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24 January 2022

Andrew Smith, P.E., LHG
UST/Technical Services Unit Supervisor
Ecology's Toxics Cleanup Program
Southwest Regional Office
Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Subject: Eighth Annual Compliance Groundwater Monitoring Report
Agreed Order No. DE 9514
Frederickson Industrial Park Site, Pierce County, WA
Geosyntec Project: GR4631J

Dear Mr. Smith:

This letter has been prepared by Geosyntec Consultants on behalf of Olin Corporation and Mallinckrodt US Holdings LLC (the Companies) to present the results from compliance monitoring completed in 2021 at the Frederickson Industrial Park Site (Site) in Pierce County, Washington (Figure 1). This compliance monitoring is being performed in accordance with the Washington Department of Ecology's (Ecology's) Agreed Order (AO) No. DE 9514 (Order).

Background

The Site encompasses 527 acres of land south of 176th Street East and east of Canyon Road East in the Fredrickson area of Pierce County, Washington. The Site is situated approximately 10 miles south of Tacoma and 8 miles southwest of Puyallup, and is located in unincorporated County area surrounded by a mixture of industrial, residential and commercial properties. Boeing is the current owner of the Frederickson Industrial Center; Olin and Mallinckrodt are the successors of former owners of the Site.

In 1997, the Companies entered into AO No. DE 97TC-S121 requiring the Companies to undertake the following remedial actions at the Site:

- devise and implement a permanent solution regarding the impact of carbon tetrachloride (CTC) in affected domestic drinking water wells; and

- design and implement a Remedial Investigation/Feasibility Study (RI/FS).

The RI/FS Report [Geosyntec, 2012][1] was submitted to Ecology by the Companies on 28 March 2012 and recommended monitored natural attenuation (MNA) to address CTC in groundwater. This was followed by execution of AO No. DE 9514. The Companies agreed to prepare and execute a Cleanup Action Plan (CAP) and Compliance Monitoring Work Plan (CMWP), which were subsequently submitted and approved by Ecology on 27 February 2014.

The CAP, approved by Ecology after a public comment period, was based upon Ecology's approval of MNA as the groundwater remedy. The CMWP was provided as part of the CAP and outlines the requirements for MNA compliance monitoring. The current compliance monitoring network encompasses eight monitoring wells at the Site (listed in Table 1) and includes hydrogeologic monitoring and groundwater sampling for CTC analysis. As described in the CMWP, compliance monitoring for the Site consists of performance monitoring to track MNA, followed by confirmational monitoring to confirm compliance with applicable cleanup standards.

The performance monitoring sampling frequency was reduced from two monitoring events per year to a single annual event in 2016 as outlined in the CMWP and approved by Ecology. The April 2021 sampling event is the eighth year of the CMWP-required performance monitoring. In accordance with procedures outlined in the CMWP, and as defined in WAC 173-340-720(9)(iv), the performance monitoring well network was reduced from the original eleven wells identified in the CMWP to the current eight wells prior to the 2018 sampling event based on groundwater data from 2014-2017 and approved by Ecology on March 27, 2018. A sampling comparison evaluation of low-flow versus passive diffusion bags (PDBs) results were presented to Ecology in the Fourth Annual Compliance Groundwater Monitoring Report dated 12 February 2018 and in an email dated 3 April 2018. Ecology approved the use of PDBs based on the sampling comparison evaluation results in an email dated 6 April 2018. The 2021 sampling event is the fourth compliance monitoring event to use PDBs exclusively for sample collection.

[1] Geosyntec, 2012. Remedial Investigation/Feasibility Study (RI/FS) Report, Frederickson Industrial Park, Frederickson, Washington. March 2012.

Performance Monitoring Groundwater Results

Hydrogeologic Monitoring

Water level data collected during the 2021 groundwater monitoring event are presented in Table 1. Water level contours for Aquifer A are shown in Figure 2 for the 2021 monitoring event. The groundwater gradient in Aquifer A is to the north-northwest towards Clover Creek, and is consistent with past monitoring events.

Carbon Tetrachloride

Eight monitoring wells were sampled using passive diffusion bags during the April 2021 monitoring event. The samples were analyzed for CTC by ALS laboratory. The CTC data are summarized in Table 2, and the analytical reports are provided in Attachment A. Figure 3 presents the performance monitoring well locations and updated CTC contour based on the 2021 CTC results. Concentration trends for CTC are plotted for the performance monitoring wells in Figures 4a-4c.

Consistent with previous monitoring results, monitoring wells BMW-18, HLA-1, and 11-CL continue to have the highest CTC concentrations ranging between 2.9 µg/L and 4.1 µg/L (Figure 4a). The intermediate concentration wells (e.g., MW-1 and MW-13) remain in the range between 1.3 µg/L and 1.5 µg/L (Figure 4b). The peripheral monitoring wells, MW-4 on the east, P2-S on the north, and 11-BL on the west, had CTC concentrations of 0.65 µg/L, 0.35 (J) µg/L, and 0.33 (J) µg/L, respectively (Figure 4c). The trends plotted in Figures 4a-4c illustrate declining, low CTC concentrations; the data plotted in Figures 4a-4c are provided in Table 3.

An evaluation of the monitoring data indicates that MNA continues to be active based on the following observations:

- The declining trends in BMW-18, MW-1 and MW-13, and 11-BL;
- The absence of any increasing trends within the data set;
- That P2-S, MW-4, and 11-BL have been below or essentially equal to the regulatory limit for the past several years; and
- The concentrations at MW-1 and MW-13, which bound the upgradient and downgradient extents of the plume, are trending downward since the transition from low-flow sampling to using the PDBs.

CTC concentrations at P2-S were below the CTC cleanup level of 0.63 µg/L for the ninth (9) consecutive sampling event. The approved CMWP specifies the statistical method and the representative sampling period to determine when individual monitoring wells can be removed

from the Performance Monitoring program. Consistent with WAC 173-340-720 (9)(d)(i)(A), the CMWP states that "an individual compliance monitoring well will be removed from the Performance Monitoring program if the upper one-sided ninety-five percent confidence limit on the true mean groundwater concentration is below the MTCA cleanup level (which is currently 0.63 µg/L)." Per the CMWP, the representative sampling period is specified as being the preceding four (4) sampling events. Therefore, well P2-S meets the Ecology-approved criteria, as described in the CMWP, to be removed from the Performance Monitoring program. However, Ecology has previously not approved removal of this well from the performance monitoring network because it serves as a downgradient performance monitoring well for the CTC plume. Therefore, P2-S will continue to be monitored in 2022.

2022 Monitoring Schedule

After eight years of compliance monitoring, we believe there is an understanding of scale and rate of MNA occurring at the Site. The Companies request that future monitoring be changed to every other year. This proposed schedule will result in a monitoring event in 2023 with the event occurring in the spring (2nd quarter), to coincide with seasonally high groundwater elevations.

Conclusions and Recommendations

The eighth year of MNA compliance monitoring confirmed that CTC concentrations continue to be low and are declining. The results of the 2021 sampling event demonstrate that MNA is effectively reducing CTC concentrations at the Site.

Please contact Julie Peoples (423-336-4084) if you have questions regarding the information presented herein.

Sincerely,

James J. Deitsch, PhD., P.E. (GA)
Senior Principal

David L. Parkinson, PhD., P.G. (WA, TX)
Principal

Cc: Julie Peoples, Olin Corporation

GR4631K

Karen Burke, Mallinckrodt
Deborah Taege, The Boeing Company
Anne Smith, Tacoma Water

Attachments:
Tables
Figures
Attachment A: Analytical Laboratory Report

Tables

Table 1.
Performance Monitoring for 2021 Groundwater Sampling Event Water Level Data
Brazier Site, Frederickson, Washington

Well	Ground Elevation (ft MSL)	Top of Casing Elevation (MSL)	Top of Screen (MSL)	Bottom of Screen (MSL)	Aquifer	Sample Date	Depth to Water (ft)	Water Level (MSL)
11-BL	395.5	396.08	331.5	321.5	Lower - Aquifer A	04/29/21	37.41	358.67
11-CL	403.69	404.55	329.7	319.7	Lower - Aquifer A	04/29/21	42.27	362.28
BMW-18	409.74	412.09	375.7	345.7	Upper - Aquifer A	04/29/21	39.19	372.90
HLA-1	403.86	405.81	320.9	310.9	Lower - Aquifer A	04/29/21	43.60	362.21
MW-1	413.27	415.79	324.8	314.8	Lower - Aquifer A	04/29/21	39.31	376.48
MW-4	465.5	467.72	317.9	307.9	Aquifer A	04/29/21	115.45	352.27
P2-S	340.55	343.6	320.6	310.6	Upper - Aquifer A	04/29/21	15.12	328.48
MW-13	394.5	394.1	284.5	274.5	Aquifer A	04/29/21	52.84	341.26

Note: The Performance Monitoring Network was revised following the 2017 Annual Sampling Event in accordance with the criteria established in the Compliance Monitoring Work Plan and per Ecology approval dated 27 March 2018; BMW-3, MW-7, and P2-I were removed from the network and are no longer sampled as part of compliance monitoring.

Table 2.
Carbon Tetrachloride Results for 2021
Brazier Site, Frederickson, Washington

Well	PDB Deployment Date	Sample Date	Result (µg/L)	Lab MRL	Lab MDL	Qualifiers	Depth to Water (ft)	Water Level (MSL)
11-BL	4/15/2021	04/29/21	0.33	0.5	0.096	J	37.41	358.67
11-CL	4/15/2021	04/29/21	**4.1**	0.5	0.096		42.27	362.28
BMW-18	4/15/2021	04/29/21	**2.9**	0.5	0.096		39.19	372.90
HLA-1	4/15/2021	04/29/21	**4.0**	0.5	0.096		43.60	362.21
MW-1	4/15/2021	04/29/21	**1.3**	0.5	0.096		39.31	376.48
MW-4	4/15/2021	04/29/21	**0.65**	0.5	0.096		115.45	352.27
P2-S	4/15/2021	04/29/21	0.35	0.5	0.096	J	15.12	328.48
MW-13	4/15/2021	04/29/21	**1.5**	0.5	0.096		52.84	341.26

Notes:

BOLD = CTC value above groundwater cleanup level of 0.63 µg/L

µg/L = micrograms per liter;

MRL = Method Reporting Limit

MDL = Method Detection Limit

Laboratory Qualifier:

J = Carbon Tetrachloride detected between the MDL and method reporting limit (MRL: 0.5 µg/L). The reported value is estimated.

Table 3.
2014-2021 Carbon Tetrachloride Groundwater Performance Monitoring Data
Brazier Site, Frederickson, Washington

Wells	11-BL	11-CL	HLA-1	BMW-3	BMW-18	MW-1	MW-4	MW-7	P2-S	P2-I	MW-13
May-14	**0.97**	**5.4**	**5.0**	*0.28*	**5.5**	**1.8**	**0.82**	**2.3**	**0.76**	**0.72**	**2.3**
Oct-14	**0.95**	**4.4**	**4.6**	*0.39*	**4.8**	**1.4**	**0.66**	ND	ND	ND	**1.9**
Mar-15	**0.64**	**4.3**	**4.4**	*0.19*	**4.2**	**1.5**	0.62	*0.22*	*0.29*	ND	**1.9**
Oct-15	**0.72**	**3.8**	**3.9**	0.51	**3.8**	**1.2**	0.53	*0.24*	*0.45*	ND	**1.7**
May-16	0.50	**2.9**	**3.6**	*0.27*	**3.7**	**1.5**	0.51	ND	*0.28*	ND	**1.3**
Jun-17	**0.74**	**3.7**	**4.4**	*0.43*	**4.7**	**1.8**	**0.67**	ND	*0.27*	ND	**1.6**
May-18[1]	0.51	**4.1**	**4.5**	--	**3.4**	**2.1**	**0.67**	--	*0.36*	--	**1.8**
May-19[1]	**0.89**	**4.4**	**4.6**	--	**3.5**	**1.7**	**0.67**	--	*0.37*	--	**2.0**
May-20[1]	*0.38*	**3.2**	**3.8**	--	**2.5**	**1.3**	0.58	--	*0.36*	--	**1.7**
April-21[1]	*0.33*	**4.1**	**4.0**	--	**2.9**	**1.3**	**0.65**	--	*0.35*	--	**1.5**
95% UCL[2]	**0.89**	**4.4**	**4.6**	--	**3.5**	**2.1**	**0.67**	--	*0.37*	--	**2.0**

Notes:

1 - Groundwater sampling prior to 2018 was performed by low-flow method; use of passive diffusion bags for sampling began in 2018.

2 - 95% Upper Confidence Limit on true mean, using Ecology's Statistical Guidance for sample sets less than 20 (Example #15, page 97-98)
https://fortress.wa.gov/ecy/publications/documents/9254.pdf

WAC 173-340-720 (9)(e)(iv) **If more than fifty percent of the measurements are below the practical quantitation limit, the largest value in the data set shall be used in place of an upper confidence limit on the true mean groundwater calculation.

1.5	Bold values are above the CTC cleanup level of 0.63 µg/L
0.5	Estimated Value (i.e., concentration greater than method detection limit but less than method reporting limit)
ND	Non-Detected (Method Detection = 0.096)
--	Monitoring well no longer requires Performance Monitoring

The Performance Monitoring Network was revised following the 2017 Annual Sampling Event in accordance with the criteria established in the Compliance Monitoring Work Plan and per Ecology approval dated 27 March 2018; BMW-3, MW-7, and P2-I were removed from the network and are no longer sampled as part of performance monitoring.

Figures

Property Location

Frederickson Industrial Park
Frederickson, WA

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Seattle, WA | May 2021

Figure 1

P:\Projects\Olin Frederickson\800 GIS and CAD\320 GIS\GIS\2021_May\MXDs\Figure 1_Property Location.mxd; minman; 5/21/2021

N

MW-7

P-1S
P-1I

P-2I
P-2S (328.48)

Clover Creek

330

335

340

345

MW-13 (341.26)

350

355

MW-4 (352.27)

12-A

360

MW-3

365

370

63rd Ave

BMW-21

11-BL (358.67)

Y-4B

180th Street

11-CU

11-CL (362.28)

Y-4A

BMW-19

HLA-1 (362.21*)

375

BMW-18 (372.90)

BMW-20

BMW-22

Y-5

BMW-4

Y-3B

14-AL

BMW-2

MW-1 (376.48)

BMW-12

BMW-13R

BMW-5

Y-2

BMW-3

BMW-16

Y-6

BMW-1

20-AU

Y-1

9-A

BMW-14

BMW-15

Y-7A

Y-7B

9-B

BMW-9

BMW-8

21-A

9-C

BMW-6

BMW-17

BMW-7

PW1

7-A

Y-8

BMW-11

BMW-10

750 375 0 750 Feet

Note:

* - Not used in water level contouring; well is screened in lower level of Aquifer A compared to wells used to develop contours.

Legend

- April 2021 Water Level Contours (ft masl)
- Aquifer A Compliance Monitoring Network Well (April 2021 Water Level (ft masl))
- Monitoring Wells
- Property Boundary

Aquifer A Groundwater Levels
April 2021
Frederickson Industrial Park
Frederickson, WA

Geosyntec consultants

Seattle, WA | May 2021

Figure
2

P:\Projects\Olin Frederickson\800 GIS and CAD\920 GIS\GIS\GIS\2021 May\MXDs\Figure_02_OIn_GW_Elev_April2021.mxd; minman; 5/21/2021

N

MW-7

P-1S
P-1I
P-2I
P-2S (0.35J)

Clover Creek

0.63 µg/L

MW-13 (1.5)

63rd Ave

180th Street

12-A
MW-4 (0.65)

BMW-21
11-BL (0.33J)
HLA-1 (4.0)
11-CL (4.1)
11-A
Y-4B
Y-4A
BMW-18 (2.9)
BMW-20
BMW-4
Y-5
Y-3B
14-AL
MW-1 (1.3)
BMW-12
BMW-13R
BMW-3
Y-2
BMW-5
BMW-16
Y-6
BMW-1
20-AU
Y-1
9-A
BMW-14
BMW-15
Y-7A
Y-7B
9-B
BMW-9
BMW-8
21-A
9-C
BMW-6
BMW-17
BMW-7
PW1

750 375 0 750 Feet

Legend

- Aquifer A Monitoring Well (CTC Concentration (µg/L))
- Monitoring Wells
- CTC Contour for April 2021 data set
- Property Boundary

Notes:
1. (0.33 J) The results were above the Method Detection Limit (MDL), but below the Method Reporting Limit (MRL) and thus the values are estimated (i.e., J - flagged).

Aquifer A Carbon Tetrachloride Groundwater Results April 2021

Frederickson Industrial Park
Frederickson, WA

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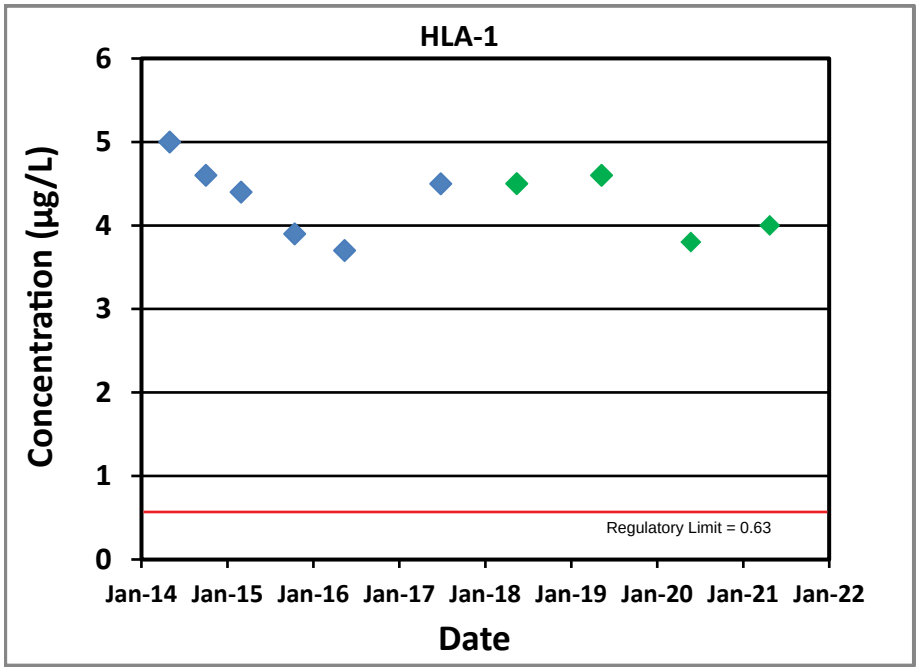
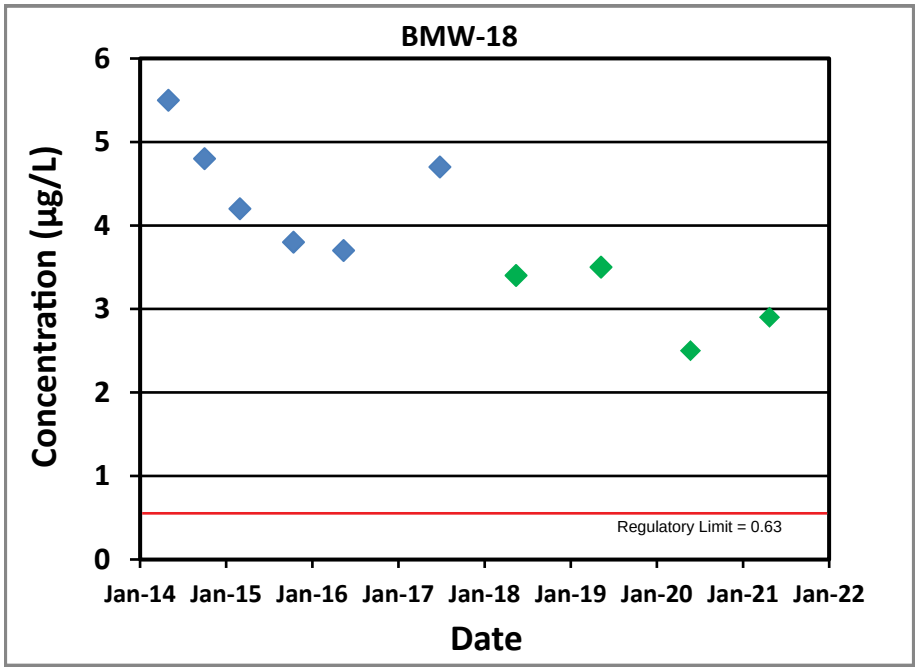
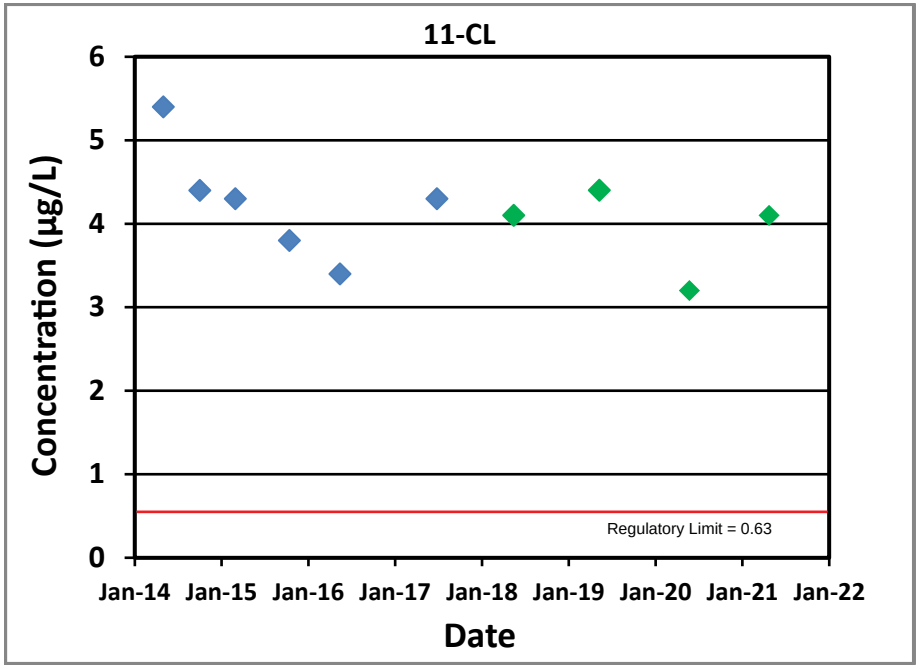
Seattle, WA | May 2021

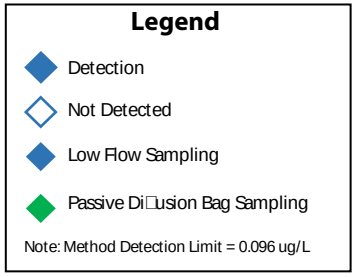
Figure 3

P:\Projects\Olin Frederickson\800 GIS and CAD\920 GIS\GIS\GIS\2021 May\MXDs\Figure_03_Olin_CTC_Conc_Apr2021.mxd; mimma.n; 5/21/2021







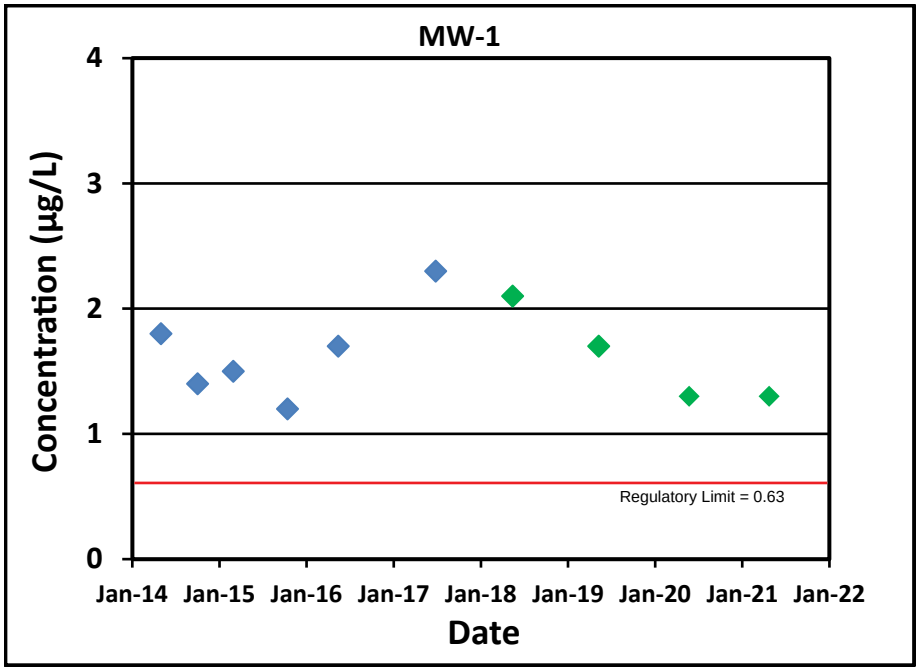


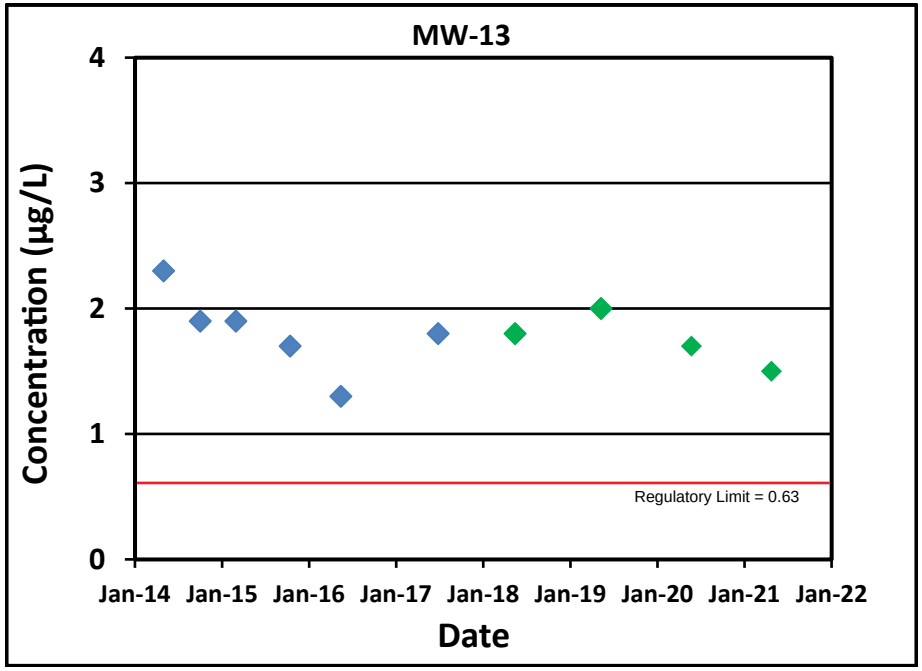
Carbon Tetrachloride
Groundwater Monitoring Well Data
Frederickson Industrial Park, Frederickson, WA

Geosyntec consultants

Seattle, WA | 2021

Figure **4a**





Legend

- Detection
- Not Detected
- Low Flow Sampling
- Passive Di□usion Bag Sampling

Note: Method Detection Limit = 0.096 ug/L

Carbon Tetrachloride
Groundwater Monitoring Well Data
Frederickson Industrial Park, Frederickson, WA

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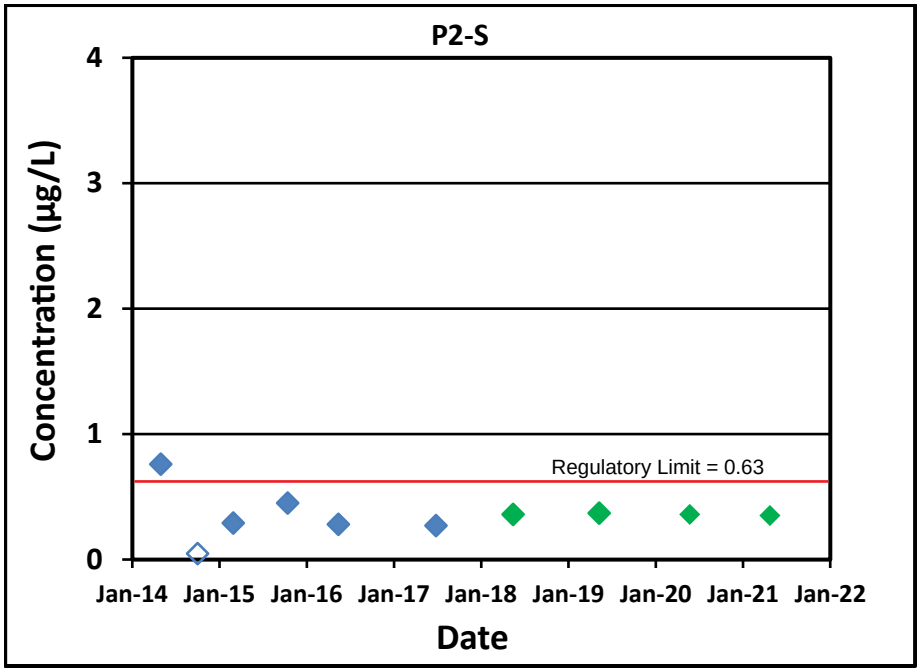
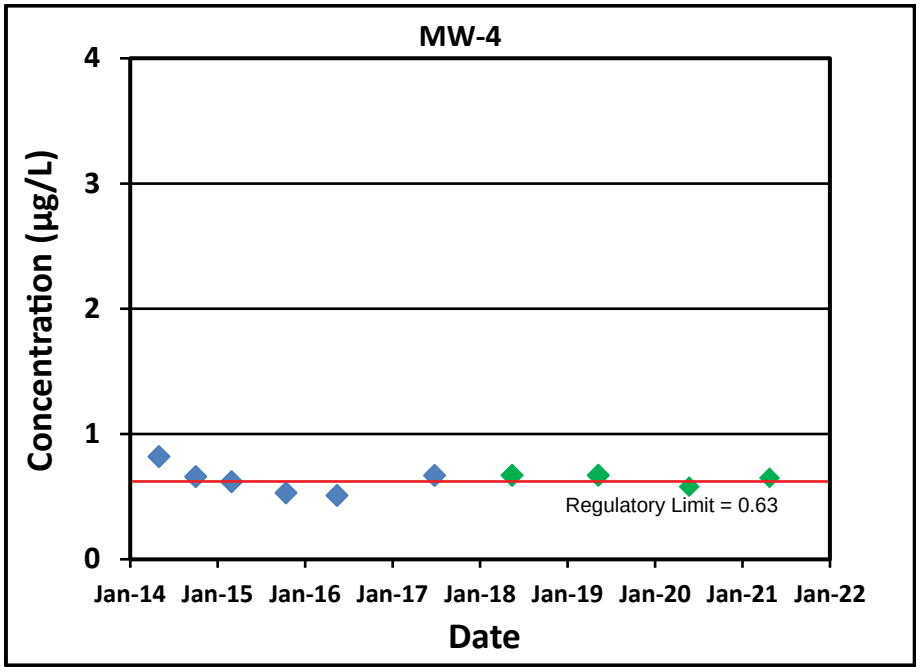
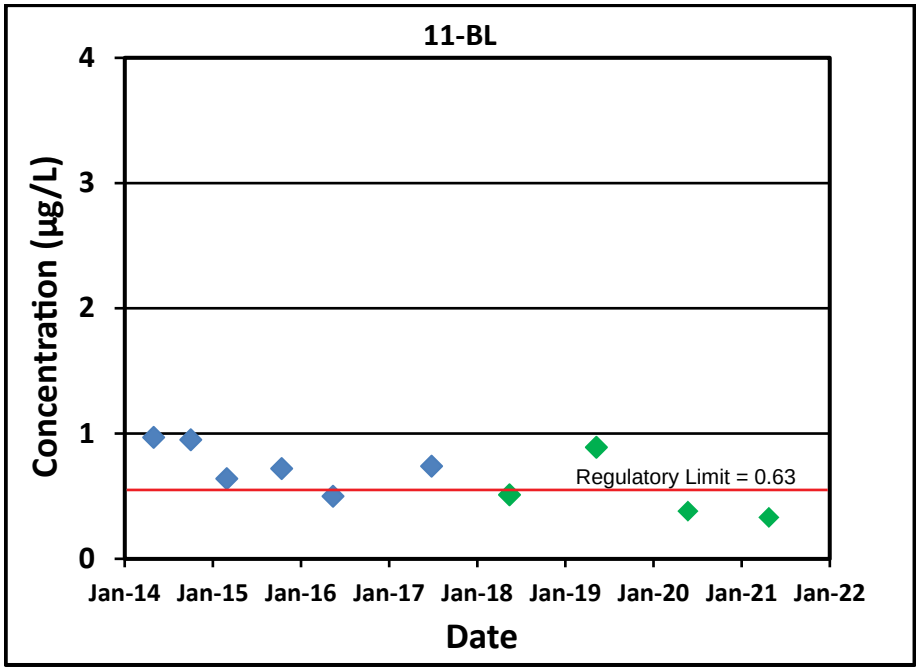
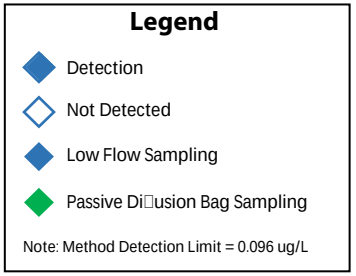
Seattle, WA | 2021

Figure **4b**









Carbon Tetrachloride
Groundwater Monitoring Well Data
Frederickson Industrial Park, Frederickson, WA

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Figure **4c**

Attachment A

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

May 14, 2021

Analytical Report for Service Request No: K2104733

Dave Parkinson
Geosyntec Consultants
520 Pike Street, Suite 2600
Seattle, WA 98101

RE: Frederickson Industrial Park

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory April 30, 2021
For your reference, these analyses have been assigned our service request number **K2104733.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

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Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Geosyntec Consultants
Project: Frederickson Industrial Park
Sample Matrix: Water

Service Request: K2104733
Date Received: 04/30/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier III level requested by the client.

Sample Receipt:

Ten water samples were received for analysis at ALS Environmental on 04/30/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 05/14/2021

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Environmental

CHAIN OF CUSTODY

116631

004

SR# K2104733

COC Set 1 of 2

COC# 1 2

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: 1300 Canyon Rd E, Olin Fredrickson, Fredrickson, WA
Project Number:
Project Manager: Dave Parkinson
Company: Geo Syntec
Address:
Phone #: 206-618-0350
email:
Sampler Signature: [signature]
Sampler Printed Name: Andrew Luser

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	7D Screen VOA GCMS /	14D 8260C / VOC FP	1 GTC	2	3	4	5	Remarks
1. GW-042921-MW-1		4/29/21	0804	Water				X					
2. GW-042921-MW-4		4/29/21	0850	Water				X					
3. GW-042921-11-BL		4/29/21	0923	Water				X					
4. GW-042921-11-CL		4/29/21	0943	Water				X					
5. GW-042921-HLA-1		4/29/21	0956	Water				X					
6. GW-042921-BMW-18		4/29/21	1022	Water				X					
7. GW-042921-BMW-18-MS		4/29/21	~~1108~~ 1022	Water				X					
8. GW-042921-BMW-18-MSD		4/29/21	1022	Water				X					
9. GW-042921-P2-S		4/29/21	1108	Water				X					
10. GW-042921-MW-13		4/29/21	1132	Water				X					

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

___ V. EDD

Invoice Information

P.O.#___

Bill To:___

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other___ (Circle One)

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	[signature]	Cody Graves				
Printed Name	Andrew Luser	ALS				
Firm	DTS					
Date/Time	4/30/21 1620	4/30/21 1620				

ALS Environmental

CHAIN OF CUSTODY
116631

004

SR# K2104733

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name	Olin Frederickson
Project Manager	Dave Parkinson
Company	GeoSyntec
Address	18001 Cantrell Rd E, Frederickson, WA
Phone #	206-618-0350
email	
Sampler Signature	
Sampler Printed Name	Andrew Laser

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	7D Screen VOA GCMS /	14D B260C / VOC FP	1 CTC	2	3	4	5	Remarks
GW-042921-MW-13-Dup		4/29/21		water				X					
GW-042921-Blank		4/29/21		water				X					

Report Requirements

- __ I. Routine Report: Method Blank, Surrogate, as required
- __ II. Report Dup., MS, MSD as required
- __ III. CLP Like Summary (no raw data)
- __ IV. Data Validation Report
- __ V. EDD

Invoice Information

P.O.#_____

Bill To:_____

Turnaround Requirements

____ 24 hr. ____ 48 hr.
____ 5 Day
____ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature Cody Graves	Signature	Signature	Signature	Signature
Printed Name Andrew Laser	Printed Name ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm BTS	Firm	Firm	Firm	Firm	Firm
Date/Time 4/30/21 1610	Date/Time 4/30/21 1620	Date/Time	Date/Time	Date/Time	Date/Time

PM KL

Cooler Receipt and Preservation Form

Client GeoSyntec Service Request K21

Received: 4/30/21 Opened: 4/30/21 By: CG Unloaded: 4/30/21 By: CG

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
✓	3.0	FR01					

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 08:04
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-MW-1	**Units:**	ug/L
Lab Code:	K2104733-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**1.3**	0.50	0.096	1	05/05/21 17:42	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	05/05/21 17:42	
Dibromofluoromethane	93	73 - 122	05/05/21 17:42	
Toluene-d8	100	65 - 144	05/05/21 17:42	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 08:50
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-MW-4	**Units:**	ug/L
Lab Code:	K2104733-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**0.65**	0.50	0.096	1	05/05/21 18:09	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	68 - 117	05/05/21 18:09	
Dibromofluoromethane	95	73 - 122	05/05/21 18:09	
Toluene-d8	98	65 - 144	05/05/21 18:09	

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 09:23
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-11-BL	**Units:**	ug/L
Lab Code:	K2104733-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**0.33 J**	0.50	0.096	1	05/05/21 18:35	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	05/05/21 18:35	
Dibromofluoromethane	98	73 - 122	05/05/21 18:35	
Toluene-d8	99	65 - 144	05/05/21 18:35	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 09:43
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-11-CL	**Units:**	ug/L
Lab Code:	K2104733-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**4.1**	0.50	0.096	1	05/05/21 19:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	68 - 117	05/05/21 19:02	
Dibromofluoromethane	97	73 - 122	05/05/21 19:02	
Toluene-d8	97	65 - 144	05/05/21 19:02	

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 09:56
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-HLA-1	**Units:**	ug/L
Lab Code:	K2104733-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**4.0**	0.50	0.096	1	05/05/21 19:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	68 - 117	05/05/21 19:28	
Dibromofluoromethane	95	73 - 122	05/05/21 19:28	
Toluene-d8	98	65 - 144	05/05/21 19:28	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 10:22
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-BMW-18	**Units:**	ug/L
Lab Code:	K2104733-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**2.9**	0.50	0.096	1	05/06/21 18:44	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	68 - 117	05/06/21 18:44	
Dibromofluoromethane	93	73 - 122	05/06/21 18:44	
Toluene-d8	97	65 - 144	05/06/21 18:44	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 11:08
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-P2-S	**Units:**	ug/L
Lab Code:	K2104733-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**0.35 J**	0.50	0.096	1	05/06/21 19:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	05/06/21 19:11	
Dibromofluoromethane	93	73 - 122	05/06/21 19:11	
Toluene-d8	97	65 - 144	05/06/21 19:11	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21 11:32
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-MW-13	**Units:**	ug/L
Lab Code:	K2104733-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**1.5**	0.50	0.096	1	05/06/21 19:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	68 - 117	05/06/21 19:37	
Dibromofluoromethane	94	73 - 122	05/06/21 19:37	
Toluene-d8	97	65 - 144	05/06/21 19:37	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-MW13-Dup	**Units:**	ug/L
Lab Code:	K2104733-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	**1.6**	0.50	0.096	1	05/06/21 20:04	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	68 - 117	05/06/21 20:04	
Dibromofluoromethane	97	73 - 122	05/06/21 20:04	
Toluene-d8	101	65 - 144	05/06/21 20:04	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21
Sample Matrix:	Water	**Date Received:**	04/30/21 16:20
Sample Name:	GW-042921-Blank	**Units:**	ug/L
Lab Code:	K2104733-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	ND U	0.50	0.096	1	05/06/21 20:30	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	68 - 117	05/06/21 20:30	
Dibromofluoromethane	94	73 - 122	05/06/21 20:30	
Toluene-d8	98	65 - 144	05/06/21 20:30	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2108093-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	ND U	0.50	0.096	1	05/06/21 13:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	68 - 117	05/06/21 13:00	
Dibromofluoromethane	95	73 - 122	05/06/21 13:00	
Toluene-d8	99	65 - 144	05/06/21 13:00	

Analytical Report

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2108177-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Carbon Tetrachloride	ND U	0.50	0.096	1	05/05/21 12:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	68 - 117	05/05/21 12:49	
Dibromofluoromethane	95	73 - 122	05/05/21 12:49	
Toluene-d8	99	65 - 144	05/05/21 12:49	

Client: Geosyntec Consultants **Service Request:** K2104733
Project: Frederickson Industrial Park
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene 68-117	Dibromofluoromethane 73-122	Toluene-d8 65-144
GW-042921-MW-1	K2104733-001	90	93	100
GW-042921-MW-4	K2104733-002	88	95	98
GW-042921-11-BL	K2104733-003	86	98	99
GW-042921-11-CL	K2104733-004	89	97	97
GW-042921-HLA-1	K2104733-005	87	95	98
GW-042921-BMW-18	K2104733-006	88	93	97
GW-042921-P2-S	K2104733-007	86	93	97
GW-042921-MW-13	K2104733-008	87	94	97
GW-042921-MW13-Dup	K2104733-009	89	97	101
GW-042921-Blank	K2104733-010	87	94	98
Method Blank	KQ2108093-05	89	95	99
Method Blank	KQ2108177-05	89	95	99
Lab Control Sample	KQ2108093-03	93	96	100
Duplicate Lab Control Sample	KQ2108093-04	95	100	101
Lab Control Sample	KQ2108177-03	92	96	101
Duplicate Lab Control Sample	KQ2108177-04	93	100	101
GW-042921-BMW-18	KQ2108093-06	93	96	99
GW-042921-BMW-18	KQ2108093-07	95	95	97

Client: Geosyntec Consultants **Service Request:**K2104733
Project: Frederickson Industrial Park **Date Analyzed:**05/05/21 10:36

Internal Standard Area and RT SUMMARY
Volatile Organic Compounds by GC/MS

File ID: J:\MS13\DATA\050521\0505F004.D\ **Lab Code:**KQ2108177-02
Instrument ID: K-MS-13 **Analysis Lot:**722217
Analysis Method: 8260C **Signal ID:**1

		Chlorobenzene-d5		1,4-Dichlorobenzene-d4		Fluorobenzene	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	143,879	9.36	114,453	11.96	394,730	5.32
	Upper Limit ==>	287,758	9.86	228,906	12.46	789,460	5.82
	Lower Limit ==>	71,940	8.86	57,227	11.46	197,365	4.82
Associated Analyses							
Lab Control Sample	KQ2108177-03	153204	9.36	113809	11.96	394281	5.32
Duplicate Lab Control Sample	KQ2108177-04	154787	9.36	119999	11.96	404024	5.32
Method Blank	KQ2108177-05	144451	9.36	105766	11.96	383109	5.32
GW-042921-MW-1	K2104733-001	143961	9.36	108289	11.96	363760	5.32
GW-042921-MW-4	K2104733-002	145657	9.36	107186	11.96	375659	5.32
GW-042921-11-BL	K2104733-003	151726	9.36	109817	11.95	383486	5.32
GW-042921-11-CL	K2104733-004	143406	9.36	101857	11.96	373033	5.32
GW-042921-HLA-1	K2104733-005	142598	9.36	104231	11.96	372479	5.32

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Geosyntec Consultants **Service Request:**K2104733
Project: Frederickson Industrial Park **Date Analyzed:**05/06/21 10:47

Internal Standard Area and RT SUMMARY
Volatile Organic Compounds by GC/MS

File ID: J:\MS13\DATA\050621\0506F002.D\ **Lab Code:**KQ2108093-02
Instrument ID: K-MS-13 **Analysis Lot:**722503
Analysis Method: 8260C **Signal ID:**1

		Chlorobenzene-d5		1,4-Dichlorobenzene-d4		Fluorobenzene	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Result ==>	148,406	9.36	110,978	11.96	368,161	5.32
	Upper Limit ==>	296,812	9.86	221,956	12.46	736,322	5.82
	Lower Limit ==>	74,203	8.86	55,489	11.46	184,081	4.82
Associated Analyses							
Lab Control Sample	KQ2108093-03	154727	9.36	118558	11.96	400627	5.32
Duplicate Lab Control Sample	KQ2108093-04	154671	9.36	117195	11.96	404892	5.32
Method Blank	KQ2108093-05	147062	9.36	112030	11.95	378330	5.32
GW-042921-BMW-18	K2104733-006	149722	9.36	106746	11.95	394066	5.32
GW-042921-P2-S	K2104733-007	152000	9.36	113111	11.95	396772	5.32
GW-042921-MW-13	K2104733-008	147898	9.36	109330	11.95	388981	5.32
GW-042921-MW13-Dup	K2104733-009	144978	9.36	105010	11.95	371684	5.32
GW-042921-Blank	K2104733-010	143402	9.36	106539	11.95	375336	5.32
GW-042921-BMW-18MS	KQ2108093-06	152130	9.36	117957	11.96	399963	5.32
GW-042921-BMW-18DMS	KQ2108093-07	153181	9.36	116423	11.96	411409	5.32

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Collected:**	04/29/21
Sample Matrix:	Water	**Date Received:**	04/30/21
		Date Analyzed:	05/6/21
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	GW-042921-BMW-18	**Units:**	ug/L
Lab Code:	K2104733-006	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	None		

		Matrix Spike KQ2108093-06			Duplicate Matrix Spike KQ2108093-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon Tetrachloride	2.9	14.6	10.0	117	13.8	10.0	109	53-161	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/06/21
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	722503

	Lab Control Sample KQ2108093-03			Duplicate Lab Control Sample KQ2108093-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon Tetrachloride	9.67	10.0	97	9.84	10.0	98	55-140	2	30

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/05/21
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	722217

	Lab Control Sample KQ2108177-03			Duplicate Lab Control Sample KQ2108177-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon Tetrachloride	9.26	10.0	93	9.05	10.0	91	55-140	2	30

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/06/21 13:00
Sample Matrix:	Water	**Date Extracted:**	

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-13
Lab Code:	KQ2108093-05	**File ID:**	J:\MS13\DATA\050621\0506F007.D\
Analysis Method:	8260C	**Analysis Lot:**	722503
Prep Method:	None		

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ2108093-03	J:\MS13\DATA\050621\0506F003.D\	05/06/21 11:13
Duplicate Lab Control Sample	KQ2108093-04	J:\MS13\DATA\050621\0506F004.D\	05/06/21 11:40
GW-042921-BMW-18	K2104733-006	J:\MS13\DATA\050621\0506F019.D\	05/06/21 18:44
GW-042921-P2-S	K2104733-007	J:\MS13\DATA\050621\0506F020.D\	05/06/21 19:11
GW-042921-MW-13	K2104733-008	J:\MS13\DATA\050621\0506F021.D\	05/06/21 19:37
GW-042921-MW13-Dup	K2104733-009	J:\MS13\DATA\050621\0506F022.D\	05/06/21 20:04
GW-042921-Blank	K2104733-010	J:\MS13\DATA\050621\0506F023.D\	05/06/21 20:30
GW-042921-BMW-18MS	KQ2108093-06	J:\MS13\DATA\050621\0506F024.D\	05/06/21 20:57
GW-042921-BMW-18DMS	KQ2108093-07	J:\MS13\DATA\050621\0506F025.D\	05/06/21 21:23

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/05/21 12:49
Sample Matrix:	Water	**Date Extracted:**	

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-13
Lab Code:	KQ2108177-05	**File ID:**	J:\MS13\DATA\050521\0505F009.D\
Analysis Method:	8260C	**Analysis Lot:**	722217
Prep Method:	None		

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ2108177-03	J:\MS13\DATA\050521\0505F005.D\	05/05/21 11:03
Duplicate Lab Control Sample	KQ2108177-04	J:\MS13\DATA\050521\0505F006.D\	05/05/21 11:29
GW-042921-MW-1	K2104733-001	J:\MS13\DATA\050521\0505F020.D\	05/05/21 17:42
GW-042921-MW-4	K2104733-002	J:\MS13\DATA\050521\0505F021.D\	05/05/21 18:09
GW-042921-11-BL	K2104733-003	J:\MS13\DATA\050521\0505F022.D\	05/05/21 18:35
GW-042921-11-CL	K2104733-004	J:\MS13\DATA\050521\0505F023.D\	05/05/21 19:02
GW-042921-HLA-1	K2104733-005	J:\MS13\DATA\050521\0505F024.D\	05/05/21 19:28

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/06/21 11:13
Sample Matrix:	Water	**Date Extracted:**	

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-13
Lab Code:	KQ2108093-03	**File ID:**	J:\MS13\DATA\050621\0506F003.D\
Analysis Method:	8260C	**Analysis Lot:**	722503
Prep Method:	None		

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ2108093-04	J:\MS13\DATA\050621\0506F004.D\	05/06/21 11:40
Method Blank	KQ2108093-05	J:\MS13\DATA\050621\0506F007.D\	05/06/21 13:00
GW-042921-BMW-18	K2104733-006	J:\MS13\DATA\050621\0506F019.D\	05/06/21 18:44
GW-042921-P2-S	K2104733-007	J:\MS13\DATA\050621\0506F020.D\	05/06/21 19:11
GW-042921-MW-13	K2104733-008	J:\MS13\DATA\050621\0506F021.D\	05/06/21 19:37
GW-042921-MW13-Dup	K2104733-009	J:\MS13\DATA\050621\0506F022.D\	05/06/21 20:04
GW-042921-Blank	K2104733-010	J:\MS13\DATA\050621\0506F023.D\	05/06/21 20:30
GW-042921-BMW-18MS	KQ2108093-06	J:\MS13\DATA\050621\0506F024.D\	05/06/21 20:57
GW-042921-BMW-18DMS	KQ2108093-07	J:\MS13\DATA\050621\0506F025.D\	05/06/21 21:23

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/05/21 11:03
Sample Matrix:	Water	**Date Extracted:**	

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-13
Lab Code:	KQ2108177-03	**File ID:**	J:\MS13\DATA\050521\0505F005.D\
Analysis Method:	8260C	**Analysis Lot:**	722217
Prep Method:	None		

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ2108177-04	J:\MS13\DATA\050521\0505F006.D\	05/05/21 11:29
Method Blank	KQ2108177-05	J:\MS13\DATA\050521\0505F009.D\	05/05/21 12:49
GW-042921-MW-1	K2104733-001	J:\MS13\DATA\050521\0505F020.D\	05/05/21 17:42
GW-042921-MW-4	K2104733-002	J:\MS13\DATA\050521\0505F021.D\	05/05/21 18:09
GW-042921-11-BL	K2104733-003	J:\MS13\DATA\050521\0505F022.D\	05/05/21 18:35
GW-042921-11-CL	K2104733-004	J:\MS13\DATA\050521\0505F023.D\	05/05/21 19:02
GW-042921-HLA-1	K2104733-005	J:\MS13\DATA\050521\0505F024.D\	05/05/21 19:28

Client: Geosyntec Consultants **Service Request:**K2104733
Project: Frederickson Industrial Park **Date Analyzed:**05/05/21 10:09

Tune Summary
Volatile Organic Compounds by GC/MS

File ID: J:\MS13\DATA\050521\0505F003.D\ **Analytical Method:** 8260C
Instrument ID: K-MS-13 **Analysis Lot:** 722217

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	21.74	2032	Pass
75	95	30	60	50.68	4737	Pass
95	95	100	100	100.00	9347	Pass
96	95	5	9	7.41	693	Pass
173	174	0	2	1.18	94	Pass
174	95	50	120	84.99	7944	Pass
175	174	5	9	7.92	629	Pass
176	174	95	101	97.53	7748	Pass
177	176	5	9	7.54	584	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ2108177-02	J:\MS13\DATA\050521\0505F004.D\	05/05/21 10:36	
Lab Control Sample	KQ2108177-03	J:\MS13\DATA\050521\0505F005.D\	05/05/21 11:03	
Duplicate Lab Control Sample	KQ2108177-04	J:\MS13\DATA\050521\0505F006.D\	05/05/21 11:29	
Method Blank	KQ2108177-05	J:\MS13\DATA\050521\0505F009.D\	05/05/21 12:49	
GW-042921-MW-1	K2104733-001	J:\MS13\DATA\050521\0505F020.D\	05/05/21 17:42	
GW-042921-MW-4	K2104733-002	J:\MS13\DATA\050521\0505F021.D\	05/05/21 18:09	
GW-042921-11-BL	K2104733-003	J:\MS13\DATA\050521\0505F022.D\	05/05/21 18:35	
GW-042921-11-CL	K2104733-004	J:\MS13\DATA\050521\0505F023.D\	05/05/21 19:02	
GW-042921-HLA-1	K2104733-005	J:\MS13\DATA\050521\0505F024.D\	05/05/21 19:28	

Client: Geosyntec Consultants **Service Request:**K2104733
Project: Frederickson Industrial Park **Date Analyzed:**05/06/21 10:17

Tune Summary
Volatile Organic Compounds by GC/MS

File ID: J:\MS13\DATA\050621\0506F001.D\ **Analytical Method:** 8260C
Instrument ID: K-MS-13 **Analysis Lot:** 722503

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	21.15	2373	Pass
75	95	30	60	52.24	5862	Pass
95	95	100	100	100.00	11221	Pass
96	95	5	9	7.82	877	Pass
173	174	0	2	0.78	71	Pass
174	95	50	120	81.33	9126	Pass
175	174	5	9	5.60	511	Pass
176	174	95	101	98.36	8976	Pass
177	176	5	9	5.99	538	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ2108093-02	J:\MS13\DATA\050621\0506F002.D\	05/06/21 10:47	
Lab Control Sample	KQ2108093-03	J:\MS13\DATA\050621\0506F003.D\	05/06/21 11:13	
Duplicate Lab Control Sample	KQ2108093-04	J:\MS13\DATA\050621\0506F004.D\	05/06/21 11:40	
Method Blank	KQ2108093-05	J:\MS13\DATA\050621\0506F007.D\	05/06/21 13:00	
GW-042921-BMW-18	K2104733-006	J:\MS13\DATA\050621\0506F019.D\	05/06/21 18:44	
GW-042921-P2-S	K2104733-007	J:\MS13\DATA\050621\0506F020.D\	05/06/21 19:11	
GW-042921-MW-13	K2104733-008	J:\MS13\DATA\050621\0506F021.D\	05/06/21 19:37	
GW-042921-MW13-Dup	K2104733-009	J:\MS13\DATA\050621\0506F022.D\	05/06/21 20:04	
GW-042921-Blank	K2104733-010	J:\MS13\DATA\050621\0506F023.D\	05/06/21 20:30	
GW-042921-BMW-18	KQ2108093-06	J:\MS13\DATA\050621\0506F024.D\	05/06/21 20:57	
GW-042921-BMW-18	KQ2108093-07	J:\MS13\DATA\050621\0506F025.D\	05/06/21 21:23	

Client: Geosyntec Consultants **Service Request:** K2104733
Project: Frederickson Industrial Park **Calibration Date:** 7/25/2019

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

Calibration ID: KC1900305 **Signal ID:** 1
Instrument ID: K-MS-13

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1900305-01	CAL 0.1 PPB	I:\MS13\DATA\072519\0725F006.D	07/25/2019 09:26
02	KC1900305-02	CAL 0.2 PPB	I:\MS13\DATA\072519\0725F007.D	07/25/2019 09:52
03	KC1900305-03	CAL 0.5 PPB	I:\MS13\DATA\072519\0725F008.D	07/25/2019 10:19
04	KC1900305-04	CAL 1.0 PPB	I:\MS13\DATA\072519\0725F009.D	07/25/2019 10:45
05	KC1900305-05	CAL 2.0 PPB	I:\MS13\DATA\072519\0725F010.D	07/25/2019 11:12
06	KC1900305-06	CAL 5.0 PPB	I:\MS13\DATA\072519\0725F011.D	07/25/2019 11:38
07	KC1900305-07	CAL 10 PPB	I:\MS13\DATA\072519\0725F012.D	07/25/2019 12:04
08	KC1900305-08	CAL 40 PPB	I:\MS13\DATA\072519\0725F014.D	07/25/2019 12:57
09	KC1900305-09	CAL 60 PPB	I:\MS13\DATA\072519\0725F015.D	07/25/2019 13:24
10	KC1900305-10	CAL 80 PPB	I:\MS13\DATA\072519\0725F016.D	07/25/2019 13:50
11	KC1900305-11	CAL 20 PPB	I:\MS13\DATA\072519\0725F020.D	07/25/2019 15:37

Analyte

4-Bromofluorobenzene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	4.000	0.7102	05	6.000	0.7459	06	8.000	0.8099	07	10.000	0.884
11	12.000	0.8483	08	14.000	0.9184	09	16.000	0.9014	10	20.000	0.8605

Carbon Tetrachloride

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.100	0.324	02	0.200	0.3124	03	0.500	0.3236	04	1.000	0.334
05	2.000	0.3241	06	5.000	0.3497	07	10.000	0.3693	11	20.000	0.3879
08	40.000	0.4306	09	60.000	0.4261	10	80.000	0.4285			

Dibromofluoromethane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	4.000	0.1918	05	6.000	0.1983	06	8.000	0.2236	07	10.000	0.2269
11	12.000	0.2303	08	14.000	0.2471	09	16.000	0.2509	10	20.000	0.2449

Toluene-d8

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	4.000	0.871	05	6.000	0.8991	06	8.000	0.9763	07	10.000	1.003
11	12.000	0.9751	08	14.000	1.012	09	16.000	1.016	10	20.000	1.007

Client: Geosyntec Consultants **Service Request:** K2104733
Project: Frederickson Industrial Park **Calibration Date:** 7/25/2019

Initial Calibration Summary
Volatile Organic Compounds by GC/MS

Calibration ID: KC1900305 **Signal ID:** 1
Instrument ID: K-MS-13

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
4-Bromofluorobenzene	SURR	Average RF	% RSD	8.9	≤20	0.8348	0.01
Carbon Tetrachloride	TRG	Average RF	% RSD	12.8	≤20	0.3646	0.100
Dibromofluoromethane	SURR	Average RF	% RSD	9.7	≤20	0.2267	0.01
Toluene-d8	SURR	Average RF	% RSD	5.7	≤20	0.97	0.01

Client: Geosyntec Consultants **Service Request:** K2104733
Project: Frederickson Industrial Park **Calibration Date:** 7/25/2019

Initial Calibration Verification Summary
Volatile Organic Compounds by GC/MS

Calibration ID: KC1900305 **Signal ID:** 1
Instrument ID: K-MS-13

#	Lab Code	Sample Name	File Location	Acquisition Date
12	KC1900305-12	ICV	I:\MS13\DATA\072519\0725F023.D	07/25/2019 16:56

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Carbon Tetrachloride	10.0	9.46	3.646E-1	3.45E-1	-5.353	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
4-Bromofluorobenzene	10.0	9.42	8.348E-1	7.864E-1	-5.803	±30	Average RF
Dibromofluoromethane	10.0	9.59	2.267E-1	2.175E-1	-4.065	±30	Average RF
Toluene-d8	10.0	10.0	9.7E-1	9.723E-1	0.230	±30	Average RF

Client: Geosyntec Consultants
Project: Frederickson Industrial Park
Service Request: K2104733
Date Analyzed: 05/06/21 10:47

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
File ID: J:\MS13\DATA\050621\0506F002.D\
Signal ID: 1
Calibration Date: 7/25/2019
Calibration ID: KC1900305
Analysis Lot: 722503
Units: ppb

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Carbon Tetrachloride	10.0	11.0	0.3646	0.3997	9.6	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
4-Bromofluorobenzene	10.0	9.29	0.8348	0.7752	-7.1	NA	±20	Average RF
Dibromofluoromethane	10.0	9.44	0.2267	0.2139	-5.6	NA	±20	Average RF
Toluene-d8	10.0	10.4	0.97	1.0124	4.4	NA	±20	Average RF

Client:	Geosyntec Consultants	**Service Request:**	K2104733
Project:	Frederickson Industrial Park	**Date Analyzed:**	05/05/21 10:36

Continuing Calibration Verification (CCV) Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Calibration Date:**	7/25/2019
File ID:	J:\MS13\DATA\050521\0505F004.D\	**Calibration ID:**	KC1900305
Signal ID:	1	**Analysis Lot:**	722217
		Units:	ppb

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Carbon Tetrachloride	10.0	9.08	0.3646	0.331	-9.2	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
4-Bromofluorobenzene	10.0	10.1	0.8348	0.8447	1.2	NA	±20	Average RF
Dibromofluoromethane	10.0	9.43	0.2267	0.2138	-5.7	NA	±20	Average RF
Toluene-d8	10.0	10.1	0.97	0.9761	0.6	NA	±20	Average RF

Client: Geosyntec Consultants **Service Request:**K2104733
Project: Frederickson Industrial Park

Analysis Run Log
Volatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**722217
Instrument ID:K-MS-13

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS13\DATA\050521\0505F003.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	10:09:00	
J:\MS13\DATA\050521\0505F004.D\	Continuing Calibration Verification	KQ2108177-02	5/5/2021	10:36:00	
J:\MS13\DATA\050521\0505F005.D\	Lab Control Sample	KQ2108177-03	5/5/2021	11:03:00	
J:\MS13\DATA\050521\0505F006.D\	Duplicate Lab Control Sample	KQ2108177-04	5/5/2021	11:29:00	
J:\MS13\DATA\050521\0505F009.D\	Method Blank	KQ2108177-05	5/5/2021	12:49:00	
J:\MS13\DATA\050521\0505F013.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	14:36:00	
J:\MS13\DATA\050521\0505F014.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	15:03:00	
J:\MS13\DATA\050521\0505F015.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	15:29:00	
J:\MS13\DATA\050521\0505F016.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	15:56:00	
J:\MS13\DATA\050521\0505F017.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	16:22:00	
J:\MS13\DATA\050521\0505F018.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	16:49:00	
J:\MS13\DATA\050521\0505F019.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	17:15:00	
J:\MS13\DATA\050521\0505F020.D\	GW-042921-MW-1	K2104733-001	5/5/2021	17:42:00	
J:\MS13\DATA\050521\0505F021.D\	GW-042921-MW-4	K2104733-002	5/5/2021	18:09:00	
J:\MS13\DATA\050521\0505F022.D\	GW-042921-11-BL	K2104733-003	5/5/2021	18:35:00	
J:\MS13\DATA\050521\0505F023.D\	GW-042921-11-CL	K2104733-004	5/5/2021	19:02:00	
J:\MS13\DATA\050521\0505F024.D\	GW-042921-HLA-1	K2104733-005	5/5/2021	19:28:00	
J:\MS13\DATA\050521\0505F025.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	19:55:00	
J:\MS13\DATA\050521\0505F026.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	20:21:00	
J:\MS13\DATA\050521\0505F028.D\	ZZZZZZZ	ZZZZZZZ	5/5/2021	21:14:00	

Client: Geosyntec Consultants **Service Request:**K2104733
Project: Frederickson Industrial Park

Analysis Run Log
Volatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**722503
Instrument ID:K-MS-13

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS13\DATA\050621\0506F001.D\	ZZZZZZZ	ZZZZZZZ	5/6/2021	10:17:00	
J:\MS13\DATA\050621\0506F002.D\	Continuing Calibration Verification	KQ2108093-02	5/6/2021	10:47:00	
J:\MS13\DATA\050621\0506F003.D\	Lab Control Sample	KQ2108093-03	5/6/2021	11:13:00	
J:\MS13\DATA\050621\0506F004.D\	Duplicate Lab Control Sample	KQ2108093-04	5/6/2021	11:40:00	
J:\MS13\DATA\050621\0506F007.D\	Method Blank	KQ2108093-05	5/6/2021	13:00:00	
J:\MS13\DATA\050621\0506F017.D\	ZZZZZZZ	ZZZZZZZ	5/6/2021	17:51:00	
J:\MS13\DATA\050621\0506F018.D\	ZZZZZZZ	ZZZZZZZ	5/6/2021	18:17:00	
J:\MS13\DATA\050621\0506F019.D\	GW-042921-BMW-18	K2104733-006	5/6/2021	18:44:00	
J:\MS13\DATA\050621\0506F020.D\	GW-042921-P2-S	K2104733-007	5/6/2021	19:11:00	
J:\MS13\DATA\050621\0506F021.D\	GW-042921-MW-13	K2104733-008	5/6/2021	19:37:00	
J:\MS13\DATA\050621\0506F022.D\	GW-042921-MW13-Dup	K2104733-009	5/6/2021	20:04:00	
J:\MS13\DATA\050621\0506F023.D\	GW-042921-Blank	K2104733-010	5/6/2021	20:30:00	
J:\MS13\DATA\050621\0506F024.D\	GW-042921-BMW-18 MS	KQ2108093-06	5/6/2021	20:57:00	
J:\MS13\DATA\050621\0506F025.D\	GW-042921-BMW-18 DMS	KQ2108093-07	5/6/2021	21:23:00	