Tesoro Alaska Company LLC

Kenai Refinery
54741 Tesoro Road
Kenai, AK 99611
Tel: 907-776-8191

August 29, 2022

Ms. Janice E. Palumbo
Environmental Compliance Specialist
Office of Solid Waste and Emergency Response
RCRA Permitting Unit
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, WA 98101

Submitted via email
Palumbo.jan@epa.gov

RE: Submission of Quarterly Progress Report #22-3
Tesoro Alaska Company LLC
Kenai Refinery
EPA ID# AKD 048679682

Dear Ms. Palumbo:

Enclosed is Tesoro Alaska's Kenai Refinery Quarterly Progress Report (QPR) Number 22-3, prepared per the requirements of Tesoro Alaska Company's Resource Conservation and Recovery Act (RCRA) Post-Closure Permit, issued on November 1, 2017 by the U.S. Environmental Protection Agency. This report describes activities conducted May 2022 through July 2022.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Please contact Stephanie Plate of my staff (907) 776-2090 should you have questions or comments regarding the enclosed report.

Sincerely,

Bruce Jackman
General Manager, Kenai Refinery

Enclosure- Quarterly Progress Report Number 22-3

CC via email: Rory O'Rourke, ORourke.Rory@epa.com
Peter Campbell, peter.campbell@alaska.gov, ADEC Soldotna Office
Tong Li, tongligws@comcast.net, ASE

Quarterly Progress Report No. 22-3

May, June, and July 2022

RCRA POST-CLOSURE PERMIT No. AKD 04867 9682

Tesoro Alaska Company, LLC

Kenai, Alaska

August 31, 2022

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List of Abbreviations and Acronyms

µg/L	micrograms per liter
AS	air sparge
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAPP	corrective action program plan
CAMP	corrective action modification plan per Permit condition III.D.1
cfm	cubic feet per meter
COC	contaminant(s) of concern (Permit table 2)
COPC	contaminant(s) of potential concern (Permit table 8)
CSM	conception site model
EPA	Environmental Protection Agency
IP	indicator parameter(s) (Permit table 3)
LTF	Lower Tank Farm
Permit	Tesoro's Alaska refinery Part B Post-Closure Permit
PRM	Phillips Remedial Measure
psi	pounds per square inch
Q##-#	quarter (year-quarter)
QPR (##-#)	quarterly progress report (year-quarter)
UCA	upper confined aquifer
SI	surface impoundment
TCE	trichloroethene
Tesoro	Tesoro Alaska Company
VC	vinyl chloride

1.0 INTRODUCTION

Tesoro Alaska Company, LLC (Tesoro) is implementing the requirements outlined in the Region 10 Environmental Protection Agency (EPA) Post-Closure Permit No. AKD 04867 9682 (Permit) for Tesoro's refinery in Kenai, Alaska (Figure 1), effective November 1, 2017. Information regarding the performance of the EPA-approved groundwater corrective action program plan (CAPP) is provided herein and includes activities that were completed or in-progress during the May – July 2022 quarter (summer quarter).

In spring and fall quarters, Tesoro performs routine system monitoring, and sampling or gauging required by active corrective action modification plans (CAMPs). Winter and summer Quarterly Progress Reports (QPRs) are condensed to include only summaries of activities and systems data.

In spring and fall quarters, Tesoro performs comprehensive monitoring including gauging and sampling monitoring wells required by Permit Table 4 for indicator parameters (IPs), contaminants of concern (COCs), and/or contaminants of potential concern (COPCs), and additional wells required by active CAMPs. Spring and fall QPRs are more comprehensive and include data analysis, a summary of corrective action changes, potentiometric surface maps, semi-annual effectiveness demonstrations, and systems data.

Appendix A contains data validation laboratory data packages for analyses performed during the quarter.

2.0 CORRECTIVE ACTIONS SUMMARY

Permit-required corrective action system performance criteria were met this quarter, except A and B-aquifer groundwater extraction rates and air sparge criteria at the surface impoundment (SI) area (discussed below). A brief summary of each corrective action area is presented in following sections. Figure 2 illustrates system location and area designations, and Figure 3 is a cross section that shows aquifer designation in relation to overall site features. The SI area is in the A-aquifer but is discussed separately because of the disconnected and unique plume conditions. Analytical results are summarized in Table 2 and the laboratory report is included in Appendix A.

2.1 SURFACE IMPOUNDMENT (SI) AREA

Tesoro operated the SI air sparge (AS) system in accordance with Permit Table D-6. Table 3A presents SI AS system monitoring records required by Permit Table D-10. Flow in cubic feet per minute (cfm) and pressure in pounds per square foot (psi) were recorded weekly for each operating AS well. Performance criteria were met for 12 of the 13 weeks. Performance criteria data were not collected for the week ending May 27; therefore, it is unknown if the criteria were met that week.

Tesoro collected four groundwater samples to monitor the plume. Discussion of the SI area status will be provided in the next comprehensive Quarterly Report.

2.2 A-AQUIFER

The A-Aquifer groundwater extraction system was above the target 60 gallons per minute (gpm) for 12 of the 13 weeks. Groundwater extraction rates were not met May 23 through 27 because the system was shut down for pump replacements. The system was shut down for less than 10 days, so subsequent gauging was not required. Table 4 presents the groundwater extraction system flow rates and volumes, recorded weekly as required by Permit Table D-10. Table 5 presents groundwater injection rates, recorded weekly. The Calgon treatment system operated continuously during the quarter. Activated carbon from one of the two Calgon vessels was replaced on September 29, 2021.

Tesoro operated the Phillips Remedial Measure (PRM), Highway Air Sparge (HAS) and the Highway Vapor Extraction system during this quarter. System data were collected in accordance with Permit Table D-6 and are provided in Tables 3B, 3C, and 6.

Tesoro collected six supplemental groundwater samples to monitor the southern portion of the benzene plume near E-072RR and three monitoring wells. Three samples were collected down gradient of the Lower Tank Farm (LTF) area as part of the LTF AS shut-down requirements. Three samples were collected down gradient of the swamp, and

one sample was collected down gradient of the Highway Air Sparge (HAS) Expansion to assess HAS system efficiency. Three additional samples were collected to monitor the benzene plume during the shutdown of R-21R. Discussion of the results will be provided in the next comprehensive Quarterly Report (Q22-2).

The beach seep area is checked daily during the ebbing tide to identify the presence of petroleum sheen seeps and mitigate sheen migration when beach is accessible and free of ice. Continued updates will be included in the Kenai Refinery's Quarterly Progress Reports submitted to EPA. Tesoro plans to implement bio-sparging pilot test to increase oxygen content of source soils and groundwater, potentially enhancing NSZD rates along the bluff. The proposed bio-sparge well installation is scheduled for August 2022.

2.3 B-AQUIFER

Tesoro operated the B-Aquifer groundwater extraction system in accordance with Permit Table D-6. Table 4 presents the groundwater extraction system monitoring records required by Permit Table D-10. Flow and volume were recorded weekly for each pumping well. Table 5 presents groundwater injection rates, recorded weekly. Performance criteria were met 3 out of 13 weeks. Groundwater extraction rates were not met May 2 through July 11 due to electrical system issues and procurement delays for new extraction well pumps.

Three supplemental groundwater samples were collected from the northern portion of the B-Aquifer to monitor the northern boundary. One sample was collected down gradient of the Highway Air Sparge Expansion to assess system efficiency. Two groundwater samples were collected from two newly installed wells located on the bluff, for continued assessment of groundwater near the beach seep sheen (Appendix B). Discussion of the results will be provided in the next comprehensive Quarterly Report (Q22-2).

Implementing the planned HAS expansion, called West Highway Air Sparge (WAS), which includes deep (B-Aquifer) air sparging, was started on May 3, 2022. All system data were collected in accordance with Permit Table D-6 and are provided in Tables 3C. Four monitoring wells were sampled in the vicinity of the WAS to assess system performance.

2.4 UPPER CONFINED AQUIFER (UCA)

Industrial pumping rates for the UCA wells and total volume are presented in Table 6.

No supplemental wells were sampled in the UCA.

3.0 ADMINISTRATIVE ACTIVITIES

Activity	Summary
None	None

Upcoming Activities	Summary
None	None

4.0 INDEX OF QPR APPENDICES

QPR NO.	QUARTER	APPENDIX
QPR 01	Nov-Dec 95-Jan 96	A - Laboratory Analytical Reports
		B - Groundwater Velocity Calculations
		C - Daily Ground Water Recovery Totals
		D - Biannual Assessment of Effectiveness of Corrective Actions
QPR 02	Feb-Mar-Apr 96	A - Laboratory Analytical Reports
		B - Daily Ground Water Recovery Totals
QPR 03	May-Jun-Jul 96	A - Boring Logs and Well Completion Diagrams for New Piezometers; Revised Permit Figures 3 and 4
		B - Boring Log and Well Completion Diagram for New Recovery Well R-45; Revised Permit Figure 2
		C - Laboratory Analytical Reports
		D - Groundwater Velocity Calculations
		E - Daily Ground Water Recovery Totals
		F - Workplans for Pilot Testing Alternate Groundwater Treatment Actions
		G - Biannual assessment of Effectiveness of Corrective Actions
QPR 04	Aug-Sep-Oct 96	A - Laboratory Analytical Reports and Data Validation Memoranda
		B - Groundwater Velocity Calculations
		C - Daily Ground Water Recovery Totals
		D - PRC Environmental Management, Inc. Correspondence and Response
QPR 05	Nov-Dec 96-Jan 97	A - Additional Gauging Data
		B - Data Validation Summary and Laboratory Reports
		C - Comparison of Sample Handling Methods on Dissolved Lead Concentrations
		D - Daily Groundwater and Product Recovery Totals
QPR 06	Feb-Mar-Apr 97	A - Data Validation Summary and Laboratory Reports
		B - Daily Groundwater and Product Recovery Totals
		C - Well E-72 Replacement and Abandonment Report
		D - Well E-103B Installation Report
		E - Piezometer P-45 Installation Report

QPR NO.	QUARTER	APPENDIX
		F - Revised Survey Data
		G - Notification Letters
		H - Revised Permit Tables and Figures
		I - Well E-17 Replacement and Abandonment Report
QPR 07	May-Jun-Jul 97	A - Additional Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and ARI Laboratory Reports
		D - Data Validation Summary and MAS Laboratory Reports
		E - Revised Groundwater Contour Maps
		F - Daily Groundwater and Product Recovery Totals
		G - ADEC Notification Letters
		H - New Survey Data
		I - Additional Analytical Data for E-122 and SPZ-3
		J - E-77 Investigation Borehole and Monitoring Well Location Map
		K - Responses to EPA Comments
		L - Revised Permit Tables and Figures
		M - Boring and Well Construction Logs (E-101B, E-121B, E-137B, E-168, 97B-23)
QPR-08	Aug-Sep-Oct 97	A - Additional Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Notification Letter
		F - Interim Measures Data
		G - Beach Inspection Log
QPR-09	Nov-Dec 97-Jan 98	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - New Survey Data
		F - Notification Letter

QPR NO.	QUARTER	APPENDIX
		G - Interim Monitoring Program Data
		H - Boring and Well Construction Logs (E-173, E-174)
QPR-10	Feb-Mar-Apr 98	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - SPZ-1 and SPZ-2 Well Construction Diagrams
		F - ADEC Notification Letters
		G - Interim Monitoring Program Data
		H - New Survey Data
		I - Well Installation Report (R-46 To R-49; P-46 To P-49; E-173, -175, -176)
		J - Response to EPA Comments (regarding QPR 7)
QPR 11	May-Jun-Jul 98	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - SI Area Laboratory Reports
		F - Well Installation Report (E-177A/B; SMW-29, -30)
		G - ADEC Notification Letters
		H - Interim Measures Monitoring Data and Beach Logs
		I - PM Area Lab Reports
		J - Revised Permit Figures
QPR 12	Aug-Sep-Oct 98	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Interim Monitoring Program Data
		F - Well Installation Report (E-178 To E-183)
		G - ADEC Notice of Violation #98-075
		H - Revised Permit Figure 4 and Table 1B
QPR 13	Nov-Dec 98-Jan 99	A - Quarterly Gauging Data
		B - Summary of Analytical Data

QPR NO.	QUARTER	APPENDIX
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Interim Monitoring Program Data
		F - ADEC Notification Letter
		G - Well Installation & Abandonment Report (E-182 to E-194; Abandon E-39)
		H - Revised Permit Figure 4 and Permit Table 1D
QPR 14	Feb-Mar-Apr 99	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - Well Installation Report (E-195 to E-201)
		G - Sheetpile Wall Monitoring Points Survey Data
		H - Boardwalk Plume Corrective Action Modification Plan
		I - Revised Permit Figure 4
		J - Revised Permit Attachment DD - Security Plan
		K - Revised Permit Attachment EE - Inspection Plan
		J - Revised Permit Attachment FF - Training Plan
QPR 15	May-Jun-Jul 99	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Notification Letters
		G - Well Installation Report (E-202 to E-208)
		H - Revised Permit Tables
		I - Revised Permit Figures
		J - Boardwalk Plume Corrective Action Modification Report
		K - E-77 Area Investigation Report
QPR 16	Aug-Sep-Oct 99	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports

QPR NO.	QUARTER	APPENDIX
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Notification Letters
		G - Revised Permit Table 1B
		H - Well Installation Report (E-209, -210; TW-5)
		I - Revised Permit Attachment GG - Contingency Plan
QPR 17	Nov-Dec 99-Jan 2000	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Compliance Reports
		G - Well Installation Report (E-211 to E-214; I-1 to I-5; PI-1, -4, -5)
		H - Response to EPA Comments
		I - Revised Permit Figure 4
		J - Revised Permit Attachment EE - Inspection Plan
QPR 18	Feb-Mar-Apr 2000	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Compliance Reports
		G - SI Area Supplemental Sampling Report
		H - Injection System Startup Report - E-150 Lobe Area
		I - Well Installation Report (DW-1; O-1 to O-7)
		J - Revised Permit Figure 4
		K - Revised Permit Attachment GG - Contingency Plan
QPR 19	May-Jun-Jul 2000	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data

QPR NO.	QUARTER	APPENDIX
		F - UCA Potentiometric Surface Elevation Correction Procedures
		G - ADEC Notification Letters
		H - Monitoring Well Installation Report (E-215 to E-218A/B)
		I - Corrective Action Modification Assessment Report; Boardwalk Plume
		J - E-77 Supplemental Monitoring Report
		K - Wharf Lobe Supplemental Sampling Report
		L - Revised Permit Figure 4
		M - Revised Permit Attachment FF - Training Plan
QPR 20	Aug-Sep-Oct 2000	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Notification Letters
QPR 21	Nov-Dec 2000-Jan 01	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Compliance Reports
		G - Monitoring Well Installation Report (E-224 - E-227; R-50 - R-53; P-50 - P-53; TW-5A; I-6 - I-9; PI-6A - PI-9)
		H - Revised Permit Figure 4
Separate Submittal	Nov. 16, 2000	*B-Aquifer Interim Corrective Measures Plan* [EPA approval dated Jan. 30, 2001]
QPR 22	Feb-Mar-Apr 01	A - Quarterly Gauging Data
		B - Summary of Analytical Data
		C - Data Validation Summary and Laboratory Reports
		D - Daily Groundwater and Product Recovery Totals
		E - Expanded Interim Monitoring Program Data
		F - ADEC Notification Letters

QPR NO.	QUARTER	APPENDIX
		G - B-Aquifer Interim Corrective Measures Startup Report
		H - A-Aquifer Supplemental Corrective Measures Plan
		I - Revised Permit Tables and Figures
QPR 23	May-Jun-Jul 01	A - Data Validation and Lab Reports
		B - Well Installation Report (E-228, RR2AS to RR-6AS, RR-8AS to RR-17AS, RR-14SVE
		C - Well Decommissioning Report (E-E, E-13, E-113, E-124, DW-1, O-1, O-3, O-6, O-7)
		D - Revised Permit Documents
		E - B-Aquifer Corrective Measure and Monitoring Plan [EPA approval dated May 27, 2003]
		F - UCA Natural Attenuation Supplemental Sampling Report and Work Plan [EPA approval dated Feb. 18, 2003]
QPR 24	Aug-Sep-Oct 01	A - Data Validation and Lab Reports
		B - Revised Permit Documents
QPR 25	Nov-Dec 01-Jan 02	A - Data Validation and Lab Reports
		B - Well Installation Report
		C - E-228 Investigation Report
QPR 26	Feb-Mar-Apr 02	A - Data Validation and Lab Reports
		B - E-228 CAMP Investigation Status Report
		C - Startup Monitoring Report for Lower Tank Farm (LTF) Supplemental Corrective Measure (SCM)
QPR 27	May-Jun-Jul 02	A - Data Validation and Lab Reports
		B - Well Installation Report for Wells E-231 and E-232A/B and Borehole 02B-01
		C - E-228 Corrective Action Modification Plan (CAMP) Report
		D - Research of Sample E-38 (Collected on 9/12/01) for the Presence of 1,2-Dichloroethane (1,2-DCA)

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QPR 28	Aug-Sep-Oct 02	A - Data Validation and Lab Reports B - Revised Permit Documents C - Research of Sample E-38 (Collected on 9/12/01) for the Presence of 1,2-Dichloroethane (1,2-DCA)
QPR 29	Nov-Dec 02-Jan 03	A - Data Validation and Lab Reports B - Assessment of Quarter 28 Analytical Data from Wells E-137B and E-161
QPR 30	Feb-Mar-Apr 03	A - Data Validation and Lab Reports B - Revised Permit Table 4
QPR 31	May-Jun-Jul 03	A - Data Validation and Lab Reports
QPR 32	Aug-Sep-Oct 03	A - Data Validation and Lab Reports B - Compilation of Historical Analytical Data for Selected Wells
QPR 33	Nov-Dec 03-Jan 04	A - Data Validation and Lab Reports B - Compilation of Historical Analytical Data for Selected Wells
QPR 34	Feb-Mar-Apr 04	A - Data Validation and Lab Reports B - Compilation of Historical Analytical Data for Selected Wells C - Response of Unconfined Aquifer to the Shut Down of the SI Corrective Measure D - Environmental Indicator Determination Information
QPR 35	May-Jun-Jul 04	A - Data Validation and Lab Reports B - Well E-112 Abandonment Report
QPR 36	Aug-Sep-Oct 04	A - Data Validation and Lab Reports
Separate Submittal	Aug. 4, 2004	*No-Purge Groundwater Sampling Evaluation and Plan* [EPA approval dated Feb. 14, 2005]
QPR 37	Nov-Dec 04-Jan 05	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
QPR 38	Feb-Mar-Apr 05	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Supplemental Corrective Measure Work Plan, SI Area Air Sparging System [EPA approval dated Aug. 11, 2005]

QPR NO.	QUARTER	APPENDIX
QPR 39	May-Jun-Jul 05	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Well Installation Report (SMW31, -32, -33, and SAS-01 Through -25)
QPR 40	Aug-Sep-Oct 05	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - FFS for the SI Air Sparge Supplemental System
QPR 41	Nov-Dec 05-Jan 06	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
QPR 42	Feb-Mar-Apr 06	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Response of Unconfined Aquifer to the Shut Down of the SI Corrective Measure D - Revised Permit Table 4 E - Well Abandonment Report (IWS-1, IWS-2, SMW-I-3)
QPR 43	May-Jun-Jul 06	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Well Installation Report for PIRM Air Sparge Wells PAS-01 through PAS-15
QPR 44	Aug-Sep-Oct 06	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Response of Unconfined Aquifer to the Shut Down of the PIRM Corrective Measure
QPR 45	Nov-Dec 06-Jan 07	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
QPR 46	Feb-Mar-Apr 07	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Corrected Permit figure 5
QPR 47	May-Jun-Jul-07	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Well Installation Report for Injection Wells I-6A through I-9A

QPR NO.	QUARTER	APPENDIX
QPR 48	Aug-Sep-Oct-07	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Monitored Natural Attenuation Implementation Plan, Wharf Lobe Corrective Measure [EPA approval dated Feb. 25, 2008] D - Revised Permit Table 5 and Permit Figure 12
QPR 49	Nov-Dec 07-Jan 08	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
QPR 50	Feb-Mar-Apr 08	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Revised Permit Table 4 and Permit Figure 6
QPR 51	May-Jun-Jul 08	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - PIRM Air Sparging Startup Report D - Well Installation Report – Recovery Wells R-50R, R-51R, and R-52R
QPR 52	Aug-Sep-Oct-08	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Well Installation Report – Production Well TW-8 D - Progress Report – B-Aquifer CAMP
Separate Submittal	Aug. 21, 2008	*Corrective Action Modification Plan for the B-Unconfined Aquifer* [EPA approval dated Aug. 28, 2008]
QPR 53	Nov-Dec 08-Jan 09	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - 2009 SI Corrective Action Modification and Monitored Natural Attenuation Validation Plan D - 2009 PIRM Air Sparge Transition Plan E - Class 1 Permit Modifications, Revised Table D-6
QPR 54	Feb-Mar-Apr 09	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Corrective Action Modification Plan (CAMP) for UCA Well E-198 D - Revised Permit tables 5 and D-6

QPR NO.	QUARTER	APPENDIX
QPR 55	May-Jun-Jul 09	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - 2009 SI Corrective Action Modification and Monitored Natural Attenuation Validation Plan (Revised 7/29/09) [EPA approval dated Aug. 6, 2009] D - Beach Seep Sample Location Map
QPR 56	Aug-Sep-Oct 09	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Well Installation Report: Monitoring Wells E-234A&B, E-235A&B, & E-236 and Air Sparge Wells HAS-01 through HAS-17
Separate submittal	Feb 4, 2010	*2009 PIRM Air Sparge Media Transfer Evaluation Report*
QPR 57	Nov-Dec 09-Jan 10	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *2009 PIRM Air Sparge Media Transfer Evaluation Report* (previously submitted Feb. 4, 2010)
Separate submittal	May 7, 2010	*2009 PIRM SVE System and Air Sparge System Expansion Work Plan* [EPA comments dated May 27, 2010]
QPR 58	Feb-Mar-Apr 10	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *SI 2010 TCE Corrective Action Modification Plan (CAMP)* [EPA comments and conditional approval, dated August 25, 2010] (Plan revised & re-submitted in QPR 60)
-		D - *PM 2010 Highway AS/SVE Interim Measures Plan (IMP)* E - *PIRM 2010 AS/SVE Pilot Test Plan* [EPA comments and conditional approval, dated August 9, 2010] F - *Wharf 2010 Standby Plan*
QPR 59	May-Jun-Jul 10	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *SI Well Installation Report* – Monitoring Wells SMW-34 and SMW-35

QPR NO.	QUARTER	APPENDIX
		D - *PM/PIRM Well Installation Report* – Monitoring Wells E-237 and E-238; Soil Vapor Extraction Wells HSVE-1 through HSVE-6 and PSVE-6; Soil Vapor Monitoring Points (HMVP-1 through HMVP-3); and Air Sparge Wells PAS-16 through PAS-2 E - *Revised PIRM 2010 SVE Pilot Test and Air Sparge System Expansion Work Plan*, (red-lined version submitted on August 13, 2010) [EPA approval dated August 23, 2010] F - Revised Table 5B (Quarterly Progress Report 54) and Table 5C (Quarterly Progress Report 58)
Separate submittal	August 13, 2010	*Revised PIRM 2010 SVE Pilot Test and Air Sparge System Expansion Work Plan (redline version) and Response to EPA Comments dated August 9, 2010* [EPA approval dated August 23, 2010]
QPR 60	Aug-Sep-Oct 10	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *REVISED SI 2010 Potassium Permanganate In-Situ Chemical Oxidation (ISCO) Pilot Test,* (originally submitted in QPR 58) [EPA comments and conditional approval, dated August 25, 2010]
QPR 61	Nov-Dec 10-Jan 11	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *SI 2010 TCE Potassium Permanganate In-situ Chemical Oxidation (ISCO) Report* D - *PM 2011 Highway AS/SVE System Installation and Operation Work Plan*
Separate submittal	May 27, 2011	*Soil Vapor Extraction System Startup Report, PIRM Area*, dated May 25, 2011.
QPR 62	Feb-Mar-Apr 11	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Soil Vapor Extraction System Startup Report, PIRM Area* dated May 25, 2011 (submitted previously on May 27, 2011). [EPA comments dated October 21, 2011]
Separate submittal	July 26, 2011	*Final PM 2011 Highway Area ASSVE System Installation and Operation Work Plan – Phase 1*, dated July 25, 2011.

QPR NO.	QUARTER	APPENDIX
QPR 63	May-Jun-Jul 11	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Final PM 2011 Highway Area ASSVE System Installation and Operation Work Plan – Phase 1* dated July 25, 2011 (previously submitted on July 26, 2011) [EPA approval dated July 28, 2011]
QPR 64	Aug-Sep-Oct 11	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Well Abandonment Report, SI Monitoring Well SMW-13*
QPR 65	Nov-Dec 11-Jan 12	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Final PM 2011 Highway Area AS/SVE System Installation and Operation Work Plan – Phase 1 (submitted February 6, 2012)*
Separate submittal	February 6, 2012	*Final PM 2011 Highway Area AS/SVE System Installation and Operation Work Plan – Phase 1*
Separate submittal	May 16, 2012	*PM Highway Area AS/SVE System Phase 1 Startup Report*
QPR 66	Feb-Mar-Apr 2012	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *PM Highway Area AS/SVE System Phase 1 Startup Report*
QPR 67	May-Jun-Jul 2012	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - B-Aquifer Potentiometric Surface Elevation Maps, June 5 and June 28, 2012 D - Revised Permit Figures 2, 3, and 4
Separate submittal	October 9, 2012	*Memorandum: PIRM Area Deep Benzene Plume (DBP) Update,* (electronically submitted to EPA on October 16, 2012). [EPA comments and conditional approval, dated November 6, 2012]
QPR 68	Aug-Sept-Oct 2012	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *2012 SI TCE Corrective Action Modification Plan (CAMP)* D - PIRM SVE Capture Evaluation Data

QPR NO.	QUARTER	APPENDIX
QPR 69	Nov-Dec 12-Jan 13	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Well Installation Report: E-239, E-240, E-242, E-243, PAS-21 through PAS-32, PAS-21R, PSVE-7, PVMP-1*
QPR 70	Feb-Mar-Apr 2013	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Well Installation Report: Production Well TW-2B* D - Revised Permit Table 4
Separate submittal	May 14, 2013	Letter to EPA with proposed deep benzene plume (DBP) interim measures [EPA approval and additional comments, dated August 14, 2013]
QPR 71	May-Jun-Jul 2013	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Well Installation Report: E-244, E-245A/B, PAS-34, PSVE-8* D - *2013 Deep Benzene Plume (DBP) Response Report*
QPR 72	Aug-Sept-Oct 2013	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
Separate submittal	September 12, 2013	*Response to EPA Comments Dated August 14, 2013, Tesoro PIRM Deep Benzene Plume*
QPR 73	Nov-Dec 13-Jan 14	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Well Installation Report: Highway System Wells: E-246A/B, HAS-18 through HAS-21, HSVE-8, HVMP-10 and HVMP-11* D - *PM Swamp Corrective Action Modification Plan (CAMP)*
QPR 74	Feb-Mar-Apr 2014	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *Well Installation and Abandonment Report: Highway System Wells: Monitoring Wells E-077RR, E-247A/B, and E-248A/B, Air Sparge Wells HAS-23 and HAS-24, and Abandoned Well E-077R*
Separate submittal	April 21, 2014	*PM Swamp CAMP Update* [EPA approval and additional comments, dated June 5, 2014]

QPR NO.	QUARTER	APPENDIX
Class 2 Permit Mod Request	May 28, 2014	*Request for Class 2 Permit Modification* for allowing A-aquifer groundwater to be treated in the Calgon granulated activated carbon (GAC) unit [EPA approval, dated September 16, 2014]
Class 1 Permit Modification	July 24, 2014	*Class 1 Permit Modification* for change in company name to Tesoro Alaska Company, LLC
Separate submittal	August 8, 2014	*PM Swamp CAMP Update*
QPR 75	May-Jun-Jul 2014	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *PM Swamp CAMP Report*
Separate submittal	August 11, 2014	*August PM Swamp CAMP Memo* to EPA
QPR 76	Aug-Sept-Oct 2014	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *E-219 CAMP, Restarting the Lower Tank Farm (LTF) Air Sparge and Soil Vapor Extraction (AS/SVE) System*
QPR 77	Nov-Dec 14-Jan 15	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - SI Potentiometric Contour Maps D - Revised Permit Table 4 E - *Well Installation Report – Monitoring Wells MW-93A/B, Recovery Wells R-54 and R-55* F - *2015 B-Aquifer Corrective Action Modification Plan (CAMP)*
QPR 78	Feb-Mar-Apr 2015	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *SI Potentiometric Surface Contour Map, April 2015* D - Revised Permit Table 4
QPR 79	May-Jun-Jul 2015	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - SI Potentiometric Surface Contour Map

QPR NO.	QUARTER	APPENDIX
QPR 80	Aug-Sept-Oct 2015	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
Separate submittal	November 5, 2015	*R-21 Replacement Well Screen Depth* [EPA approval e-mail dated November 5, 2015]
Separate submittal	January 13, 2016	*Recovery Well R-21R and R-56 Installation Work Plan*
Separate submittal	January 22, 2016	*Work Plan for Well Installation: E-249 to E-254, TPZ-1 to TPZ-4, and Replacement for E-064*
QPR 16-1 (81)	Nov-Dec 15, Jan 16	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - SI Area Data Review and Plan for Remedy Enhancement D - Modeling Feasibility Study of B-aquifer Plume Capture Alternatives
QPR 16-2	Feb-Mar-Apr 2016	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - *SI Potentiometric Surface Contour Map, March 2016* D - Decommissioning Report E - R-21R Aquifer Testing Work Plan
QPR 16-3	May-Jun-Jul 2016	A - Data Validation and Lab Reports B - Historical Analytical Data C - Well Installation Report D - R-21R Aquifer Testing Report
Separate Submittal	September 29, 2016	*RCRA Post-Closure Permit 10-year Renewal Application*
Separate Submittal	October 5, 2016	*Proposal for SVE System Shut-Down*
QPR 16-4	Aug-Sep-Oct 2016	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Air Optimization Test Results for SI Area D - Maps and Hydrographs for Injection Trench Area

QPR NO.	QUARTER	APPENDIX
QPR 17-1	Nov-Dec '16, Jan '17	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Well Installation Information
QPR 17-2	Feb-Mar-Apr 2017	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - LTF CAMP
QPR 17-3	May-June-July 2017	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
Separate Submittal	September 7, 2017	SI Area Pilot Study Work Plan Approval [EPA/ADEC approval e-mail dated September 7, 2017]
Separate Submittal	October 31, 2017	Treated Groundwater Injection Plan [ADEC approval e-mail dated October 31, 2017]
QPR 17-4	Aug-Sept-Oct 2017	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - Installation Report D - Decommissioning Report E - 2017 B-Aquifer CAMP
QPR 18-1	Nov-Dec 17, Jan 18	A - Data Validation and Lab Reports
QPR 18-2	Feb-Apr 2018	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter
QPR 18-3	May-July 2018	A - Data Validation and Lab Reports B - SI Area Remedy Enhancement Pilot Study Interim Report C - R-51RR Well Replacement Installation Report
QPR 18-4	May-July 2018	A - Data Validation and Lab Reports B - Historical Data for the Monitoring Wells Sampled this Quarter C - SI Area Remedy Enhancement Pilot Study Interim Report
Separate Submittal	Feb 7, 2019	Cook Inlet Bluff Sheet Pile Wall Inspection, Maintenance and Pending Repair or Replacement

QPR NO.	QUARTER	APPENDIX
QPR 19-1	May-July 2018	A - Data Validation and Lab Reports
		B - Southern Plume Review
Separate Submittal	March 26, 2019	Sheet Pile Wall Beach Sheet Notification Letter
Separate Submittal	April 15, 2019	Table 2B Revision for Quarterly Report 18-2
Separate Submittal	May 7, 2019	Sheet Pile Wall Beach Sheen 60-Day Report
QPR 19-2	Feb-Apr 2019	A - Data Validation and Lab Reports
		B - SI Area Remedy Enhancement Pilot Study Interim Report
		C - Time Plots
		D - SI Interim Report
		E - LTF Report
QPR 19-3	May-July 2019	A - Data Validation and Lab Reports
QPR 19-4	Aug-Oct 2019	B - Historical Data for the Monitoring Wells Sampled this Quarter
		C - Time Plots
		D - Well Installation Site Plans
QPR 20-1	Nov 2019-Dec 2020	A - Data Validation and Lab Reports
		B - Well Installation and Decommissioning Report
		C - Kenai Beach Sheen
QPR 20-2	Feb-Apr 2020	A - Data Validation and Lab Reports
		B - Historical Data for the Monitoring Wells Sampled this Quarter
		C - Concentrations/Depth to Groundwater verses Time Graphs
		D - SI Interim Report
QPR 20-3	May-July 2020	A - Data Validation and Lab Reports
QPR 20-4	Aug-Oct 2020	A - Data Validation and Lab Reports
		B - Historical Data for the Monitoring Wells Sampled this Quarter
		C - Concentrations/Depth to Groundwater verses Time Graphs
		D - SI Interim Report
QPR 21-1	Nov 2020-Jan 2021	A - Data Validation and Lab Reports
		B - SI Area Mass Flux Evaluation

QPR NO.	QUARTER	APPENDIX
Separate Submittal	November 13, 2020	Updated Conceptual Site Model and Remedial Alternatives Evaluation for the 1987 Hot Oil Pipeline Release
QPR 21-2	Feb-Apr 2021	A - Data Validation and Lab Reports
		B - Historical Data for the Monitoring Wells Sampled this Quarter
		C - Concentrations/Depth to Groundwater verses Time Graphs
		D - R-56 Well Replacement Installation Report
Separate Submittal	April 22 2021	Updated Conceptual Site Model and Remedial Alternatives Evaluation for the 1987 Hot Oil Pipeline Release Revision 2
QPR 21-3	May-July 2021	A - Data Validation and Lab Reports
Separate Submittal	November 9,2021	Biosparge Pilot Study 1987 Hot Oil Pipeline Release Work Plan Revision 1
QPR 21-4	Aug-Oct 2021	A - Data Validation and Lab Reports
		B - Historical Data for the Monitoring Wells Sampled this Quarter
		C - Concentrations/Depth to Groundwater verses Time Graphs
		D - SI Area Remedy Evaluation and Recommendation
QPR 22-1	Nov 2021 – Feb 2022	A - Data Validation and Lab Reports
		B - Well Installation and Decommissioning Report
QPR 22-2	Feb-Apr 2022	A - Data Validation and Lab Reports
		B - Historical Data for the Monitoring Wells Sampled this Quarter
		C - Concentrations/Depth to Groundwater verses Time Graphs
QPR 22-3	May – July 2022	A - Data Validation and Lab Reports

5.0 INDEX OF CAMPS

CAMP	Summary	Status
1999 Boardwalk Plume Lobe CAMP	Modify the corrective measures system to more effectively meet the performance standards for the boardwalk plume.	Closed
2000 B-Aquifer Interim Corrective Measures Plan	Installation of groundwater pumping and injection systems.	Closed
2001 B-Aquifer Corrective Measure and Monitoring Plan	Describes required water level monitoring, water quality monitoring, and treatment monitoring.	Included in Permit
2002 E-228 CAMP	Evaluation if E-228 was within capture zone, including source area evaluation, natural attenuation evaluation, and groundwater flow and capture zone evaluation.	Updated in 2013 and Subsequently Closed
2009 CAMP for UCA Well E-198	Evaluation of elevated benzene concentrations in E-198, including pressurization test and supplemental sampling.	Updated in 2013 and Subsequently Closed
2009 SI CAMP	Air sparge combined with natural attenuation as the corrective measure for the SI plume.	Included in Permit
2012 SI TCE CAMP	System maintenance and additional sampling of downgradient wells to evaluate the effectiveness of the actions.	Active
2013 B-Aquifer CAMP	Address dissolved-phase contamination that occurs in the B-aquifer and lower portion of the merged UCA.	Updated in 2015
2013 E-228 CAMP	Evaluation if E-228 was within capture zone, including source area evaluation, natural attenuation evaluation, and groundwater flow and capture zone evaluation.	Closed
2013 E-198 CAMP	Evaluation of elevated benzene concentrations in E-198, including pressurization test and supplemental sampling.	Closed

CAMP	Summary	Status
2014 PM Swamp CAMP	Additional surface water sampling, groundwater sampling, sediment sampling, and gauging.	Updated in 2014
2014 E-219 CAMP	Lower Tank Farm AS/SVE restart.	Updated in 2017
2014 PM Area Swamp CAMP Update	Expansion of air sparge system, installation of monitoring wells, additional groundwater, and surface water sampling, and additional gauging.	Active
2015 B-Aquifer CAMP	New recovery wells, well redevelopment, pipeline modifications, additional gauging and capture evaluation, and additional sampling.	Updated in 2017
2017 LFT CAMP	Lower Tank Farm AS/SVE restart and monitoring.	Closed
2017 B-Aquifer CAMP	New recovery wells, monitoring wells, pumping rates and monitoring.	Active

TABLES

TABLE 1. WATER LEVEL DATA – POTENTIOMETRIC SURFACE ELEVATIONS

PLACEHOLDER

TABLE 1. NOT REQUIRED IN WINTER AND SUMMER QUARTERS

TABLE 2. ANALYTICAL RESULTS - INDICATOR PARAMETERS
QUARTER 22-3

Well ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes, Total (µg/L)	Trichloro-ethene (µg/L)	Vinyl Chloride (µg/L)	Naphthalene (µg/L)	Diesel Range Organics (µg/L)	Gasoline Range Organics (µg/L)	1,2,4-Trimethyl-benzene (µg/L)	1,3,5-Trimethyl-benzene (µg/L)	2-Methyl-naphthalene (µg/L)	Isopropyl-benzene (µg/L)
TGPS		**4.6**	**1,100**	**15**	**190**	**2.8**	**0.19**	**1.7**	**1500**	**2200**	**15**	**120**	**36**	**450**
E-010	06/20/22	**2820**	260	**94**	**737**	--	--	--	--	--	--	--	--	--
E-072RR	06/20/22	**2570**	518	**1120**	**3060**	--	--	--	--	--	--	--	--	--
E-097	06/17/22	**538**	ND(2.5)	ND(2.5)	25.2	--	--	--	--	--	--	--	--	--
E-147	06/15/22	**13.5**	ND(0.31)	ND(0.31)	ND(1)	ND(0.31)	ND(0.05)	ND(0.31)	ND(0.204)	ND(0.045)	ND(0.31)	ND(0.31)	ND(0.00423)	ND(0.31)
E-152	06/14/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-162	06/16/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-168	06/13/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-190A	06/14/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-217A	06/14/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-227	06/17/22	**1000**	ND(5)	**351**	**709**	--	--	--	--	--	--	--	--	--
E-244	06/14/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-247A	06/15/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-247B	06/15/22	**40.5**	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-249A	06/20/22	**1470**	ND(5)	ND(5)	ND(14)	--	--	--	--	--	--	--	--	--
E-249B	06/17/22	**223**	ND(2.5)	ND(2.5)	ND(7)	--	--	--	--	--	--	--	--	--
E-249C	06/15/22	**5.14**	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-250A	06/16/22	**375**	ND(2.5)	ND(2.5)	ND(7)	--	--	--	--	--	--	--	--	--
E-250B	06/16/22	**650**	ND(5)	ND(5)	ND(14)	--	--	--	--	--	--	--	--	--
E-253	06/14/22	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-255	06/16/22	**393**	ND(2.5)	ND(2.5)	ND(7)	--	--	--	--	--	--	--	--	--
E-256	06/20/22	**1690**	ND(5)	ND(5)	ND(14)	--	--	--	--	--	--	--	--	--
E-257B	06/13/22	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
E-258	06/13/22	ND(0.15)	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
MW-92	06/15/22	3.41	ND(0.5)	ND(0.5)	ND(1.4)	--	--	--	--	--	--	--	--	--
SMW-09	06/21/22	0.538	ND(0.31)	ND(0.31)	ND(1)	ND(0.31)	**0.508**	ND(0.31)	ND(0.213)	ND(0.045)	ND(0.31)	ND(0.31)	ND(0.0156)	ND(0.31)
SMW-12B	06/21/22	**138**	ND(0.31)	**29.9**	167	ND(0.31)	ND(0.05)	**21.5**	2.53	1.13	67.4	17.9	1.79	14.3
SMW-24	06/21/22	ND(0.12)	ND(0.31)	ND(0.31)	ND(1)	ND(0.31)	--	--	--	--	--	--	--	--
SMW-34	06/21/22	**7.95**	ND(0.31)	13.2	ND(1)	**12.4**	**4.77**	ND(0.31)	ND(0.204)	0.18	4.13	ND(0.31)	ND(0.015)	4.36
SMW-35	06/21/22	3.34	ND(0.31)	ND(0.31)	ND(1)	**20.4**	--	--	--	--	--	--	--	--

Notes:

BOLD Results exceed TGPS

TGPS Target Groundwater Protection Standards, from Permit table 2

ND Analyte was not present in a concentration above detection level

J-/+ Estimated concentration low/high

-- Not analyzed

The method detection limit (MDL) was used as the reporting limit.

TABLE 3A. SI AIR SPARGE SYSTEM PERFORMANCE DATA

	SAS-1		SAS-2		SAS-3		SAS-4	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	16	2	17	8	13	7.5	3	8.5
5/13/2022	16	2	13	11	12	7	0	9
5/20/2022	16	2	14	11	12	7	0	9
5/27/2022	-	-	-	-	-	-	-	-
6/3/2022	0	0	16	9	13	7	13	8.5
6/10/2022	0	0	16	10	14	8	7	8
6/17/2022	0	0	14	13	14	7	2.5	11
6/24/2022	0	0	14	13	14	7	3	11
7/1/2022	13	3	16	9	13	9	9	3
7/8/2022	0	0	12	8	14	8	9	6
7/15/2022	0	0	12	12	13	7	2.5	10
7/22/2022	0	0	12	10.5	14	8	10	8
7/29/2022	0	0	**11**	**12**	14	9.5	11	6.5

	SAS-5		SAS-6		SAS-7		SAS-8	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	14	8	15	7	11	4	14	6.5
5/13/2022	12	11	12	5	9	5	13	9
5/20/2022	12	11	12	6	10	5	13	9
5/27/2022	-	-	-	-	-	-	-	-
6/3/2022	13	9	14	6	10	4	13	7
6/10/2022	13	10	15	8	8	5	13	8
6/17/2022	11	14	14	6	10	6	13	11
6/24/2022	11	13	13	6	9	6	13	11
7/1/2022	13	9	14	8	0	0	14	7
7/8/2022	13	8.5	14	8	9	2	14	7
7/15/2022	11	13	14	7	8	7	11	10
7/22/2022	13	10	14	7.5	10	5	13	8
7/29/2022	**13**	**11**	15	9	7	4	**13**	**8**

	SAS-9		SAS-10		SAS-11		SAS-12	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	5	14.5	0	0	14	12	6	14
5/13/2022	5	11	0	0	5	14	5	10
5/20/2022	5	11	0	0	5	14	6	10
5/27/2022	-	-	-	-	-	-	-	-
6/3/2022	6	13	0	0	5	12	6	11.5
6/10/2022	6	14	0	0	5	14	6	13
6/17/2022	6	13	0	0	2.5	16	5	12
6/24/2022	5	15	0	0	2.5	16	5	12
7/1/2022	6	14	0	0	5	13	5	14
7/8/2022	5	13	0	0	3	13	5	12
7/15/2022	5	13	0	0	2.5	15	5	13
7/22/2022	5	14	0	0	3	14.5	6	13.5
7/29/2022	6	14	0	0	**3**	**15**	6	13.5

TABLE 3A. SI AIR SPARGE SYSTEM PERFORMANCE DATA

	SAS-13		SAS-14		SAS-15		SAS-16	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	15	12	14	10	14	6.5	5	13
5/13/2022	14	11	12	12	0	0	5	14
5/20/2022	14	12	12	12	0	0	5	14
5/27/2022	-	-	-	-	-	-	-	-
6/3/2022	14	10.5	13	10	12	5	5	13
6/10/2022	15	12	13	11	14	6	5	13
6/17/2022	12	14	12	15	14	6	2.5	15
6/24/2022	11	14	13	14	14	6	2.5	15
7/1/2022	12	11	13	10	11	6	5	13
7/8/2022	12	12	13	10.5	12	5	5	13
7/15/2022	6	14	7	14	12	5	0	15
7/22/2022	13	12.5	15	11.5	13	6	5	14.5
7/29/2022	11	12	**15**	**12**	11	6	2.5	13

	SAS-17		SAS-18		SAS-19		SAS-20	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	5	10	3	15	14	13	15	0
5/13/2022	0	12	5	14	14	14	14	0
5/20/2022	0	12	5	14	14	14	14	0
5/27/2022	-	-	-	-	-	-	-	-
6/3/2022	6	9.5	3	13	12	13	0	0
6/10/2022	5	11	5	14	10	14	0	0
6/17/2022	2.5	14	5	14	10	15	2.5	0
6/24/2022	2.5	14	5	14	9	15	2.5	0
7/1/2022	5	11	5	14	10	13	0	0
7/8/2022	2.5	9.5	5	13	8	13	0	0
7/15/2022	2.5	13	2.5	14	8	16	0	0
7/22/2022	3	12	5	14.7	9	14.5	0	0
7/29/2022	**6**	**12**	3	14.5	6	14.5	**0**	**0**

	SAS-21		SAS-22		TOTAL CFM			Minimum
Week ending:	CFM	PSI	CFM	PSI	BANK 1	BANK 2	BANK 3	Total
5/6/2022	15	8.5	14	8	78	93	71	35
5/13/2022	14	8	15	10	73	69	53	35
5/20/2022	14	8	15	9	74	70	54	35
5/27/2022	-	-	-	-	-	-	-	35
6/3/2022	13	7	15	7	69	66	67	35
6/10/2022	13	9	15	8	60	65	73	35
6/17/2022	12	9	15	10	52	58	70	35
6/24/2022	13	9	16	10	51	59	69	35
7/1/2022	11	10	15	7	64	66	65	35
7/8/2022	12	8	15	7	58	58	67	35
7/15/2022	11	9	14	10	39	46	63	35
7/22/2022	12	9.5	14	8.5	61	59	69	35
7/29/2022	12	9.5	12	8	50	61	67	35

Notes:
CFM - cubic feet per minute
PSI - pounds per square inch
Minimum total rate per permit Table D-6
Bold - Below Minimum Total
- System Readings Not Collected

TABLE 3B. PRM AIR SPARGE SYSTEM PERFORMANCE DATA

	PAS-7		PAS-8		PAS-9		PAS-10	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	4.2	3.5	5.0	6	0.0	13	3.6	5
5/13/2022	3.7	8	3.2	6	0.0	13	2.3	6
5/20/2022	2.4	7	2.1	5	0.0	10	2.3	6
5/27/2022	2.9	5	2.8	9	0.0	11	2.1	5
6/3/2022	3.7	8	2.9	10	0.0	10	2.6	4
6/10/2022	2.8	4.5	3.7	8	0.0	11	2.9	5
6/17/2022	2.9	5	3.2	6	0.0	12	2.8	3
6/24/2022	2.8	3	3.0	3.5	0.0	9	2.6	4
7/1/2022	3.7	8	2.6	8	0.0	13	3.2	6
7/8/2022	3.9	6	2.4	7	0.0	10	3.2	4
7/15/2022	6.4	12	6.2	15	0.0	19	5.0	6
7/22/2022	6.5	10	6.9	14	0.0	17.5	4.6	5
7/29/2022	7.0	9.5	6.5	12.5	0.0	8	5.0	5

	PAS-11		PAS-12		PAS-13		PAS-16	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	4.7	13	6.6	13	0.0	0	6.0	14
5/13/2022	3.2	12	3.7	4	0.0	0	4.3	11
5/20/2022	2.9	10	2.0	4.5	0.0	0	2.0	9
5/27/2022	4.1	10	3.9	6	0.0	0	3.2	12
6/3/2022	4.1	10	4.5	8	0.0	0	4.3	11
6/10/2022	4.3	11	4.4	7.5	0.0	0	4.4	11.5
6/17/2022	4.3	11	6.8	11	0.0	0	4.4	11.5
6/24/2022	4.3	11	5.0	10	0.0	0	2.9	10
7/1/2022	3.2	12	5.4	11.5	0.0	0	5.3	11
7/8/2022	4.3	11	5.3	11	0.0	0	4.3	11
7/15/2022	3.9	18	11.1	16	0.0	0	9.7	16
7/22/2022	5.4	17	7.1	10	0.0	0	9.4	15
7/29/2022	6.8	18	7.1	12	0.0	0	8.7	15

	PAS-17		PAS-18		PAS-19		PAS-21	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	3.6	15	5.4	11.5	0.0	15	1.8	1
5/13/2022	0.0	14	4.2	10.5	0.0	12	2.3	2
5/20/2022	2.2	11	3.9	9	2.2	11	1.3	1
5/27/2022	3.4	14	2.9	10	2.3	12	1.3	1
6/3/2022	0.0	13	3.9	9	0.0	13.5	0.0	0
6/10/2022	3.4	13.5	4.1	10	3.3	12.5	1.3	1
6/17/2022	3.4	13.5	4.2	10.5	3.3	13	1.6	1
6/24/2022	3.3	13	3.9	9	3.2	12	0.0	0
7/1/2022	3.3	13	3.9	9	2.4	13.5	0.0	0
7/8/2022	3.3	13	4.9	9.5	13.7	13	0.0	0
7/15/2022	2.6	16	8.4	14	9.7	16	0.0	0
7/22/2022	0.0	15	8.6	12.5	0.0	15	0.0	0
7/29/2022	0.0	15	8.0	12.5	0.0	15	2.9	2

TABLE 3B. PRM AIR SPARGE SYSTEM PERFORMANCE DATA

	PAS-22		PAS-23		PAS-24		PAS-25	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	5.2	8	4.6	10	3.3	13	3.4	13.5
5/13/2022	3.4	7	2.0	9	0.0	12	2.3	12
5/20/2022	2.3	6	1.7	7	0.0	11	2.2	11
5/27/2022	3.4	7	3.4	7	0.0	11	2.3	12
6/3/2022	3.9	6	2.9	10	0.0	12	3.3	12.5
6/10/2022	3.7	8	2.9	10	0.0	12	3.2	12
6/17/2022	4.2	7	1.7	7	0.0	12	3.3	12.5
6/24/2022	3.2	6	2.9	10	5.8	10	2.9	10
7/1/2022	4.2	7	2.3	6	0.0	8	3.3	12.5
7/8/2022	4.9	7	2.6	8	0.0	11	3.2	12
7/15/2022	7.1	10	3.7	16	2.9	20	5.2	16
7/22/2022	6.8	9	0.0	0	0.0	18.5	5.0	15
7/29/2022	7.1	8.5	0.0	4	5.7	19	0.0	15

	PAS-26		PAS-27		PAS-28		PAS-29	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	5.8	10	5.3	11	5.8	10	4.9	7
5/13/2022	1.6	3	4.1	10	2.0	9	2.6	4
5/20/2022	0.0	6	3.7	8	1.8	8	2.3	6
5/27/2022	2.8	9	3.7	8	3.7	8	2.4	7
6/3/2022	4.1	10	2.8	9	3.9	9	1.8	2
6/10/2022	5.0	10	4.3	11	4.1	10	2.1	5
6/17/2022	3.1	11	4.3	11	4.1	10	2.3	6
6/24/2022	3.1	11.5	4.1	10	2.9	10	2.9	10
7/1/2022	3.1	11	4.1	10	2.8	9	3.2	6
7/8/2022	5.3	11	3.9	9	4.8	9	4.3	11
7/15/2022	11.7	16	6.8	18	7.1	15	5.2	16
7/22/2022	8.0	15	6.5	16.5	6.9	14	5.0	15
7/29/2022	7.4	13	5.5	18	7.7	14	4.5	12

	PAS-30		PAS-31		PAS-32		PAS-33	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	3.6	15.5	0.0	15	0.0	16	0.0	0
5/13/2022	0.0	12	0.0	13	0.0	14	0.0	0
5/20/2022	3.1	11	0.0	12	0.0	12	0.0	0
5/27/2022	2.3	12	0.0	13	0.0	12	0.0	0
6/3/2022	3.1	11	0.0	11	0.0	12.5	0.0	0
6/10/2022	3.2	12	0.0	13.5	0.0	14	0.0	0
6/17/2022	3.4	14	0.0	13	0.0	14	0.0	0
6/24/2022	3.2	12	0.0	13	0.0	13	0.0	13
7/1/2022	4.7	13	0.0	13	0.0	14	0.0	0
7/8/2022	4.3	11	0.0	12	0.0	12	0.0	0
7/15/2022	8.5	17	0.0	0	0.0	19	0.0	0
7/22/2022	8.8	13	0.0	15	0.0	18.5	0.0	0
7/29/2022	4.9	14	0.0	0	0.0	20	0.0	0

TABLE 3B. PRM AIR SPARGE SYSTEM PERFORMANCE DATA

	PAS-34		PAS-35		PAS-36		PAS-37	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	0.0	0	11.3	15	5.0	10	12.9	14
5/13/2022	0.0	1	2.3	12	3.9	9	9.0	12
5/20/2022	0.0	0	2.2	11	2.4	7	5.8	10
5/27/2022	0.0	0	2.3	12	3.7	8	7.1	12
6/3/2022	0.0	0	3.1	11	3.2	6	8.6	11
6/10/2022	0.0	0	3.3	13	3.7	8	8.4	12
6/17/2022	0.0	0	4.7	13	4.8	9	8.4	12
6/24/2022	0.0	0	3.3	13	3.9	9	6.4	12
7/1/2022	0.0	0	3.3	13	3.4	7	7.8	12
7/8/2022	0.0	0	6.8	11	4.2	7	8.6	11
7/15/2022	0.0	0	3.3	13	5.3	11	17.0	17
7/22/2022	0.0	0	11.3	10	5.8	10	8.2	10
7/29/2022	0.0	0	10.0	13	6.2	9	8.1	11

	PAS-38		PAS-39		Total
Week ending:	CFM	PSI	CFM	PSI	CFM
5/6/2022	4.5	8	5.8	13	122.4
5/13/2022	4.5	8	5.0	10	69.5
5/20/2022	2.4	7	3.7	8	56.6
5/27/2022	2.4	7	4.5	8	72.9
6/3/2022	3.3	6.5	4.2	7	74.3
6/10/2022	3.4	7	4.8	9	86.7
6/17/2022	3.7	8	4.8	9	89.8
6/24/2022	3.4	7	4.5	8	83.7
7/1/2022	3.7	8	4.8	9	83.6
7/8/2022	3.4	7	4.5	8	106.4
7/15/2022	4.2	7	6.8	9	157.9
7/22/2022	5.0	7.5	6.9	8	132.9
7/29/2022	5.2	8	7.7	10	132.0

Notes:

CFM - cubic feet per minute

PSI - pounds per square inch

TABLE 3C. HIGHWAY AIR SPARGE SYSTEM PERFORMANCE DATA

	HAS-01		HAS-02		HAS-03		HAS-04	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	0.0	0	0.0	0	9.2	17	3.6	0
5/13/2022	0.0	0	0.0	0	7.5	17	3.8	18
5/20/2022	0.0	0	0.0	0	7.5	17	3.7	16
5/27/2022	0.0	0	0.0	0	7.5	17	5.2	16
6/3/2022	0.0	0	0.0	0	15.0	19	6.4	16
6/10/2022	0.0	0	0.0	0	7.4	16	3.8	18
6/17/2022	0.0	0	0.0	0	8.4	17	3.8	17
6/24/2022	0.0	0	0.0	0	7.4	16	3.8	18
7/1/2022	0.0	0	0.0	0	7.5	17	3.7	16
7/8/2022	0.0	0	0.0	0	5.4	18	9.9	17
7/15/2022	0.0	0	0.0	0	0.0	0	5.2	16
7/22/2022	0.0	0	0.0	0	3.6	0	10.6	17
7/29/2022	0.0	0	0.0	0	2.6	0	10.6	17

	HAS-05		HAS-06		HAS-07		HAS-08	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	5.6	20	0.0	1	0.0	20	0.0	1
5/13/2022	4.0	22	5.7	22	3.9	19	4.1	23
5/20/2022	3.9	20	0.0	20	3.9	20	0.0	20
5/27/2022	3.9	19	9.9	22	3.9	19	8.1	22
6/3/2022	5.6	20	0.0	21	0.0	20	5.6	21
6/10/2022	5.4	18	0.0	25	5.4	18	9.5	26
6/17/2022	3.9	20	4.0	21	3.9	19	8.0	21
6/24/2022	3.8	18	10.3	25	5.4	18	10.3	25
7/1/2022	3.2	9	12.8	22	3.8	18	12.6	21
7/8/2022	0.0	18	0.0	22	0.0	18	9.9	22
7/15/2022	3.9	19	0.0	21	1.2	19	5.6	21
7/22/2022	5.5	19	0.0	22	0.0	18	0.0	22
7/29/2022	5.5	19	0.0	22	0.0	19	5.8	22.5

	HAS-09		HAS-10		HAS-11		HAS-12	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	8.9	15	3.6	0	0.0	22	0.0	3
5/13/2022	7.3	15	8.8	20	13.8	21	0.0	22
5/20/2022	7.4	16	9.2	17	14.0	22	0.0	18
5/27/2022	7.3	15.5	10.9	19	13.4	22	0.0	21
6/3/2022	9.0	16	7.5	17	0.0	21	0.0	20
6/10/2022	3.6	14	11.3	21	11.8	20	0.0	25
6/17/2022	5.2	16	7.5	17	13.2	21	7.7	19
6/24/2022	5.1	14	11.1	20	12.4	20	0.0	24
7/1/2022	5.2	16	10.4	16	13.8	21	0.0	19
7/8/2022	12.6	18	11.7	24	2.5	20	9.8	21
7/15/2022	0.0	18	5.4	18	12.6	21	0.0	14
7/22/2022	13.2	18	10.9	19	0.0	20	8.9	21
7/29/2022	13.7	18	11.0	19.5	0.0	21	9.8	21

TABLE 3C. HIGHWAY AIR SPARGE SYSTEM PERFORMANCE DATA

	HAS-13		HAS-14		HAS-15		HAS-16	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	8.9	0	0.0	0	5.1	0	4.4	0
5/13/2022	0.0	0	3.9	20	0.0	0	9.5	19
5/20/2022	0.0	0	3.8	17	0.0	0	10.9	12
5/27/2022	0.0	0	3.9	20	0.0	0	10.8	18
6/3/2022	6.3	0	11.7	16	8.9	0	7.6	18
6/10/2022	3.6	0	9.2	23	0.0	0	11.6	23
6/17/2022	0.0	0	5.2	16	0.0	0	10.6	17
6/24/2022	2.6	0	5.8	23	0.0	0	11.9	17
7/1/2022	0.0	0	5.3	17	0.0	0	10.6	17
7/8/2022	5.7	0	10.6	17	4.4	0	5.3	17
7/15/2022	0.0	0	5.2	16	0.0	0	7.4	16
7/22/2022	5.7	0	10.2	19	5.1	0	5.1	14
7/29/2022	5.1	0	10.2	19	5.1	0	2.6	0

	HAS-17		HAS-18		HAS-19		HAS-20	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	0.0	0	5.1	0	9.5	19	0.0	0
5/13/2022	0.0	0	6.5	17	5.5	19	3.0	5
5/20/2022	0.0	0	7.7	19	5.5	19	3.0	5
5/27/2022	0.0	0	7.6	18	12.1	18	3.3	10
6/3/2022	0.0	0	10.1	14	7.7	19	11.5	10
6/10/2022	0.0	0	9.5	19	11.9	17	4.2	5
6/17/2022	0.0	0	8.7	14	9.3	18	3.4	12
6/24/2022	0.0	0	7.7	19	7.6	18	3.4	12
7/1/2022	0.0	0	7.1	14	5.5	19	3.4	12
7/8/2022	3.6	0	8.7	14	10.1	18	10.1	18
7/15/2022	0.0	0	7.1	14	12.2	19	5.1	14
7/22/2022	5.1	0	9.0	16	10.1	18	10.8	18
7/29/2022	6.8	0	9.3	18	7.7	18.5	10.9	19

	HAS-21		HAS-22		HAS-23		HAS-24		Total
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI	CFM
5/6/2022	9.5	19	0.0	0	10.7	14	3.6	0	87.7
5/13/2022	0.0	18	0.0	20	3.1	7	5.5	19	95.8
5/20/2022	0.0	18	0.0	17	3.5	13	5.1	15	89.1
5/27/2022	0.0	18	0.0	20	7.6	7	5.4	18	120.8
6/3/2022	9.8	16	5.2	16	9.0	8	7.1	14	144.0
6/10/2022	0.0	14	0.0	25	12.9	4	5.6	20	126.4
6/17/2022	0.0	3	0.0	17	5.7	10	3.4	12	112.1
6/24/2022	0.0	18	0.0	20	7.6	7	5.4	18	121.6
7/1/2022	0.0	19	0.0	12	9.4	10	0.0	12	114.5
7/8/2022	7.1	14	5.6	20	7.4	3	9.8	16	150.3
7/15/2022	9.2	17	0.0	17	10.7	11	5.1	15	96.0
7/22/2022	7.3	15.5	5.6	20	7.4	6	9.2	17	143.4
7/29/2022	7.3	15	5.6	21	7.8	8	9.3	18	146.7

TABLE 3C. HIGHWAY AIR SPARGE SYSTEM PERFORMANCE DATA

	WAS-1		WAS-2		WAS-3		WAS-4	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	-	-	-	-	-	-	-	-
5/13/2022	-	-	-	-	-	-	-	-
5/20/2022	10.0	28	10.0	26	10.0	22	11.0	24
5/27/2022	10.0	27	10.0	26	10.0	22	11.0	25
6/3/2022	10.0	29	10.0	27	10.5	21	10.5	25
6/10/2022	10.0	28	11.0	25	10.0	23	10.0	25
6/17/2022	9.0	30	9.0	28	10.0	22	10.0	25
6/24/2022	9.0	30	9.0	27	10.0	24	10.0	25
7/1/2022	10.0	28	10.0	26	10.0	22	10.0	26
7/8/2022	10.0	29	10.0	26	10.0	26	11.0	24
7/15/2022	10.0	28	10.0	25	10.0	21	10.0	26
7/22/2022	8.0	27	9.0	25	9.5	20	10.0	24
7/29/2022	8.0	27.5	8.5	25.5	9.0	21	9.5	24

	WAS-5		WAS-6		WAS-7		WAS-8	
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI
5/6/2022	-	-	-	-	-	-	-	-
5/13/2022	-	-	-	-	-	-	-	-
5/20/2022	11.0	24	11.0	-	9.0	23	8.0	-
5/27/2022	11.0	24	12.0	-	9.0	22	7.0	-
6/3/2022	11.0	25	9.5	-	9.0	24	6.0	-
6/10/2022	11.0	25	10.0	-	9.0	24	6.0	-
6/17/2022	11.0	25	10.0	-	9.0	24	6.0	-
6/24/2022	11.0	25	10.0	-	8.0	24	8.0	-
7/1/2022	11.0	25	10.0	-	9.0	24	6.0	-
7/8/2022	12.0	23	10.0	-	9.0	23	7.0	-
7/15/2022	11.0	25	10.0	-	8.0	24	6.0	-
7/22/2022	10.5	24	9.5	-	8.5	23	4.0	-
7/29/2022	10.0	24	9.5	-	8.5	22.5	4.0	-

	WAS-9		WAS-10		WAS-11		WAS-12		Total
Week ending:	CFM	PSI	CFM	PSI	CFM	PSI	CFM	PSI	CFM
5/6/2022	-	-	-	-	-	-	-	-	0.0
5/13/2022	-	-	-	-	-	-	-	-	0.0
5/20/2022	9.0	-	8.5	37	9.0	37	10.3	37	116.8
5/27/2022	8.0	-	8.0	37	8.0	37	11.0	37	115.0
6/3/2022	7.5	-	8.0	37	8.0	37	11.0	37	111.0
6/10/2022	7.0	-	8.0	37	8.0	37	12.0	37	112.0
6/17/2022	6.0	-	9.0	36	9.0	36	11.0	37	109.0
6/24/2022	6.0	-	9.0	36	9.0	36	9.0	36	108.0
7/1/2022	7.0	-	8.0	37	8.0	37	10.0	37	109.0
7/8/2022	8.0	-	8.0	37	9.0	37	10.0	38	114.0
7/15/2022	6.0	-	8.0	37	8.0	37	10.0	38	107.0
7/22/2022	6.0	-	6.0	36	7.0	36	7.0	37	95.0
7/29/2022	5.5	-	6.0	37	7.0	36	6.0	37	91.5

TABLE 3C. HIGHWAY AIR SPARGE SYSTEM PERFORMANCE DATA

	SVE-1	SVE-2	SVE-3	SVE-4	SVE-5	SVE-6	SVE-7	SVE-8
Week ending:	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
5/6/2022	0.00	0.00	**28.00**	**32.00**	**30.00**	**30.00**	**24.00**	**22.00**
5/13/2022	0.00	0.00	28.00	30.00	28.00	30.00	24.00	27.00
5/20/2022	0.00	0.00	30.00	36.00	28.00	32.00	24.00	22.00
5/27/2022	0.00	0.00	30.00	32.00	28.00	30.00	22.00	28.00
6/3/2022	0.00	0.00	28.00	32.00	28.00	28.00	24.00	24.00
6/10/2022	0.00	0.00	28.00	32.00	28.00	28.00	24.00	24.00
6/17/2022	0.00	0.00	28.00	28.00	29.00	30.00	22.00	27.00
6/24/2022	0.00	0.00	28.00	30.00	30.00	30.00	24.00	26.00
7/1/2022	0.00	0.00	28.00	32.00	28.00	28.00	30.00	30.00
7/8/2022	0.00	0.00	30.00	32.00	30.00	22.00	32.00	24.00
7/15/2022	0.00	0.00	30.00	30.00	29.00	30.00	28.00	26.00
7/22/2022	0.00	0.00	28.00	30.00	30.00	28.00	30.00	30.00
7/29/2022	0.00	0.00	**28.00**	**32.00**	**30.00**	**31.00**	**26.00**	35.00

Notes:

CFM - cubic feet per minute

PSI - pounds per square inch

- System Readings Not Collected

TABLE 4. RECOVERY WELL PUMPING RATE

A-AQUIFER

Week ending:	R-21R GPM	R-40 GPM	R-41 GPM	COMBINED TOTAL GPM	MIN GPM	
5/6/2022	0	45	49	94	60	
5/13/2022	0	46.1	47.5	93.6	60	
5/20/2022	0	49	46.8	95.8	60	
5/27/2022	0	52.9	--	52.9	60	*
6/3/2022	0	53	47	100	60	
6/10/2022	0	56.1	50.1	106.2	60	
6/17/2022	0	55.5	48.2	103.7	60	
6/24/2022	0	56.4	48.5	104.9	60	
7/1/2022	0	57.1	41	98.1	60	
7/8/2022	0	57.1	49.5	106.6	60	
7/15/2022	0	42.9	25.6	68.5	60	
7/22/2022	0	44	27	71	60	
7/29/2022	0	44.7	29.6	74.3	60	

B-AQUIFER

Week ending:	R-50 GPM	R-51 GPM	R-52 GPM	R-54 GPM	R-55 GPM	R-56 GPM	COMBINED TOTAL GPM	MIN GPM	
5/6/2022	0	0	0	0	34	18	52	60	*
5/13/2022	0	0	0	0	35.1	22.2	57.3	60	*
5/20/2022	0	0	0	0	35.5	20.6	56.1	60	*
5/27/2022	0	0	0	0	35.2	19.3	54.5	60	*
6/3/2022	0	0	0	0	35	19	54	60	*
6/10/2022	0	0	0	26.2	0	24.7	50.9	60	*
6/17/2022	0	0	0	0	0	24.1	24.1	60	*
6/24/2022	0	0	0	0	0	23.5	23.5	60	*
7/1/2022	0	0	0	0	0	23.5	23.5	60	*
7/8/2022	0	0	0	0	0	24.1	24.1	60	*
7/15/2022	0	0	0	34.8	44	7.1	85.9	60	
7/22/2022	0	0	0	35	44	8	87	60	
7/29/2022	0	0	0	38	41	8.9	87.9	60	

TABLE 4. RECOVERY WELL PUMPING RATE

CALGON

Week ending:	GPM	GPD	MAX GPD
5/6/2022	182	262080	1000000
5/13/2022	181	260640	1000000
5/20/2022	182	262080	1000000
5/27/2022	182.1	262224	1000000
6/3/2022	180	259200	1000000
6/10/2022	174	250560	1000000
6/17/2022	139.1	200304	1000000
6/24/2022	142.1	204624	1000000
7/1/2022	138.8	199872	1000000
7/8/2022	141.2	203328	1000000
7/15/2022	176.1	253584	1000000
7/22/2022	185	266400	1000000
7/29/2022	189	272160	1000000

Notes:

gpm - gallons per minute

gpd - gallons per day

* Aquifer total below 60 gallons per minute; Wells shutdown for electrical issues/awaiting new pump arrival.

TABLE 5. GROUNDWATER INJECTION RATES

B-INJECTION

Week ending:	I-6 GPM	I-7 GPM	I-8 GPM	I-9 GPM	COMBINED TOTAL GPM	MIN GPM
5/6/2022	17	17	16	18	68	30
5/13/2022	16.5	16.9	15.5	18.2	67.1	30
5/20/2022	18.2	15.7	16.8	18	68.7	30
5/27/2022	18.2	12.2	16.1	15.1	61.6	30
6/3/2022	18	15	15	15	63	30
6/10/2022	21	17.9	21.3	16.3	76.5	30
6/17/2022	18.1	12.2	16.1	12.9	59.3	30
6/24/2022	18.4	12.1	16.1	12.1	58.7	30
7/1/2022	19.4	11.4	16.8	12.7	60.3	30
7/8/2022	20	21	19	22	82.2	30
7/15/2022	19	11	18	11	58.7	30
7/22/2022	19	9	17	11	56	30
7/29/2022	20	10	18	12	59.1	30

A-INJECTION

Week ending:	IR-29 GPM	IR-30 GPM	IR-31 GPM	IR-32 GPM	COMBINED TOTAL GPM	MIN GPM
5/6/2022	34	44	49	55	182	60
5/13/2022	34.8	15.3	48.9	52	151	60
5/20/2022	34.5	44.8	46.5	56.2	182	60
5/27/2022	35.1	45	46.4	55.6	182.1	60
6/3/2022	35	45	46	54	180	60
6/10/2022	33.3	42.9	44.9	52.9	174	60
6/17/2022	26.2	34.4	35.9	42.6	139.1	60
6/24/2022	26.1	35.1	36.3	44.6	142.1	60
7/1/2022	25.1	34.9	35.8	43	138.8	60
7/8/2022	26.4	35.4	36.2	42.2	140.2	60
7/15/2022	34.2	44.2	44.7	53	176.1	60
7/22/2022	35	46	46	58	185	60
7/29/2022	37	47	48	57	189	60

Notes:
gpm- gallons per minute

TABLE 6. UCA INDUSTRIAL PUMPING

	WELL TW-2B		WELL TW-1		WELL TW-7	
Date	Total GAL	GPD	Total GAL	GPD	GAL	GPD
5/6/2022	43041267	361,429	6682.1	7	139270	0
5/13/2022	47414665	624,771	6698.4	2	139270	0
5/20/2022	51494402	582,820	6698.5	0	139270	0
5/27/2022	54665870	453,067	6743.2	6	139270	0
6/3/2022	57458119	398,893	9400.1	380	139270	0
6/10/2022	59026184	224,009	11024.7	232	139270	0
6/17/2022	60915150	269,852	13962	420	139270	0
6/24/2022	64330711	487,937	14934.5	139	139270	0
7/1/2022	67500333	452,803	15290.6	51	139270	0
7/8/2022	69380998	268,666	17395	301	139270	0
7/15/2022	71372842	284,549	20229.6	405	139270	0
7/22/2022	74080419	386,797	204954	26389	139270	0
7/29/2022	77408890	475,496	220906	2279	139270	0

Notes:
gal- gallons
gpd- gallons per day
NM- Not Measured

FIGURES

N

0 2,000'

SOURCE: USGS 7.5' QUAD SHEET
KENAI (C-4) NW, AK
PROVISIONAL EDITION 1986

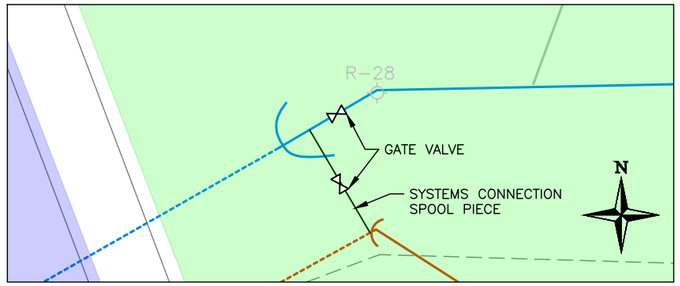
Trihydro CORPORATION
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1

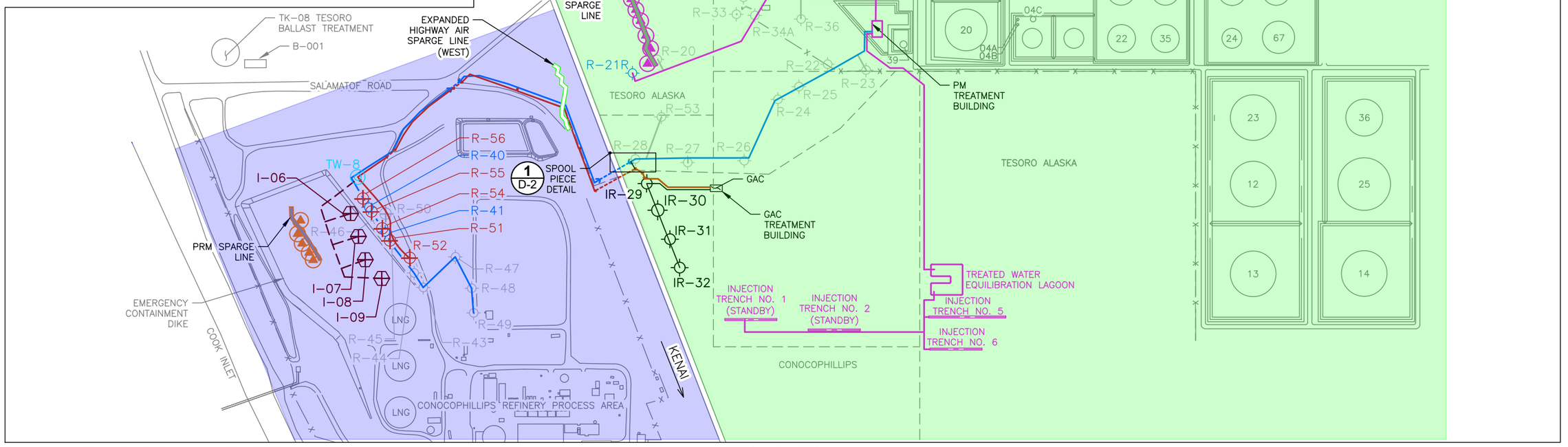
SITE LOCATION MAP

QUARTERLY PROGRESS REPORT
TESORO KENAI REFINERY
KENAI, ALASKA

Drawn By: DH	Checked By: SP	Scale: 1" = 2,000'	Date: 11/21/16	File: Fig1_Kenai_Site_Location.mxd



1 SPOOL PIECE DETAIL
SCALE: NONE



Source Drawing From: Kent & Sullivan Inc., Circa 2007

EXPLANATION

- PRM VAPOR EXTRACTION WELL
- HIGHWAY VAPOR EXTRACTION WELL
- LOWER TANKFARM VAPOR EXTRACTION WELL
- TW-8 — PRODUCTION WELL AND DESIGNATION FOR PRM AND B-AQUIFER INJECTION SYSTEM
- R-41 — PRM RECOVERY WELL AND DESIGNATION
- R-52 — B-AQUIFER RECOVERY WELL AND DESIGNATION
- I-09 — B-AQUIFER INJECTION WELL AND DESIGNATION
- R-41 — PRM RECOVERY WELL AND DESIGNATION
- IR-32 — INJECTION WELL AND DESIGNATION
- R-50 — OFFLINE B-AQUIFER RECOVERY WELL AND DESIGNATION

- PRM AIR SPARGE LINE
- HIGHWAY AIR SPARGE LINE
- LOWER TANKFARM AIR SPARGE LINE
- SI AIR SPARGE LINE
- EXPANDED HIGHWAY AIR SPARGE LINE (WEST)
- PRM RECOVERY WELL PIPELINE (DASHED WHERE SEGMENTS ARE UNDERGROUND)
- PM RECOVERY WELL PIPELINE
- B-AQUIFER RECOVERY WELL PIPELINE (DASHED WHERE SEGMENTS ARE UNDERGROUND)
- B-AQUIFER INJECTION WELL PIPELINE
- GAC TREATMENT PIPELINE

- PM INJECTION TRENCH
- SI CLOSED SURFACE IMPOUNDMENT
- PRM AREA
- PM AREA
- SI AREA

AS	AIR SPARGE	PRM	PHILLIPS REMEDIAL MEASURE
GAC	GRANULAR ACTIVATED CARBON	PM	PHILLIPS MARATHON
HEA	HOMER ELECTRIC ASSOCIATION	SI	SURFACE IMPOUNDMENT
LNG	LIQUID NATURAL GAS	VE	VAPOR EXTRACTION
NO.	NUMBER		

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

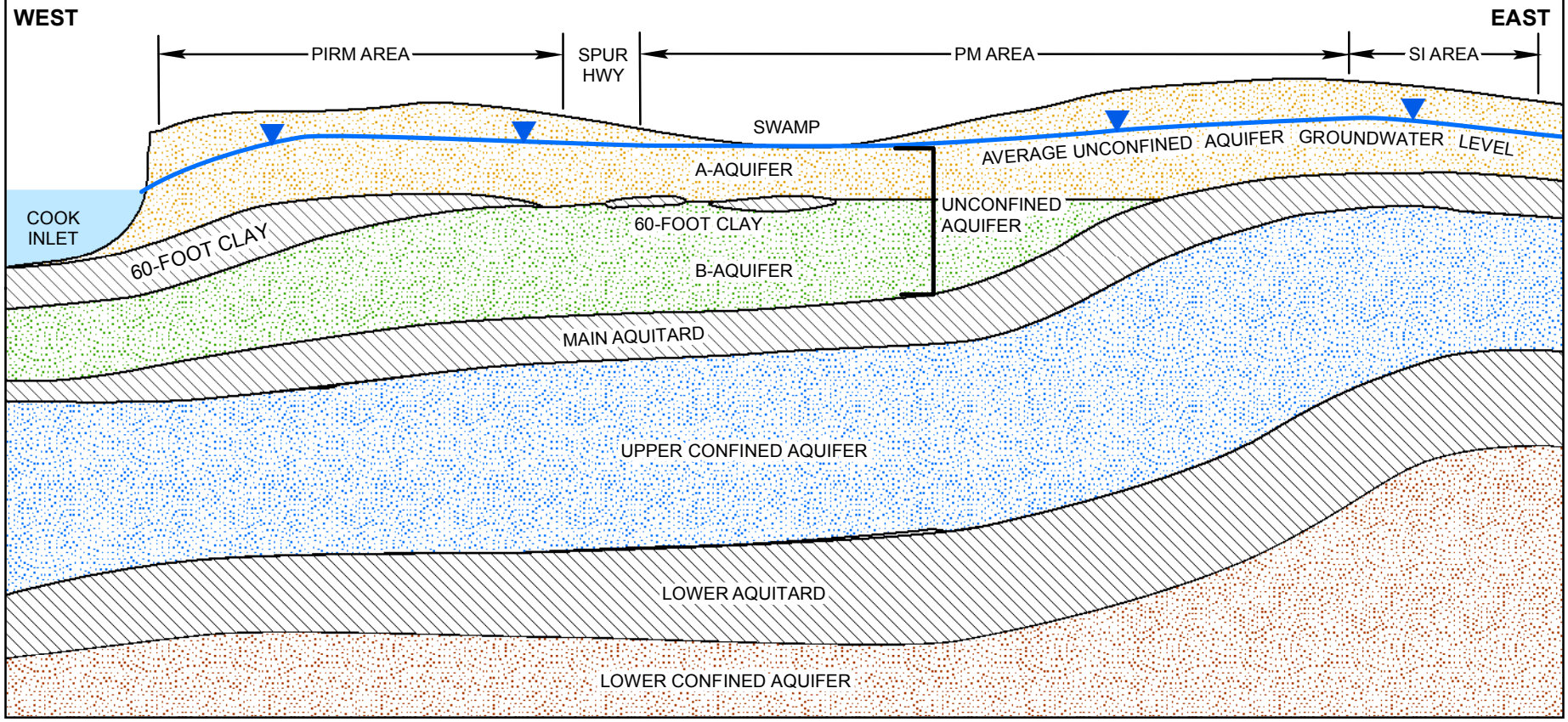
FIGURE 2

AREA DESIGNATIONS AND CORRECTIVE MEASURES SYSTEM

KENAI TESORO REFINERY
KENAI, ALASKA

Drawn By: JLP	Checked By: BF	Scale: NONE	Date: 8/26/2022	File: 39B-KR_CORRECTIVEMEASURESYS_202208

M:\STOR\TESORO\CAD\KENAIREFINERY\RCRA_PERMIT\PERMIT\AS-SUBMITTED_20170717\TESORO_KENAI_PERMIT\39B-KR_CORRECTIVEMEASURESYS_202208



NOTE:

NOT TO SCALE

Trihydro CORPORATION
1252 Commerce Drive
Laramie, WY 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 3

DIAGRAMMATIC CROSS SECTION ILLUSTRATING AQUIFER IDENTIFICATION

TESORO KENAI REFINERY KENAI, ALASKA

Drawn By: DH	Checked By: SP	Scale: Not to Scale	Date: 2/16/18	File: Fig3_XSecAquifers.mxd

M:\ST\OVT\TESORO\GIS\PROJECTS\TESORO KENAI\MAPPING\QUARTERLY\REPORTS\2018\02_Q18-1\FIGS_XSECAQUIFERS.MXD

APPENDIX A

DATA VALIDATIONS AND LABORATORY REPORTS

A-1. DATA VALIDATIONS

A-2. LABORATORY REPORTS

APPENDIX A-1

DATA VALIDATIONS

Laboratory Data Review Checklist

Completed By:

Bridget Boyer

Title:

Staff Scientist

Date:

07/28/2022

Consultant Firm:

Trihydro Corp.

Laboratory Name:

SGS North America

Laboratory Report Number:

1223214

Laboratory Report Date:

07/12/2022

CS Site Name:

Tesoro Alaska Refinery (Marathon)

ADEC File Number:

232.38.057

Hazard Identification Number:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   Yes☒ No☐ N/A☐ Comments:

   SGS North America

   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☒ N/A☐ Comments:

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   Yes☒ No☐ N/A☐ Comments:

   Receipt temperatures 4.4°C

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   Yes☒ No☐ N/A☐ Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   Yes☒ No☐ N/A☐ Comments:

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☐ N/A☐ Comments:

None documented

e. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes☒ No☐ N/A☐ Comments:

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None indicated

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes☒ No☐ N/A☐ Comments:

e. Data quality or usability affected?

Data quality or usability was not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

NA

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

v. Data quality or usability affected?

Comments:

Data quality or 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☐ N/A☐ Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

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

Comments:

N/A

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability was not affected.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes☒ No☐ N/A☐ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes☐ No☒ N/A☐ Comments:

8270D SIM - PAH MS/MSD RPD (1669298) for several analytes do not meet QC criteria. These analytes were not reported above the LOQ in the parent sample. Project team determined that data quality and usability not affected.

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

Comments:

No samples affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☒ N/A☐ Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability was not affected.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes☒ No☐ N/A☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

iv. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes☒ No☐ N/A☐ Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes☒ No☐ N/A☐ Comments:

iii. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD\ (\%) = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☒ No☐ N/A☐ Comments:

i. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

NA

iii. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

QUALITY CONTROL SUMMARY- 1223214

Trihydro completed a quality assurance/quality control (QA/QC) review of the analytical results. Results of the QA/QC review for data are summarized below and are presented in the ADEC Laboratory Data Review Checklist. The sample results are reported under SGS North America project number 1223214. On June 17, 2022, seventeen groundwater samples, one duplicate sample, one trip blank, and one equipment blank sample were submitted to the laboratory. Dup-2 was collected as a duplicate of E-247B. The samples were received at the lab in good condition, preserved and at temperatures of 4.4°C.

Sample results were reviewed to determine overall precision of sampling and analysis as well as matrix homogeneity for all analytes. All percent recoveries (%R) from laboratory control sample/duplicate (LCS/LCSD) were within range. MSD recovery for PAH MS.MSP RPD for several analytes to do not meet QC criteria These analytes were not reported above the LOQ in the parent sample. Data was evaluated by project team and determined not effected. All duplicated sample RPDs were well below the recommended percentage (30% water). The following summary highlights the data evaluation findings for this sampling event:

- No data are rejected.
- The completeness objectives (greater than 85 percent complete) for this project are met with 100% completeness.
- The precision and accuracy of the laboratory data, as measured by laboratory quality control indicators, demonstrate that the data are useable as qualified for the purposes of this project.
- The precision measurements for result comparisons between primary and duplicate field samples are acceptable for the purpose of this project and are marked with applicable qualifiers.

Laboratory Data Review Checklist

Completed By:

Bridget Boyer

Title:

Staff Scientist

Date:

08/12/2022

Consultant Firm:

Trihydro Corp.

Laboratory Name:

SGS North America

Laboratory Report Number:

1223344

Laboratory Report Date:

07/12/2022

CS Site Name:

Tesoro Alaska Refinery (Marathon)

ADEC File Number:

232.38.057

Hazard Identification Number:

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   Yes☒ No☐ N/A☐ Comments:

SGS North America

   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☒ N/A☐ Comments:

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   Yes☒ No☐ N/A☐ Comments:

Receipt temperatures 3.3°C

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   Yes☒ No☐ N/A☐ Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   Yes☒ No☐ N/A☐ Comments:

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☐ N/A☐ Comments:

None documented

e. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes☒ No☐ N/A☐ Comments:

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None indicated

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes☒ No☐ N/A☐ Comments:

e. Data quality or usability affected?

Data quality or usability was not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

NA

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

v. Data quality or usability affected?

Comments:

Data quality or 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☐ N/A☐ Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

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

Comments:

N/A

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability was not affected.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes☐ No☒ N/A☐ Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes☐ No☐ N/A☒ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes☐ No☐ N/A☒ Comments:

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

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability was not affected.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes☒ No☐ N/A☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes☐ No☒ N/A☐ Comments:

AK101 – SMW-12B Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

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

Yes☐ No☒ N/A☐ Comments:

iv. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes☒ No☐ N/A☐ Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes☒ No☐ N/A☐ Comments:

iii. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☒ No☐ N/A☐ Comments:

i. All results less than LOQ and project specified objectives?

Yes☐ No☒ N/A☐ Comments:

EB 6-20 contained results higher than LOQ for Benzene and P&M Xylene. EB 6-2 contained results higher than LOQ for Toluene.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples affected by the equipment blank results.

iii. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

QUALITY CONTROL SUMMARY- 1223344

Trihydro completed a quality assurance/quality control (QA/QC) review of the analytical results. Results of the QA/QC review for data are summarized below and are presented in the ADEC Laboratory Data Review Checklist. The sample results are reported under SGS North America project number 1223344. On June 22, 2022, twelve groundwater samples, four duplicate sample, one trip blank, and two equipment blank samples were submitted to the laboratory. Dup-1 was collected as a duplicate of E-010. Dup-3 was collected as a duplicate of E-072RR. Dup-4 was collected as a duplicate of SMW-35. Dup-5 was collected as a duplicate of SMW-34. The samples were received at the lab in good condition, preserved and at temperatures of 3.3°C.

Sample results were reviewed to determine overall precision of sampling and analysis as well as matrix homogeneity for all analytes. All percent recoveries (%R) from laboratory control sample/duplicate (LCS/LCSD) were within range. AK101 for SMW-12B surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference. EB 6-20 and EB 6-22 contained results higher the LOQ for Benzene, P&M Xylene, and Toluene, respectively. All data was evaluated by project team and determined not effected. All duplicated sample RPDs were well below the recommended percentage (30% water). The following summary highlights the data evaluation findings for this sampling event:

- No data are rejected.
- The completeness objectives (greater than 85 percent complete) for this project are met with 100% completeness.
- The precision and accuracy of the laboratory data, as measured by laboratory quality control indicators, demonstrate that the data are useable as qualified for the purposes of this project.
- The precision measurements for result comparisons between primary and duplicate field samples are acceptable for the purpose of this project and are marked with applicable qualifiers.

APPENDIX A-2

(PLEASE SEE ATTACHED USB)

LABORATORY REPORT

Laboratory Report of Analysis

To: Tesoro Alaska Petroleum-Kenai
312 Tyee Street
Soldotna, AK 99669
(907)262-2315

Report Number: **1223214**

Client Project: **39B-003-008 22-3**

Dear Brianna Force,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **Tesoro Alaska Petroleum-Kenai**
SGS Project: **1223214**
Project Name/Site: **39B-003-008 22-3**
Project Contact: **Brianna Force**

Refer to sample receipt form for information on sample condition.

E-253 (1223214014) PS

Revised Report - Benzene results have been added.

E-257B (1223214016) PS

Revised Report - Benzene results have been added.

1223235003MSD (1669298) MSD

8270D SIM - PAH MS/MSD RPD for several analytes do not meet QC criteria. These analytes were not reported above the LOQ in the parent sample.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
Dup-2	1223214001	06/15/2022	06/17/2022	Water (Surface, Eff., Ground)
E-147	1223214002	06/15/2022	06/17/2022	Water (Surface, Eff., Ground)
E-152	1223214003	06/14/2022	06/17/2022	Water (Surface, Eff., Ground)
E-162	1223214004	06/16/2022	06/17/2022	Water (Surface, Eff., Ground)
E-168	1223214005	06/13/2022	06/17/2022	Water (Surface, Eff., Ground)
E-190A	1223214006	06/14/2022	06/17/2022	Water (Surface, Eff., Ground)
E-217A	1223214007	06/14/2022	06/17/2022	Water (Surface, Eff., Ground)
E-244	1223214008	06/14/2022	06/17/2022	Water (Surface, Eff., Ground)
E-247A	1223214009	06/15/2022	06/17/2022	Water (Surface, Eff., Ground)
E-247B	1223214010	06/15/2022	06/17/2022	Water (Surface, Eff., Ground)
E-249C	1223214011	06/15/2022	06/17/2022	Water (Surface, Eff., Ground)
E-250A	1223214012	06/16/2022	06/17/2022	Water (Surface, Eff., Ground)
E-250B	1223214013	06/16/2022	06/17/2022	Water (Surface, Eff., Ground)
E-253	1223214014	06/14/2022	06/17/2022	Water (Surface, Eff., Ground)
E-255	1223214015	06/16/2022	06/17/2022	Water (Surface, Eff., Ground)
E-257B	1223214016	06/13/2022	06/17/2022	Water (Surface, Eff., Ground)
E-258	1223214017	06/13/2022	06/17/2022	Water (Surface, Eff., Ground)
MW-92	1223214018	06/15/2022	06/17/2022	Water (Surface, Eff., Ground)
EB6-16	1223214019	06/16/2022	06/17/2022	Water (Surface, Eff., Ground)
Trip Blank	1223214020	06/13/2022	06/17/2022	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM (PAH)	8270 PAH SIM Semi-Vol GC/MS Liq/Liq ext.
SW8021B	BTEX 8021
AK102	DRO Low Volume (W)
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds(W)Custom List

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Detectable Results Summary

Client Sample ID: **Dup-2**
Lab Sample ID: 1223214001

	Parameter	Result	Units
Volatile Fuels	Benzene	39.4	ug/L

Client Sample ID: **E-147**
Lab Sample ID: 1223214002

	Parameter	Result	Units
Volatile GC/MS	Benzene	13.5	ug/L

Client Sample ID: **E-247B**
Lab Sample ID: 1223214010

	Parameter	Result	Units
Volatile Fuels	Benzene	40.5	ug/L

Client Sample ID: **E-249C**
Lab Sample ID: 1223214011

	Parameter	Result	Units
Volatile Fuels	Benzene	5.14	ug/L

Client Sample ID: **E-250A**
Lab Sample ID: 1223214012

	Parameter	Result	Units
Volatile Fuels	Benzene	375	ug/L

Client Sample ID: **E-250B**
Lab Sample ID: 1223214013

	Parameter	Result	Units
Volatile Fuels	Benzene	650	ug/L

Client Sample ID: **E-255**
Lab Sample ID: 1223214015

	Parameter	Result	Units
Volatile Fuels	Benzene	393	ug/L

Client Sample ID: **MW-92**
Lab Sample ID: 1223214018

	Parameter	Result	Units
Volatile Fuels	Benzene	3.41	ug/L

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Results of **Dup-2**

Client Sample ID: **Dup-2**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214001
Lab Project ID: 1223214

Collection Date: 06/15/22 08:00
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	39.4		0.500	0.150	ug/L	1		06/23/22 19:05
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 19:05
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 19:05
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 19:05
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 19:05
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 19:05
Surrogates								
1,4-Difluorobenzene (surr)	90.5		77-115		%	1		06/23/22 19:05

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 19:05
Container ID: 1223214001-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-147**

Client Sample ID: **E-147**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214002
Lab Project ID: 1223214

Collection Date: 06/15/22 14:30
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2-Methylnaphthalene	0.0143	U	0.0143	0.00423	ug/L	1		07/10/22 04:36
Surrogates								
2-Methylnaphthalene-d10 (surr)	53.4		42-86		%	1		07/10/22 04:36
Fluoranthene-d10 (surr)	62		50-97		%	1		07/10/22 04:36

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/10/22 04:36
Container ID: 1223214002-F

Prep Batch: XXX46466
Prep Method: SW3535A
Prep Date/Time: 06/22/22 17:35
Prep Initial Wt./Vol.: 875 mL
Prep Extract Vol: 1 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-147**

Client Sample ID: **E-147**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214002
Lab Project ID: 1223214

Collection Date: 06/15/22 14:30
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.612	U	0.612	0.204	mg/L	1		06/26/22 00:35
Surrogates								
5a Androstane (surr)	84.7		50-150		%	1		06/26/22 00:35

Batch Information

Analytical Batch: XFC16266
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 06/26/22 00:35
Container ID: 1223214002-A

Prep Batch: XXX46477
Prep Method: SW3520C
Prep Date/Time: 06/23/22 16:40
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-147**

Client Sample ID: **E-147**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214002
Lab Project ID: 1223214

Collection Date: 06/15/22 14:30
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0450	mg/L	1		06/22/22 23:23
Surrogates								
4-Bromofluorobenzene (surr)	80.8		50-150		%	1		06/22/22 23:23

Batch Information

Analytical Batch: VFC16131
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 06/22/22 23:23
Container ID: 1223214002-C

Prep Batch: VXX38740
Prep Method: SW5030B
Prep Date/Time: 06/22/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-147**

Client Sample ID: **E-147**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214002
Lab Project ID: 1223214

Collection Date: 06/15/22 14:30
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
1,3,5-Trimethylbenzene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
Benzene	13.5		0.400	0.120	ug/L	1		06/23/22 17:11
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
Isopropylbenzene (Cumene)	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
Naphthalene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
o-Xylene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		06/23/22 17:11
Toluene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
Trichloroethene	1.00 U		1.00	0.310	ug/L	1		06/23/22 17:11
Vinyl chloride	0.150 U		0.150	0.0500	ug/L	1		06/23/22 17:11
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		06/23/22 17:11
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		06/23/22 17:11
4-Bromofluorobenzene (surr)	100		85-114		%	1		06/23/22 17:11
Toluene-d8 (surr)	101		89-112		%	1		06/23/22 17:11

Batch Information

Analytical Batch: VMS21721
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 06/23/22 17:11
Container ID: 1223214002-H

Prep Batch: VXX38736
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-152**

Client Sample ID: **E-152**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214003
Lab Project ID: 1223214

Collection Date: 06/14/22 12:10
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 19:24
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 19:24
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 19:24
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 19:24
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 19:24
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 19:24
Surrogates								
1,4-Difluorobenzene (surr)	83.7		77-115		%	1		06/23/22 19:24

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 19:24
Container ID: 1223214003-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-162**

Client Sample ID: **E-162**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214004
Lab Project ID: 1223214

Collection Date: 06/16/22 10:55
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500	U	0.500	0.150	ug/L	1		06/23/22 19:42
Ethylbenzene	1.00	U	1.00	0.500	ug/L	1		06/23/22 19:42
o-Xylene	1.00	U	1.00	0.500	ug/L	1		06/23/22 19:42
P & M -Xylene	2.00	U	2.00	0.900	ug/L	1		06/23/22 19:42
Toluene	1.00	U	1.00	0.500	ug/L	1		06/23/22 19:42
Xylenes (total)	3.00	U	3.00	1.40	ug/L	1		06/23/22 19:42
Surrogates								
1,4-Difluorobenzene (surr)	83.4		77-115		%	1		06/23/22 19:42

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 19:42
Container ID: 1223214004-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-168**

Client Sample ID: **E-168**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214005
Lab Project ID: 1223214

Collection Date: 06/13/22 14:05
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 20:01
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:01
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:01
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 20:01
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:01
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 20:01
Surrogates								
1,4-Difluorobenzene (surr)	83.7		77-115		%	1		06/23/22 20:01

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 20:01
Container ID: 1223214005-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-190A**

Client Sample ID: **E-190A**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214006
Lab Project ID: 1223214

Collection Date: 06/14/22 13:05
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 20:20
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:20
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:20
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 20:20
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:20
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 20:20
Surrogates								
1,4-Difluorobenzene (surr)	83.3		77-115		%	1		06/23/22 20:20

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 20:20
Container ID: 1223214006-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-217A**

Client Sample ID: **E-217A**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214007
Lab Project ID: 1223214

Collection Date: 06/14/22 14:05
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 20:38
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:38
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:38
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 20:38
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:38
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 20:38
Surrogates								
1,4-Difluorobenzene (surr)	83.3		77-115		%	1		06/23/22 20:38

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 20:38
Container ID: 1223214007-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-244**

Client Sample ID: **E-244**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214008
Lab Project ID: 1223214

Collection Date: 06/14/22 12:50
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 20:57
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:57
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:57
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 20:57
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 20:57
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 20:57
Surrogates								
1,4-Difluorobenzene (surr)	83.2		77-115		%	1		06/23/22 20:57

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 20:57
Container ID: 1223214008-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-247A**

Client Sample ID: **E-247A**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214009
Lab Project ID: 1223214

Collection Date: 06/15/22 11:22
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 21:16
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 21:16
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 21:16
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 21:16
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 21:16
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 21:16
Surrogates								
1,4-Difluorobenzene (surr)	83.6		77-115		%	1		06/23/22 21:16

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 21:16
Container ID: 1223214009-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-247B**

Client Sample ID: **E-247B**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214010
Lab Project ID: 1223214

Collection Date: 06/15/22 12:18
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	40.5		0.500	0.150	ug/L	1		06/23/22 21:34
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 21:34
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 21:34
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 21:34
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 21:34
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 21:34
Surrogates								
1,4-Difluorobenzene (surr)	90.5		77-115		%	1		06/23/22 21:34

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 21:34
Container ID: 1223214010-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-249C**

Client Sample ID: **E-249C**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214011
Lab Project ID: 1223214

Collection Date: 06/15/22 13:35
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.14		0.500	0.150	ug/L	1		06/23/22 22:11
Ethylbenzene	1.00	U	1.00	0.500	ug/L	1		06/23/22 22:11
o-Xylene	1.00	U	1.00	0.500	ug/L	1		06/23/22 22:11
P & M -Xylene	2.00	U	2.00	0.900	ug/L	1		06/23/22 22:11
Toluene	1.00	U	1.00	0.500	ug/L	1		06/23/22 22:11
Xylenes (total)	3.00	U	3.00	1.40	ug/L	1		06/23/22 22:11
Surrogates								
1,4-Difluorobenzene (surr)	83.7		77-115		%	1		06/23/22 22:11

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 22:11
Container ID: 1223214011-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-250A**

Client Sample ID: **E-250A**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214012
Lab Project ID: 1223214

Collection Date: 06/16/22 14:15
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	375		2.50	0.750	ug/L	5		06/28/22 03:35
Ethylbenzene	5.00 U		5.00	2.50	ug/L	5		06/28/22 03:35
o-Xylene	5.00 U		5.00	2.50	ug/L	5		06/28/22 03:35
P & M -Xylene	10.0 U		10.0	4.50	ug/L	5		06/28/22 03:35
Toluene	5.00 U		5.00	2.50	ug/L	5		06/28/22 03:35
Xylenes (total)	15.0 U		15.0	7.00	ug/L	5		06/28/22 03:35
Surrogates								
1,4-Difluorobenzene (surr)	95.9		77-115		%	5		06/28/22 03:35

Batch Information

Analytical Batch: VFC16143
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 03:35
Container ID: 1223214012-B

Prep Batch: VXX38765
Prep Method: SW5030B
Prep Date/Time: 06/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-250B**

Client Sample ID: **E-250B**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214013
Lab Project ID: 1223214

Collection Date: 06/16/22 13:33
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	650		5.00	1.50	ug/L	10		06/28/22 02:59
Ethylbenzene	10.0 U		10.0	5.00	ug/L	10		06/28/22 02:59
o-Xylene	10.0 U		10.0	5.00	ug/L	10		06/28/22 02:59
P & M -Xylene	20.0 U		20.0	9.00	ug/L	10		06/28/22 02:59
Toluene	10.0 U		10.0	5.00	ug/L	10		06/28/22 02:59
Xylenes (total)	30.0 U		30.0	14.0	ug/L	10		06/28/22 02:59
Surrogates								
1,4-Difluorobenzene (surr)	94.3		77-115		%	10		06/28/22 02:59

Batch Information

Analytical Batch: VFC16143
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 02:59
Container ID: 1223214013-B

Prep Batch: VXX38765
Prep Method: SW5030B
Prep Date/Time: 06/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-253**

Client Sample ID: **E-253**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214014
Lab Project ID: 1223214

Collection Date: 06/14/22 10:15
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 23:06
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 23:06
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 23:06
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 23:06
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 23:06
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 23:06
Surrogates								
1,4-Difluorobenzene (surr)	81.8		77-115		%	1		06/23/22 23:06

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 23:06
Container ID: 1223214014-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-255**

Client Sample ID: **E-255**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214015
Lab Project ID: 1223214

Collection Date: 06/16/22 12:35
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	393		2.50	0.750	ug/L	5		06/28/22 03:17
Ethylbenzene	5.00 U		5.00	2.50	ug/L	5		06/28/22 03:17
o-Xylene	5.00 U		5.00	2.50	ug/L	5		06/28/22 03:17
P & M -Xylene	10.0 U		10.0	4.50	ug/L	5		06/28/22 03:17
Toluene	5.00 U		5.00	2.50	ug/L	5		06/28/22 03:17
Xylenes (total)	15.0 U		15.0	7.00	ug/L	5		06/28/22 03:17
Surrogates								
1,4-Difluorobenzene (surr)	99.6		77-115		%	5		06/28/22 03:17

Batch Information

Analytical Batch: VFC16143
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 03:17
Container ID: 1223214015-B

Prep Batch: VXX38765
Prep Method: SW5030B
Prep Date/Time: 06/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-257B**

Client Sample ID: **E-257B**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214016
Lab Project ID: 1223214

Collection Date: 06/13/22 12:10
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500	U	0.500	0.150	ug/L	1		06/23/22 23:42
Ethylbenzene	1.00	U	1.00	0.500	ug/L	1		06/23/22 23:42
o-Xylene	1.00	U	1.00	0.500	ug/L	1		06/23/22 23:42
P & M -Xylene	2.00	U	2.00	0.900	ug/L	1		06/23/22 23:42
Toluene	1.00	U	1.00	0.500	ug/L	1		06/23/22 23:42
Xylenes (total)	3.00	U	3.00	1.40	ug/L	1		06/23/22 23:42
Surrogates								
1,4-Difluorobenzene (surr)	82.5		77-115		%	1		06/23/22 23:42

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 23:42
Container ID: 1223214016-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **E-258**

Client Sample ID: **E-258**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214017
Lab Project ID: 1223214

Collection Date: 06/13/22 12:50
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/24/22 00:00
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:00
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:00
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/24/22 00:00
Toluene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:00
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/24/22 00:00
Surrogates								
1,4-Difluorobenzene (surr)	82.8		77-115		%	1		06/24/22 00:00

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/24/22 00:00
Container ID: 1223214017-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **MW-92**

Client Sample ID: **MW-92**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214018
Lab Project ID: 1223214

Collection Date: 06/15/22 10:30
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.41		0.500	0.150	ug/L	1		06/24/22 00:18
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:18
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:18
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/24/22 00:18
Toluene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:18
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/24/22 00:18
Surrogates								
1,4-Difluorobenzene (surr)	82.9		77-115		%	1		06/24/22 00:18

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/24/22 00:18
Container ID: 1223214018-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **EB6-16**

Client Sample ID: **EB6-16**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214019
Lab Project ID: 1223214

Collection Date: 06/16/22 07:30
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/24/22 00:36
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:36
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:36
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/24/22 00:36
Toluene	1.00 U		1.00	0.500	ug/L	1		06/24/22 00:36
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/24/22 00:36
Surrogates								
1,4-Difluorobenzene (surr)	81.6		77-115		%	1		06/24/22 00:36

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/24/22 00:36
Container ID: 1223214019-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **39B-003-008 22-3**
Lab Sample ID: 1223214020
Lab Project ID: 1223214

Collection Date: 06/13/22 08:00
Received Date: 06/17/22 14:50
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 18:28
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 18:28
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 18:28
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 18:28
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 18:28
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 18:28
Surrogates								
1,4-Difluorobenzene (surr)	83.7		77-115		%	1		06/23/22 18:28

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 18:28
Container ID: 1223214020-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:28PM

Method Blank

Blank ID: MB for HBN 1838556 [VXX/38736]
Blank Lab ID: 1669551

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223214002

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	100	85-114		%
Toluene-d8 (surr)	99.4	89-112		%

Batch Information

Analytical Batch: VMS21721
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: JMG
Analytical Date/Time: 6/23/2022 12:40:00PM

Prep Batch: VXX38736
Prep Method: SW5030B
Prep Date/Time: 6/23/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:31PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223214 [VXX38736]
Blank Spike Lab ID: 1669552
Date Analyzed: 06/23/2022 12:55

Spike Duplicate ID: LCSD for HBN 1223214 [VXX38736]
Spike Duplicate Lab ID: 1669553
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223214002

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	30	27.7	92	30	27.9	93	(79-124)	0.88	(< 20)
1,3,5-Trimethylbenzene	30	29.0	97	30	29.7	99	(75-124)	2.30	(< 20)
Benzene	30	30.2	101	30	30.9	103	(79-120)	2.60	(< 20)
Ethylbenzene	30	30.0	100	30	30.1	100	(79-121)	0.39	(< 20)
Isopropylbenzene (Cumene)	30	28.9	96	30	29.4	98	(72-131)	1.50	(< 20)
Naphthalene	30	27.5	92	30	28.6	95	(61-128)	3.80	(< 20)
o-Xylene	30	30.3	101	30	30.9	103	(78-122)	2.00	(< 20)
P & M -Xylene	60	61.2	102	60	62.4	104	(80-121)	1.90	(< 20)
Toluene	30	30.4	101	30	31.3	104	(80-121)	2.60	(< 20)
Trichloroethene	30	27.8	93	30	28.7	96	(79-123)	3.20	(< 20)
Vinyl chloride	30	28.1	94	30	28.3	94	(58-137)	0.93	(< 20)
Xylenes (total)	90	91.5	102	90	93.3	104	(79-121)	2.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		101	30		102	(81-118)	1.40	
4-Bromofluorobenzene (surr)	30		97	30		97	(85-114)	0.86	
Toluene-d8 (surr)	30		101	30		102	(89-112)	0.70	

Batch Information

Analytical Batch: **VMS21721**
Analytical Method: **SW8260D**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **JMG**

Prep Batch: **VXX38736**
Prep Method: **SW5030B**
Prep Date/Time: **06/23/2022 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:33PM

Method Blank

Blank ID: MB for HBN 1838641 [VXX/38740]
Blank Lab ID: 1669585

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223214002

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
1,4-Difluorobenzene (surr)	96.3	77-115		%
4-Bromofluorobenzene (surr)	80.1	50-150		%

Batch Information

Analytical Batch: VFC16131
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: PHK
Analytical Date/Time: 6/22/2022 10:17:00AM

Prep Batch: VXX38740
Prep Method: SW5030B
Prep Date/Time: 6/22/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:36PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223214 [VXX38740]
Blank Spike Lab ID: 1669645
Date Analyzed: 06/22/2022 11:12

Spike Duplicate ID: LCSD for HBN 1223214 [VXX38740]
Spike Duplicate Lab ID: 1669646
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223214002

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.960	96	1.00	0.944	94	(60-120)	1.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		81	0.0500		82	(50-150)	0.81	

Batch Information

Analytical Batch: **VFC16131**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38740**
Prep Method: **SW5030B**
Prep Date/Time: **06/22/2022 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:38PM

Method Blank

Blank ID: MB for HBN 1838839 [VXX/38747]
Blank Lab ID: 1669935

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223214001, 1223214003, 1223214004, 1223214005, 1223214006, 1223214007, 1223214008, 1223214009, 1223214010, 1223214011, 1223214014, 1223214016, 1223214017, 1223214018, 1223214019, 1223214020

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.500	ug/L
o-Xylene	0.500U	1.00	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.900	ug/L
Toluene	0.500U	1.00	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.40	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	82.3	77-115		%

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 6/23/2022 10:58:00AM

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 6/23/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:40PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223214 [VXX38747]
Blank Spike Lab ID: 1669936
Date Analyzed: 06/23/2022 11:34

Spike Duplicate ID: LCSD for HBN 1223214 [VXX38747]
Spike Duplicate Lab ID: 1669937
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223214001, 1223214003, 1223214004, 1223214005, 1223214006, 1223214007, 1223214008, 1223214009, 1223214010, 1223214011, 1223214014, 1223214016, 1223214017, 1223214018, 1223214019, 1223214020

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	106	106	100	102	102	(80-120)	4.00	(< 20)
Ethylbenzene	100	105	105	100	102	102	(75-125)	2.50	(< 20)
o-Xylene	100	99.9	100	100	98.7	99	(80-120)	1.20	(< 20)
P & M -Xylene	200	208	104	200	203	101	(75-130)	2.40	(< 20)
Toluene	100	104	104	100	101	101	(75-120)	2.80	(< 20)
Xylenes (total)	300	308	103	300	302	101	(79-121)	2.00	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50		95	50		101	(77-115)	6.60	

Batch Information

Analytical Batch: **VFC16136**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38747**
Prep Method: **SW5030B**
Prep Date/Time: **06/23/2022 06:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:43PM

Method Blank

Blank ID: MB for HBN 1838981 [VXX/38765]
Blank Lab ID: 1670526

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223214012, 1223214013, 1223214015

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.500	ug/L
o-Xylene	0.500U	1.00	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.900	ug/L
Toluene	0.500U	1.00	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.40	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	86.9	77-115		%

Batch Information

Analytical Batch: VFC16143
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 6/27/2022 11:32:00AM

Prep Batch: VXX38765
Prep Method: SW5030B
Prep Date/Time: 6/27/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:45PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223214 [VXX38765]
Blank Spike Lab ID: 1670527
Date Analyzed: 06/27/2022 12:09

Spike Duplicate ID: LCSD for HBN 1223214 [VXX38765]
Spike Duplicate Lab ID: 1670528
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223214012, 1223214013, 1223214015

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	101	101	100	102	102	(80-120)	0.45	(< 20)
Ethylbenzene	100	100	100	100	99.4	99	(75-125)	0.60	(< 20)
o-Xylene	100	99.6	100	100	98.6	99	(80-120)	0.97	(< 20)
P & M -Xylene	200	200	100	200	198	99	(75-130)	0.62	(< 20)
Toluene	100	100	100	100	100	100	(75-120)	0.29	(< 20)
Xylenes (total)	300	299	100	300	297	99	(79-121)	0.73	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50		100	50		101	(77-115)	0.20	

Batch Information

Analytical Batch: **VFC16143**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38765**
Prep Method: **SW5030B**
Prep Date/Time: **06/27/2022 06:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Print Date: 08/15/2022 4:58:47PM

Method Blank

Blank ID: MB for HBN 1838370 [XXX/46466]
Blank Lab ID: 1669295

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223214002

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
2-Methylnaphthalene	0.00625U	0.0125	0.00370	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	46.9	42-86		%
Fluoranthene-d10 (surr)	62.7	50-97		%

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/10/2022 3:55:00AM

Prep Batch: XXX46466
Prep Method: SW3535A
Prep Date/Time: 6/22/2022 5:35:24PM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 08/15/2022 4:58:49PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223214 [XXX46466]
Blank Spike Lab ID: 1669296
Date Analyzed: 07/10/2022 04:15

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223214002

Results by **8270D SIM (PAH)**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
2-Methylnaphthalene	0.5	0.263	53	(39-114)
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.5		43	(42-86)
Fluoranthene-d10 (surr)	0.5		69	(50-97)

Batch Information

Analytical Batch: **XMS13228**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX46466**
Prep Method: **SW3535A**
Prep Date/Time: **06/22/2022 17:35**
Spike Init Wt./Vol.: 0.5 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 08/15/2022 4:58:51PM

Matrix Spike Summary

Original Sample ID: 1223235003
MS Sample ID: 1669297 MS
MSD Sample ID: 1669298 MSD

QC for Samples: 1223214002

Analysis Date: 07/10/2022 5:37
Analysis Date: 07/10/2022 5:58
Analysis Date: 07/10/2022 6:19
Matrix: Water (Surface, Eff., Ground)

Results by **8270D SIM (PAH)**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
2-Methylnaphthalene	0.00660U	0.556	.352	63	0.541	0.337	62	39-114	4.20	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.556	.294	53	0.541	0.270	50	42-86	8.40	
Fluoranthene-d10 (surr)		0.556	.347	62	0.541	0.309	57	50-97	11.70	

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/10/2022 5:58:00AM

Prep Batch: XXX46466
Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM
Prep Date/Time: 6/22/2022 5:35:24PM
Prep Initial Wt./Vol.: 900.00mL
Prep Extract Vol: 1.00mL

Print Date: 08/15/2022 4:58:53PM

Method Blank

Blank ID: MB for HBN 1838559 [XXX/46477]
Blank Lab ID: 1669558

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223214002

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	83.1	60-120		%

Batch Information

Analytical Batch: XFC16266
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: MDT
Analytical Date/Time: 6/25/2022 8:48:00PM

Prep Batch: XXX46477
Prep Method: SW3520C
Prep Date/Time: 6/23/2022 4:40:31PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 08/15/2022 4:58:54PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223214 [XXX46477]
Blank Spike Lab ID: 1669559
Date Analyzed: 06/25/2022 20:59

Spike Duplicate ID: LCSD for HBN 1223214 [XXX46477]
Spike Duplicate Lab ID: 1669560
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223214002

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	20.9	105	20	18.1	90	(75-125)	14.60	(< 20)
Surrogates									
5a Androstane (surr)	0.4		100	0.4		91	(60-120)	9.70	

Batch Information

Analytical Batch: **XFC16266**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **MDT**

Prep Batch: **XXX46477**
Prep Method: **SW3520C**
Prep Date/Time: **06/23/2022 16:40**
Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

Print Date: 08/15/2022 4:58:57PM

CHAIN OF CUSTODY

Corrected Report - Revision 1

ro Corporation
312 Tyee Street
Soldotna, Alaska 99669
62-2315 - (907) 262-2320 (fax)

Laboratory: SGS

Address:

Lab Accession No.

Reporting Instructions
Send Report To: Brianna Force
(Trihydro Corporation)

Billing Information
Bill: Trihydro - (Our Client)
Our Client's P.O. No: 4500291894

oject Name: 22-3

Our Client: Marathon

Our Project No: 39B-003-008

Sampler(s): JY, ML

PM#333517AK

Turnaround:
24-HR 48-HR 5-Day (2-WKS) Other
Data Deliverables:
(Standard) Level 3 Other
EDD Required? (Y) - N

Lab No.	Sample No.	Matrix	Date	Time	No. of Jars per Analysis: BTEX (8021B) List1	DRO (AK102)	GRO (AK101)	PAH SIM List 3	VOCs (8260C) List3						Comments & Special Instructions
1AC	Dup-2	GW	6/15/22	08:00	3										1223214
2AJ	E-147	GW	6/15/22	14:30		2	3	2	3						
3AC	E-152	GW	6/14/22	12:10	3										
4AC	E-162	GW	6/16/22	10:55	3										
5AC	E-168	GW	6/13/22	14:05	3										
6AC	E-190A	GW	6/14/22	13:05	3										
7AC	E-217A	GW	6/14/22	14:05	3										
8AC	E-244	GW	6/14/22	12:50	3										
9AC	E-247A	GW	6/15/22	11:22	3										
10AC	E-247B	GW	6/15/22	12:18	3										

Relinquished By (Name and Company):	Date	Time	Received By (Name and Company):	Date	Time
Trihydro	6/17/2022	7:07 AM	SGS	6/17/22	14:50
			IF IB	4-4 DSS	Alert

CHAIN OF CUSTODY

Corrected Report - Revision 1 | Page 2 of 2

Trihydro Corporation
312 Tyee Street
Soldotna, Alaska 99669
(907) 262-2315 - (907) 262-2320 (fax)

Laboratory: SGS

Address:

Lab Accession No.

Reporting Instructions
Send Report To: Brianna Force
(Trihydro Corporation)

Billing Information
Bill: Trihydro - (Our Client)
Our Client's P.O. No: 4500291894

Project Name: 22-3

Our Client: Marathon

Our Project No: 39B-003-008

Sampler(s): JY, ML

Turnaround:
24-HR 48-HR 5-Day (2-WKS) Other
Data Deliverables:
(Standard) Level 3 Other
EDD Required? (Y) - N

Lab No.	Sample No.	Matrix	Date	Time	No. of Jars per Analysis: BTEX (8021B) List1										Comments & Special Instructions
11AC	E-249C	GW	6/15/22	13:35	3										
12AC	E-250A	GW	6/16/22	14:15	3										
13AC	E-250B	GW	6/16/22	13:33	3										
14AC	E-253	GW	6/14/22	10:15	3										
15AC	E-255	GW	6/16/22	12:35	3										
16AC	E-257B	GW	6/13/22	12:10	3										
17AC	E-258	GW	6/13/22	12:50	3										
18AC	MW-92	GW	6/15/22	10:30	3										
19AC	EB 6-16	GW	6/16/22	07:30	3										
20AC	Trip Blank	GW	6/13/22	08:00	3										

Relinquished By (Name and Company):	Date	Time	Received By (Name and Company):	Date	Time
			[signature] SGS	6/17/22	14:50
[signature] Trihydro	6/17/2022	7:07 AM	intact - IFIB	4.4 IDS	Accept

MARATHON 2021 ANALYTE SAMPLE LIST

Marathon List #1 (IPs)

Parameters	Analysis	Method	NOTES
BTEX	BTEX	8021B	Red Text: Added Analyte

Marathon List #2 (IPs)

Parameters	Analysis	Method
BTEX & Trichloroethene (TCE)	BTEX + TCE	8260C

Marathon List #3 (CoCs)

Parameters	Analysis	Method	
Benzene	VOCs	8260C	
Toluene	VOCs	8260C	
Ethylbenzene	VOCs	8260C	
Xylenes (total)	VOCs	8260C	
Trichloroethene (TCE)	VOCs	8260C	
Vinyl chloride	VOCs	8260C	
Naphthalene	VOCs	8260C	
Isopropylbenzene (cumene)	VOCs	8260C	
1,2,4-Trimethylbenzene	VOCs	8260C	
1,3,5-Trimethylbenzene	VOCs	8260C	
Diesel-range organics (DRO)	DRO	AK102	
Gasoline-range organics (GRO)	GRO	AK101	
2-Methyl-naphthalene	PAH SIM	PAH (8270) SIM	*PAH List3 COC

Marathon List #4 (COPCs)

Parameters	Analysis	Method
VOCs		
1,1,1-Trichloroethane	VOCs	8260C
1,1,2-Trichloroethane	VOCs	8260C
1,1-Dichloroethane	VOCs	8260C
1,2-Dibromoethane	VOCs	8260C
1,2-Dichlorobenzene	VOCs	8260C
1,2-Dichloroethane	VOCs	8260C
1,3-Dichlorobenzene	VOCs	8260C
1,4-Dichlorobenzene	VOCs	8260C
2-Butanone (Methyl ethyl ketone)	VOCs	8260C
2-Hexanone	VOCs	8260C
Acetone	VOCs	8260C
Benzene	VOCs	8260C
Butylbenzene (n-)	VOCs	8260C
Butylbenzene (sec-)	VOCs	8260C
Butylbenzene (tert-)	VOCs	8260C
Carbon disulfide	VOCs	8260C
Carbon tetrachloride	VOCs	8260C
Chlorobenzene	VOCs	8260C

MARATHON 2021 ANALYTE SAMPLE LIST

Pyridine	SVOCs	8270D
Inorganics		
Arsenic	INORGANICS	6020A
Lead	INORGANICS	6020A
Cyanides	INORGANICS	6020A
Sulfides	INORGANICS	
Total Hydrocarbons		
Gasoline-range organics (GRO)	GRO	AK101
Diesel-range organics (DRO)	DRO	AK102

Marathon List #5 (SI Pilot)

Parameters	**Analysis**	**Method**
Volatile organic compounds (full suite)	VOCs	SW8260C
Sulfate	INORGANICS	EPA 300.0
Nitrate	INORGANICS	EPA 300.0
Sulfide	INORGANICS	SM 4500S-D
Total Iron	INORGANICS	SW 6020A
Total Manganese	INORGANICS	SW 6020A
Dissolved Iron	INORGANICS	SW 6020A
Dissolved Manganese	INORGANICS	SW 6020A
Total Organic Carbon	ORGANICS	SM 5310B
Methane, ethane, ethene	DISS. GASES	RSK 175
Volatile fatty acids		LCP-OALC

Marathon List #6 (NA)

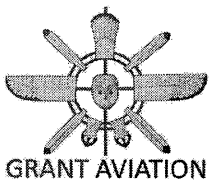
Parameters	**Analysis**	**Method**
Iron II	INORGANICS	EPA 200.0
Dissolved Manganese	INORGANICS	6020A
Sulfate	INORGANICS	EPA 9056A
Methane	DISS. GASES	RSK 175

AIRBILL 10038837

I hereby declare that the goods contained herein do not contain dangerous goods.

Signed..... Date .....

Grant Aviation
6420 Kulis Dr. Anchorage, AK 99502
Phone: 1 (888) 359-4726
Freephone: 1 (888) 359-4726
Email: res@flygrant.com
Web: http://www.flygrant.com/



FREIGHT DETAILS

FROM/TO: Kenai -> Anchorage International

Flight Departs: Jun 17 22 8:40 AM

Receiver: SGS
907-562-2343

Sender: TRIHYDRO
907-252-8366

Accepted: Fri, Jun 17 22 8:25:00 AM

Description & Comment	Quan.	Wgt.	Handle Fee	Hazmat Fee	Total
water samples	1	35	-	-	$28.24
				Total Tax:	$1.76
				Total Payments made:	$30.00
				Total Unpaid:	**$0.00**

Received in good condition by: .....

CUSTOMER COPY

AIRBILL 10038837

I hereby declare that the goods contained herein do not contain dangerous goods.

Signed..... Date .....

Grant Aviation
6420 Kulis Dr. Anchorage, AK 99502
Phone: 1 (888) 359-4726
Freephone: 1 (888) 359-4726
Email: res@flygrant.com
Web: http://www.flygrant.com/

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Accepted: Fri, Jun 17 22 8:25:00 AM

Description & Comment	Quan.	Wgt.	Handle Fee	Hazmat Fee	Total
water samples	1	35	-	-	$28.24
TAX: Federal Excise Tax					$1.76
				Total Payments made:	$30.00
				Total Unpaid:	**$0.00**

TERMS AND CONDITIONS

Consignemnt Note Text

Alert Expeditors Inc.

#419952

Corrected Report - Revision 1

Citywide Delivery • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

Date 6/17/02

From Tuxedo

To 565

Collect	Prepay	Advance Charges
Job #	PO# G.I 1003537	

Sample

Shipped Signature

Total Charge

Received By:

e-Sample Receipt Form

Corrected Report - Revision 1

SGS Workorder #:	1223214	1223214

Review Criteria	Condition (Yes, No, N/A	Exceptions Noted below
Chain of Custody / Temperature Requirements	*Note:* Temperature and COC seal information is found on the chain of custody form	
DOD only: Did all sample coolers have a corresponding COC?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note containers received with ice:		
Identify any containers received at non-compliant temperature: *(Use form FS-0029 if more space is needed)*		
Holding Time / Documentation / Sample Condition Requirements	*Note:* Refer to form F-083 "Sample Guide" for specific holding times and sample containers.	
Were samples received within analytical holding time?	Yes	
Do sample labels match COC? Record discrepancies.	Yes	
Note: *If information on containers differs from COC, default to COC information for login. If times differ <1hr, record details & login per COC.*		
Were analytical requests clear? *(i.e. method is specified for analyses with multiple option for method (Eg, BTEX 8021 vs 8260, Metals 6020 vs 200.8)*	Yes	
Were proper containers (type/mass/volume/preservative)used? Note: Exemption for metals analysis by 200.8/6020 in water.	Yes	
Volatile Analysis Requirements (VOC, GRO, LL-Hg, etc.)		
Were all soil VOAs received with a corresponding % solids container?	N/A	
Were Trip Blanks (e.g., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (e.g., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with Methanol+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1223214001-A	HCL to pH < 2	OK	1223214015-A	HCL to pH < 2	OK
1223214001-B	HCL to pH < 2	OK	1223214015-B	HCL to pH < 2	OK
1223214001-C	HCL to pH < 2	OK	1223214015-C	HCL to pH < 2	OK
1223214002-A	HCL to pH < 2	OK	1223214016-A	HCL to pH < 2	OK
1223214002-B	HCL to pH < 2	OK	1223214016-B	HCL to pH < 2	OK
1223214002-C	HCL to pH < 2	OK	1223214016-C	HCL to pH < 2	OK
1223214002-D	HCL to pH < 2	OK	1223214017-A	HCL to pH < 2	OK
1223214002-E	HCL to pH < 2	OK	1223214017-B	HCL to pH < 2	OK
1223214002-F	No Preservative Required	OK	1223214017-C	HCL to pH < 2	OK
1223214002-G	No Preservative Required	OK	1223214018-A	HCL to pH < 2	OK
1223214002-H	HCL to pH < 2	OK	1223214018-B	HCL to pH < 2	OK
1223214002-I	HCL to pH < 2	OK	1223214018-C	HCL to pH < 2	OK
1223214002-J	HCL to pH < 2	OK	1223214019-A	HCL to pH < 2	OK
1223214003-A	HCL to pH < 2	OK	1223214019-B	HCL to pH < 2	OK
1223214003-B	HCL to pH < 2	OK	1223214019-C	HCL to pH < 2	OK
1223214003-C	HCL to pH < 2	OK	1223214020-A	HCL to pH < 2	OK
1223214004-A	HCL to pH < 2	OK	1223214020-B	HCL to pH < 2	OK
1223214004-B	HCL to pH < 2	OK	1223214020-C	HCL to pH < 2	OK
1223214004-C	HCL to pH < 2	OK			
1223214005-A	HCL to pH < 2	OK			
1223214005-B	HCL to pH < 2	OK			
1223214005-C	HCL to pH < 2	OK			
1223214006-A	HCL to pH < 2	OK			
1223214006-B	HCL to pH < 2	OK			
1223214006-C	HCL to pH < 2	OK			
1223214007-A	HCL to pH < 2	OK			
1223214007-B	HCL to pH < 2	OK			
1223214007-C	HCL to pH < 2	OK			
1223214008-A	HCL to pH < 2	OK			
1223214008-B	HCL to pH < 2	OK			
1223214008-C	HCL to pH < 2	OK			
1223214009-A	HCL to pH < 2	OK			
1223214009-B	HCL to pH < 2	OK			
1223214009-C	HCL to pH < 2	OK			
1223214010-A	HCL to pH < 2	OK			
1223214010-B	HCL to pH < 2	OK			
1223214010-C	HCL to pH < 2	OK			
1223214011-A	HCL to pH < 2	OK			
1223214011-B	HCL to pH < 2	OK			
1223214011-C	HCL to pH < 2	OK			
1223214012-A	HCL to pH < 2	OK			
1223214012-B	HCL to pH < 2	OK			
1223214012-C	HCL to pH < 2	OK			
1223214013-A	HCL to pH < 2	OK			
1223214013-B	HCL to pH < 2	OK			
1223214013-C	HCL to pH < 2	OK			
1223214014-A	HCL to pH < 2	OK			
1223214014-B	HCL to pH < 2	OK			
1223214014-C	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

Laboratory Report of Analysis

To: Tesoro Alaska Petroleum-Kenai
312 Tyee Street
Soldotna, AK 99669
(907)262-2315

Report Number: **1223344**

Client Project: **22-3**

Dear Brianna Force,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Alexandra at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

_____

Alexandra Lambe Date
Project Manager
Alexandra.Lambe@sgs.com

Case Narrative

SGS Client: **Tesoro Alaska Petroleum-Kenai**
SGS Project: **1223344**
Project Name/Site: **22-3**
Project Contact: **Brianna Force**

Refer to sample receipt form for information on sample condition.

SMW-12B (1223344013) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 DW Chemistry (Provisionally Certified as of 05/31/2022 for Nitrate as N by SM 4500NO3-F) & Microbiology & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
DUP-1	1223344001	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
DUP-3	1223344002	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
DUP-4	1223344003	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
DUP-5	1223344004	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
E-010	1223344005	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
E-072RR	1223344006	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
E-097	1223344007	06/17/2022	06/22/2022	Water (Surface, Eff., Ground)
E-227	1223344008	06/17/2022	06/22/2022	Water (Surface, Eff., Ground)
E-249A	1223344009	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
E-249B	1223344010	06/17/2022	06/22/2022	Water (Surface, Eff., Ground)
E-256	1223344011	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
SMW-09	1223344012	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
SMW-12B	1223344013	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
SMW-24	1223344014	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
SMW-34	1223344015	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
SMW-35	1223344016	06/21/2022	06/22/2022	Water (Surface, Eff., Ground)
EB 6-20	1223344017	06/20/2022	06/22/2022	Water (Surface, Eff., Ground)
EB 6-22	1223344018	06/22/2022	06/22/2022	Water (Surface, Eff., Ground)
Trip Blank	1223344019	06/17/2022	06/22/2022	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV-Custom
SW8021B	BTEX 8021
AK102	DRO Low Volume (W)
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds(W)Custom List

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **DUP-1**
Lab Sample ID: 1223344001

Volatile Fuels

Parameter	Result	Units
Benzene	2870	ug/L
Ethylbenzene	107	ug/L
o-Xylene	83.5	ug/L
P & M -Xylene	762	ug/L
Toluene	268	ug/L
Xylenes (total)	846	ug/L

Client Sample ID: **DUP-3**
Lab Sample ID: 1223344002

Volatile Fuels

Parameter	Result	Units
Benzene	2430	ug/L
Ethylbenzene	1070	ug/L
o-Xylene	917	ug/L
P & M -Xylene	2010	ug/L
Toluene	498	ug/L
Xylenes (total)	2930	ug/L

Client Sample ID: **DUP-4**
Lab Sample ID: 1223344003

Volatile GC/MS

Parameter	Result	Units
Benzene	3.02	ug/L
Trichloroethene	17.9	ug/L

Client Sample ID: **DUP-5**
Lab Sample ID: 1223344004

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Gasoline Range Organics	0.210	mg/L
1,2,4-Trimethylbenzene	5.48	ug/L
Benzene	7.45	ug/L
Ethylbenzene	17.5	ug/L
Isopropylbenzene (Cumene)	5.24	ug/L
Trichloroethene	8.55	ug/L
Vinyl chloride	3.65	ug/L

Client Sample ID: **E-010**
Lab Sample ID: 1223344005

Volatile Fuels

Parameter	Result	Units
Benzene	2820	ug/L
Ethylbenzene	94.0	ug/L
o-Xylene	77.0	ug/L
P & M -Xylene	660	ug/L
Toluene	260	ug/L
Xylenes (total)	737	ug/L

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Detectable Results Summary

Client Sample ID: **E-072RR**
Lab Sample ID: 1223344006
Volatile Fuels

Parameter	Result	Units
Benzene	2570	ug/L
Ethylbenzene	1120	ug/L
o-Xylene	956	ug/L
P & M -Xylene	2100	ug/L
Toluene	518	ug/L
Xylenes (total)	3060	ug/L

Client Sample ID: **E-097**
Lab Sample ID: 1223344007
Volatile Fuels

Parameter	Result	Units
Benzene	538	ug/L
P & M -Xylene	25.2	ug/L
Xylenes (total)	25.2	ug/L

Client Sample ID: **E-227**
Lab Sample ID: 1223344008
Volatile Fuels

Parameter	Result	Units
Benzene	1000	ug/L
Ethylbenzene	351	ug/L
o-Xylene	13.1	ug/L
P & M -Xylene	695	ug/L
Xylenes (total)	709	ug/L

Client Sample ID: **E-249A**
Lab Sample ID: 1223344009
Volatile Fuels

Parameter	Result	Units
Benzene	1470	ug/L

Client Sample ID: **E-249B**
Lab Sample ID: 1223344010
Volatile Fuels

Parameter	Result	Units
Benzene	223	ug/L

Client Sample ID: **E-256**
Lab Sample ID: 1223344011
Volatile Fuels

Parameter	Result	Units
Benzene	1690	ug/L

Client Sample ID: **SMW-09**
Lab Sample ID: 1223344012
Volatile GC/MS

Parameter	Result	Units
Benzene	0.538	ug/L
Vinyl chloride	0.508	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **SMW-12B**
Lab Sample ID: 1223344013

Polynuclear Aromatics GC/MS
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
2-Methylnaphthalene	1.79	ug/L
Diesel Range Organics	2.53	mg/L
Gasoline Range Organics	1.13	mg/L
1,2,4-Trimethylbenzene	67.4	ug/L
1,3,5-Trimethylbenzene	17.9	ug/L
Benzene	138	ug/L
Ethylbenzene	29.9	ug/L
Isopropylbenzene (Cumene)	14.3	ug/L
Naphthalene	21.5	ug/L
P & M -Xylene	166	ug/L
Xylenes (total)	167	ug/L

Client Sample ID: **SMW-34**
Lab Sample ID: 1223344015

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Gasoline Range Organics	0.180	mg/L
1,2,4-Trimethylbenzene	4.13	ug/L
Benzene	7.95	ug/L
Ethylbenzene	13.2	ug/L
Isopropylbenzene (Cumene)	4.36	ug/L
Trichloroethene	12.4	ug/L
Vinyl chloride	4.77	ug/L

Client Sample ID: **SMW-35**
Lab Sample ID: 1223344016

Volatile GC/MS

Parameter	Result	Units
Benzene	3.34	ug/L
Trichloroethene	20.4	ug/L

Client Sample ID: **EB 6-20**
Lab Sample ID: 1223344017

Volatile Fuels

Parameter	Result	Units
Benzene	0.700	ug/L
P & M -Xylene	2.37	ug/L

Client Sample ID: **EB 6-22**
Lab Sample ID: 1223344018

Volatile Fuels

Parameter	Result	Units
Toluene	2.02	ug/L

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Results of **DUP-1**

Client Sample ID: **DUP-1**
Client Project ID: **22-3**
Lab Sample ID: 1223344001
Lab Project ID: 1223344

Collection Date: 06/20/22 08:30
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2870		25.0	7.50	ug/L	50		06/28/22 22:30
Ethylbenzene	107		50.0	25.0	ug/L	50		06/28/22 22:30
o-Xylene	83.5		50.0	25.0	ug/L	50		06/28/22 22:30
P & M -Xylene	762		100	45.0	ug/L	50		06/28/22 22:30
Toluene	268		50.0	25.0	ug/L	50		06/28/22 22:30
Xylenes (total)	846		150	70.0	ug/L	50		06/28/22 22:30
Surrogates								
1,4-Difluorobenzene (surr)	97.4		77-115		%	50		06/28/22 22:30

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 22:30
Container ID: 1223344001-B

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 06/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **DUP-3**

Client Sample ID: **DUP-3**
Client Project ID: **22-3**
Lab Sample ID: 1223344002
Lab Project ID: 1223344

Collection Date: 06/20/22 08:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2430		50.0	15.0	ug/L	100		06/28/22 21:16
Ethylbenzene	1070		100	50.0	ug/L	100		06/28/22 21:16
o-Xylene	917		100	50.0	ug/L	100		06/28/22 21:16
P & M -Xylene	2010		200	90.0	ug/L	100		06/28/22 21:16
Toluene	498		100	50.0	ug/L	100		06/28/22 21:16
Xylenes (total)	2930		300	140	ug/L	100		06/28/22 21:16
Surrogates								
1,4-Difluorobenzene (surr)	86.8		77-115		%	100		06/28/22 21:16

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 21:16
Container ID: 1223344002-B

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 06/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **DUP-4**

Client Sample ID: **DUP-4**
Client Project ID: **22-3**
Lab Sample ID: 1223344003
Lab Project ID: 1223344

Collection Date: 06/21/22 08:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.02		0.400	0.120	ug/L	1		07/05/22 19:13
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:13
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:13
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/05/22 19:13
Toluene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:13
Trichloroethene	17.9		1.00	0.310	ug/L	1		07/05/22 19:13
Xylenes (total)	3.00	U	3.00	1.00	ug/L	1		07/05/22 19:13
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		07/05/22 19:13
4-Bromofluorobenzene (surr)	101		85-114		%	1		07/05/22 19:13
Toluene-d8 (surr)	98.9		89-112		%	1		07/05/22 19:13

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 19:13
Container ID: 1223344003-A

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **DUP-5**

Client Sample ID: **DUP-5**
Client Project ID: **22-3**
Lab Sample ID: 1223344004
Lab Project ID: 1223344

Collection Date: 06/21/22 09:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2-Methylnaphthalene	0.0500	U	0.0500	0.0150	ug/L	1		07/10/22 00:29
Surrogates								
2-Methylnaphthalene-d10 (surr)	50.9		42-86		%	1		07/10/22 00:29
Fluoranthene-d10 (surr)	58.1		50-97		%	1		07/10/22 00:29

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/10/22 00:29
Container ID: 1223344004-I

Prep Batch: XXX46510
Prep Method: SW3535A
Prep Date/Time: 06/28/22 18:07
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **DUP-5**

Client Sample ID: **DUP-5**
Client Project ID: **22-3**
Lab Sample ID: 1223344004
Lab Project ID: 1223344

Collection Date: 06/21/22 09:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.612	U	0.612	0.204	mg/L	1		07/01/22 00:21
Surrogates								
5a Androstane (surr)	71.3		50-150		%	1		07/01/22 00:21

Batch Information

Analytical Batch: XFC16274
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 07/01/22 00:21
Container ID: 1223344004-G

Prep Batch: XXX46519
Prep Method: SW3520C
Prep Date/Time: 06/29/22 16:15
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Print Date: 07/12/2022 5:12:04PM

Results of **DUP-5**

Client Sample ID: **DUP-5**
Client Project ID: **22-3**
Lab Sample ID: 1223344004
Lab Project ID: 1223344

Collection Date: 06/21/22 09:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.210		0.100	0.0450	mg/L	1		07/01/22 08:27
Surrogates								
4-Bromofluorobenzene (surr)	125		50-150		%	1		07/01/22 08:27

Batch Information

Analytical Batch: VFC16149
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 07/01/22 08:27
Container ID: 1223344004-A

Prep Batch: VXX38791
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **DUP-5**

Client Sample ID: **DUP-5**
Client Project ID: **22-3**
Lab Sample ID: 1223344004
Lab Project ID: 1223344

Collection Date: 06/21/22 09:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	5.48		1.00	0.310	ug/L	1		07/05/22 19:28
1,3,5-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:28
Benzene	7.45		0.400	0.120	ug/L	1		07/05/22 19:28
Ethylbenzene	17.5		1.00	0.310	ug/L	1		07/05/22 19:28
Isopropylbenzene (Cumene)	5.24		1.00	0.310	ug/L	1		07/05/22 19:28
Naphthalene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:28
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:28
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/05/22 19:28
Toluene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:28
Trichloroethene	8.55		1.00	0.310	ug/L	1		07/05/22 19:28
Vinyl chloride	3.65		0.150	0.0500	ug/L	1		07/05/22 19:28
Xylenes (total)	3.00	U	3.00	1.00	ug/L	1		07/05/22 19:28
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		07/05/22 19:28
4-Bromofluorobenzene (surr)	101		85-114		%	1		07/05/22 19:28
Toluene-d8 (surr)	98.8		89-112		%	1		07/05/22 19:28

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 19:28
Container ID: 1223344004-D

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **E-010**

Client Sample ID: **E-010**
Client Project ID: **22-3**
Lab Sample ID: 1223344005
Lab Project ID: 1223344

Collection Date: 06/20/22 13:50
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2820		25.0	7.50	ug/L	50		07/01/22 00:32
Ethylbenzene	94.0		50.0	25.0	ug/L	50		07/01/22 00:32
o-Xylene	77.0		50.0	25.0	ug/L	50		07/01/22 00:32
P & M -Xylene	660		100	45.0	ug/L	50		07/01/22 00:32
Toluene	260		50.0	25.0	ug/L	50		07/01/22 00:32
Xylenes (total)	737		150	70.0	ug/L	50		07/01/22 00:32
Surrogates								
1,4-Difluorobenzene (surr)	104		77-115		%	50		07/01/22 00:32

Batch Information

Analytical Batch: VFC16149
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 07/01/22 00:32
Container ID: 1223344005-C

Prep Batch: VXX38790
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **E-072RR**

Client Sample ID: **E-072RR**
Client Project ID: **22-3**
Lab Sample ID: 1223344006
Lab Project ID: 1223344

Collection Date: 06/20/22 12:05
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2570		100	30.0	ug/L	200		06/28/22 20:58
Ethylbenzene	1120		200	100	ug/L	200		06/28/22 20:58
o-Xylene	956		200	100	ug/L	200		06/28/22 20:58
P & M -Xylene	2100		400	180	ug/L	200		06/28/22 20:58
Toluene	518		200	100	ug/L	200		06/28/22 20:58
Xylenes (total)	3060		600	280	ug/L	200		06/28/22 20:58
Surrogates								
1,4-Difluorobenzene (surr)	87.2		77-115		%	200		06/28/22 20:58

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 20:58
Container ID: 1223344006-B

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 06/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **E-097**

Client Sample ID: **E-097**
Client Project ID: **22-3**
Lab Sample ID: 1223344007
Lab Project ID: 1223344

Collection Date: 06/17/22 10:40
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	538		2.50	0.750	ug/L	5		06/28/22 23:07
Ethylbenzene	5.00 U		5.00	2.50	ug/L	5		06/28/22 23:07
o-Xylene	5.00 U		5.00	2.50	ug/L	5		06/28/22 23:07
P & M -Xylene	25.2		10.0	4.50	ug/L	5		06/28/22 23:07
Toluene	5.00 U		5.00	2.50	ug/L	5		06/28/22 23:07
Xylenes (total)	25.2		15.0	7.00	ug/L	5		06/28/22 23:07
Surrogates								
1,4-Difluorobenzene (surr)	95.3		77-115		%	5		06/28/22 23:07

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 23:07
Container ID: 1223344007-B

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 06/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **E-227**

Client Sample ID: **E-227**
Client Project ID: **22-3**
Lab Sample ID: 1223344008
Lab Project ID: 1223344

Collection Date: 06/17/22 12:40
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1000		5.00	1.50	ug/L	10		07/01/22 00:50
Ethylbenzene	351		10.0	5.00	ug/L	10		07/01/22 00:50
o-Xylene	13.1		10.0	5.00	ug/L	10		07/01/22 00:50
P & M -Xylene	695		20.0	9.00	ug/L	10		07/01/22 00:50
Toluene	10.0 U		10.0	5.00	ug/L	10		07/01/22 00:50
Xylenes (total)	709		30.0	14.0	ug/L	10		07/01/22 00:50
Surrogates								
1,4-Difluorobenzene (surr)	104		77-115		%	10		07/01/22 00:50

Batch Information

Analytical Batch: VFC16149
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 07/01/22 00:50
Container ID: 1223344008-C

Prep Batch: VXX38790
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **E-249A**

Client Sample ID: **E-249A**
Client Project ID: **22-3**
Lab Sample ID: 1223344009
Lab Project ID: 1223344

Collection Date: 06/20/22 11:10
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1470		5.00	1.50	ug/L	10		07/01/22 01:09
Ethylbenzene	10.0 U		10.0	5.00	ug/L	10		07/01/22 01:09
o-Xylene	10.0 U		10.0	5.00	ug/L	10		07/01/22 01:09
P & M -Xylene	20.0 U		20.0	9.00	ug/L	10		07/01/22 01:09
Toluene	10.0 U		10.0	5.00	ug/L	10		07/01/22 01:09
Xylenes (total)	30.0 U		30.0	14.0	ug/L	10		07/01/22 01:09
Surrogates								
1,4-Difluorobenzene (surr)	102		77-115		%	10		07/01/22 01:09

Batch Information

Analytical Batch: VFC16149
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 07/01/22 01:09
Container ID: 1223344009-C

Prep Batch: VXX38790
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **E-249B**

Client Sample ID: **E-249B**
Client Project ID: **22-3**
Lab Sample ID: 1223344010
Lab Project ID: 1223344

Collection Date: 06/17/22 12:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	223		2.50	0.750	ug/L	5		06/28/22 23:25
Ethylbenzene	5.00 U		5.00	2.50	ug/L	5		06/28/22 23:25
o-Xylene	5.00 U		5.00	2.50	ug/L	5		06/28/22 23:25
P & M -Xylene	10.0 U		10.0	4.50	ug/L	5		06/28/22 23:25
Toluene	5.00 U		5.00	2.50	ug/L	5		06/28/22 23:25
Xylenes (total)	15.0 U		15.0	7.00	ug/L	5		06/28/22 23:25
Surrogates								
1,4-Difluorobenzene (surr)	91		77-115		%	5		06/28/22 23:25

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/28/22 23:25
Container ID: 1223344010-B

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 06/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **E-256**

Client Sample ID: **E-256**
Client Project ID: **22-3**
Lab Sample ID: 1223344011
Lab Project ID: 1223344

Collection Date: 06/20/22 13:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1690		5.00	1.50	ug/L	10		07/01/22 01:27
Ethylbenzene	10.0 U		10.0	5.00	ug/L	10		07/01/22 01:27
o-Xylene	10.0 U		10.0	5.00	ug/L	10		07/01/22 01:27
P & M -Xylene	20.0 U		20.0	9.00	ug/L	10		07/01/22 01:27
Toluene	10.0 U		10.0	5.00	ug/L	10		07/01/22 01:27
Xylenes (total)	30.0 U		30.0	14.0	ug/L	10		07/01/22 01:27
Surrogates								
1,4-Difluorobenzene (surr)	101		77-115		%	10		07/01/22 01:27

Batch Information

Analytical Batch: VFC16149
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 07/01/22 01:27
Container ID: 1223344011-C

Prep Batch: VXX38790
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-09**

Client Sample ID: **SMW-09**
Client Project ID: **22-3**
Lab Sample ID: 1223344012
Lab Project ID: 1223344

Collection Date: 06/21/22 09:20
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2-Methylnaphthalene	0.0521	U	0.0521	0.0156	ug/L	1		07/10/22 00:50
Surrogates								
2-Methylnaphthalene-d10 (surr)	45.7		42-86		%	1		07/10/22 00:50
Fluoranthene-d10 (surr)	51.6		50-97		%	1		07/10/22 00:50

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/10/22 00:50
Container ID: 1223344012-I

Prep Batch: XXX46510
Prep Method: SW3535A
Prep Date/Time: 06/28/22 18:07
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-09**

Client Sample ID: **SMW-09**
Client Project ID: **22-3**
Lab Sample ID: 1223344012
Lab Project ID: 1223344

Collection Date: 06/21/22 09:20
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.638	U	0.638	0.213	mg/L	1		07/01/22 00:31
Surrogates								
5a Androstane (surr)	85.4		50-150		%	1		07/01/22 00:31

Batch Information

Analytical Batch: XFC16274
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 07/01/22 00:31
Container ID: 1223344012-G

Prep Batch: XXX46519
Prep Method: SW3520C
Prep Date/Time: 06/29/22 16:15
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-09**

Client Sample ID: **SMW-09**
Client Project ID: **22-3**
Lab Sample ID: 1223344012
Lab Project ID: 1223344

Collection Date: 06/21/22 09:20
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0450	mg/L	1		07/01/22 08:45
Surrogates								
4-Bromofluorobenzene (surr)	96.2		50-150		%	1		07/01/22 08:45

Batch Information

Analytical Batch: VFC16149
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 07/01/22 08:45
Container ID: 1223344012-A

Prep Batch: VXX38791
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **SMW-09**

Client Sample ID: **SMW-09**
Client Project ID: **22-3**
Lab Sample ID: 1223344012
Lab Project ID: 1223344

Collection Date: 06/21/22 09:20
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
1,3,5-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
Benzene	0.538		0.400	0.120	ug/L	1		07/05/22 18:42
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
Isopropylbenzene (Cumene)	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
Naphthalene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/05/22 18:42
Toluene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
Trichloroethene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:42
Vinyl chloride	0.508		0.150	0.0500	ug/L	1		07/05/22 18:42
Xylenes (total)	3.00	U	3.00	1.00	ug/L	1		07/05/22 18:42
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		07/05/22 18:42
4-Bromofluorobenzene (surr)	101		85-114		%	1		07/05/22 18:42
Toluene-d8 (surr)	97.7		89-112		%	1		07/05/22 18:42

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 18:42
Container ID: 1223344012-D

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **SMW-12B**

Client Sample ID: **SMW-12B**
Client Project ID: **22-3**
Lab Sample ID: 1223344013
Lab Project ID: 1223344

Collection Date: 06/21/22 12:55
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2-Methylnaphthalene	1.79		0.0510	0.0153	ug/L	1		07/10/22 01:10
Surrogates								
2-Methylnaphthalene-d10 (surr)	46.3		42-86		%	1		07/10/22 01:10
Fluoranthene-d10 (surr)	50.2		50-97		%	1		07/10/22 01:10

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/10/22 01:10
Container ID: 1223344013-I

Prep Batch: XXX46510
Prep Method: SW3535A
Prep Date/Time: 06/28/22 18:07
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

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Results of **SMW-12B**

Client Sample ID: **SMW-12B**
Client Project ID: **22-3**
Lab Sample ID: 1223344013
Lab Project ID: 1223344

Collection Date: 06/21/22 12:55
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.53		0.638	0.213	mg/L	1		07/01/22 00:41
Surrogates								
5a Androstane (surr)	82.7		50-150		%	1		07/01/22 00:41

Batch Information

Analytical Batch: XFC16274
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 07/01/22 00:41
Container ID: 1223344013-G

Prep Batch: XXX46519
Prep Method: SW3520C
Prep Date/Time: 06/29/22 16:15
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-12B**

Client Sample ID: **SMW-12B**
Client Project ID: **22-3**
Lab Sample ID: 1223344013
Lab Project ID: 1223344

Collection Date: 06/21/22 12:55
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.13		0.100	0.0450	mg/L	1		07/01/22 09:03
Surrogates								
4-Bromofluorobenzene (surr)	171	*	50-150		%	1		07/01/22 09:03

Batch Information

Analytical Batch: VFC16149
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 07/01/22 09:03
Container ID: 1223344013-A

Prep Batch: VXX38791
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-12B**

Client Sample ID: **SMW-12B**
Client Project ID: **22-3**
Lab Sample ID: 1223344013
Lab Project ID: 1223344

Collection Date: 06/21/22 12:55
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	67.4		1.00	0.310	ug/L	1		07/05/22 20:13
1,3,5-Trimethylbenzene	17.9		1.00	0.310	ug/L	1		07/05/22 20:13
Benzene	138		0.400	0.120	ug/L	1		07/05/22 20:13
Ethylbenzene	29.9		1.00	0.310	ug/L	1		07/05/22 20:13
Isopropylbenzene (Cumene)	14.3		1.00	0.310	ug/L	1		07/05/22 20:13
Naphthalene	21.5		1.00	0.310	ug/L	1		07/05/22 20:13
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/05/22 20:13
P & M -Xylene	166		2.00	0.620	ug/L	1		07/05/22 20:13
Toluene	1.00	U	1.00	0.310	ug/L	1		07/05/22 20:13
Trichloroethene	1.00	U	1.00	0.310	ug/L	1		07/05/22 20:13
Vinyl chloride	0.150	U	0.150	0.0500	ug/L	1		07/05/22 20:13
Xylenes (total)	167		3.00	1.00	ug/L	1		07/05/22 20:13
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		81-118		%	1		07/05/22 20:13
4-Bromofluorobenzene (surr)	100		85-114		%	1		07/05/22 20:13
Toluene-d8 (surr)	100		89-112		%	1		07/05/22 20:13

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 20:13
Container ID: 1223344013-D

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-24**

Client Sample ID: **SMW-24**
Client Project ID: **22-3**
Lab Sample ID: 1223344014
Lab Project ID: 1223344

Collection Date: 06/21/22 09:55
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.400	U	0.400	0.120	ug/L	1		07/05/22 19:43
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:43
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:43
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/05/22 19:43
Toluene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:43
Trichloroethene	1.00	U	1.00	0.310	ug/L	1		07/05/22 19:43
Xylenes (total)	3.00	U	3.00	1.00	ug/L	1		07/05/22 19:43
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		07/05/22 19:43
4-Bromofluorobenzene (surr)	102		85-114		%	1		07/05/22 19:43
Toluene-d8 (surr)	98.2		89-112		%	1		07/05/22 19:43

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 19:43
Container ID: 1223344014-A

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-34**

Client Sample ID: **SMW-34**
Client Project ID: **22-3**
Lab Sample ID: 1223344015
Lab Project ID: 1223344

Collection Date: 06/21/22 11:15
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2-Methylnaphthalene	0.0500	U	0.0500	0.0150	ug/L	1		07/10/22 01:31
Surrogates								
2-Methylnaphthalene-d10 (surr)	49.3		42-86		%	1		07/10/22 01:31
Fluoranthene-d10 (surr)	50.6		50-97		%	1		07/10/22 01:31

Batch Information

Analytical Batch: XMS13228
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/10/22 01:31
Container ID: 1223344015-I

Prep Batch: XXX46510
Prep Method: SW3535A
Prep Date/Time: 06/28/22 18:07
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-34**

Client Sample ID: **SMW-34**
Client Project ID: **22-3**
Lab Sample ID: 1223344015
Lab Project ID: 1223344

Collection Date: 06/21/22 11:15
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.612	U	0.612	0.204	mg/L	1		07/01/22 00:52
Surrogates								
5a Androstane (surr)	84.5		50-150		%	1		07/01/22 00:52

Batch Information

Analytical Batch: XFC16274
Analytical Method: AK102
Analyst: MDT
Analytical Date/Time: 07/01/22 00:52
Container ID: 1223344015-G

Prep Batch: XXX46519
Prep Method: SW3520C
Prep Date/Time: 06/29/22 16:15
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-34**

Client Sample ID: **SMW-34**
Client Project ID: **22-3**
Lab Sample ID: 1223344015
Lab Project ID: 1223344

Collection Date: 06/21/22 11:15
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.180		0.100	0.0450	mg/L	1		07/01/22 09:22
Surrogates								
4-Bromofluorobenzene (surr)	123		50-150		%	1		07/01/22 09:22

Batch Information

Analytical Batch: VFC16149
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 07/01/22 09:22
Container ID: 1223344015-A

Prep Batch: VXX38791
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-34**

Client Sample ID: **SMW-34**
Client Project ID: **22-3**
Lab Sample ID: 1223344015
Lab Project ID: 1223344

Collection Date: 06/21/22 11:15
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	4.13		1.00	0.310	ug/L	1		07/05/22 18:57
1,3,5-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:57
Benzene	7.95		0.400	0.120	ug/L	1		07/05/22 18:57
Ethylbenzene	13.2		1.00	0.310	ug/L	1		07/05/22 18:57
Isopropylbenzene (Cumene)	4.36		1.00	0.310	ug/L	1		07/05/22 18:57
Naphthalene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:57
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:57
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/05/22 18:57
Toluene	1.00	U	1.00	0.310	ug/L	1		07/05/22 18:57
Trichloroethene	12.4		1.00	0.310	ug/L	1		07/05/22 18:57
Vinyl chloride	4.77		0.150	0.0500	ug/L	1		07/05/22 18:57
Xylenes (total)	3.00	U	3.00	1.00	ug/L	1		07/05/22 18:57
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		07/05/22 18:57
4-Bromofluorobenzene (surr)	101		85-114		%	1		07/05/22 18:57
Toluene-d8 (surr)	99.4		89-112		%	1		07/05/22 18:57

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 18:57
Container ID: 1223344015-D

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **SMW-35**

Client Sample ID: **SMW-35**
Client Project ID: **22-3**
Lab Sample ID: 1223344016
Lab Project ID: 1223344

Collection Date: 06/21/22 10:45
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.34		0.400	0.120	ug/L	1		07/05/22 19:58
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		07/05/22 19:58
o-Xylene	1.00 U		1.00	0.310	ug/L	1		07/05/22 19:58
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		07/05/22 19:58
Toluene	1.00 U		1.00	0.310	ug/L	1		07/05/22 19:58
Trichloroethene	20.4		1.00	0.310	ug/L	1		07/05/22 19:58
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		07/05/22 19:58
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		07/05/22 19:58
4-Bromofluorobenzene (surr)	101		85-114		%	1		07/05/22 19:58
Toluene-d8 (surr)	99.2		89-112		%	1		07/05/22 19:58

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/05/22 19:58
Container ID: 1223344016-A

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 07/05/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **EB 6-20**

Client Sample ID: **EB 6-20**
Client Project ID: **22-3**
Lab Sample ID: 1223344017
Lab Project ID: 1223344

Collection Date: 06/20/22 16:30
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.700		0.500	0.150	ug/L	1		06/29/22 00:02
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/29/22 00:02
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/29/22 00:02
P & M -Xylene	2.37		2.00	0.900	ug/L	1		06/29/22 00:02
Toluene	1.00 U		1.00	0.500	ug/L	1		06/29/22 00:02
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/29/22 00:02
Surrogates								
1,4-Difluorobenzene (surr)	84.7		77-115		%	1		06/29/22 00:02

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/29/22 00:02
Container ID: 1223344017-B

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 06/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **EB 6-22**

Client Sample ID: **EB 6-22**
Client Project ID: **22-3**
Lab Sample ID: 1223344018
Lab Project ID: 1223344

Collection Date: 06/22/22 07:15
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500	U	0.500	0.150	ug/L	1		07/01/22 00:14
Ethylbenzene	1.00	U	1.00	0.500	ug/L	1		07/01/22 00:14
o-Xylene	1.00	U	1.00	0.500	ug/L	1		07/01/22 00:14
P & M -Xylene	2.00	U	2.00	0.900	ug/L	1		07/01/22 00:14
Toluene	2.02		1.00	0.500	ug/L	1		07/01/22 00:14
Xylenes (total)	3.00	U	3.00	1.40	ug/L	1		07/01/22 00:14
Surrogates								
1,4-Difluorobenzene (surr)	95.4		77-115		%	1		07/01/22 00:14

Batch Information

Analytical Batch: VFC16149
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 07/01/22 00:14
Container ID: 1223344018-B

Prep Batch: VXX38790
Prep Method: SW5030B
Prep Date/Time: 06/30/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **22-3**
Lab Sample ID: 1223344019
Lab Project ID: 1223344

Collection Date: 06/17/22 08:00
Received Date: 06/22/22 11:38
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		06/23/22 18:46
Ethylbenzene	1.00 U		1.00	0.500	ug/L	1		06/23/22 18:46
o-Xylene	1.00 U		1.00	0.500	ug/L	1		06/23/22 18:46
P & M -Xylene	2.00 U		2.00	0.900	ug/L	1		06/23/22 18:46
Toluene	1.00 U		1.00	0.500	ug/L	1		06/23/22 18:46
Xylenes (total)	3.00 U		3.00	1.40	ug/L	1		06/23/22 18:46
Surrogates								
1,4-Difluorobenzene (surr)	83.5		77-115		%	1		06/23/22 18:46

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Analyst: PHK
Analytical Date/Time: 06/23/22 18:46
Container ID: 1223344019-A

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 06/23/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:04PM

Method Blank

Blank ID: MB for HBN 1838839 [VXX/38747]
Blank Lab ID: 1669935

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344019

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.500	ug/L
o-Xylene	0.500U	1.00	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.900	ug/L
Toluene	0.500U	1.00	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.40	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	82.3	77-115		%

Batch Information

Analytical Batch: VFC16136
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 6/23/2022 10:58:00AM

Prep Batch: VXX38747
Prep Method: SW5030B
Prep Date/Time: 6/23/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [VXX38747]
Blank Spike Lab ID: 1669936
Date Analyzed: 06/23/2022 11:34

Spike Duplicate ID: LCSD for HBN 1223344 [VXX38747]
Spike Duplicate Lab ID: 1669937
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344019

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	106	106	100	102	102	(80-120)	4.00	(< 20)
Ethylbenzene	100	105	105	100	102	102	(75-125)	2.50	(< 20)
o-Xylene	100	99.9	100	100	98.7	99	(80-120)	1.20	(< 20)
P & M -Xylene	200	208	104	200	203	101	(75-130)	2.40	(< 20)
Toluene	100	104	104	100	101	101	(75-120)	2.80	(< 20)
Xylenes (total)	300	308	103	300	302	101	(79-121)	2.00	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50		95	50		101	(77-115)	6.60	

Batch Information

Analytical Batch: **VFC16136**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38747**
Prep Method: **SW5030B**
Prep Date/Time: **06/23/2022 06:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1839076 [VXX/38778]
Blank Lab ID: 1671018

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344001, 1223344002, 1223344006, 1223344007, 1223344010, 1223344017

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.500	ug/L
o-Xylene	0.500U	1.00	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.900	ug/L
Toluene	0.500U	1.00	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.40	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	86.7	77-115		%

Batch Information

Analytical Batch: VFC16144
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 6/28/2022 3:29:00PM

Prep Batch: VXX38778
Prep Method: SW5030B
Prep Date/Time: 6/28/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:12PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [VXX38778]
Blank Spike Lab ID: 1671019
Date Analyzed: 06/28/2022 16:06

Spike Duplicate ID: LCSD for HBN 1223344 [VXX38778]
Spike Duplicate Lab ID: 1671020
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344001, 1223344002, 1223344006, 1223344007, 1223344010, 1223344017

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	105	105	100	109	109	(80-120)	3.50	(< 20)
Ethylbenzene	100	104	104	100	106	106	(75-125)	2.20	(< 20)
o-Xylene	100	103	103	100	104	104	(80-120)	0.91	(< 20)
P & M -Xylene	200	207	104	200	211	105	(75-130)	1.90	(< 20)
Toluene	100	103	103	100	108	108	(75-120)	4.30	(< 20)
Xylenes (total)	300	310	103	300	315	105	(79-121)	1.60	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50		100	50		100	(77-115)	0.16	

Batch Information

Analytical Batch: **VFC16144**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38778**
Prep Method: **SW5030B**
Prep Date/Time: **06/28/2022 06:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1839155 [VXX/38790]
Blank Lab ID: 1671335

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344005, 1223344008, 1223344009, 1223344011, 1223344018

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.500	ug/L
o-Xylene	0.500U	1.00	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.900	ug/L
Toluene	0.500U	1.00	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.40	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	96	77-115		%

Batch Information

Analytical Batch: VFC16149
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: PHK
Analytical Date/Time: 6/30/2022 1:55:00PM

Prep Batch: VXX38790
Prep Method: SW5030B
Prep Date/Time: 6/30/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:16PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [VXX38790]
Blank Spike Lab ID: 1671336
Date Analyzed: 06/30/2022 14:32

Spike Duplicate ID: LCSD for HBN 1223344 [VXX38790]
Spike Duplicate Lab ID: 1671337
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344005, 1223344008, 1223344009, 1223344011, 1223344018

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	101	101	100	102	102	(80-120)	1.20	(< 20)
Ethylbenzene	100	91.1	91	100	90.3	90	(75-125)	0.82	(< 20)
o-Xylene	100	90.2	90	100	89.9	90	(80-120)	0.37	(< 20)
P & M -Xylene	200	179	90	200	179	89	(75-130)	0.41	(< 20)
Toluene	100	96.9	97	100	97.9	98	(75-120)	1.00	(< 20)
Xylenes (total)	300	270	90	300	269	90	(79-121)	0.40	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50		102	50		103	(77-115)	1.30	

Batch Information

Analytical Batch: **VFC16149**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38790**
Prep Method: **SW5030B**
Prep Date/Time: **06/30/2022 06:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1839156 [VXX/38791]
Blank Lab ID: 1671340

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344004, 1223344012, 1223344013, 1223344015

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
1,4-Difluorobenzene (surr)	95.2	77-115		%
4-Bromofluorobenzene (surr)	95.9	50-150		%

Batch Information

Analytical Batch: VFC16149
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: PHK
Analytical Date/Time: 7/1/2022 6:00:00AM

Prep Batch: VXX38791
Prep Method: SW5030B
Prep Date/Time: 6/30/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [VXX38791]
Blank Spike Lab ID: 1671341
Date Analyzed: 07/01/2022 05:06

Spike Duplicate ID: LCSD for HBN 1223344 [VXX38791]
Spike Duplicate Lab ID: 1671342
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344004, 1223344012, 1223344013, 1223344015

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.994	99	1.00	0.958	96	(60-120)	3.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		101	0.0500		102	(50-150)	1.00	

Batch Information

Analytical Batch: **VFC16149**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **PHK**

Prep Batch: **VXX38791**
Prep Method: **SW5030B**
Prep Date/Time: **06/30/2022 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1839277 [VXX/38808]
Blank Lab ID: 1671894

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344003, 1223344004, 1223344012, 1223344013, 1223344014, 1223344015, 1223344016

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	98.5	89-112		%

Batch Information

Analytical Batch: VMS21759
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: JMG
Analytical Date/Time: 7/5/2022 4:09:00PM

Prep Batch: VXX38808
Prep Method: SW5030B
Prep Date/Time: 7/5/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [VXX38808]
Blank Spike Lab ID: 1671895
Date Analyzed: 07/05/2022 16:24

Spike Duplicate ID: LCSD for HBN 1223344 [VXX38808]
Spike Duplicate Lab ID: 1671896
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344003, 1223344004, 1223344012, 1223344013, 1223344014, 1223344015, 1223344016

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	30	31.4	105	30	31.0	103	(79-124)	1.30	(< 20)
1,3,5-Trimethylbenzene	30	31.8	106	30	31.3	104	(75-124)	1.80	(< 20)
Benzene	30	30.1	100	30	29.6	99	(79-120)	1.70	(< 20)
Ethylbenzene	30	30.3	101	30	30.0	100	(79-121)	1.10	(< 20)
Isopropylbenzene (Cumene)	30	31.2	104	30	30.6	102	(72-131)	1.90	(< 20)
Naphthalene	30	26.2	87	30	28.3	94	(61-128)	7.90	(< 20)
o-Xylene	30	30.6	102	30	30.4	101	(78-122)	0.86	(< 20)
P & M -Xylene	60	61.8	103	60	60.8	101	(80-121)	1.60	(< 20)
Toluene	30	29.5	98	30	28.4	95	(80-121)	3.80	(< 20)
Trichloroethene	30	29.6	99	30	29.3	98	(79-123)	1.30	(< 20)
Vinyl chloride	30	29.0	97	30	28.9	96	(58-137)	0.63	(< 20)
Xylenes (total)	90	92.4	103	90	91.2	101	(79-121)	1.40	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		98	30		99	(81-118)	1.40	
4-Bromofluorobenzene (surr)	30		101	30		101	(85-114)	0.08	
Toluene-d8 (surr)	30		100	30		98	(89-112)	2.20	

Batch Information

Analytical Batch: **VMS21759**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **JMG**

Prep Batch: **VXX38808**
Prep Method: **SW5030B**
Prep Date/Time: **07/05/2022 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 07/12/2022 5:12:27PM

Method Blank

Blank ID: MB for HBN 1838950 [XXX/46510]
Blank Lab ID: 1670414

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344004, 1223344012, 1223344013, 1223344015

Results by **8270D SIM LV (PAH)**

Parameter	Results	LOQ/CL	DL	Units
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	53.8	42-86		%
Fluoranthene-d10 (surr)	65.6	50-97		%

Batch Information

Analytical Batch: XMS13227
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/8/2022 9:23:00PM

Prep Batch: XXX46510
Prep Method: SW3535A
Prep Date/Time: 6/28/2022 6:07:04PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [XXX46510]
Blank Spike Lab ID: 1670415
Date Analyzed: 07/08/2022 21:44

Spike Duplicate ID: LCSD for HBN 1223344 [XXX46510]
Spike Duplicate Lab ID: 1670416
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344004, 1223344012, 1223344013, 1223344015

Results by **8270D SIM LV (PAH)**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
2-Methylnaphthalene	2	1.34	67	2	1.25	62	(39-114)	7.60	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2		54	2		52	(42-86)	3.10	
Fluoranthene-d10 (surr)	2		65	2		65	(50-97)	0.27	

Batch Information

Analytical Batch: **XMS13227**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX46510**
Prep Method: **SW3535A**
Prep Date/Time: **06/28/2022 18:07**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1839000 [XXX/46519]
Blank Lab ID: 1670597

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1223344004, 1223344012, 1223344013, 1223344015

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	86.1	60-120		%

Batch Information

Analytical Batch: XFC16274
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: MDT
Analytical Date/Time: 6/30/2022 11:08:00PM

Prep Batch: XXX46519
Prep Method: SW3520C
Prep Date/Time: 6/29/2022 4:15:43PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1223344 [XXX46519]
Blank Spike Lab ID: 1670598
Date Analyzed: 06/30/2022 23:19

Spike Duplicate ID: LCSD for HBN 1223344 [XXX46519]
Spike Duplicate Lab ID: 1670599
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1223344004, 1223344012, 1223344013, 1223344015

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	18.8	94	20	20.4	102	(75-125)	8.10	(< 20)
Surrogates									
5a Androstane (surr)	0.4		90	0.4		99	(60-120)	9.70	

Batch Information

Analytical Batch: **XFC16274**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **MDT**

Prep Batch: **XXX46519**
Prep Method: **SW3520C**
Prep Date/Time: **06/29/2022 16:15**
Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

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Chain of Custody

Page 1 of 2

1223344

Trihydro Corporation
312 Tyee Street
Soldotna, Alaska 99669
(907) 262-2315 - (907) 262-2320 (fax)

Laboratory: SGS

Address:

Reporting Instructions
Send Report To: Brianna Force
(Trihydro Corporation)

Billing Information
Bill: Trihydro - (Our Client)
Our Client's P.O. No: 4500291894

Project Name: 22-3

Our Client: Marathon

Our Project No: 39B-003-008

Sampler(s): JY, ML

p#333517 AL

Turnaround:
24-HR 48-HR 5-Day (2-WKS) Other
Data Deliverables:
(Standard) Level 3 Other
EDD Required? (Y) - N

Lab No.	Sample No.	Matrix	Date	Time	No. of Jars per Analysis: BTEX (8021B) List1	BTEX + TCE + VC (8260C) List2	DRO (AK102)	GRO (AK101)	PAHs List 3	VOCs (8260C) List3					Comments & Special Instructions
(1) AC	Dup-1	GW	6/20/22	08:30	3										
(2) AC	Dup-3	GW	6/20/22	08:00	3										
(3) AC	Dup-4	GW	6/21/22	08:00		3									
(4) AJ	Dup-5	GW	6/21/22	09:00			2	3	2	3					
(5) AC	E-010	GW	6/20/22	13:50	3										
(6) AC	E-072RR	GW	6/20/22	12:05	3										
(7) AC	E-097	GW	6/17/22	10:40	3										
(8) AC	E-227	GW	6/17/22	12:40	3										
(9) AC	E-249A	GW	6/20/22	11:10	3										
(10) AC	E-249B	GW	6/17/22	12:00	3										

Relinquished By (Name and Company):	Date	Time	Received By (Name and Company):	Date	Time
Trihydro	6/22/2022	7:25 AM			
				6/22/22	1138

33 DSS CJS

CHAIN OF CUSTODY

Trihydro Corporation
312 Tyee Street
Soldotna, Alaska 99669
(907) 262-2315 - (907) 262-2320 (fax)

Laboratory: SGS

Address:

1223344

Reporting Instructions
Send Report To: Brianna Force
(Trihydro Corporation)

Billing Information
Bill: Trihydro - (Our Client)
Our Client's P.O. No: 4500291894

Project Name: 22-3

Our Client: Marathon

Our Project No: 39B-003-008

Sampler(s): JY, ML

Turnaround:
24-HR 48-HR 5-Day (2-WKS) Other
Data Deliverables:
(Standard) Level 3 Other
EDD Required? (Y) - N

Lab No.	Sample No.	Matrix	Date	Time	No. of Jars per Analysis: BTEX (8021B) List1	BTEX + TCE (8260C) List2	BTEX + TCE + VC (8260C) List2	DRO (AK102)	GRO (AK101)	PAHs List 3	VOCs (8260C) List3				Comments & Special Instructions
(11) AC	E-256	GW	6/20/22	13:00	3										
(12) AJ	SMW-09	GW	6/21/22	09:20				2	3	2	3				
(13) AJ	SMW-12B	GW	6/21/22	12:55				2	3	2	3				
(14) AC	SMW-24	GW	6/21/22	09:55		3									
(15) AJ	SMW-34	GW	6/21/22	11:15				2	3	2	3				
(16) AE	SMW-35	GW	6/21/22	10:45			3								
(17) AC	EB 6-20	GW	6/20/2022	16:30	3										
(18) AE	EB 6-22	GW	6/22/2022	07:15	3										
(19) AC	Trip Blank		6/17/2022	08:00	3										

Relinquished By (Name and Company):	Date	Time	Received By (Name and Company):	Date	Time
Trihydro	6/22/2022	7:25 AM			
			COS	6/22/22	11:38

SGS

1223344

Project Information Form

This form provides clarification and/or additional information for sample login, and should be scanned with the receiving paperwork.

Client Name:	Tesoro/Trihydro
Project:	22-3
Date:	6/22/2022
Reason for Clarification:	Analytical Requests
Notes:	BTEX List 1 = Line item #64 (VF_BTX...1) BTEX+TCE+VC List 2 = Line item #76 (VM.BTX.C.1) BTEX+TCE List 2 = Line item #66 (VM.BTX.C.1) PAHs List 3 = Line item #28 (XM.PAHLSC1) VOCs List 3 = Line item #27 (VM.8260PC1)

e-Sample Receipt Form

SGS Workorder #:	1223344	1223344

Review Criteria	Condition (Yes, No, N/A	Exceptions Noted below
Chain of Custody / Temperature Requirements	*Note:* Temperature and COC seal information is found on the chain of custody form	
DOD only: Did all sample coolers have a corresponding COC?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note containers received with ice:		
Identify any containers received at non-compliant temperature: *(Use form FS-0029 if more space is needed)*		
Holding Time / Documentation / Sample Condition Requirements	*Note:* Refer to form F-083 "Sample Guide" for specific holding times and sample containers.	
Were samples received within analytical holding time?	Yes	
Do sample labels match COC? Record discrepancies.	Yes	
Note: *If information on containers differs from COC, default to COC information for login. If times differ <1hr, record details & login per COC.*		
Were analytical requests clear? *(i.e. method is specified for analyses with multiple option for method (Eg, BTEX 8021 vs 8260, Metals 6020 vs 200.8)*	Yes	
Were proper containers (type/mass/volume/preservative)used? Note: Exemption for metals analysis by 200.8/6020 in water.	Yes	
Volatile Analysis Requirements (VOC, GRO, LL-Hg, etc.)		
Were all soil VOAs received with a corresponding % solids container?	N/A	
Were Trip Blanks (e.g., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (e.g., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with Methanol+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition
1223344001-A	HCL to pH < 2	OK
1223344001-B	HCL to pH < 2	OK
1223344001-C	HCL to pH < 2	OK
1223344002-A	HCL to pH < 2	OK
1223344002-B	HCL to pH < 2	OK
1223344002-C	HCL to pH < 2	OK
1223344003-A	HCL to pH < 2	OK
1223344003-B	HCL to pH < 2	OK
1223344003-C	HCL to pH < 2	OK
1223344004-A	HCL to pH < 2	OK
1223344004-B	HCL to pH < 2	OK
1223344004-C	HCL to pH < 2	OK
1223344004-D	HCL to pH < 2	OK
1223344004-E	HCL to pH < 2	OK
1223344004-F	HCL to pH < 2	OK
1223344004-G	HCL to pH < 2	OK
1223344004-H	HCL to pH < 2	OK
1223344004-I	No Preservative Required	OK
1223344004-J	No Preservative Required	OK
1223344005-A	HCL to pH < 2	OK
1223344005-B	HCL to pH < 2	OK
1223344005-C	HCL to pH < 2	OK
1223344006-A	HCL to pH < 2	OK
1223344006-B	HCL to pH < 2	OK
1223344006-C	HCL to pH < 2	OK
1223344007-A	HCL to pH < 2	OK
1223344007-B	HCL to pH < 2	OK
1223344007-C	HCL to pH < 2	OK
1223344008-A	HCL to pH < 2	OK
1223344008-B	HCL to pH < 2	OK
1223344008-C	HCL to pH < 2	OK
1223344009-A	HCL to pH < 2	OK
1223344009-B	HCL to pH < 2	OK
1223344009-C	HCL to pH < 2	OK
1223344010-A	HCL to pH < 2	OK
1223344010-B	HCL to pH < 2	OK
1223344010-C	HCL to pH < 2	OK
1223344011-A	HCL to pH < 2	OK
1223344011-B	HCL to pH < 2	OK
1223344011-C	HCL to pH < 2	OK
1223344012-A	HCL to pH < 2	OK
1223344012-B	HCL to pH < 2	OK
1223344012-C	HCL to pH < 2	OK
1223344012-D	HCL to pH < 2	OK
1223344012-E	HCL to pH < 2	OK
1223344012-F	HCL to pH < 2	OK
1223344012-G	HCL to pH < 2	OK
1223344012-H	HCL to pH < 2	OK
1223344012-I	No Preservative Required	OK
1223344012-J	No Preservative Required	OK
1223344013-A	HCL to pH < 2	OK
1223344013-B	HCL to pH < 2	OK
1223344013-C	HCL to pH < 2	OK
1223344013-D	HCL to pH < 2	OK
1223344013-E	HCL to pH < 2	OK
1223344013-F	HCL to pH < 2	OK
1223344013-G	HCL to pH < 2	OK
1223344013-H	HCL to pH < 2	OK
1223344013-I	No Preservative Required	OK
1223344013-J	No Preservative Required	OK
1223344014-A	HCL to pH < 2	OK
1223344014-B	HCL to pH < 2	OK
1223344014-C	HCL to pH < 2	OK
1223344015-A	HCL to pH < 2	OK
1223344015-B	HCL to pH < 2	OK
1223344015-C	HCL to pH < 2	OK
1223344015-D	HCL to pH < 2	OK
1223344015-E	HCL to pH < 2	OK
1223344015-F	HCL to pH < 2	OK
1223344015-G	HCL to pH < 2	OK
1223344015-H	HCL to pH < 2	OK
1223344015-I	No Preservative Required	OK
1223344015-J	No Preservative Required	OK
1223344016-A	HCL to pH < 2	OK
1223344016-B	HCL to pH < 2	OK
1223344016-C	HCL to pH < 2	OK
1223344017-A	HCL to pH < 2	OK
1223344017-B	HCL to pH < 2	OK
1223344017-C	HCL to pH < 2	OK
1223344018-A	HCL to pH < 2	OK
1223344018-B	HCL to pH < 2	OK
1223344018-C	HCL to pH < 2	OK
1223344019-A	HCL to pH < 2	OK
1223344019-B	HCL to pH < 2	OK
1223344019-C	HCL to pH < 2	OK

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.