Injected on : 4/22/2019 20:04:02
Instrument : CP30--19507A
Result file : 30ALSK18156016.009.RAW
Calibration files : 304AKR1815605.CAL
Method files : AKRSUM30F.MET REAKR30F.MET
Setting : 304AKR1815605(V)

Surrogate Recoveries

N-TRIACONTANE-D62	*30% (50-150)	Conc.: 0.005989
O-TERPHENYL SURR	103% (50-150)	Conc.: 0.020764

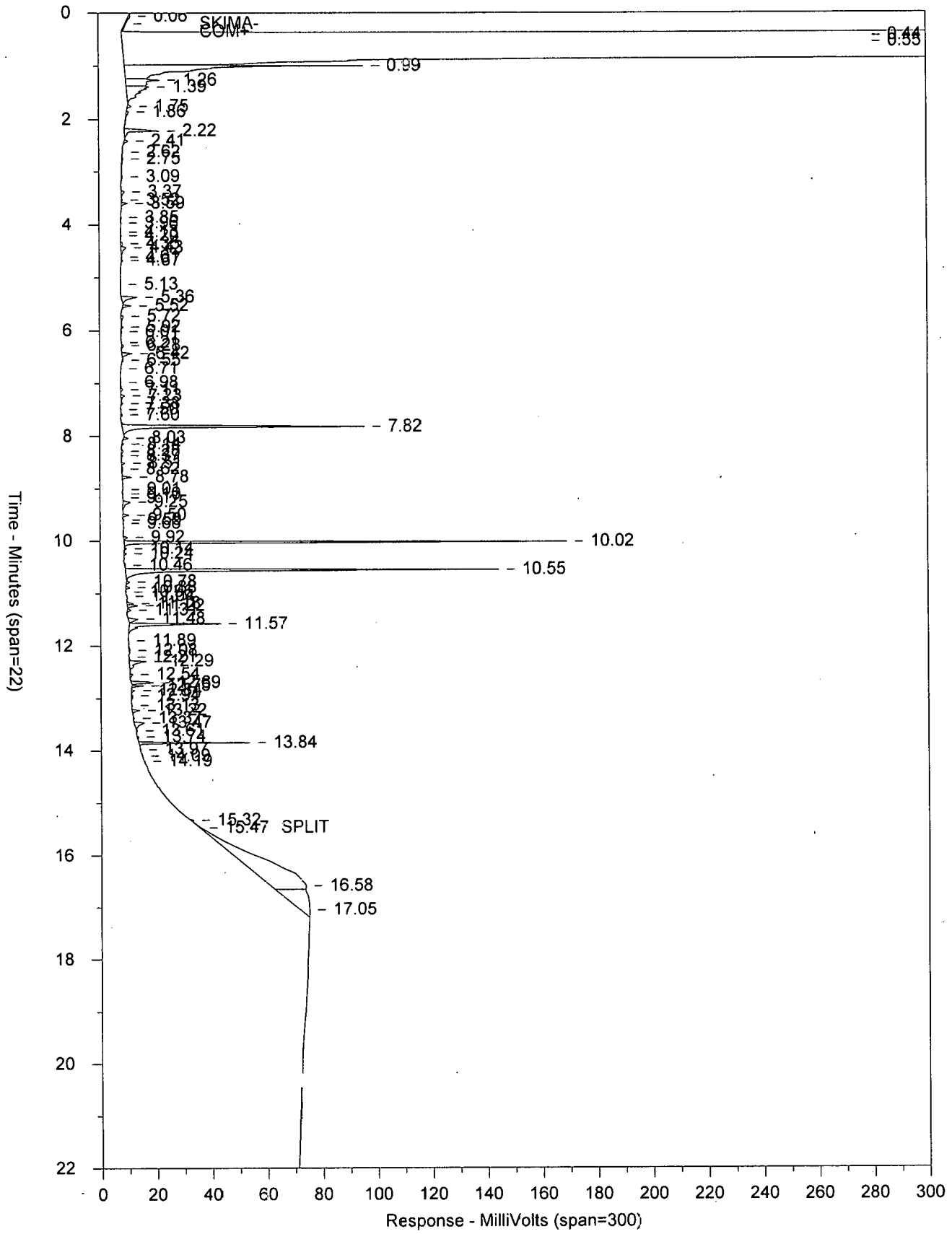
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	2.23 - 12.61	983318	0.0663	<0.253	0.0506	J	ppm
C25-C36 RRO	12.61 - 15.37	104427	0.0084	<0.253	<0.082		ppm
o-Terphenyl SURR	10.02 (9.97 - 10.07)	259166	0.0208				ppm
n-Triacontane-d62	13.84 (13.80 - 13.90)	50680	0.0060				ppm

Comments: _____

Reviewed by: Nicholas Rossi Nicholas Rossi Senior Chemist
Date: MAY 06 2019

Verified by: Jamie L. Brillhart 5/6/19 Jamie L. Brillhart Senior Chemist
Date: MAY 08 2019

Sample: 1030699 AAL3801 T 191070024A 13222 AK 102-SV 4/8/02
File: 30ALSK18156016.009.RAW



Sample ID: 1030699 AAL3801 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 8:04:02 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190; 30C/min to 340; hold 6.5mins
Sample Amount: 247
Dilution Factor: 2
Analyst: 1826

Peak	Ret. Time (min)	Peak Name	Amount (PPM)	Area
33	6.42	Capric Acid	0.001	8617.792
58	10.02	o-Terphenyl SURR	0.021	259165.9
77	12.69	C25	0.000	18052.83
87	13.84	n-Triacontane-d62	0.006	50680.03

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
DRO (C10-<C25)	2.23	12.61	5.414	983317.6
o-Terphenyl SURR	9.97	10.07	5.129	259165.9
RRO (C25-C36)	12.61	15.37	1.479	104427.3
N-Triacontane-d62	13.80	13.90	1.479	50680.0

********** RESULTS TABLE **********

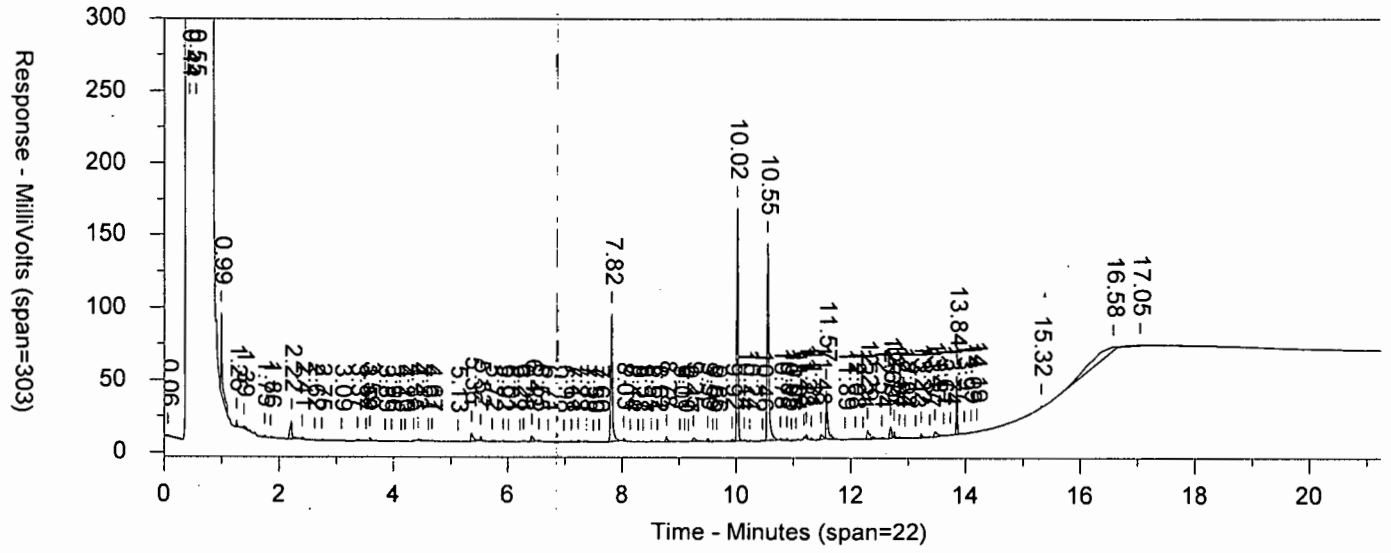
C10-<C25 ADJUSTED DRO AREA = 724151.8
C10-<C25 PRELIMINARY DRO AREA = 0.066 PPM

C25-C36 ADJUSTED RRO AREA = 53747.280
C25-C36 PRELIMINARY RRO AMT = 0.008 PPM

FILES:

Area File: 30ALSK18156016.009.RAW
Method File: AKRSUM30F.MET
Calibration File: 304AKR1815605.CAL
Format File: AKRSUM30F.FMT
Area file created on: 4/22/2019 8:26:04 PM
File reported on: 4/30/2019 at 4:20:51 PM

Sample:1030699 AAL3801 T 191070024A 13222 AK 102-SV 4/8/02 Replot
File: 30ALSK18156016.009.RAW



Sample: 1030699 AAL3801 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Volume Inj. per Column: 4uL
Oven Parameters: 60C for 2mins; 15C/min to 190C; 30C/min to 340C; hold 6.5mins
Sample Amount: 247
Analyst: 1826

Injected on: 4/22/2019 8:04:02 PM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area
33	6.42	Capric Acid	0.001	8617.792
58	10.02	o-Terphenyl SURR	0.021	259165.9
77	12.69	C25	0.000	18052.83
87	13.84	n-Triacontane-d62	0.006	50680.03

Slice Number	Start Time	Stop Time	Slice Amount	Slice Area

O-TERPHENYL % RECOVERY = 102.5752 %
N-TRIACONTANE-D62 % RECOVERY = 29.58617 %

FILES:
Area File: 30ALSK18156016.009.RAW
Method File: REAKR30F.MET
Calibration File: 304AKR1815605.CAL
Format File: REAKR30F.FMT
Area file created on: 4/22/2019 8:26:04 PM
File reported on: 4/30/2019 at 4:24:44 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1030700 L3802 Sample ID: AA **Batchnumber:** 191070024A
Sample Amount: 244. Total Volume: 2. ml Analyst: 1826 SDG: LSV38 State: AK
Analyses: 13222

Injection Summary

Injected on : 4/22/2019 20:30:52
Instrument : CP30--19507A
Result file : 30ALSK18156016.010.RAW
Calibration files : 304AKR1815605.CAL
Method files : AKRSUM30F.MET REAKR30F.MET
Setting : 304AKR1815605(V)

Surrogate Recoveries

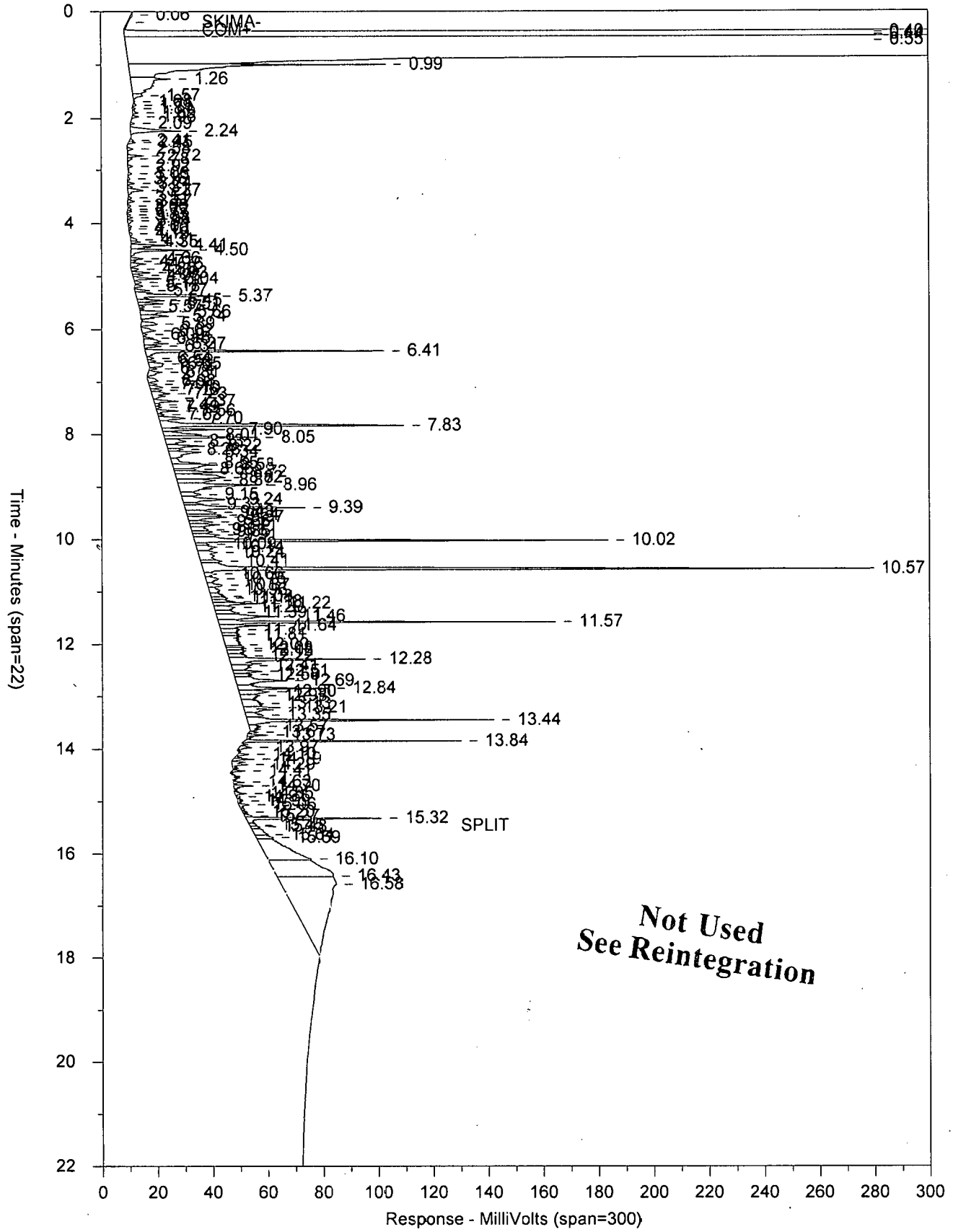
N-TRIACONTANE-D62	57% (50-150)	Conc.: 0.011808
O-TERPHENYL SURR	94% (50-150)	Conc.: 0.019202

Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
☑ C10-<C25 DRO	2.23 - 12.61	10171760	0.9207	0.2561	0.0512		ppm
☐ C25-C36 RRO	12.61 - 15.37	5628189	0.8763	0.2561	0.083		ppm
☐ o-Terphenyl SURR	10.02 (9.97 - 10.07)	236759	0.0192				ppm
☐ n-Triacontane-d62	13.84 (13.80 - 13.90)	98708	0.0118				ppm

Comments: _____

Reviewed by: _____ Verified by: _____
Nicholas Rossi
Senior Chemist
Date: MAY 07 2019 Date: MAY 08 2019
Jamie L. Brillhart
Senior Chemist

Sample: 1030700 AAL3802 T 191070024A 13222 AK 102-SV 4/8/02
File: 30ALSK18156016.010.RAW



Sample ID: 1030700 AAL3802 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 8:30:52 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190; 30C/min to 340; hold 6.5mins
Sample Amount: 244
Dilution Factor: 2
Analyst: 1826

Peak	Ret. Time (min)	Peak Name	Amount (PPM)	Area
63	6.41	Capric Acid	0.019	142799.9
107	10.02	o-Terphenyl SURR	0.022	274078.5
133	12.41	C24	0.000	36087.13
136	12.69	C25	0.000	81176.7
147	13.84	n-Triacontane-d62	0.012	98707.94
160	15.27	C36	0.000	6067.392

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
DRO (C10-<C25)	2.23	12.61	10.149	4118390.0
o-Terphenyl SURR	9.97	10.07	5.424	274078.5
RRO (C25-C36)	12.61	15.37	2.881	844609.4
N-Triacontane-d62	13.80	13.90	2.881	98707.9

********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 3844311
C10-<C25 PRELIMINARY DRO AREA = 0.356 PPM

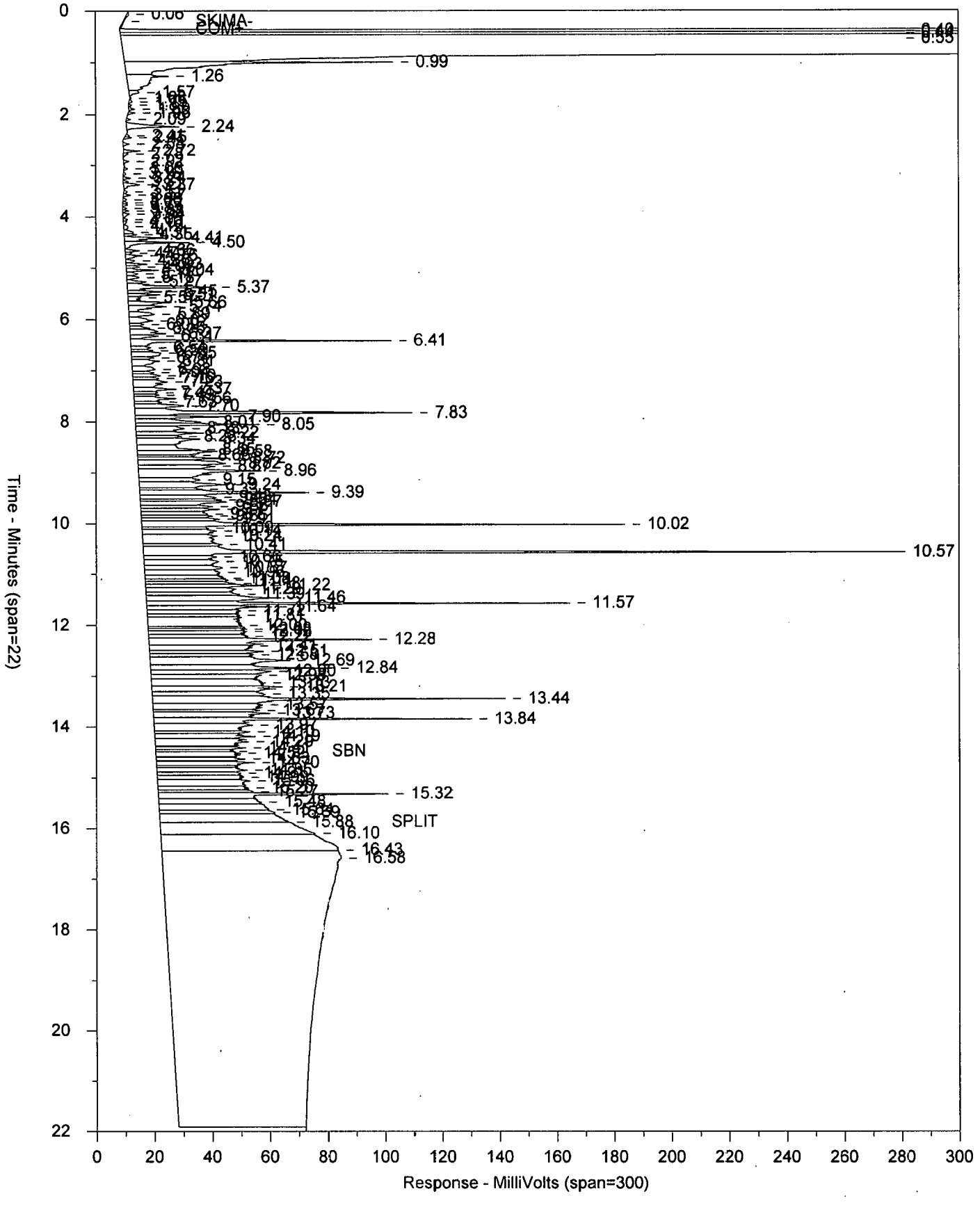
C25-C36 ADJUSTED RRO AREA = 745901.500
C25-C36 PRELIMINARY RRO AMT = 0.118 PPM

FILES:

Area File: 30ALSK18156016.010.RAW
Method File: AKRSUM30F.MET
Calibration File: 304AKR1815605.CAL
Format File: AKRSUM30F.FMT
Area file created on: 4/22/2019 8:52:54 PM
File reported on: 4/30/2019 at 4:21:11 PM

Not Used
See Reintegration

Sample: 1030700 AAL3802 T 191070024A 13222 AK 102-SV 4/8/02
File: 30alsk18156016.010.BND



Sample ID: 1030700 AAL3802 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 8:30:52 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190; 30C/min to 340; hold 6.5mins
Sample Amount: 244
Dilution Factor: 2
Analyst: 1826

Peak	Ret. Time (min)	Peak Name	Amount (PPM)	Area
63	6.41	Capric Acid	0.024	176162.8
107	10.02	o-Terphenyl SURR	0.033	401019.7
133	12.41	C24	0.000	218002.2
136	12.69	C25	0.000	353795.3
147	13.84	n-Triacontane-d62	0.039	324999.1
161	15.27	C36	0.000	96218.41

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
DRO (C10-<C25)	2.23	12.61	13.765	10171760.0 M
o-Terphenyl SURR	9.97	10.07	7.936	401019.7
RRO (C25-C36)	12.61	15.37	9.486	5628188.0
N-Triacontane-d62	13.80	13.90	9.486	324999.1

********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 9770740
C10-<C25 PRELIMINARY DRO AREA = 0.905 PPM

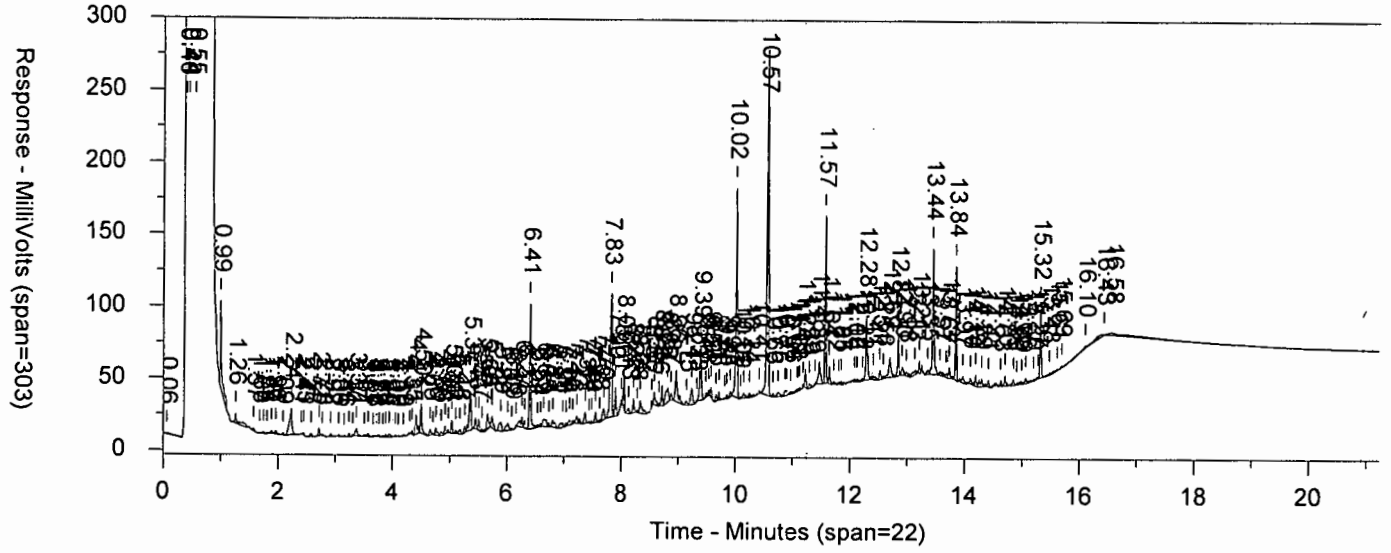
C25-C36 ADJUSTED RRO AREA = 5303189.000
C25-C36 PRELIMINARY RRO AMT = 0.840 PPM

M = Manually Integrated
Analyst MB 5/6/19
Approved by 5-8-19
Circle Reason 1 (2) 3 4
1 = Missed Peak
2 = Improper Baseline
3 = RT Update
4 = Other _____

FILES:

Area File: 30alsk18156016.010.RAW
Method File: AKRSUM30F.MET
Calibration File: 304AKR1815605.CAL
Format File: AKRSUM30F.FMT
Area file created on: 5/6/2019 4:11:51 PM
File reported on: 5/6/2019 at 4:11:54 PM

Sample:1030700 AAL3802 T 191070024A 13222 AK 102-SV 4/8/02 Replot
File: 30ALSK18156016.010.RAW



Sample: 1030700 AAL3802 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Volume Inj. per Column: 4uL
Oven Parameters: 60C for 2mins; 15C/min to 190C; 30C/min to 340C; hold 6.5mins
Sample Amount: 244
Analyst: 1826

Injected on: 4/22/2019 8:30:52 PM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area
63	6.41	Capric Acid	0.019	141444.4
107	10.02	o-Terphenyl SURR	0.019	236758.5
133	12.41	C24	0.000	8203.978
136	12.69	C25	0.000	38049.15
147	13.84	n-Triacontane-d62	0.012	98707.94
160	15.27	C36	0.000	2320.862

Slice Number	Start Time	Stop Time	Slice Amount	Slice Area

O-TERPHENYL % RECOVERY = 93.70662 %
N-TRIACONTANE-D62 % RECOVERY = 57.62407 %

FILES:
Area File: 30ALSK18156016.010.RAW
Method File: REAKR30F.MET
Calibration File: 304AKR1815605.CAL
Format File: REAKR30F.FMT
Area file created on: 4/22/2019 8:52:54 PM
File reported on: 4/30/2019 at 4:25:07 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1030701 L3803 Sample ID: AA **Batchnumber:** 191070024A
Sample Amount: 239. Total Volume: 2. ml Analyst: 1826 SDG: LSV38 State: AK
Analyses: 13222

Injection Summary

Injected on : 4/22/2019 20:57:33
Instrument : CP30--19507A
Result file : 30ALSK18156016.011.RAW
Calibration files : 304AKR1815605.CAL
Method files : AKRSUM30F.MET REAKR30F.MET
Setting : 304AKR1815605(V)

Surrogate Recoveries

N-TRIACONTANE-D62	*41% (50-150)	Conc.: 0.008597
O-TERPHENYL SURR	102% (50-150)	Conc.: 0.021267

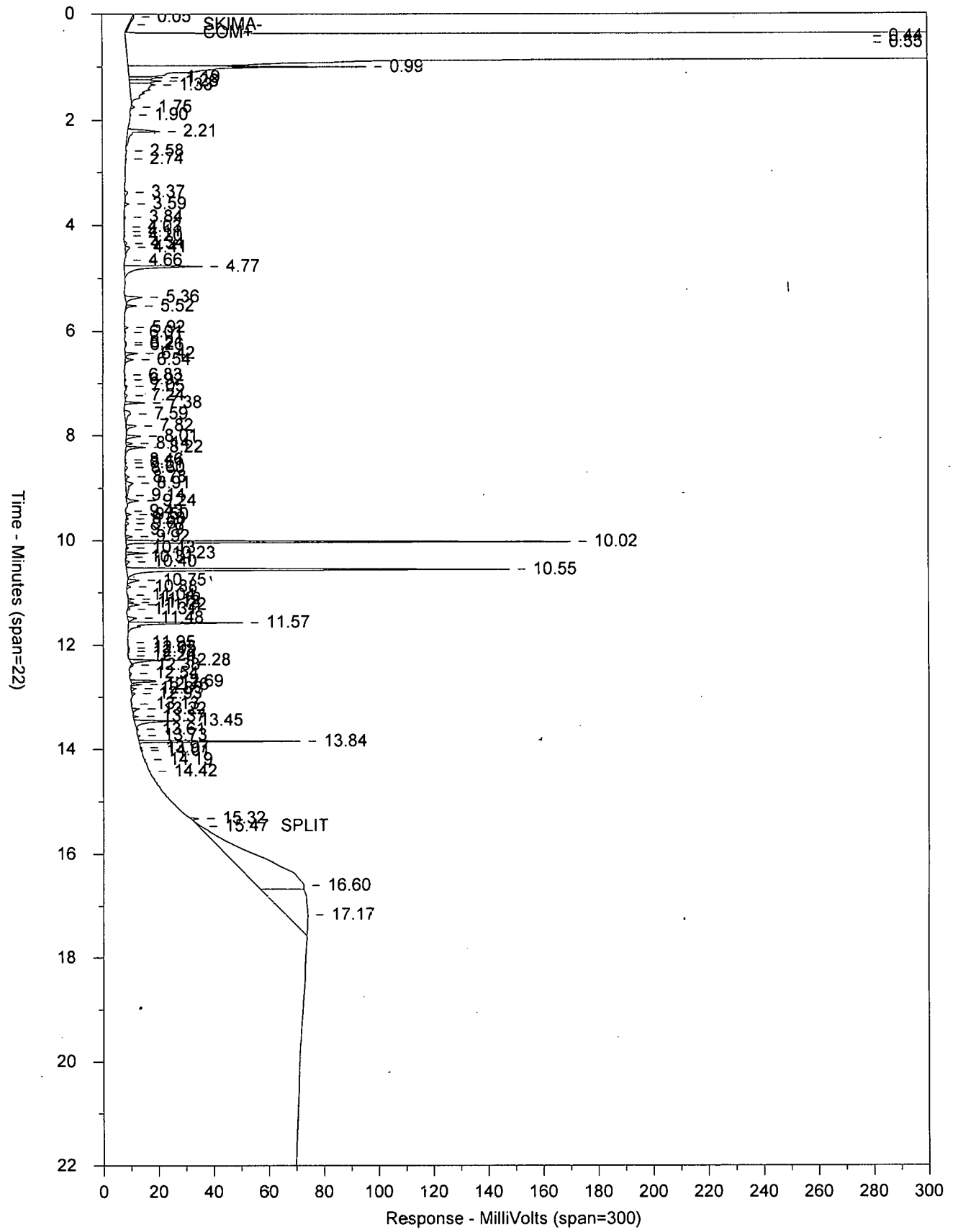
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	2.23 - 12.61	1009558	0.0712	<0.2615	0.0523	J	ppm
C25-C36 RRO	12.61 - 15.37	159336	0.0144	<0.2615	<0.0847		ppm
o-Terphenyl SURR	10.02 (9.97 - 10.07)	256843	0.0213				ppm
n-Triacontane-d62	13.84 (13.80 - 13.90)	70389	0.0086				ppm

Comments: _____

Reviewed by: Nicholas Rossi Senior Chemist Verified by: 5/6/19
Date: MAY 06 2019 Date:

Jamie L. Brillhart Senior Chemist
MAY 08 2019

Sample: 1030701 AAL3803 T 191070024A 13222 AK 102-SV 4/8/02
File: 30ALSK18156016.011.RAW



Sample ID: 1030701 AAL3803 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 8:57:33 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190; 30C/min to 340; hold 6.5mins
Sample Amount: 239
Dilution Factor: 2
Analyst: 1826

Peak	Ret. Time (min)	Peak Name	Amount (PPM)	Area
29	6.42	Capric Acid	0.001	9454.718
54	10.02	o-Terphenyl SURR	0.021	256842.7
74	12.38	C24	0.000	1844.444
76	12.69	C25	0.000	22279.13
86	13.84	n-Triacontane-d62	0.009	70388.99
91	15.32	C36	0.000	4129.97

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
DRO (C10-<C25)	2.23	12.61	5.396	1009558.0
o-Terphenyl SURR	9.97	10.07	5.083	256842.7
RRO (C25-C36)	12.61	15.37	2.055	159335.8
N-Triacontane-d62	13.80	13.90	2.055	70389.0

********** RESULTS TABLE **********

C10-<C25 ADJUSTED DRO AREA = 752715.7
C10-<C25 PRELIMINARY DRO AREA = 0.071 PPM

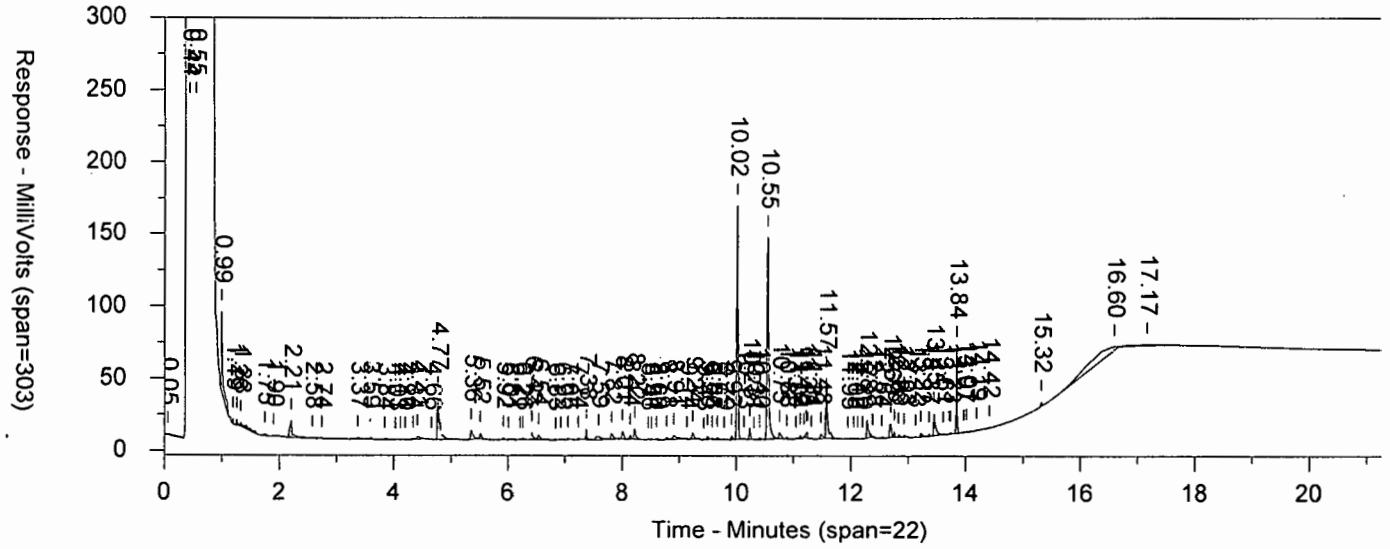
C25-C36 ADJUSTED RRO AREA = 88946.800
C25-C36 PRELIMINARY RRO AMT = 0.014 PPM

FILES:

Area File: 30ALSK18156016.011.RAW
Method File: AKRSUM30F.MET
Calibration File: 304AKR1815605.CAL
Format File: AKRSUM30F.FMT
Area file created on: 4/22/2019 9:19:33 PM
File reported on: 4/30/2019 at 4:21:38 PM

Chrom Perfect Chromatogram Report

Sample:1030701 AAL3803 T 191070024A 13222 AK 102-SV 4/8/02 Replot
File: 30ALSK18156016.011.RAW



Sample: 1030701 AAL3803 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Volume Inj. per Column: 4uL
Oven Parameters: 60C for 2mins; 15C/min to 190C; 30C/min to 340C; hold 6.5mins
Sample Amount: 239
Analyst: 1826

Injected on: 4/22/2019 8:57:33 PM
GC Column: ZB5 30m X 0.32mm X 0.25um
Dilution Factor: 2

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area
29	6.42	Capric Acid	0.001	9454.718
54	10.02	o-Terphenyl SURR	0.021	256842.7
74	12.38	C24	0.000	1844.444
76	12.69	C25	0.000	22279.13
86	13.84	n-Triacontane-d62	0.009	70388.99
91	15.32	C36	0.000	4129.97

Slice Number	Start Time	Stop Time	Slice Amount	Slice Area

O-TERPHENYL % RECOVERY = 101.6557 %
N-TRIACONTANE-D62 % RECOVERY = 41.09193 %

FILES:
Area File: 30ALSK18156016.011.RAW
Method File: REAKR30F.MET
Calibration File: 304AKR1815605.CAL
Format File: REAKR30F.FMT
Area file created on: 4/22/2019 9:19:33 PM
File reported on: 4/30/2019 at 4:25:28 PM

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: 1030702 L3804 Sample ID: AA **Batchnumber:** 191070024A
Sample Amount: 247. Total Volume: 2. ml Analyst: 1826 SDG: LSV38 State: AK
Analyses: 13222

Injection Summary

Injected on : 4/22/2019 21:24:10
Instrument : CP30--19507A
Result file : 30ALSK18156016.012.RAW
Calibration files : 304AKR1815605.CAL
Method files : AKRSUM30F.MET REAKR30F.MET
Setting : 304AKR1815605(V)

Surrogate Recoveries

N-TRIACONTANE-D62	*38% (50-150)	Conc.: 0.007756
O-TERPHENYL SURR	101% (50-150)	Conc.: 0.020385

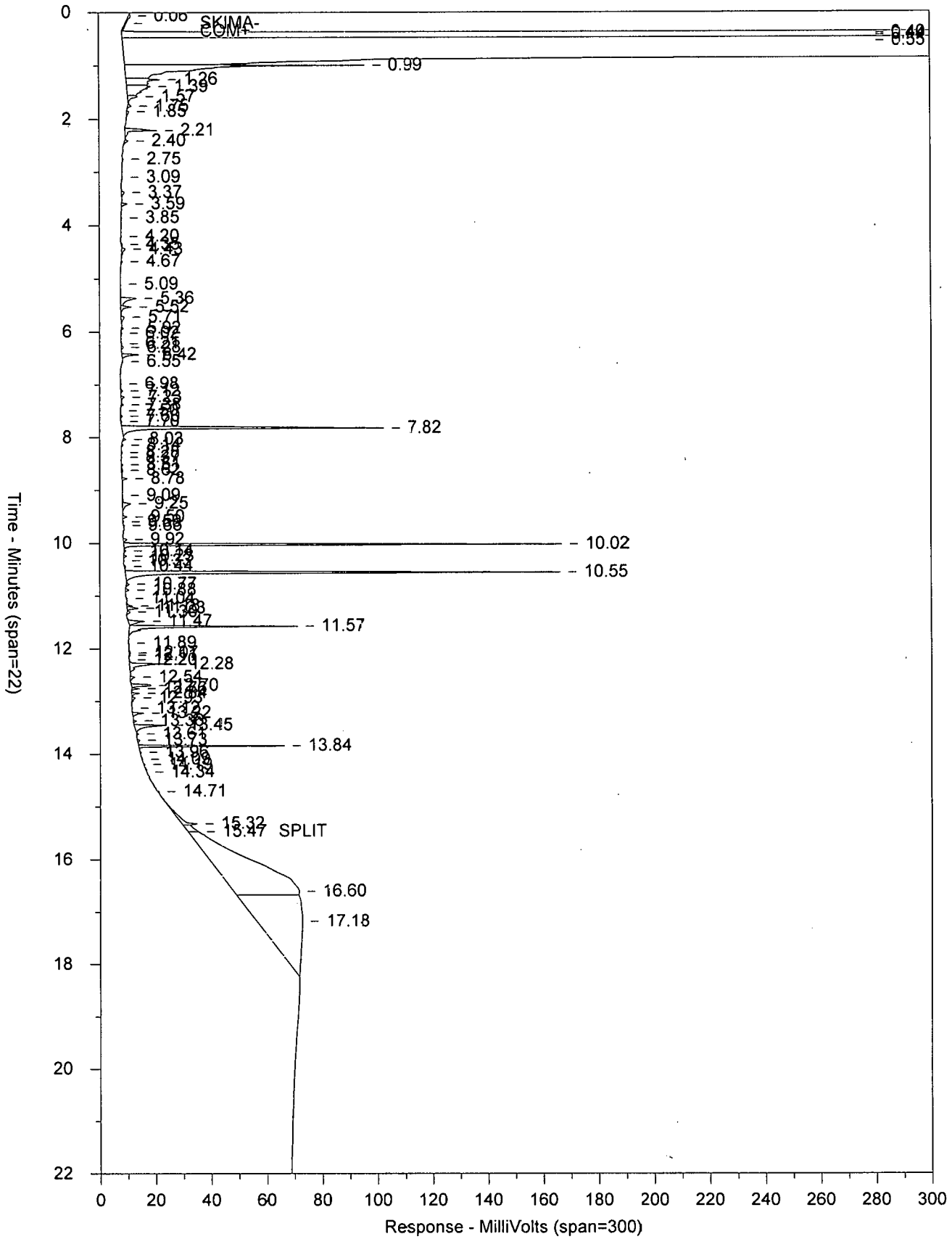
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
C10-<C25 DRO	2.23 - 12.61	1097503	0.0772	<0.253	0.0506	J	ppm
C25-C36 RRO	12.61 - 15.37	172078	0.0167	<0.253	<0.082		ppm
o-Terphenyl SURR	10.02 (9.97 - 10.07)	254430	0.0204				ppm
n-Triacontane-d62	13.84 (13.80 - 13.90)	65632	0.0078				ppm

Comments: _____

Reviewed by: Nicholas Rossi Nicholas Rossi Senior Chemist Date: MAY 06 2019

Verified by: Jamie L. Brillhart 5/6/19 Jamie L. Brillhart Senior Chemist Date: MAY 08 2019

Sample: 1030702 AAL3804 T 191070024A 13222 AK 102-SV 4/8/02
File: 30ALSK18156016.012.RAW



Sample ID: 1030702 AAL3804 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 9:24:10 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190; 30C/min to 340; hold 6.5mins
Sample Amount: 247
Dilution Factor: 2
Analyst: 1826

Peak	Ret. Time (min)	Peak Name	Amount (PPM)	Area
30	6.42	Capric Acid	0.002	12205
53	10.02	o-Terphenyl SURR	0.020	254430.2
73	12.70	C25	0.000	17428.57
83	13.84	n-Triacontane-d62	0.008	65632.12
89	15.32	C36	0.000	30012.4

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
DRO (C10-<C25)	2.23	12.61	5.439	1097503.0
o-Terphenyl SURR	9.97	10.07	5.035	254430.2
RRO (C25-C36)	12.61	15.37	1.916	172077.8
N-Triacontane-d62	13.80	13.90	1.916	65632.1

********** RESULTS TABLE **********

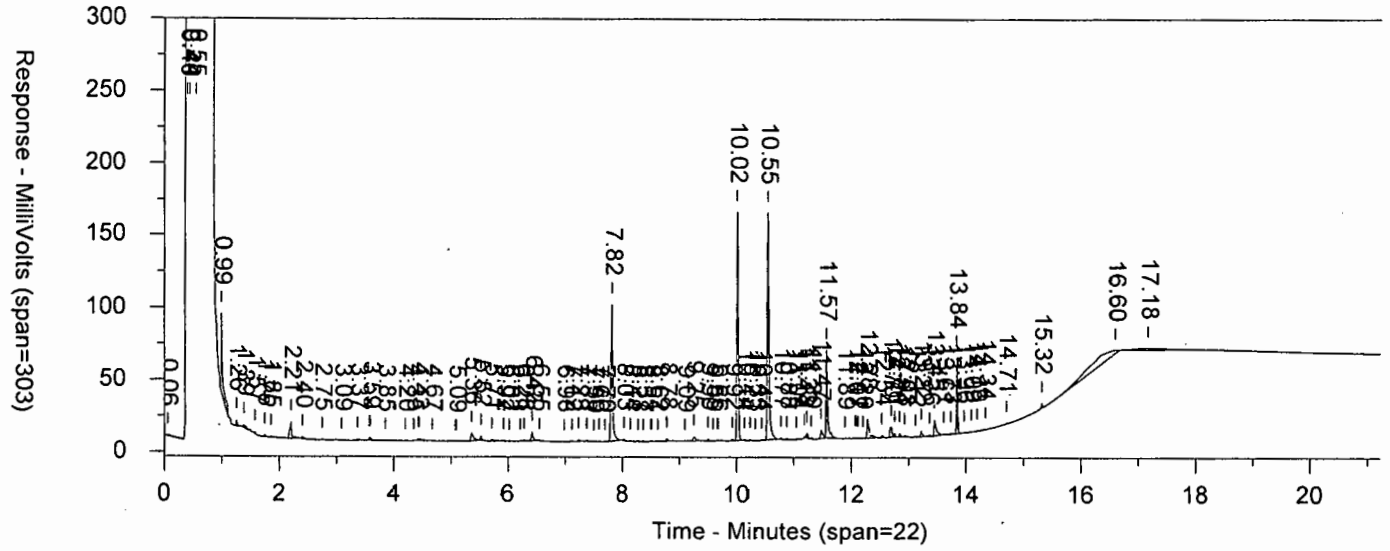
C10-<C25 ADJUSTED DRO AREA = 843072.3
C10-<C25 PRELIMINARY DRO AREA = 0.077 PPM

C25-C36 ADJUSTED RRO AREA = 106445.700
C25-C36 PRELIMINARY RRO AMT = 0.017 PPM

FILES:

Area File: 30ALSK18156016.012.RAW
Method File: AKRSUM30F.MET
Calibration File: 304AKR1815605.CAL
Format File: AKRSUM30F.FMT
Area file created on: 4/22/2019 9:46:12 PM
File reported on: 4/30/2019 at 4:21:59 PM

Sample:1030702 AAL3804 T 191070024A 13222 AK 102-SV 4/8/02 Replot
File: 30ALSK18156016.012.RAW



Sample: 1030702 AAL3804 T 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 9:24:10 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190C; 30C/min to 340C; hold 6.5mins
Sample Amount: 247
Dilution Factor: 2
Analyst: 1826

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area
30	6.42	Capric Acid	0.002	12205
53	10.02	o-Terphenyl SURR	0.020	254430.2
73	12.70	C25	0.000	17428.57
83	13.84	n-Triacontane-d62	0.008	65632.12
89	15.32	C36	0.000	4616.398

Slice Number	Start Time	Stop Time	Slice Amount	Slice Area

O-TERPHENYL % RECOVERY = 100.7009 %
N-TRIACONTANE-D62 % RECOVERY = 38.31495 %

FILES:
Area File: 30ALSK18156016.012.RAW
Method File: REAKR30F.MET
Calibration File: 304AKR1815605.CAL
Format File: REAKR30F.FMT
Area file created on: 4/22/2019 9:46:12 PM
File reported on: 4/30/2019 at 4:25:48 PM

Raw QC Data

DRO/RRO by GC

Eurofins Lancaster Laboratories-Range Data Summary

Sample Name: BLANKA 4/17/19 PBLK24107 Sample ID: AA **Batchnumber:** 191070024A
Sample Amount: 250. Total Volume: 2. ml Analyst: 1826 SDG: State:
Analyses: 13222

Injection Summary

Injected on : 4/22/2019 18:43:52
Instrument : CP30--19507A
Result file : 30ALSK18156016.006.RAW
Calibration files : 304AKR1815605.CAL
Method files : AKRSUM30F.MET REAKR30F.MET
Setting : 304AKR1815605(V)

Surrogate Recoveries

N-TRIACONTANE-D62	*21% (50-150)	Conc.: 0.004216
O-TERPHENYL SURR	96% (50-150)	Conc.: 0.019173

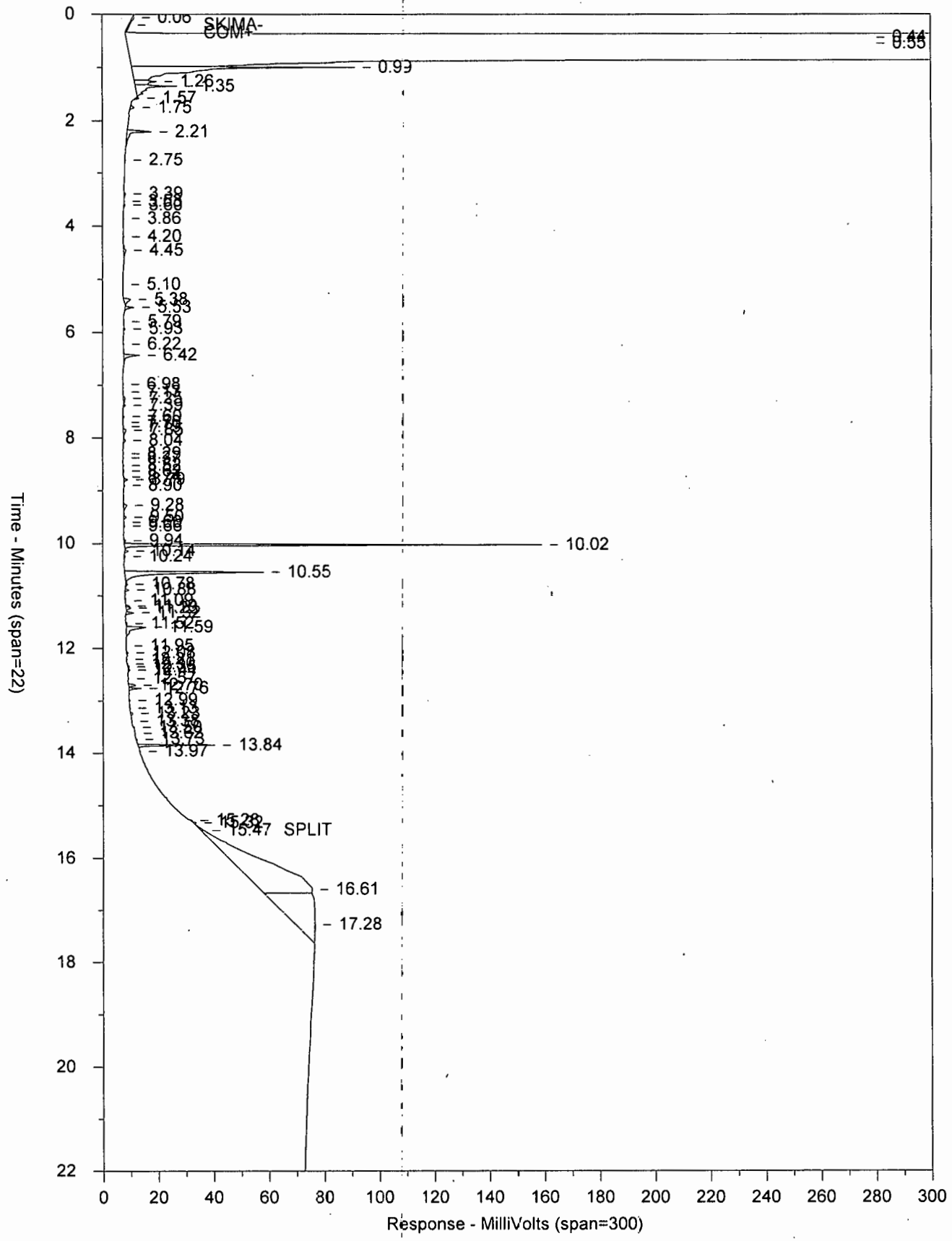
Range	Retention Times	Area	Amount	LOQ	MDL	Flags	Units
☐ C10-<C25 DRO	2.23 - 12.61	506833	0.0239	<0.25	<0.05		ppm
☐ C25-C36 RRO	12.61 - 15.37	56842	0.0032	<0.25	<0.081		ppm
☐ o-Terphenyl SURR	10.02 (9.97 - 10.07)	242206	0.0192				ppm
☐ n-Triacontane-d62	13.84 (13.80 - 13.90)	36107	0.0042				ppm

Comments: See DCF

Reviewed by: Nicholas Rossi
Nicholas Rossi
Senior Chemist
Date: MAY 06 2019

Verified by: 5/6/19
Jamie L. Brillhart
Senior Chemist
Date: MAY 08 2019

Sample: BLANKA 4/17/19 AAPBLK24107 BLK 19 070024A 13222 AK 102-SV 4/8/02
File: 30ALSK18156016.006.RAW



Sample ID: BLANKA 4/17/19 AAPBLK24107 BLK 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 6:43:52 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190; 30C/min to 340; hold 6.5mins
Sample Amount: 250
Dilution Factor: 2
Analyst: 1826

Peak	Ret. Time (min)	Peak Name	Amount (PPM)	Area
23	6.42	Capric Acid	0.002	14462.24
45	10.02	o-Terphenyl SURR	0.019	242205.7
62	12.41	C24	0.000	1222.447
64	12.70	C25	0.000	5711.58
73	13.84	n-Triacontane-d62	0.004	36106.95
75	15.28	C36	0.000	1054.498

Slice Name	Start Time	Stop Time	Slice Amount	Slice Area
DRO (C10-<C25)	2.23	12.61	5.272	506832.8
o-Terphenyl SURR	9.97	10.07	4.793	242205.7
RRO (C25-C36)	12.61	15.37	1.054	56841.6
N-Triacontane-d62	13.80	13.90	1.054	36107.0

********** RESULTS TABLE **********

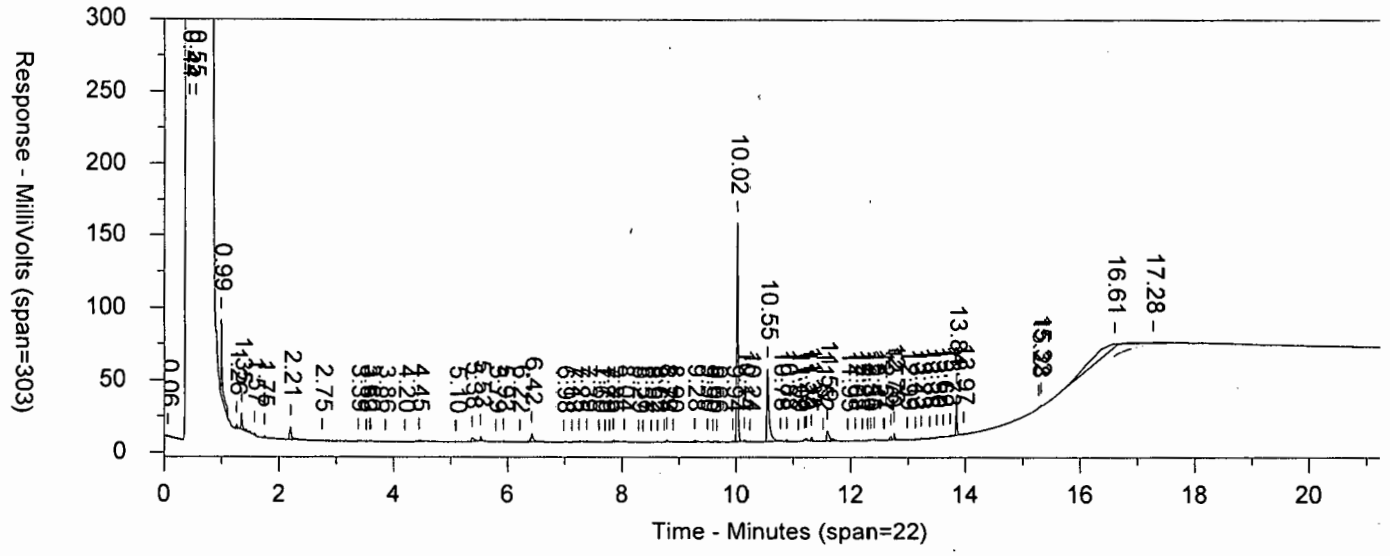
C10-<C25 ADJUSTED DRO AREA = 264627.1
C10-<C25 PRELIMINARY DRO AREA = 0.024 PPM

C25-C36 ADJUSTED RRO AREA = 20734.590
C25-C36 PRELIMINARY RRO AMT = 0.003 PPM

FILES:

Area File: 30ALSK18156016.006.RAW
Method File: AKRSUM30F.MET
Calibration File: 304AKR1815605.CAL
Format File: AKRSUM30F.FMT
Area file created on: 4/22/2019 7:05:57 PM
File reported on: 4/30/2019 at 4:19:44 PM

Sample:BLANKA 4/17/19 AAPBLK24107 BLK 191070024A 13222 AK 102-SV 4/8/02 Replot
File: 30ALSK18156016.006.RAW



Sample: BLANKA 4/17/19 AAPBLK24107 BLK 191070024A 13222 AK 102-SV 4/8/02

Instrument ID:CP30-19507A
Injected on: 4/22/2019 6:43:52 PM
Volume Inj. per Column: 4uL
GC Column: ZB5 30m X 0.32mm X 0.25um
Oven Parameters: 60C for 2mins; 15C/min to 190C; 30C/min to 340C; hold 6.5mins
Sample Amount: 250
Dilution Factor: 2
Analyst: 1826

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area
23	6.42	Capric Acid	0.002	14462.24
45	10.02	o-Terphenyl SURR	0.019	242205.7
62	12.41	C24	0.000	1222.447
64	12.70	C25	0.000	5711.58
73	13.84	n-Triacontane-d62	0.004	36106.95
75	15.28	C36	0.000	1054.498

Slice Number	Start Time	Stop Time.	Slice Amount	Slice Area

O-TERPHENYL % RECOVERY = 95.86253 %
N-TRIACONTANE-D62 % RECOVERY = 21.07865 %

FILES:
Area File: 30ALSK18156016.006.RAW
Method File: REAKR30F.MET
Calibration File: 304AKR1815605.CAL
Format File: REAKR30F.FMT
Area file created on: 4/22/2019 7:05:57 PM
File reported on: 4/30/2019 at 4:23:47 PM

Extraction/Distillation/Digestion Logs

DRO/RRO by GC

Organic Extraction Batchlog Assigned to: 701 Karen Beyer Reviewed by: JSR 1526 Start Date: 4/17/19 Start time: 23:05

191070024A

Tech 1: [illegible] Tech 2: —

Dept: 32 Prep Analysis: 13225 Mini-Ext. AK 102/103SV,DRO/RRO AK 102/103-SV

QC	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments
BLANKA	PBLK24107	250	SS1910532A	.25			2	2	—	NA	
LCSA	LCS24107	250	SS1910532A	.25	MS1907832A	.25	2	2	—	NA	
LCSDA	LCSD24107	250	SS1910532A	.25	MS1907832A	.25	2	2	—	NA	

Solvent Used	Lot No.
1:1 HCL	HJ17-14
Methylene Chloride	191108
Sodium Sulfate	19099A
—	—

NA KS 4/17/19

Spike Solutions: Witness: NA

MS1907832A AK 102/103 SPIKE

SS1910532A AK SURROGATE STANDARD

Sample #	Sample Code	Amt (g)	SS/IS Sol.	Amt (mL)	FV (mL)	pH	pH	BC	Comments	Analyses	List	Due Date	Prio
1 1030699	L3801	247	SS1910532A	.25	2	2	—	30A	Tan	13222		04/19/2019	N
2 1030700	L3802	244	SS1910532A	.25	2	2	—	30A	Tan	13222		04/19/2019	N
3 1030701	L3803	239	SS1910532A	.25	2	2	—	30A	Clear	13222		04/19/2019	N
4 1030702	L3804	247	SS1910532A	.25	2	2	—	30A	Tan	13222		04/19/2019	N

NA KS 4/17/19

LSV38 Page 75 of 75

Bench#	—	Bench#	—	Bench#	—
Rack ID:	—	Work Station	Bench 1	Micro Temp 100?	—
Internal Standard		Balance #	25996		

R-VAP ID	— C	R-VAP ID	— C	R-VAP ID	— C
S-bath ID	80.0 C	S-bath ID	— C	N-Evap	— C

M-vap — C

191070024A

5

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

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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 08, 2019 10:24

Project: 91252

Account #: 11964
Group Number: 2038286
SDG: LSV38
PO Number: 0015308801
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

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
MW-2-W-190408 Grab Groundwater	04/08/2019 12:15	1030699
MW-5-W-190408 Grab Groundwater	04/08/2019 12:55	1030700
EQB-W-1-190408 Grab Water	04/08/2019 11:00	1030701
BD-1-WD-190408 Grab Groundwater	04/08/2019	1030702

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

Sample Description: **MW-2-W-190408 Grab Groundwater**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019 12:15
SDG#: LSV38-01

Chevron
ELLE Sample #: GW 1030699
ELLE Group #: 2038286
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.066 J	0.051	0.25	1

The recovery for the method blank surrogate and the sample surrogate(s) is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 20:04	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Sample Description: **MW-5-W-190408 Grab Groundwater**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019 12:55
SDG#: LSV38-02

Chevron
ELLE Sample #: GW 1030700
ELLE Group #: 2038286
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.92	0.051	0.26	1

The recovery for the method blank surrogate is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 20:30	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Sample Description: **EQB-W-1-190408 Grab Water**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019 11:00
SDG#: LSV38-03EB

Chevron
ELLE Sample #: **WW 1030701**
ELLE Group #: **2038286**
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.071 J	0.052	0.26	1

The recovery for the method blank surrogate and the sample surrogate(s) is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 20:57	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

Sample Description: **BD-1-WD-190408 Grab Groundwater**
Facility# 91252
11836 Old Glenn Hwy- Eagle River, AK

Project Name: **91252**

Submittal Date/Time: 04/10/2019 10:20
Collection Date/Time: 04/08/2019
SDG#: LSV38-04FD

Chevron
ELLE Sample #: GW 1030702
ELLE Group #: 2038286
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13222	C10-<C25 DRO	n.a.	0.077 J	0.051	0.25	1

The recovery for the method blank surrogate and the sample surrogate(s) is outside the method acceptance limits as noted on the QC Summary. Since the recovery is within our statistically derived limits the data is reported.

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
13222	AK 102-SV DRO	AK 102-SV 4/8/02	1	191070024A	04/22/2019 21:24	Nicholas R Rossi	1
13225	Mini-Ext. AK 102/103SV,DRO/RRO	AK 102-SV 4/8/02	1	191070024A	04/17/2019 23:05	Karen L Beyer	1

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

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Quality Control Summary

Client Name: Chevron
Group Number: 2038286
Reported: 05/08/2019 10:24

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
	mg/l	mg/l	mg/l
Batch number: 191070024A	Sample number(s): 1030699-1030702		
C10-<C25 DRO	N.D.	0.050	0.25

LCS/LCSD

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
Batch number: 191070024A	Sample number(s): 1030699-1030702								
C10-<C25 DRO	1.00	0.851	1.00	0.822	85	82	75-125	4	20

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: AK 102-SV DRO
Batch number: 191070024A

	Orthoterphenyl	n-Triacontane-d62
1030699	103	30*
1030700	94	57
1030701	102	41*
1030702	101	38*
Limits:	50-150	50-150

	Orthoterphenyl	n-Triacontane-d62
Blank	96	21*
LCS	106	64
LCSD	103	61
Limits:	60-120	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

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Acct. # 119164 For Eurofins Lancaster Laboratories Environmental use only Group # 2058286 Sample # 10390699-702

Client Information

Facility # 91252 WBS 07.09-Groundwater Sampling/Monitoring

Site Address 11836 Old Glen Hwy Eagle River, AK

Chevron PM ~~Nicole Monroe~~ Erik Hetrick Lead Consultant Arcadis

Consultant/Office Arcadis

Consultant Project Mgr. Nicole Monroe

Sampler David Braudoin

State where samples were collected: AK For Compliance: Yes ☒ No ☐

SCR #: _____

Matrix

Soil ☐ Sediment ☐ Water ☒ Ground ☐ Potable ☐ Surface ☐ NPDES ☐ 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 ☐	8260 full scan	Oxygenates ____	TPH-GRO 8015 ☐ 8260 ☐	TPH-DRO without Silica Gel Cleanup ☐	TPH-DRO with Silica Gel Cleanup ☐	VPH ☐ EPH ☐ Method ____	Lead Total ☐ Diss. ☐ Method ____
MW-2-W-190408	04/08/19	1215	X		2					X			
MW-5-W-190408	04/08/19	~~1235~~ 1233	X		2					X			
EQB-W-1-190408	04/08/19	1100	X		2					X			
BD-1-W-190408	04/08/19	—	X		2					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
1		4.08.19	1500	Arcadis Cold Storage	4.08.19	1500
2		4.09.19	0900	FedEx		
3						

Relinquished by Commercial Carrier: UPS ____ FedEx X Other ____

Received by _____ Date 4/10/19 Time 1020

Temperature Upon Receipt 1.2 °C

Custody Seals Intact? Yes No

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Sample Administration Receipt Documentation Log

Doc Log ID: 245994

Group Number(s): 2038286

Client: Chevron c/o Arcadis

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	04/10/2019 10:20
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	AR		

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:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 14:21 on 04/10/2019

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	DT146	1.2	DT	Wet	Y	Bagged	N

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Lancaster, PA 17605-2425
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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.

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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.

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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.

APPENDIX D

ADEC Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Suresh PR

Title:

Project Chemist

Date:

July 8, 2019

CS Report Name:

First Semiannual Groundwater Monitoring Report

Report Date:

May 08, 2019

Consultant Firm:

ARCADIS U.S., Inc

Laboratory Name:

Eurofins Lancaster Laboratory, Lancaster, Pennsylvania

Laboratory Report Number:

2038286 – LSV38

ADEC File Number:

2107.26.003

Hazard Identification Number:

23705

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:

Yes.

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:

Yes

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:

No.

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:

Metals/inorganic analysis was not requested for submitted samples.

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:

MS/MSD analysis was not requested on the project sample.

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:

No.

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:

No.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☒ No Comments:

No.

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:

Data quality/usability was not affected.

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:

The surrogate n-Triacontane-d62 recovery was less than the control limit for samples MW-2-W-190408, EQB-W-1-190408 and BD-1-WD-190408 whereas the surrogate orthoterphenyl was within the control limit. Hence, the associated results were not qualified.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

No.

iv. Data quality or usability affected? (use comment box to explain)

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

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:

No.

ii. All results less than MDL?

☐ Yes ☒ No Comments:

No.

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:

The field duplicate sample BD-1-WD-190408 collected from MW-2-W-190408.

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

Yes.

i. If above MDL, what samples are affected?

☒ Yes ☐ No Comments:

The compound C10-<C25 DRO (0.071 mg/l) was detected below the reporting limit in an equipment blank sample EQB-W-1-190408. A blank action level was established at five times of the detected concentration. The compound C10-<C25 DRO result in samples MW-2-W-190408 and BD-1-WD-190408 were less than the reporting limit and qualified as non-detect (UB) at the reporting limit.

ii. Data quality or usability affected?

Data quality/usability was not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

Yes.