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November 6, 2024

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Subject: 2022 Groundwater Monitoring and Product Recovery at GPPF/GPTF

Mr. Farris,

Susitna Environmental, LLC (Susitna) is pleased to submit the referenced report to Hilcorp Alaska LLC (Hilcorp) for groundwater monitoring and product recovery at Granite Point Production Facility and Granite Point Tank Farm.

If you have any questions or concerns, please contact me at (907) 350-7952 or m.mayer@susitna.com.

Thank you,

M. Mayer

Melissa Mayer, Qualified Environmental Professional
Susitna Environmental, LLC

Hilcorp Alaska, LLC

Groundwater Monitoring and Product Recovery at

Granite Point Production Facility and Granite Point Tank Farm

Granite Point, Alaska

October 2024

Prepared by:

Melissa Mayer

Qualified Environmental Professional

Susitna Environmental, LLC

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Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
Aleut	Aleut Remediation, LLC
ARCO	Atlantic Richfield Company
AST	above ground storage tank
Brice	Brice Environmental Services Corporation
BTEX	benzene, toluene, ethylbenzene, and total xylenes
btoc	below top of casing
CoC	chain-of-custody
cy	cubic yard
DRO	diesel-range organics
EPA	Environmental Protection Agency
GPPF	Granite Point Production Facility
GPTF	Granite Point Tank Farm
GRO	gasoline-range organics
IDW	investigation derived waste
LLC	limited liability corporation
LNAPL	light non-aqueous phase liquid
Marathon	Marathon Petroleum Corporation
µg/L	micrograms per liter
mg/L	milligrams per liter
MS/MSD	matrix spike/ matrix spike duplicate
PAH	polycyclic aromatic hydrocarbons
PAL	Project Action Limits
PSA	Production and Storage Area
PVC	polyvinyl chloride
PWD	Produced Water Disposal Area
PWRB	Produced Water Retention Basin
QAR	Quality Assurance Review
QA/QC	quality assurance/quality control
ROD	record of decision

RPD	relative percent difference
RRO	residual-range organics
S&W	Shannon & Wilson, Inc.
SGS	SGS North America Inc.
SLR	SLR Consulting
Susitna	Susitna Environmental LLC
VOC	volatile organic compounds
Weston	Weston Solutions, Inc.

1.0 Introduction

This report details November 2022 groundwater monitoring and product recovery activities at Granite Point Production Facility (GPPF) Hazard ID: 1264 and Granite Point Tank Farm (GPTF) Hazard ID: 1280, located 45 miles across Cook Inlet from Anchorage, Alaska (Figure 1). This work was conducted at the request of the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Program in part to satisfy conditions four and six of the Record of Decision (ROD) issued by ADEC on November 2, 2006, for Marathon Petroleum Corporation (Marathon) Granite Point Facility (ADEC 2006). Condition four requires groundwater monitoring until the groundwater quality meets applicable cleanup levels established for the site (referred to in this report as Project Action Limits or PALs). Condition six requires a property use status report every five years addressing the site's compliance with other site conditions referenced in the ROD. The last property use status report was completed in 2017.

The objectives of this project were to monitor groundwater contamination at GPPF and GPTF, perform free product recovery in existing monitoring wells as needed, and review historical contaminant trends in monitoring wells. These objectives were achieved by sampling existing groundwater monitoring wells and reviewing historical groundwater sampling data.

This project was conducted by Susitna Environmental, limited liability corporation (LLC) (Susitna) on behalf of Hilcorp Alaska, LLC (Hilcorp). Field notes are provided in Appendix A; groundwater sampling forms are provided in Appendix B; a photographic log is included in Appendix C; the Quality Assurance Review (QAR) and ADEC Checklist are in Appendix D; and the laboratory report is provided in Appendix E.

1.1 Site Description and Background

Hilcorp's GPPF and GPTF are located approximately 45 air miles southwest of Anchorage, Alaska, and approximately 35 air miles northwest of Kenai, Alaska (Figure 1). The site lies at approximately 61° 01' 02.73" N latitude and 151° 25' 27.92" W longitude, within Section 28, Township 11 North, Range 12 West, Seward Meridian. ThNe nearest community is Shirleyville, located approximately 1 mile east of the facility.

GPTF was built by Union Oil and Exxon in the 1960s and is located on the western shore of Cook Inlet. Historically, GPTF has been a crude oil processing and storage facility with an onshore gas gathering and processing facility. Due to the operational history and based on documented releases and previously conducted environmental assessments, hydrocarbon contamination is present at the site. The tanks were removed from the site and replaced in the late 1990s with Tanks 104 and 105.

The GPPF is a former crude oil and natural gas collection and processing facility. The GPPF was constructed in 1968 by Atlantic Richfield Company (ARCO) Alaska and was used as a production facility between 1968 and 1992. Marathon began leasing the facility in 1984 and continued to operate the facility for crude oil processing until 1992. In 2006 a ROD was issued for the GPPF with institutional controls (ADEC 2006). While the 2006 ROD placed institutional controls on GPPF, there are no institutional controls on GPTF.

The GPPF is comprised of three main areas: Production and Storage Area (PSA), Produced Water Retention Basin (PWRB), and Produced Water Disposal area (PWD). The PSA was used to receive offshore fluids, separate crude oil from water, and store recovered crude in the aboveground storage

tanks (ASTs). The purpose of the PWRB was to contain the produced water from the crude oil. The produced water was then discharged into the PWD. Hilcorp assumed operation and maintenance of GPPF and GPTF from Chevron in 2012 (SLR Consulting [SLR] 2014).

1.2 Granite Point Tank Farm

ADEC Hazard ID: 1280 | ADEC File Number: 2337.38.033 | Status: Active

In 1993, during a Site Assessment/Remedial Investigation, 15,000 cubic yards (cy) of contaminated soil was estimated to be located at the GPTF within 10 different areas. Contaminants of concern were gasoline-range organics (GRO), diesel-range organics (DRO), residual-range organics (RRO), benzene, ethylbenzene, total xylenes, 2-methylnaphthalene, methylene chloride, arsenic, barium, chromium, and lead.

In September 2013, SLR performed groundwater sampling at GPTF at four monitoring wells. All benzene, toluene, ethylbenzene, and total xylene (BTEX) concentrations were detected below PALs except benzene detected in TF-WP-3 (0.06 milligrams per liter [mg/L]) above the PAL of 0.05 mg/L (SLR 2014).

In 2017, Brice Environmental Services Corporation (Brice) investigated the extent of contamination associated with road surface staining and an observed seep area at the GPTF. Soil samples indicated contamination was present at the location of the road staining, but surface water seep results indicated that contaminants were not migrating offsite. In May 2018, Hilcorp personnel excavated a 4 by 9-foot area to 1 foot deep where the road stain was located. Hilcorp is continuing to monitor the area of excavation for reappearance of the stain or development of new staining. It was recommended that additional investigation of the road staining and seep area should be conducted during facility decommissioning (Brice 2018).

Groundwater monitoring was conducted at GPTF in 2017 at six monitoring wells. No exceedances above the PALs were observed in any of the six monitoring wells. An inspection of existing wells at GPTF showed several wells were frost jacked and required replacement plugs or locks (Brice 2018).

1.3 Granite Point Production Facility

ADEC Hazard ID: 1264 | ADEC File Number: 2337.38.038 | Status: Active

Several environmental site assessments were performed between 1984 and 1999. Soil samples collected from the three areas indicated petroleum hydrocarbon impact at concentrations that exceeded ADEC soil cleanup levels. Groundwater samples collected from site monitoring wells installed across the facility also indicated metals and/or petroleum hydrocarbon impact above ADEC groundwater cleanup levels. Free-phase product has historically been observed within the PWRB area.

In 2004 and 2005, Marathon conducted removal actions resulting in the excavation and thermal treatment of 2,000 cy of impacted soil from the PWRB area and 5 cy from the PSA area (Shannon & Wilson, Inc. [S&W] 2005). In 2006 a ROD was issued for the GPPF with institutional controls (ADEC 2006). While the 2006 ROD placed institutional controls on GPPF, there are no institutional controls on GPTF.

Under the ROD, groundwater monitoring activities were conducted at GPPF on August 16, 2007, by American Environmental, under contract to Marathon. Reporting and coordination with the ADEC and other project stakeholders were conducted by Shannon & Wilson (S&W 2008).

In spring 2007, groundwater monitoring wells PF-MW-4 and PF-MW-8 (PSA), PF-MW-6 (PWRB) and PF-MW-9 through PF-MW-12 (PWD) were sampled. The samples were analyzed for GRO, DRO, RRO, and BTEX. In addition, samples collected from the four PWDA wells (PF-MW-9 through PF-MW-12) were also analyzed for barium.

The results from groundwater samples collected from PSA wells PF-MW-4 and PF-MW-8, indicated no constituents of concern detected above ADEC Table C Groundwater Cleanup Levels. Therefore, future sampling of these wells was suspended per conditions outlined in the ROD.

Groundwater monitoring wells PF-MW-9 through PF-MW-12, located in the PWD area, were sampled for a final event in August 2007 prior to their decommissioning. Groundwater results indicated that only RRO was detected above PALs. The August 2007 analytical results were consistent with historical analytical results. Groundwater samples collected from PF-MW-6 at the PWRB contained RRO above the PAL of 1,100 micrograms per liter (µg/L). Monitoring well PF-MW-7 was monitored for the presence of free-phase product (light non-aqueous phase liquids [LNAPL]). A layer of "thick black oil" at approximately 10 feet below ground surface was observed. A previous measurement of 1.40 feet of product was observed in the well in September 2004.

At the end of 2007, many of the groundwater monitoring wells could be decommissioned and/or removed from the sampling program per the conditions of the ROD. The wells that were removed from the program included PF-MW-1, PF-MW-3, PF-MW-5, and PF-MW-9 through PF-MW-12. Well PF-MW-6 contained RRO above the PAL of 1,100 µg/L, and Well PF-MW-7 contained LNAPL, so these two wells remained in the sampling program for the next 5-year monitoring event.

At the next 5-year interval, in 2012, Weston Solutions, Inc. (Weston) sampled monitoring well PF-MW-6 for GRO, DRO/RRO, and BTEX. DRO was detected at 1,300 µg/L and RRO was detected at 930 µg/L; both concentrations were below PAL. Free product was reported by the field team at PF-MW-7, but the depth to LNAPL or the thickness was not recorded (Weston 2012).

At the next 5-year interval, in 2017, Brice Environmental Services Corporation (Brice) sampled PF-MW-6 and analyzed for GRO, DRO, RRO, volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). Results did not indicate any exceedances above the PAL. Free product (LNAPL) was encountered in PF-MW-7 and the well was not sampled. It was recommended that biennial product removal via absorbent socks be conducted with measurements of product recovery provided to ADEC as an additional section in the GPPF ROD groundwater sampling report in monitoring wells where free product was encountered.

Monitoring well PF-MW-6 is downgradient from PF-MW-7, which has free product. Although the ROD allows clean wells to be removed from the sampling program and PF-MW-6 did not exceed cleanup levels in 2012 or 2017, PF-MW-6 was recommended for continued monitoring for contaminant migration from PF-MW-7 (Brice 2018).

2.0 Field Activities

Field activities occurred in November 2022 under the ADEC approved workplan, *Groundwater Monitoring and Product Recovery at Granite Point Production Facility and Granite Point Tank Farm* (Susitna, 2022).

2.1 Groundwater Sampling

All groundwater samples were collected using a submersible pump connected to new tubing for each well and decontaminated between each well. Depth to groundwater was measured from a marked measuring point on the top of each inner polyvinyl chloride (pvc) well casing and documented on groundwater field forms prior to purging the well. The field team purged each monitoring well in accordance with low-flow techniques outlined in the U.S Environmental Protection Agency (EPA) *Low Stress (low flow) Purging and Sampling Procedures for the Collection of Ground Water Samples from Monitoring Wells* published in 2017 (EPA, 2017) and the ADEC Field Sampling Guidance (ADEC, 2022a).

Groundwater was pumped through a flow-through cell connected to a YSI 556 Multiparameter Instrument and water quality parameters were monitored and recorded on Groundwater Sample Forms (Appendix B). Parameters were considered stable when three successive readings, collected three to five minutes apart, were within a prescribed range as outlined in the approved work plan.

Groundwater samples were submitted to SGS Environmental, LLC (SGS) in Anchorage, Alaska, under chain-of-custody (CoC) for laboratory analyses of GRO (AK101), BTEX (SW8260D), DRO (AK102), and RRO (AK103).

Groundwater sample results are compared to ADEC Title 18 Alaska Administrative Code (AAC) 75 Table C, Groundwater Human Health cleanup levels (ADEC, 2023) and are presented Table 1. Project specific cleanup levels are referred to as PALs in this report. Approximately 71 gallons of purge water were generated and disposed of as described in Section 2.4.

2.1.1 Granite Point Tank Farm

Six wells were sampled at GPTF in 2022: TF-MW-1, TF-MW-4, TF-MW-5, TF-MW-9, TF-MW-12, and TF-MW-17 (Figure 2). Well TF-MW-15 was purged dry and did not recharge after eight hours, so this well was not sampled.

2.1.2 Granite Point Production Facility

Monitoring well PF-MW-6 at GPPF was sampled, and monitoring well PF-MW-7 was not sampled because it contained free product. Instead, the thickness of the product was measured, and product recovery was initiated. The depth to the top of product measured in well PF-MW-7 was 8.15 feet below top of casing (btoc) with the depth to the top of the water table ranging from 9 to 9.8 feet btoc, likely due to the thick product coating the sensor of the interface probe. The estimated product thickness was 0.85 to 1.65 feet. The measurement in 2004 was reported at 1.4 feet of product and in 2007, the oil/water interface was not distinguishable (S&W 2008). The thickness of product was not recorded in 2012 or 2017.

Field personnel used an absorbent sock attached to a line lowered into the monitoring well to absorb the free product. However, the product in this well is highly viscous and adhered to the outside of the

sock rather than absorbing. Therefore, the weight of the product could not be determined using this method. Based on these results, it is recommended that a bailer be used in the future for product recovery from this monitoring well.

2.2 Monitoring Well Repair

Most wells visited during the 2022 sampling event required no repairs, except for the following:

- Well TF-MW-4 (Photo 1) has some frost jacking of the inner casing; however, the tooling for cutting down the inner PVC casing was not on hand. The well has a cap and a working lock; the outer casing is locked closed.
- Well TF-MW-9 (Photo 3) requires a new well cap. The well cap brought on site did not fit the inner (4-inch) diameter of the well; however, the outer casing is locked.

2.3 Quality Control Samples

Analytical sampling included collection of duplicate samples at a frequency of ten percent and matrix spike/matrix spike duplicate (MS/MSD) samples at a frequency of twenty percent. A duplicate sample was collected at GPTF-MW-9, and a MS/MSD was collected at GPTF-MW-5. Trip blanks accompanied samples for volatile analysis and were also submitted to the lab for analyses. All data generated by the laboratory was reviewed by Aleut Remediation, LLC (Aleut). The data quality review conducted by Aleut evaluated precision, accuracy, sensitivity, representativeness, comparability, and completeness of the data by reviewing laboratory-supplied quality assurance/quality control (QA/QC) information as well as conducting independent QA/QC checks on the data. The review was conducted in accordance with the requirements of the ADEC Technical Memorandum on Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling (ADEC, 2022b). Laboratory QC sample recoveries and relative percent differences (RPDs) were compared to laboratory control limits. Field-duplicate RPDs were compared to ADEC-recommended measurement quality objectives.

2.4 Decontamination and Investigation-derived Waste

Sampling equipment including the submersible pump, and the interface probe were decontaminated between monitoring wells to prevent cross contamination.

Investigation-derived waste (IDW) generated during field activities included purge and decontamination water, used (oily) sorbent socks from well PF-MW-7, nitrile gloves, paper towels, and disposable tubing. A total of 55 gallons of purge water were generated from the GPTF, and 16 gallons were generated from the GPPF. The purge water was containerized into two separate 55-gallon drums. Two gallons of decontamination water was generated and containerized in a sealed 5-gallon bucket. The drums and bucket were labeled and stored on pallets for disposal by Hilcorp. The used sorbent socks were placed into the oily waste bin at the facility. All other IDW (nitrile gloves, paper towels, disposable tubing, etc.) were disposed of at the facility as household trash.

3.0 Analytical Results

Analytical groundwater samples were submitted to SGS for analysis of GRO, DRO, RRO and BTEX. The PALs for this project are defined by 18 AAC 75.345 Table C, Groundwater Human Health cleanup levels (ADEC, 2023). Results are provided in Table 1, the Quality Assurance Review and ADEC Checklist are in Appendix D, and the complete analytical laboratory report is provided in Appendix E.

3.1 Granite Point Tank Farm

Of the six wells sampled at the tank farm in 2022, two wells contained analytes above PALs. Well TF-MW-4 contained benzene above the PAL of 5 µg/L with a concentration of 45.1 µg/L. This well also contained GRO and RRO below the PALs with concentrations of 126 µg/L and 446 µg/L respectively. There were no other analytes detected in this well.

Well TF-MW-9 contained RRO at a concentration of 3,080 µg/L, exceeding the PAL of 1,100 µg/L. This well also contained DRO below the PAL. There were no other analytes detected in this well.

RRO was detected below the PAL in Wells TF-MW-1, TF-MW-12, and TF-MW-17. Well TF-MW-12 also contained benzene below the PAL, and well TF-MW-17 contained DRO and toluene below the respective PALs. The 2022 analytical results are provided in Table 1 and exceedances are shown in Figure 2.

3.2 Granite Point Production Facility

Only one monitoring well, PF-MW-6, was sampled at the production facility in 2022. Well PF-MW-6 is located downgradient from PF-MW-7, which contains free product. The analytical sample from PF-MW-6 contained RRO above the PAL, with a concentration of 2,490 µg/L. DRO and benzene were also detected at concentrations of 924 µg/L and 0.34 J µg/L, below the PALs of 1,500 µg/L and 5 µg/L respectively. No other analytes were detected in this well. The 2022 analytical results are provided in Table 1 and exceedances are shown in Figure 2.

3.3 Historical Contaminant Trends

This section presents a discussion of the historical contaminant trends in the three monitoring wells where analytes were detected above PALs in 2022, one at the production facility and two at the tank farm. Available historical analytical data are provided in Table 2.

3.3.1 Granite Point Tank Farm

Historical data for monitoring well TF-MW-4 are provided in Table 2 and include BTEX data from 1995 through 2022, and GRO, DRO and RRO data from 2007 through 2022. Monitoring well TF-MW-4 has a history of benzene concentrations exceeding the PAL of 5 µg/L from 1995 through 2006. The highest concentration of benzene detected was 86 µg/L in 1998. There were no benzene exceedances in 2007, 2013, or 2017, indicating a downward trend in benzene concentrations. However, in 2022, the benzene concentration in TF-MW-4 spiked to 45.1 µg/L. Although below PALs, detections of GRO and RRO also showed an increase from non-detect in 2017, to 126 and 446 µg/L respectively in 2022.

Historical data for monitoring well TF-MW-9 include BTEX data from 1993 through 2022, and GRO, DRO and RRO data from 2007 through 2022. Monitoring well TF-MW-9 has been sampled for RRO four times since 2007. RRO was detected above the PAL of 1,100 µg/L in 2007 with a concentration of 1,790 µg/L, and was not detected in 2017. TF-MW-9 contained RRO at a concentration of 3,080 (primary) and 2,960 (duplicate) µg/L in 2022. Although this is the highest concentration of RRO detected in this well, no

trend is apparent. GRO and DRO concentrations have been below PALs since 2007, with GRO being non-detect in 2022.

Benzene was detected above the PAL in TF-MW-9 in 1998 after showing a downward trend from 1995 to 1997. Since 1997, benzene concentrations have been non-detect except for two detections in 2001, and 2017. Toluene, ethylbenzene and xylenes were all sporadically detected below PALs from 1995 to 1998. Concentrations of these constituents either reduced to non-detect or trended downward through 2022.

Unusually high rainfall July through October 2022 may have contributed to the spike in contaminant concentrations in 2022.

Monitoring wells TF-MW-1, TF-MW-5, TF-MW-12, and TF-MW-17 contained no analytes at concentrations exceeding PALs. In some instances, analytes were detected in 2022 and not detected in 2017, but the detections in 2022 were typically just above detection levels. In general, 2022 analytical results in these wells are comparable to 2017 analytical results.

3.3.2 Granite Point Production Facility

Historical data for monitoring well PF-MW-6 are provided in Table 2 and include BTEX data from 1993 through 2022, and GRO, DRO and RRO data from 2007 through 2022. Benzene was detected above the PAL in 1995, 1997, and 2000, with the highest concentration of 32 µg/L detected in October of 1995. Benzene detections in this well trended downward from 1995 to 2017, and have been non-detect since 2012; however, benzene was detected again in 2022 below the PAL.

Well PF-MW-6 is located downgradient of well PF-MW-7 which contains free product. This well has been sampled for RRO four times since 2007, with RRO detected above the PAL in 2007 (1,940 [primary] and 1,540 [duplicate] µg/L), below the PAL in 2012, and above the PAL again in 2022 (2,490 µg/L). Unusually high rainfall July through October 2022 may have contributed to downgradient migration of RRO from PF-MW-7 to PF-MW-6.

4.0 Conclusions and Recommendations

Of the seven monitoring wells sampled during the 2022 field work at Granite Point, three contained analytes exceeding PALs. Monitoring well PF-MW-6 at the production facility contained RRO at a concentration of 2,490 µg/L, exceeding the PAL of 1,100 µg/L. Well TF-MW-9 at the tank farm contained RRO at concentrations of 3,080 (primary) and 2,960 (duplicate) µg/L. Well TF-WM-4 at the tank farm contained benzene at a concentration of 45.1 µg/L, exceeding the PAL of 5 µg/L.

Based on a review of historical data, concentrations of RRO at the Production Facility have not exhibited a clear trend. Although RRO in well PF-MW-6 decreased from 1,940 µg/L in 2007 to non-detect in 2017, the 2022 result (2,490 µg/L) is the highest RRO concentration seen in this well. Similarly, the Tank Farm well, TF-MW-9, showed a reduced RRO concentration from 2007 to 2017, with a spike in 2022 (3,080 and 2,960 µg/L).

Benzene concentrations have shown a general downward trend in all three wells; however, there was a spike in benzene concentration in 2022 in well TF-MW-4, exceeding the PAL. Well PF-MW-6 also showed an increase in benzene with a detection below the PAL.

The 2022 exceedances may be a result of above average rainfall that occurred from July through October 2022 in southcentral Alaska, which could have acted to mobilize upgradient and/or smear zone contamination in the vicinity of the wells.

It is recommended that Hilcorp continue monitoring groundwater wells PF-MW-7, TF-MW-4, and TF-MW-9, for GRO, DRO, RRO, and BTEX on a five-year basis. It is also recommended that free-product in PF-MW-7 be removed with a bailer during each five-year event. In addition, well TF-MW-4 requires the inner PVC casing be cut down, and well TF-MW-9 requires a new inner 4-inch well cap.

5.0 References

Alaska Department of Environmental Conservation (ADEC) 2023. Oil and Other Hazardous Substances Pollution Control. Division of Spill Prevention and Response, Contaminated Sites Program. 18 AAC 75. February.

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Figures

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Hilcorp Alaska, LLC

3800 Centerpoint Dr. Ste.1400
Anchorage, AK 99503

Map Date: 3/7/2023

SITE LOCATION AND VICINITY-
GRANITE POINT TANK FARM
AND PRODUCTION FAILITY
2022 GROUNDWATER MONITORING REPORT

Note:
Imagery and Basemap data provided by ESRI April 2022.

Map Scale 1:5,280

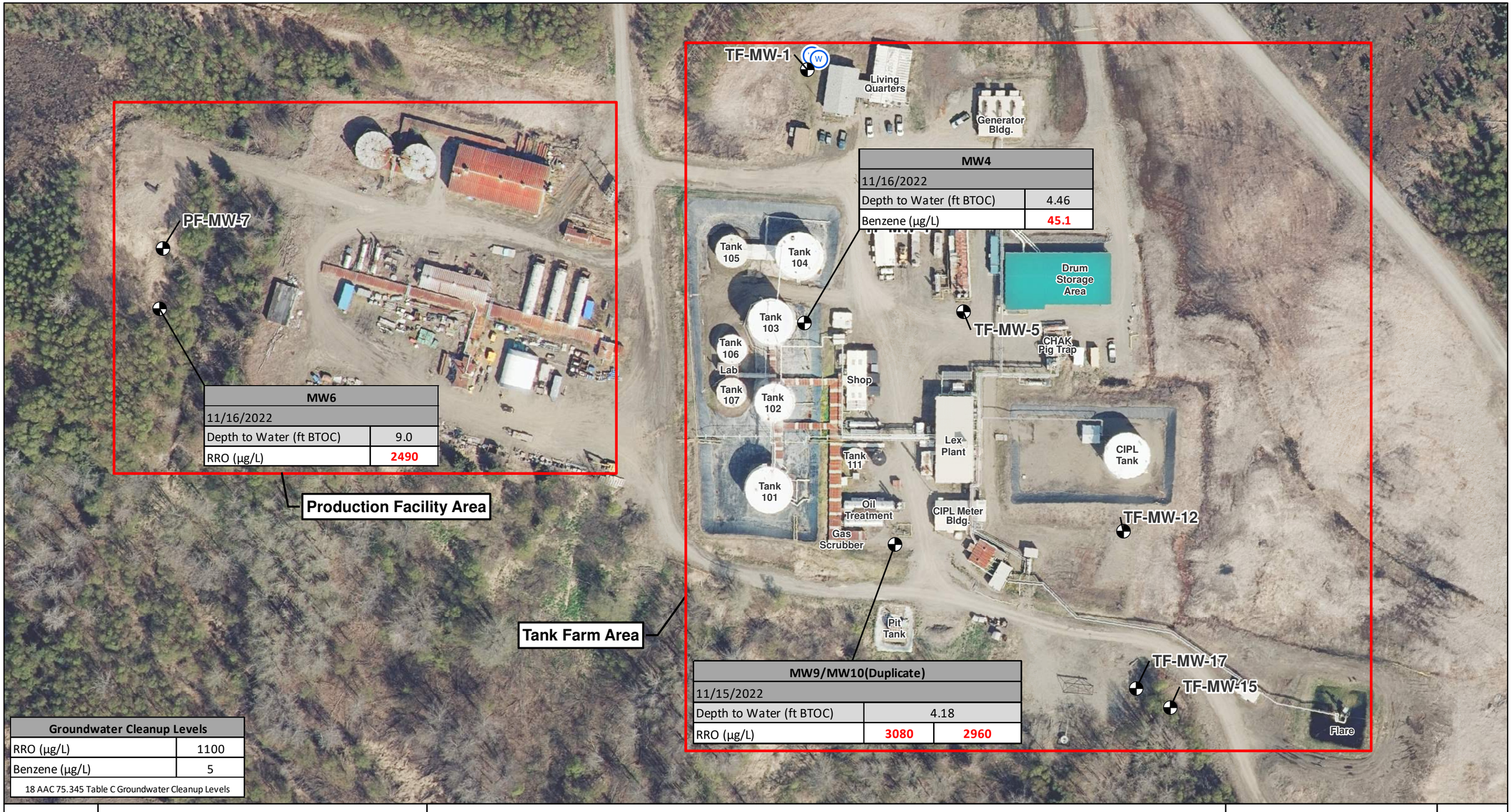
Map Projection:
Alaska State Plane 4 NAD 1983 (feet)

0 100 200
Feet

N

FIGURE:

1



Hilcorp Alaska, LLC
3800 Centerpoint Dr. Ste.1400
Anchorage, AK 99503
Map Date: 5/30/2023

GROUNDWATER ANALYTICAL RESULTS- GRANITE POINT TANK FARM AND PRODUCTION FACILITY

2022 GROUNDWATER MONITORING REPORT

Legend

- Monitoring Well
- Drinking Water Well

Note:
Imagery provided by Hilcorp acquired May 2021.
Bold results indicate an exceedance of the applicable cleanup level.
AAC - Alaska Adminstrative Code
BTOC - Below Top of Casing
ft - feet
RRO - Residual Range Organics
µg/L - Micrograms per Liter

Map Scale 1:1,200

Map Projection:
Alaska State Plane 4 NAD 1983 (feet)

0 50 100
Feet

N

FIGURE:

2

Tables

Table 1

Analytical Results for Granite Point Tank Farm / Production Facility Groundwater Sampling

		Location ID:		MW6	MW1	MW4	MW5	MW9	MW9	MW12	MW17	Trip Blank
		Sample ID:		GPPF-MW6-111622	GPTF-MW1-111622	GPTF-MW4-111422	GPTF-MW5-111422	GPTF-MW9-111522	GPTF-MW10-111522	GPTF-MW12-111522	GPTF-MW17-111622	1226937
		SDG:		1226937	1226937	1226937	1226937	1226937	1226937	1226937	1226937	Trip Blank
		QC Type:		Primary	Primary	Primary	Primary	Primary	Duplicate	Primary	Primary	11/14/2022
		Sample Date:		11/16/2022	11/16/2022	11/14/2022	11/14/2022	11/15/2022	11/15/2022	11/15/2022	11/16/2022	
Method	**Analyte**	**PSL[1]**	**Units**	**Results**								
AK101	GRO	2200	µg/L	ND [50]	ND [50]	126 [50]	ND [50]	ND [50]	ND [50]	ND [50]	ND [50]	ND [50]
AK102	DRO	1500	µg/L	924 [288]	ND [294]	ND [294]	ND [300]	740 [306]	729 [306]	ND [300]	256 [283] J	--
AK103	RRO	1100	µg/L	**2490 [240]**	571 [245]	446 [245] J	ND [250]	**3080 [255]**	**2960 [255]**	329 [250] J	659 [236]	--
SW8260D	Benzene	5	µg/L	0.34 [0.2] J	ND [0.2]	**45.1 [0.2]**	ND [0.2]	ND [0.2]	ND [0.2]	0.47 [0.2]	ND [0.2]	ND [0.2]
SW8260D	Ethylbenzene	700	µg/L	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]
SW8260D	m,p-Xylenes	--	µg/L	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]
SW8260D	o-Xylene	--	µg/L	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]
SW8260D	Toluene	1000	µg/L	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	0.75 [0.5] J	ND [0.5]
SW8260D	Xylenes	10000	µg/L	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]

Notes:

BOLD - result exceeds the cleanup level

[1] ADEC 18 AAC 75, Table C Groundwater Cleanup Level (ADEC 2023)

[ ] - limit of detection (LOD)

µg/L - micrograms per liter

ND - not detected

TB - trip blank

J - Analyte result is considered an estimated value because the result is greater than or equal to the DL and less than the LOQ

Table 2
Historical Monitoring Well Analytical Results

Sample Location	Sample ID	Date	GRO (µg/L)	DRO (µg/L)	RRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
ADEC Groundwater Cleanup Levels[1]			**2,200**	**1,500**	**1,100**	**5**	**1,000**	**700**	**10,000**
PF-MW-6		Sep-93	NA/NS	NA/NS	NA/NS	ND [10]	ND [10]	ND [10]	ND [10]
		Apr-95	NA/NS	NA/NS	NA/NS	**27**	ND [1]	ND [1]	ND [1]
		Oct-95	NA/NS	NA/NS	NA/NS	**32**	ND [0.5]	ND [0.5]	ND [0.5]
		Aug-97	NA/NS	NA/NS	NA/NS	**6.9**	1.5	ND [1]	ND [1]
		Aug-98	NA/NS	NA/NS	NA/NS	ND [1]	ND [1]	ND [1]	ND [1]
		Sep-99	NA/NS	NA/NS	NA/NS	ND [1]	ND [1]	ND [1]	10
		Oct-00	NA/NS	NA/NS	NA/NS	**5.6**	ND [1]	ND [1]	ND [2]
		Sep-06	NA/NS	NA/NS	NA/NS	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]
	MW-6	Aug-07	13.5 J	909	**1940**	0.185 J	ND [2]	ND [2]	ND [2]
	MW-6 Dupe	Aug-07	15.4 J	717	**1540**	0.273 J	ND [2]	ND [2]	ND [2]
	12-GPPF-101-GW	Jun-12	ND [4.1]	1,300	1,000	ND [0.18]	ND [0.16]	ND [0.27]	ND [0.86]
	12-GPPF-111-GW	Jun-12	ND [4.1]	930 J	930 J	ND [0.18]	ND [0.16]	ND [0.27]	ND [0.86]
	MW6-WG-101613	Oct-13	NS	NS	NS	ND [1]	ND [1]	ND [1]	ND [3]
	GPPF17-MW-6	May-17	ND [50]	521 J	ND [245]	ND [0.2]	ND [0.5]	ND [0.5]	ND [1.5]
	GPPF-MW6-111622	Nov-22	ND [50]	924 [288]	**2,490 [240]**	0.34 [0.2] J	ND [0.5]	ND [0.5]	ND [1.5]
TF-MW-4		Oct-95	NA/NS	NA/NS	NA/NS	**28**	1.8	ND [0.5]	2.1
		Aug-97	NA/NS	NA/NS	NA/NS	**68**	2.7	2.1	8.3
		Aug-98	NA/NS	NA/NS	NA/NS	**86**	2.5	2.1	10
		Sep-99	NA/NS	NA/NS	NA/NS	**75**	ND [1]	1.5	7.1
		Oct-00	NA/NS	NA/NS	NA/NS	**52**	ND [1]	ND [0.5]	4.2
		Sep-06	NA/NS	NA/NS	NA/NS	**13.7**	ND [0.5]	ND [0.5]	69
		Aug-07	14.5 J	555	646	0.468 J	ND [2]	ND [2]	ND [2]
	WP4-WG-101613	Oct-13	NS	NS	NS	ND [1]	ND [1]	ND [1]	8.7
	GPTF17-MW-4	May-17	ND [50]	319 J	ND [236]	ND [0.2]	ND [0.5]	ND [0.5]	ND [1.5]
	GPTF-MW4-111422	Nov-22	126 [50]	ND [294]	446 [245] J	**45.1 [0.2]**	ND [0.5]	ND [0.5]	ND [1.5]
TF-MW-9		Sep-93	NA/NS	NA/NS	NA/NS	ND/ND	ND/ND	60 J/ 50 J	270 / 210
		Apr-95	NA/NS	NA/NS	NA/NS	3.5	3.4	20	108
		Oct-95	NA/NS	NA/NS	NA/NS	0.6	ND [0.5]	1.4	5.7
		Aug-97	NA/NS	NA/NS	NA/NS	2.2	11	12	86
		Aug-98	NA/NS	NA/NS	NA/NS	**5.7**	2.3	10	70
		Sep-99	NA/NS	NA/NS	NA/NS	ND [1]	ND [1]	3	10
		Oct-00	NA/NS	NA/NS	NA/NS	ND [1]	1.1	6.1	27
		Sep-06	NA/NS	NA/NS	NA/NS	ND [0.5]	0.58	ND [0.5]	ND [1.5]
		Aug-07	20.8 J	834	**1,790**	0.211 J	ND [2]	ND [2]	ND [2]
	MW9-WG-101613	Oct-13	NS	NS	NS	ND [1]	ND [1]	ND [1]	ND [3]
	GPTF17-MW9	May-17	94.5 J	836	ND [228]	0.3 J	0.36 J	ND [0.5]	ND [1.5]
	GPTF-MW9-111522	Nov-22	ND [50]	740	**3,080**	ND [0.2]	ND [0.5]	ND [0.5]	ND [1.5]
	GPTF-MW10-111522	Nov-22	ND [50]	729	**2,960**	ND [0.2]	ND [0.5]	ND [0.5]	ND [1.5]

Notes:

Sample GPTF-MW10-111522 is a duplicate of GPTF-MW9-111522 collected on 15 November 2022

[ ] - limit of detection (LOD)

BOLD - result exceeds the cleanup level

[1] ADEC 18 AAC 75, Table C Groundwater Cleanup Level (ADEC 2023)

ND - Non-detect

NA/NS - Not available or not sampled

NS - Not sampled

µg/L - micrograms per liter

J - Analyte result is considered an estimated value because the result is greater than or equal to the DL and less than the LOQ

Appendix A Field Notes

Hilcorp

Rite in the Rain®
ALL-WEATHER
UNIVERSAL
№ 371FX

GPTF / GPPF

11/14/22 -

TACOMA, WA, USA
— EST. 1916 —
Rite in the Rain®
= DEFYING MOTHER NATURE =

Name Susitna

Address 863 Petersburg
Anchorage AK 99507

Phone 907-350-7952

Project GPTF / GPPF

MADE IN THE USA · RITE GREEN · Archival paper

RiteintheRain.com

CONTENTS

PAGE	REFERENCE	DATE

11/14/22 GPTF/PF TK/mm

0700 mm Depart Anc → Kenai
0919 mm/TK Depart Ken → GP
1008 Arrive @ GP; orientation, organize equipment, prep for GW sampling, lunch
1212 Locate GW wells
1218 ~~tot~~ Locate TF-MW-09
1223 Locate TF-MW-17
1225 Locate TF-MW-15
1235 Locate PF-MW-7 + MW-6
1245 Locate TF-MW-12
1253 Locate TF-MW-04
1258 ~~Did not~~ locate TF-MW-05 — flush Mount
1310 Set up to Sample TF-MW-04
1413 Well Was pumped dry; Moved on to TF-MW-05
1613 GPTF-MW5-111422
1649 Back to TF-MW-4 to collect Water Sample
- DTW = 4.5' btoc
- TD = 11.4' btoc
- Prep to collect Water Sample

1703 GPTF-MW4-111422

Scale: 1 square =

1715 Decon, pack up truck + unload into welding Shop.
1730 Back to camp, daily report, Sample summary
1900 End of Day

M. May
11/14/22

AFE # 225-01403.15.10.28

Scale: 1 square =

0700 Meet for HSE & calibrate YSI
0836 YSI Cal:
pH 4 = 4.01 ~~Cond =~~
pH 7 = 7.00
ORP = 240.0
→ Cond solun too cold - go to Collect Free Product @ PF-7
0906 Prep to Collect FP
0934 re-cal for Cond + ORP
Cond = 1.411 DO = 102.5%
ORP = 240
1013 Arrive @ TF-MW12 to set up for gw sampling
1232 GPTF-MW12-111522
1250 Break for lunch
1348 Set up on well TF-MW9
1457 pack up
1515 *Arrive @ TF-MW15 to set up.
1444 GPTF-MW9-111522 (plus dup)
1620 *Set up on TF-MW17
* Both TF-MW15 + MW17 purged dry. Will collect grab samples tomorrow.
1705 TF-MW15 DTW = 10.18' btoc.
1708 Depart TF-MW17 to shop to

Scale: 1 square = _____

unload.
1720 Calibrate YSI
pH 4 = 4.00 ORP = 240mV
pH 7 = 7.01 % DO = 102.6%
Cond = out of range
→ could not get conductivity to calibrate.
1823 Start daily report / Samp summ
1930 End of Day

M. Mayo
11/15/22

Scale: 1 square = _____

PF-MW7 Product Recovery Method

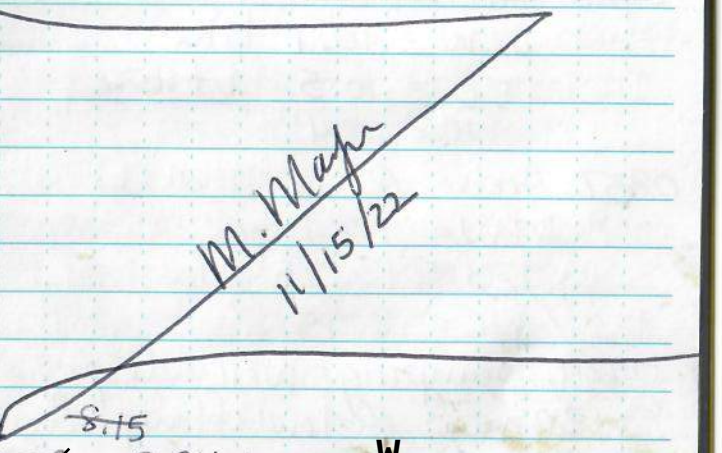
* In a bucket, weigh sorbent sock inside a trash bag; mark the trash bag w/identifier (A, B, C, etc) and weight in lbs, oz.

* Stainless steel tool was used to weight the end of the sock lowered into the well

Scale: 1 square = _____

PF-MW7 Sorbent Sock Weights

ID	(lbs oz) Before	(lbs oz) After	(lbs oz) Δ
A	~~21b 11oz~~	15min (top)	
B	30min (top)		
C	30min - very little prod (to bottom)		
D	(to 10') 15min - very little product		
E			
F			
G			
H			
I			
J			
K			
L			



11/16/22 ~~8:15~~

1414 DTW 9.8' btoc W

DTP 8.15' btoc

TD = 22.58' btoc

Product readings are variable from 9-9.8' btoc

→ Bucket Wt =

Scale: 1 square = _____

Rite in the Rain

0700 Morning Meeting, Safety
0745 Pack truck, ~~pre~~
0810 Arrive @ TF-MW17
DTW = 8.5' btoc
TD = 10.92' btoc
WC = 2.42' (~54% recovered)
0818 Check back later
0825 Arrive @ TF-MW15
DTW = 10.1' btoc
TD = 10.5' btoc
WC = 0.4'
0887 Arrive @ TF-MW1
DTW = 4.9' btoc
TD = 13.85' btoc
WC = 8.95'
0924 pumping well dry; after ~30 min of low-flow, draw-down was showing no recovery.
1042 Arrive @ GPPF to set up for GW sampling @ PF-MW~~6~~
1210 Well purged dry - pack up
1232 depart GPPF - dump purge water, break for lunch
1338 TF-MW15 DTW = 10.05' btoc
1344 TF-MW17 DTW = 8.0
WC = 2.92 = 63%

Scale: 1 square = _____

1350 TF-MW1 DTW = 10.0
→ 43% recovered
1355 Arrive @ PF-MW7 for product recovery.
- Socks are absorbing water as well as some product
- the ~~prodct~~ product is highly viscous and adheres to the outside of the sock in globules.
- taking a saturated weight will not provide a volume of product recovered.
- It appears the sock is absorbing water inside, and is coated by the oil on the outside.
- Will continue to deploy socks to recover product.

1616 pack up - recommend bailer for prod. recovery next time.
- put PF-7 waste in oily waste bin

1651 Arrive @ TF-MW15
DTW = 10.1 - no recovery; will not sample.
1657 TF-MW17 DTW = 7.8
WC = 3.12 ≈ 70%

Scale: 1 square = _____

Rite in the Rain

1700 Set up to sample TF-MW17
1707 GPTF-MW17-111622 (grab)
1721 TF-MW1, DTW = 7.13
WC = 6.72 ≈ ~~[illegible]~~ 76%
1725 Set up to sample
1731 GPTF-MW1-111622
1753 PF-MW6 DTW = 10.8
WC = 6.8 = 4.4 gal ≈ 79% recov.
1756 Set up for grab sample
1807 GPPF-MW6-111622
1811 pack up
1820 Arrive @ shop; ~~up~~ unpack truck / organize. Label decon water. Sample control.
1930 Arrive @ camp; daily report, Sample Summary
2100 End of Day

M. Mayo
11/16/22

Scale: 1 square = _____

0800 Morning meeting

To Do
- Sample control
- Weigh gear for demob
- Waste Inventory

GPTF: 55 gallons
GPPF: 16 gallons
Decon water: 2 gallons

Scale: 1 square = _____

Appendix B Field Forms

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: PF-MW6
Project Location: GPPF - MW6
Sample No.: GPPF-MW6-111622
Project Number: 225-01403
Sampler(s): MM / TK
Date/Time: 11/16/2022 1046
Weather: Sunny, Calm, 30°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1047	17.6 ☐ Meas. ☐ Hist.	9.0 Initial	8.6	5.6

Water Level Measurement Method: ☒ Electric Tape ☐ Other:

Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:

Purge Rate: —

Begin Purge: Time: 1114
Total Volume Purged: 16 gal

End Purge: Time: 1210
Well Volumes Purged: 2.9

Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:

Sample Time: 1807

Sample Collection Method: ☒ Pump Type: Hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:

Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.):

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
6	40 mL	☒ Glass ☐ Plastic	GRO/BTEX
2	250 mL	☒ Glass ☐ Plastic	DRO/RRO
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:

Grab Sample

Date: 11/16/22 Well ID: PF-MW6

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
1118	9.35	.25	5.2	—	5.45	6.8	113.3	22.82
1123	9.5	0.5	5.19	—	4.08	6.76	111.4	23.09
1128	—	0.75	5.19	—	3.93	6.76	109.7	19.68
1133	9.95	1	5.48	—	3.72	6.75	108.1	12.19
1138	10.1	1.75	5.53	—	3.77	6.75	107.9	13.76
1148	10.42/2.5	~~2.00~~	5.50	—	4.29	6.76	109.1	9.18
→	In 34 minutes the water column has consistently dropped, showing no recovery. The water column dropped by 1.42 feet.							
1154	10.3 and holding - we will purge the well dry and check back later for recovery.							
1210	Stop purge @ ~1k gallons removed							
1753 ~~1807~~	DTW = 10.8' btoc, WC = 6.8', ~79% recovered							
1807	GPPF-MW6-111622							

Notes:

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF/PF
Well ID: TF-MW1
Project Location: GPTF-MW1
Sample No.: GPTF-MW1-111622
Project Number: 225-01403
Sampler(s): MM/TK
Date/Time: 11/16/22 0832
Weather: partly cloudy, calm, 26°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
0837	13.85 ☐ Meas. ☐ Hist.	4.9 Initial	8.95	5.8

Water Level Measurement Method: ☒ Electric Tape ☐ Other:
Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:
Purge Rate: —
Begin Purge: Time: 0857
Total Volume Purged: 13gal
End Purge: Time: 0943
Well Volumes Purged: 2.2
Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:
Sample Time: 1731
Sample Collection Method: ☐ Pump Type: Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:
Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:
Sample Description (color, turbidity, odor, sheen, etc.):

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
6	40mL	☒ Glass ☐ Plastic	GRO/BTEX
2	250mL	☒ Glass ☐ Plastic	DRO/RRO
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:

→ Needs well plug
Grab sample

Date: 11/16/22 Well ID: TF-MW1

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
0903	6.5	1.0	6.58	—	2.08	6.35	24.8	92.98
0909	7.5	* purge rate @ ~ 0.2 g/min						
0911	8.1	* no recovery						
0912	8.2							
0914	8.35							
0917	8.7	6.3	6.28	—	2.28	6.53	-23.0	250.1
0922	9.05	3.8	6.59	—	2.72	6.51	-11.4	216.4
0924	lower pump to bottom to purge dry							
	water column is not recovering;							
	will check later for recovery to get							
	a grab sample							
0943	Stop purge ~13 gal							
1725	set up for grab sample;					DTW=	7.13'	btoc
1731	GPTF-MW1-111622					WC=	6.72'	
						~	76% recovered	

Notes:

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: TF-MW-~~MW~~4
Project Location: GPTF - MW4
Sample No.: GPTF-MW4-111422
Project Number: 225-01403
Sampler(s): MM / TK
Date/Time: 11/14/2022 1310
Weather: Overcast 37°

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1334	11.42 ☐ Meas. ☐ Hist.	4.46* Initial	6.96	4.5 gallons

Water Level Measurement Method: ☒ Electric Tape ☐ Other:

Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:

Purge Rate: ~~MM703~~

Begin Purge: Time: 1350 Total Volume Purged: ~7 gal

End Purge: Time: 1413 pumped dry Well Volumes Purged: 1.6

Purge Water Disposed: ☐ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:

Sample Time: 1703

Sample Collection Method: ☒ Pump Type: hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:

Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.):

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
6	40mL	☒ Glass ☐ Plastic	GRO/BTEX
2	250mL	☒ Glass ☐ Plastic	DRO/RRO
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:

→ Recovery extremely slow - will check water level tomorrow to sample

→ Need to cut down well

Date: 11/14/22 Well ID: TF-MW-4

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
~~1619~~	~~4.59~~							
1649	4.45; TD = 11.4' btoc							
- returned to well; 100% recovery; collect water sample								

Notes:

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: TF-MW-5
Project Location: GPTF-MW5
Sample No.: GPTF-MW5-111422 MS/MSD
Project Number: 225-0403
Sampler(s): MM / TK
Date/Time: 11/14/22 1450
Weather: overcast 35°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1505	12.95 ☐ Meas. ☐ Hist.	0.5 Initial	12.45	8.1 × 3 = 24.3

Water Level Measurement Method: ☒ Electric Tape ☐ Other:
Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:
Purge Rate: 0.1 gal/min
Begin Purge: Time: 1513
Total Volume Purged: 5 gal
End Purge: Time: 1613
Well Volumes Purged: ~~1.62~~ 0.6
Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:
Sample Time: 1613
Sample Collection Method: ☒ Pump Type: hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:
Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:
Sample Description (color, turbidity, odor, sheen, etc.): Very turbid, no odor/sheen

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
18	40mL	☒ Glass ☐ Plastic	GRO, BTEX MS/MSD
6	250mL	☒ Glass ☐ Plastic	DRO/RRO
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:
The annulus ~~(test~~ (outer casing) of the well is full of water. Tried pumping, but meltwater kept infiltrating to the top of the outer casing.

→ Need to secure flush mount

Date: 11/14/22 Well ID: TF-MW-5

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C) +/- .2	Cond (µS/cm) +/- 3%	DO (mg/L) +/-10%	pH +/- 0.1	OPR (mV) +/-10mV	Color/ Turbidity
1518	0.5	1.5	5.54	18.5	6.25	6.47	216.7	585.3
1524	0.25	2.0	5.29	171	6.95	6.62	203.9	588.1
1533	0.25	3.0	5.08	159	7.35	6.7	197.3	795
1548	0.25	4.0	5.06	151	7.2	6.8	193.6	>1100
1608	0.25	5.0	5.01	145	7.78	6.85	193.9	>1100

Notes:

$\frac{.5g}{6m} = 0.08\ g/min$ $\frac{5g}{50m} =$

$\frac{1g}{9} = 0.1\ g/m$

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: ~~TF-9~~ TF-MW9
Project Location: GPTF-MW9
Sample No.: GPTF-MW9-111522 / GPTF-MW10-111522 (dup)
Project Number: 225-01403
Sampler(s): MM / TK
Date/Time: 1348 11/15/22
Weather: Sunny, breeze (5-10mph)

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1353	16.10 ☒ Meas. ☐ Hist.	4.18 Initial	11.92	7.8

Water Level Measurement Method: ☒ Electric Tape ☐ Other:
Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:
Purge Rate: 0.1
Begin Purge: Time: 1401
Total Volume Purged: 4.8
End Purge: Time: 1444
Well Volumes Purged: 0.6
Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:
Sample Time: 1444 / 1230(dup)
Sample Collection Method: ☒ Pump Type: hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:
Decon Procedure: ☐ N/A ☑ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:
Sample Description (color, turbidity, odor, sheen, etc.): Clear, no odor/sheen

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
12	40 mL	☑ Glass ☐ Plastic	GRO/BTEX (dup)
4	250 mL	☒ Glass ☐ Plastic	DRO/RRO (dup
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:
Dup Sample collected: GPTF-MW10-111522, time: 1230

Date: 11/15/22 Well ID: TF-MW9

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C) +/- .2	Cond (µS/cm) +/- 3%	DO (mg/L) +/- 10%	pH +/- .1	ORP (mV) +/- 10mV	Color/ Turbidity
1407	4.65	1.0	11.43	5096	1.75	6.51	-27.4	24.31
1412	4.45	1.5	11.42	5115	1.47	6.47	-30.1	14.66
1417	4.6	2.3	11.41	5128	1.19	6.45	-46.6	10.43
1422	4.51	3.0	11.00	5057	1.07	6.44	-52.1	10.65
1427	4.35	3.3	11.05	5061	0.98	6.43	-56.9	7.84
1432	4.61	4.0	11.04	5021	1.14	6.42	-52.6	7.17
1438	4.57	4.8						7.44

Notes:

- Need a 4" well plug; the well cap doesn't fit.

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: TF-MW12
Project Location: GPTF- MW12
Sample No.: GPTF-MW12-111522
Project Number: 225-01403
Sampler(s): MM / TK
Date/Time: 11/15/22 1050
Weather: Clear, Sunny, 31°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1105	16.26 ☐ Meas. ☐ Hist.	7.81 Initial	8.45	5.5 gal

Water Level Measurement Method: ☒ Electric Tape ☐ Other:

Well Evacuation Method: ☒ Peristaltic Pump ☐ Submersible Pump ☐ Bailer ☐ Other:

Purge Rate: 0.05

Begin Purge: Time: 1116
Total Volume Purged: 6.3 gal

End Purge: Time: 1232
Well Volumes Purged: 1.1

Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:

Sample Time: 1232

Sample Collection Method: ☒ Pump Type: hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:

Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.): Clear, no odor / sheen

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
8 6	40 mL	☒ Glass ☐ Plastic	GRO / BTEX
2	250 mL	☒ Glass ☐ Plastic	DRO / RRO
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:

Date: 11/15/22 Well ID: TF-11W12

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C) +/- 0.2 ✓	Cond (µS/cm) +/- 3%	DO (mg/L) +/- 10% ✓	pH +/- 0.1 ✓	OPR (mV) +/- 10mV ✓	Color/ Turbidity +/- 10% (>5) ✓
1125	7.98	1.5	7.83	4830	1.53	6.21	-2.7	350.2
1134	7.88	2	7.49	4765	1.17	6.27	-7.0	23.32
1143	7.78	2.5	7.37	4778	1.01	6.3	-23.5	12.56
1202	7.9	~~354~~	7.94	4534	0.78	6.27	-107.9	17.22
1210	7.85	4.5	7.53	4143	0.9	6.25	-74.0	7.81
1220	7.81	6	7.56	4468	0.85	6.28	-73.5	4.48
1225	7.85	6.3	7.38	4511	0.75	6.28	-72.4	5.15

Notes:

1.5g / 9m

1/18 = 0.06

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: TF-MW15
Project Location: GPTF - MW15
Sample No.: GPTF- MW15 - 111522
Project Number: 225-01403
Sampler(s): MM / TK
Date/Time: 11/15/22 1515
Weather: Sunny, Wind 10-12mph, 30°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1519	10.65 ☐ Meas. ☐ Hist.	7.85 Initial	2.8	1.8

Water Level Measurement Method: ☒ Electric Tape ☐ Other:

Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:

Purge Rate: —

Begin Purge: Time: 1527 well purged Total Volume Purged:

End Purge: Time: 1543 dry Well Volumes Purged:

Purge Water Disposed: ☐ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:

Sample Time: no Sample Collected

Sample Collection Method: ☒ Pump Type: hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:

Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.):

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
3	40mL	☒ Glass ☐ Plastic	~~GRO/BTEX~~ mcm
2	250 mL	☒ Glass ☐ Plastic	~~DRO/RRO~~ mcm
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:

Date: 11/15-16/22 Well ID: TF-MW15

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
0825 (11/16/22)								
	DTW = 10.1' btoc							
	TD = 10.5' btoc							
	WC = 0.4' (no recovery)							
0830	Depart site - will check back later							
1338	DTW = 10.05 (no recovery)							
1651	DTW = 10.1 (no recovery)							
→	No Sample Collected							

Notes:

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: GPTF / PF
Well ID: TF-MW17
Project Location: GPTF-MW17
Sample No.: GPTF-MW17-111622
Project Number: 225-01403
Sampler(s): MM/TK
Date/Time: 11/15/22 1620 11/16/22
Weather: sunny, wind 10-12mph, 30°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1626	10.92 ☐ Meas. ☐ Hist.	6.4 Initial	4.52	3.0

Water Level Measurement Method: ☒ Electric Tape ☐ Other:

Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:

Purge Rate: —

Begin Purge: Time: 1634 pumped well dry
End Purge: Time: 1656
Total Volume Purged:
Well Volumes Purged:

Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:

Sample Time: 1707 11/16/22

Sample Collection Method: ☒ Pump Type: hurricane Dedicated ☐ Y ☒ N ☐ Bailer ☐ Other:

Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.):

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
2	250 mL	☐ Glass ☐ Plastic	DRO/RRO
6	40 mL	☐ Glass ☐ Plastic	GRO/BTEX
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes: Grab Sample

Date: 11/15/22 Well ID: TF-MW17

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
1638	7.42	1.0	5.43	1694C	3.71	6.44	-18.7	23.44
11/16/2022								
0816	DTW = 8.5' btoc							
	TD = 10.92' btoc							
	WC = 2.42' (~54% recovered)							
0818	pack up - check back later							
1657	DTW = 7.8' btoc, WC = 3.12'; ~70% recovered							
1700	Set up for grab sample							
1707	GPTF-MW17-111622							

Notes:

1s
4m

Appendix C Photographic Log

PHOTOGRAPH 1: Granite Point Tank Farm MW4, looking south. 14 November 2022.

PHOTOGRAPH 2: Granite Point Tank Farm MW5 annular space with infiltrated water. 14 November 2022.

PHOTOGRAPH 3: Granite Point Tank Farm MW9, looking west. 15 November 2022.

PHOTOGRAPH 4: Granite Point Tank Farm MW12, looking north. 15 November 2022.

PHOTOGRAPH 5: Granite Point Tank Farm MW17, looking northeast. 15 November 2022.

PHOTOGRAPH 6: Granite Point Tank Farm MW1, looking north. 16 November 2022.

PHOTOGRAPH 7: Granite Point Production Facility MW6, looking southwest. 16 November 2022.

PHOTOGRAPH 8: Granite Point Production Facility MW7, absorbent sock. 16 November 2022.

Appendix D Data Quality Report and ADEC Laboratory Data Review Checklist and Laboratory Analytical Report

January 13, 2023

Ms. Melissa Mayer

Susitna Environmental, LLC

8361 Petersburg Street

Anchorage, AK 99507

Subject: Hilcorp Alaska, LLC – 2022 Granite Point Tank Farm Groundwater Sampling, SDG 1226937

Ms. Mayer,

Attached is the quality assurance review of the laboratory data from the groundwater samples at the Granite Point Tank Farm in November 2022.

In general, the overall quality of the project data was acceptable. No results were rejected and qualified data are considered acceptable for use, with the limitations discussed within this QA report and as indicated with the appropriate qualifiers.

If you have questions, please do not hesitate to let me know.

Sincerely,

Kelly Carson

Senior Chemist

ARS Aleut Remediation, LLC

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
AAC	Alaska Administrative Code
Aleut	ARS Aleut Remediation, LLC
ADEC	Alaska Department of Environmental Conservation
BTEX	benzene, toluene, ethylbenzene, and xylenes
CoC	chain-of-custody
DL	detection limits
DQO	data quality objective
DQR	data quality report
EPA	U.S. Environmental Protection Agency
FD	field duplicate
GPTF	Granite Point Tank Farm
ID	identification
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limits of detection
LOQ	limits of quantitation
MB	method blank
MS	matrix spike
MSD	matrix spike duplicate
ND	non-detect
QA	quality assurance
QC	quality control
RPD	relative percent difference
SDG	sample delivery group
SGS	SGS North America, Inc.
TB	trip blank

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1. INTRODUCTION

This data quality report (DQR) summarizes the evaluation of laboratory data collected from Granite Point Tank Farm (GPTF) in November 2022. ARS Aleut Remediation, LLC (Aleut) reviewed and validated the data to evaluate compliance with quality assurance (QA)/quality control (QC) criteria and completed Alaska Department of Environmental Conservation (ADEC) laboratory data review checklists for each sample delivery group (SDG).

This DQR includes the following attachments:

- Attachment 1: Sample Summary and Data Summary Table
- Attachment 2: ADEC Laboratory Data Review Checklists
- Attachment 3: Laboratory Data Packages

2. DATA VALIDATION PROCEDURES

The Stage 2A data validation was performed by an experienced chemist independent of the analytical laboratory and included a completeness check of the electronic data to verify that data packages and electronic files included all of the requested information. Project data were reviewed on an SDG and analytical-batch basis by assessing QC samples and associated field sample results. Laboratory reporting and data validation were consistent with the ADEC technical memorandum Guidelines for Data Reporting (ADEC 2022).

Analytical results outside QC parameters are discussed in Section 3.0 and in the associated ADEC laboratory data review checklist (Attachment 2). Data was considered usable as qualified when the quality of the sample data met ADEC and laboratory precision, accuracy, representativeness, completeness, comparability, and sensitivity requirements.

The following information was reviewed as part of the Stage 2A data validation:

- Sample handling and chain-of-custody (CoC)
- Sample preservation and holding time compliance
- Field QC samples, including trip blanks (TBs), and field duplicates (FDs)
- Sample detection limits (DL), limits of detection (LOD), and limits of quantitation (LOQ), compared to project requirements
- Method blanks (MBs)
- Laboratory control sample (LCS) and LCS duplicate (LCSD) recoveries
- Surrogate spike recoveries
- Matrix spike (MS) and MS duplicate (MSD) recoveries
- Precision, including relative percent difference (RPD) values for duplicate analyses
- Laboratory case narrative and laboratory qualifiers

The data validation identified results requiring qualification based on the qualifier definitions provided in Table 1. The only qualifier applied to this dataset was J.

Table 1 Validation Qualifiers

QUALIFIER	DESCRIPTION
J	Analyte result is considered an estimated value because the result is greater than or equal to the DL and less than the LOQ.
J+, J-	Analyte result is considered an estimated value biased high/low due to a QC failure.
JD	Analyte result is considered an estimated value with an unknown bias due to a QC RPD failure.
B	Analyte result is considered a high estimated value due to contamination present in an associated blank (e.g., MB, FB, or TB).
H	Analyte result is considered an estimated value, biased low, due to a holding time exceedance.
R	Analyte result is rejected and considered not usable.

Notes:
For definitions, see the Acronyms and Abbreviations section.

Qualification was not required in the following circumstances:

- Surrogate recovery exceeded the upper control limit and there were no detections for associated analytes in the sample.
- Surrogate or MS recoveries outside QC limits and the sample was diluted by a factor of 5 or greater.
- MS recoveries outside QC limits and the concentration of spike added was less than the parent sample concentration.
- Analytes detected in the associated blank with no detection in the associated sample(s).
- MS/MSD or LCS/LCSD recoveries exceeded upper control limits with no detection in the associated sample(s).

Data were considered for rejection if any of the following occurred:

- All non-detect (ND) results with the continuing calibration recovery below the lower control limit.
- LCS recovery is less than 10 percent and the associated sample result is ND.
- Result is ND and missed holding time greater than two times the method-specified holding time.
- Surrogate recovery is less than 10 percent and the associated sample result is ND (dilution factor less than 5).

3. DATA QUALITY REVIEW

SGS North America, Inc. (SGS) in Anchorage, Alaska performed the laboratory analyses for this project and held current ADEC laboratory approval and U.S. Department of Defense Environmental Laboratory Accreditation Program certifications for the requested methods at the time of analysis. Samples were prepared and analyzed in accordance with analytical methods specified in Test Methods for Evaluating Solid Waste SW-846 (U.S. Environmental Protection Agency [EPA] 2020); Underground Storage Tanks Procedures Manual (ADEC 2017); and laboratory standard operating procedures.

The following sections summarize the data validation, including non-conformances of data that required results to be qualified. Flagged data are considered usable as qualified. Data that were not qualified are considered valid and usable based on the QA/QC criteria that were reviewed.

3.1 Analytical Sample and Field Quality Control Sample Summary

Seven primary groundwater samples, one FD, and one TB were submitted to SGS in SDG 1226937. A summary of primary sample quantities and field QC sample quantities is presented in Table 2. All field quality control samples submitted to the laboratory are included in the sample summary table in Attachment 1.

Table 2 Field Quality Control Sample Summary

ANALYTICAL METHODS	PRIMARY	DUP	MS/MSD	TB
Groundwater				
AK101	7	1	1	1
AK102	7	1	1	0
AK103	7	1	1	0
SW8260D (BTEX)	7	1	1	1

Notes:
For definitions, see the Acronyms and Abbreviations section.

The project-required frequency of one FD per 10 or fewer primary samples, per analyte, per matrix was met. The project-required frequency of one MS/MSD pair per 20 or fewer primary samples, per analyte, per matrix was met. A TB was submitted and analyzed for each cooler containing volatile samples.

3.2 Sample Handling and Chain-of-Custody

CoC forms and laboratory case narratives were reviewed to assess sample handling procedures that may affect the integrity of the samples and quality of the resulting data. Copies of CoCs and cooler receipt forms were included in the final laboratory report. One cooler was hand-delivered to SGS and was received within the required temperature range of 0 to 6 degrees Celsius (°C).

Sample GPPF-MW6-111622 was incorrectly logged in as GPTF-MW6-111622. The lab corrected this and issued a revised report.

3.3 Sample Preservation and Holding Time Compliance

All project samples were extracted and analyzed within the method-specified hold times.

3.4 Sample Limits of Detection and Limits of Quantitation

To determine whether the laboratory data met measurement performance criteria for analytical sensitivity, the LODs for ND results for groundwater samples were compared to the groundwater cleanup levels in Table C of ADEC 18 Alaska Administrative Code (AAC) 75 (ADEC 2021). All LODs for ND results were below cleanup levels.

3.5 Blank Detections

Method blanks were evaluated with each analytical batch, and a trip blank was included with each cooler containing volatile samples. All blank samples were ND for all analytes.

3.6 Laboratory Control Sample Analysis

LCSs and/or LCSDs were analyzed with every analytical batch and evaluated to laboratory control limits. LCS/LCSD percent recoveries and RPDs were evaluated and were within control limits.

3.7 Matrix Spike Analysis

An MS/MSD was analyzed with every batch and target analyte recoveries were evaluated using laboratory control limits. All MS/MSD percent recoveries and RPDs were within control limits.

3.8 Surrogate Analysis

Surrogates were included in all organic methods and recoveries were evaluated using laboratory control limits. All surrogate recoveries met acceptance criteria.

3.9 Field Duplicate Analysis

One field duplicate sample was collected and analyzed for 7 primary samples, and the project-required frequency of one for every 10 or fewer project samples, per matrix, per method was

met. Precision objectives for field duplicate analyses in groundwater samples include a calculated RPD of less than 30% when both results were greater than the LOQ, or if one result was above the LOD and below the LOQ. Duplicate pairs were not evaluated when both results were ND or below the LOD. Duplicate pair GPTF-MW9-111522 / GPTF-MW10-111522 was included in SDG 1226937 and all calculated RPDs were less than the recommended limit of 30%.

4. COMPLETENESS

Completeness is a measure of the amount of valid data obtained compared with the amount that was expected to be obtained under correct, normal conditions. For completeness requirements, valid results are considered to be all results that are not rejected and are determined to be usable in the context of project DQOs. No results were rejected, and 100 percent of results were considered usable. The completeness goal for the project was met.

5. OVERALL DATA QUALITY ASSESSEMENT

The overall quality of project data was acceptable. Analytical results were 100 percent complete, and no results were rejected. Qualified results are considered estimated, and whenever possible, direction of potential bias was assigned and effects on usability was discussed. Attachment 1 contains a data summary table that presents all analytical results, with qualifications applied as indicated in this DQR.

6. REFERENCES

ADEC (Alaska Department of Environmental Conservation). 2017 (March). Underground Storage Tanks Procedures Manual. Division of Spill Prevention and Response. Contaminated Sites Program.

ADEC. 2021 (November). Oil and Other Hazardous Substances Pollution Control. 18 AAC 75.

ADEC. 2022 (August). Guidelines for Data Reporting; Technical Memorandum. Division of Spill Prevention and Response. Contaminated Sites Program.

EPA (U.S. Environmental Protection Agency) 2020 (June). Test Methods for Evaluating Solid Waste. SW846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), Update VI (2018), and Update VII (2020).

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ATTACHMENT 1
SAMPLE SUMMARY AND DATA SUMMARY TABLE

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ATTACHMENT 1 - SAMPLE SUMMARY
2022 GROUNDWATER SAMPLING - GRANITE POINT TANK FARM

AFE #	SDG_Number	Haz ID	SITE	AFE	Sample ID	Location ID	Collection Date	Collection Time	Sampler	Qty	ContainerType	Preservative	Matrix	AnalyticalMethodRequested	QCType	TAT	Notes	Laboratory
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW5-111422	MW5	14-Nov-22	1613	MM/TK	18	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX	MS/MSD	Standard		SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW5-111422	MW5	14-Nov-22	1613	MM/TK	6	250 ml	HCL	GW	AK102/103 - DRO/RRO	MS/MSD	Standard		SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW4-111422	MW4	14-Nov-22	1703	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW4-111422	MW4	14-Nov-22	1703	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW12-111522	MW12	15-Nov-22	1232	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard		SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW12-111522	MW12	15-Nov-22	1232	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard		SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW10-111522	MW9	15-Nov-22	1230	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX	DUP	Standard	Duplicate of MW9	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW10-111522	MW9	15-Nov-22	1230	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO	DUP	Standard	Duplicate of MW9	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW9-111522	MW9	15-Nov-22	1444	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard		SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW9-111522	MW9	15-Nov-22	1444	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard		SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW17-111622	MW17	16-Nov-22	1707	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW17-111622	MW17	16-Nov-22	1707	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW1-111622	MW1	16-Nov-22	1731	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPTF-MW1-111622	MW1	16-Nov-22	1731	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPPF-MW6-111622	MW6	16-Nov-22	1807	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	GPPF-MW6-111622	MW6	16-Nov-22	1807	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	Grab Sample	SGS
225-01403	1226937	1280	GPTF	225-01403.15.10.28	TRIP BLANK	--	14-Nov-22	0800	MM/TK	3	40 ml -VOA	HCL	TB	AK101/8260D GRO/BTEX	trip blank	Standard		SGS

Notes:

DUP - duplicate sample
GPTF - Granite Point Tank Farm
GW - groundwater
ID - identification
MS/MSD - matrix spike/matrix spike duplucate
SDG - sample delivery group
SGS - SGS North America, Inc.
TAT - turnaround time
TB - trip blank
VOA - volatile organic analysis vial

ATTACHMENT 1
ANALYTICAL RESULTS FOR GRANITE POINT TANK FARM GROUNDWATER SAMPLING

				Location ID:	MW1	MW4	MW5	MW6	MW9	MW9	MW12	MW17	
				Sample ID:	GPTF-MW1-111622	GPTF-MW4-111422	GPTF-MW5-111422	GPPF-MW6-111622	GPTF-MW9-111522	GPTF-MW10-111522	GPTF-MW12-111522	GPTF-MW17-111622	Trip Blank
				Lab Sample ID:	1226937009	1226937004	1226937001	1226937010	1226937007	1226937006	1226937005	1226937008	1226937011
				SDG:	1226937	1226937	1226937	1226937	1226937	1226937	1226937	1226937	1226937
				QC Type:	Primary	Primary	Primary	Primary	Primary	Duplicate	Primary	Primary	Trip Blank
				Sample Date:	11/16/2022	11/14/2022	11/14/2022	11/16/2022	11/15/2022	11/15/2022	11/15/2022	11/16/2022	11/14/2022
Method	**Analyte**	**PSL[1]**	**Units**										
AK101	GRO	2200	µg/L		ND [50]	126 [50]	ND [50]	ND [50]	ND [50]	ND [50]	ND [50]	ND [50]	ND [50]
AK102	DRO	1500	µg/L		ND [294]	ND [294]	ND [300]	924 [288]	740 [306]	729 [306]	ND [300]	256 [283] J	--
AK103	RRO	1100	µg/L		571 [245]	446 [245] J	ND [250]	**2490 [240]**	**3080 [255]**	**2960 [255]**	329 [250] J	659 [236]	--
SW8260D	Benzene	5	µg/L		ND [0.2]	**45.1 [0.2]**	ND [0.2]	0.34 [0.2] J	ND [0.2]	ND [0.2]	0.47 [0.2]	ND [0.2]	ND [0.2]
SW8260D	Ethylbenzene	700	µg/L		ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]
SW8260D	m,p-Xylenes	--	µg/L		ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]	ND [1]
SW8260D	o-Xylene	--	µg/L		ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]
SW8260D	Toluene	1000	µg/L		ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	ND [0.5]	0.75 [0.5] J	ND [0.5]
SW8260D	Xylenes	10000	µg/L		ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]	ND [1.5]

Notes:

BOLD - result exceeds the cleanup level

[1] ADEC 18 AAC 75, Table C Groundwater Cleanup Level (ADEC 2021)

[ ] - limit of detection (LOD)

µg/L - micrograms per liter

ND - not detected

TB - trip blank

J - Analyte result is considered an estimated value because the result is greater than or equal to the DL and less than the LOQ

ATTACHMENT 2
ADEC LABORATORY DATA REVIEW CHECKLISTS

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ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Nathaniel Gingery	**CS Site Name:**	Granite Point Tank Farm / Production Facility	**Lab Name:**	SGS North America, Inc.
Title:	Chemist	**ADEC File No.:**	2337.38.047	**Lab Report No.:**	1226937
Consulting Firm:	ARS Aleut Remediation, LLC	**Hazard ID No.:**	2804	**Lab Report Date:**	11/29/22

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

1. **Laboratory**

   a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?
   Yes ☒ No ☐ N/A ☐
   Comments: All analyses were performed by SGS North America, Inc. of Anchorage, AK.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
   Yes ☐ No ☐ N/A ☒
   Comments: N/A

2. **Chain of Custody (CoC)**

   a. Is the CoC information completed, signed, and dated (including released/received by)?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. Were the correct analyses requested?
   Yes ☒ No ☐ N/A ☐
   Analyses requested: AK101, SW8260D (BTEX), AK102+3
   Comments: Click or tap here to enter text.

3. **Laboratory Sample Receipt Documentation**

   a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
   Yes ☒ No ☐ N/A ☐
   Cooler temperature(s): 2.3° C

Sample temperature(s): N/A
Comments: Click or tap here to enter text.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: No issues were noted.

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, canister not holding a vacuum, etc.?
Yes ☐ No ☐ N/A ☒
Comments: No issues were noted.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: The data quality and usability were not affected.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☒ No ☐ N/A ☐
Comments: Sample GPPF-MW6-111622 was logged in as GPTF-MW6-111622. The lab corrected this and issued a revised report.

c. Were all the corrective actions documented?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

d. What is the effect on data quality/usability according to the case narrative?
Comments: Data quality and usability were not affected.

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☐ No ☐ N/A ☒
Comments: Soils were not included in this SDG.

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: Click or tap here to enter text.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No qualifiers were applied.

v. Data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – Are 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: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☐ No ☐ N/A ☒
Comments: Metals were not included in this SDG.

iii. Accuracy – Are 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: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the 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: Click or tap here to enter text.

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: No qualifiers were applied.

vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☐ No ☐ N/A ☒
Comments: Metals were not included in this SDG.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are 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: Click or tap here to enter text.

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: No qualifiers were applied.

vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were 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: Click or tap here to enter text.

ii. Accuracy – Are 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: Click or tap here to enter text.

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: No qualifiers were applied.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: N/A

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: One FD was submitted with seven primary samples.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Primary sample ID / Duplicate sample ID:
GPTF-MW9-111522 / GPTF-MW10-111522

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water or air, 50% soil)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

$$RPD\ (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| X\ 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: Decon or equipment blanks were not collected for this effort.

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Decon or equipment blanks were not collected for this effort.

iii. If above LoQ or RL, specify what samples are affected.
Comments: N/A

iv. Are data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality and usability were not affected.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: All applied qualifiers are defined in Table 1 of the attached Data Quality Report.

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ATTACHMENT 3
LABORATORY DATA PACKAGES

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Laboratory Report of Analysis

To: Hilcorp Alaska, LLC
2419 McKenzie Drive
Anchorage, AK 99517
(907)350-7952

Report Number: **1226937**

Client Project: **Granite Point Tank Farm**

Dear Melissa Mayer,

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: **Hilcorp Alaska, LLC**
SGS Project: **1226937**
Project Name/Site: **Granite Point Tank Farm**
Project Contact: **Melissa Mayer**

Refer to sample receipt form for information on sample condition.

*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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t 907.562.2343 f 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
GPTF-MW5-111422	1226937001	11/14/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW5-111422(1226937001	1226937002	11/14/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW5-11...(1226937001BM	1226937003	11/14/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW4-111422	1226937004	11/14/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW12-111522	1226937005	11/15/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW10-111522	1226937006	11/15/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW9-111522	1226937007	11/15/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW17-111622	1226937008	11/16/2022	11/17/2022	Water (Surface, Eff., Ground)
GPTF-MW1-111622	1226937009	11/16/2022	11/17/2022	Water (Surface, Eff., Ground)
GPPF-MW6-111622	1226937010	11/16/2022	11/17/2022	Water (Surface, Eff., Ground)
Trip Blank	1226937011	11/14/2022	11/17/2022	Water (Surface, Eff., Ground)

Method	Method Description
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W)

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Detectable Results Summary

Client Sample ID: **GPTF-MW4-111422**
Lab Sample ID: 1226937004

	Parameter	Result	Units
Semivolatile Organic Fuels	Residual Range Organics	0.446J	mg/L
Volatile Fuels	Gasoline Range Organics	0.126	mg/L
Volatile GC/MS	Benzene	45.1	ug/L

Client Sample ID: **GPTF-MW12-111522**
Lab Sample ID: 1226937005

	Parameter	Result	Units
Semivolatile Organic Fuels	Residual Range Organics	0.329J	mg/L
Volatile GC/MS	Benzene	0.470	ug/L

Client Sample ID: **GPTF-MW10-111522**
Lab Sample ID: 1226937006

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.729	mg/L
	Residual Range Organics	2.96	mg/L

Client Sample ID: **GPTF-MW9-111522**
Lab Sample ID: 1226937007

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.740	mg/L
	Residual Range Organics	3.08	mg/L

Client Sample ID: **GPTF-MW17-111622**
Lab Sample ID: 1226937008

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.256J	mg/L
	Residual Range Organics	0.659	mg/L
Volatile GC/MS	Toluene	0.750J	ug/L

Client Sample ID: **GPTF-MW1-111622**
Lab Sample ID: 1226937009

	Parameter	Result	Units
Semivolatile Organic Fuels	Residual Range Organics	0.571	mg/L

Client Sample ID: **GPPF-MW6-111622**
Lab Sample ID: 1226937010

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.924	mg/L
	Residual Range Organics	2.49	mg/L
Volatile GC/MS	Benzene	0.340J	ug/L

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Results of **GPTF-MW5-111422**

Client Sample ID: **GPTF-MW5-111422**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937001
Lab Project ID: 1226937

Collection Date: 11/14/22 16:13
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW5

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.300	U	0.600	0.200	mg/L	1		11/22/22 20:54
Surrogates								
5a Androstane (surr)	77.3		50-150		%	1		11/22/22 20:54

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 20:54
Container ID: 1226937001-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.250	U	0.500	0.200	mg/L	1		11/22/22 20:54
Surrogates								
n-Triacontane-d62 (surr)	78		50-150		%	1		11/22/22 20:54

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 20:54
Container ID: 1226937001-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **GPTF-MW5-111422**

Client Sample ID: **GPTF-MW5-111422**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937001
Lab Project ID: 1226937

Collection Date: 11/14/22 16:13
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW5

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 19:02
Surrogates								
4-Bromofluorobenzene (surr)	82.7		50-150		%	1		11/21/22 19:02

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 19:02
Container ID: 1226937001-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW5-111422**

Client Sample ID: **GPTF-MW5-111422**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937001
Lab Project ID: 1226937

Collection Date: 11/14/22 16:13
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW5

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		11/18/22 19:35
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		11/18/22 19:35
o-Xylene	0.500 U		1.00	0.310	ug/L	1		11/18/22 19:35
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		11/18/22 19:35
Toluene	0.500 U		1.00	0.310	ug/L	1		11/18/22 19:35
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		11/18/22 19:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		11/18/22 19:35
4-Bromofluorobenzene (surr)	105		85-114		%	1		11/18/22 19:35
Toluene-d8 (surr)	102		89-112		%	1		11/18/22 19:35

Batch Information

Analytical Batch: VMS22151
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/18/22 19:35
Container ID: 1226937001-D

Prep Batch: VXX39469
Prep Method: SW5030B
Prep Date/Time: 11/18/22 12:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW4-111422**

Client Sample ID: **GPTF-MW4-111422**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937004
Lab Project ID: 1226937

Collection Date: 11/14/22 17:03
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW4

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.294	U	0.588	0.196	mg/L	1		11/22/22 21:24
Surrogates								
5a Androstane (surr)	89.6		50-150		%	1		11/22/22 21:24

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 21:24
Container ID: 1226937004-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.446	J	0.490	0.196	mg/L	1		11/22/22 21:24
Surrogates								
n-Triacontane-d62 (surr)	87.8		50-150		%	1		11/22/22 21:24

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 21:24
Container ID: 1226937004-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **GPTF-MW4-111422**

Client Sample ID: **GPTF-MW4-111422**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937004
Lab Project ID: 1226937

Collection Date: 11/14/22 17:03
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW4

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.126		0.100	0.0450	mg/L	1		11/21/22 20:36
Surrogates								
4-Bromofluorobenzene (surr)	81.7		50-150		%	1		11/21/22 20:36

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 20:36
Container ID: 1226937004-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/29/2022 2:28:56PM

J flagging is activated

Results of **GPTF-MW4-111422**

Client Sample ID: **GPTF-MW4-111422**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937004
Lab Project ID: 1226937

Collection Date: 11/14/22 17:03
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW4

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	45.1		0.400	0.120	ug/L	1		11/18/22 19:50
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		11/18/22 19:50
o-Xylene	0.500	U	1.00	0.310	ug/L	1		11/18/22 19:50
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		11/18/22 19:50
Toluene	0.500	U	1.00	0.310	ug/L	1		11/18/22 19:50
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		11/18/22 19:50
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		11/18/22 19:50
4-Bromofluorobenzene (surr)	106		85-114		%	1		11/18/22 19:50
Toluene-d8 (surr)	101		89-112		%	1		11/18/22 19:50

Batch Information

Analytical Batch: VMS22151
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/18/22 19:50
Container ID: 1226937004-D

Prep Batch: VXX39469
Prep Method: SW5030B
Prep Date/Time: 11/18/22 12:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW12-111522**

Client Sample ID: **GPTF-MW12-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937005
Lab Project ID: 1226937

Collection Date: 11/15/22 12:32
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW12

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.300	U	0.600	0.200	mg/L	1		11/22/22 21:35
Surrogates								
5a Androstane (surr)	86.3		50-150		%	1		11/22/22 21:35

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 21:35
Container ID: 1226937005-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.329	J	0.500	0.200	mg/L	1		11/22/22 21:35
Surrogates								
n-Triacontane-d62 (surr)	86.8		50-150		%	1		11/22/22 21:35

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 21:35
Container ID: 1226937005-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Results of **GPTF-MW12-111522**

Client Sample ID: **GPTF-MW12-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937005
Lab Project ID: 1226937

Collection Date: 11/15/22 12:32
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW12

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 20:54
Surrogates								
4-Bromofluorobenzene (surr)	80.3		50-150		%	1		11/21/22 20:54

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 20:54
Container ID: 1226937005-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW12-111522**

Client Sample ID: **GPTF-MW12-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937005
Lab Project ID: 1226937

Collection Date: 11/15/22 12:32
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW12

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.470		0.400	0.120	ug/L	1		11/21/22 18:00
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		11/21/22 18:00
o-Xylene	0.500	U	1.00	0.310	ug/L	1		11/21/22 18:00
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		11/21/22 18:00
Toluene	0.500	U	1.00	0.310	ug/L	1		11/21/22 18:00
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		11/21/22 18:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.6		81-118		%	1		11/21/22 18:00
4-Bromofluorobenzene (surr)	89.2		85-114		%	1		11/21/22 18:00
Toluene-d8 (surr)	109		89-112		%	1		11/21/22 18:00

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/21/22 18:00
Container ID: 1226937005-D

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW10-111522**

Client Sample ID: **GPTF-MW10-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937006
Lab Project ID: 1226937

Collection Date: 11/15/22 12:30
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW10

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.729		0.612	0.204	mg/L	1		11/22/22 21:45
Surrogates								
5a Androstane (surr)	92.6		50-150		%	1		11/22/22 21:45

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 21:45
Container ID: 1226937006-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	2.96		0.510	0.204	mg/L	1		11/22/22 21:45
Surrogates								
n-Triacontane-d62 (surr)	87		50-150		%	1		11/22/22 21:45

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 21:45
Container ID: 1226937006-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Results of **GPTF-MW10-111522**

Client Sample ID: **GPTF-MW10-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937006
Lab Project ID: 1226937

Collection Date: 11/15/22 12:30
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW10

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 21:13
Surrogates								
4-Bromofluorobenzene (surr)	75.2		50-150		%	1		11/21/22 21:13

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 21:13
Container ID: 1226937006-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **GPTF-MW10-111522**

Client Sample ID: **GPTF-MW10-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937006
Lab Project ID: 1226937

Collection Date: 11/15/22 12:30
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW10

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		11/21/22 18:15
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:15
o-Xylene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:15
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		11/21/22 18:15
Toluene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:15
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		11/21/22 18:15
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		11/21/22 18:15
4-Bromofluorobenzene (surr)	99.4		85-114		%	1		11/21/22 18:15
Toluene-d8 (surr)	99		89-112		%	1		11/21/22 18:15

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/21/22 18:15
Container ID: 1226937006-D

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW9-111522**

Client Sample ID: **GPTF-MW9-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937007
Lab Project ID: 1226937

Collection Date: 11/15/22 14:44
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW9

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.740		0.612	0.204	mg/L	1		11/22/22 21:55
Surrogates								
5a Androstane (surr)	97.2		50-150		%	1		11/22/22 21:55

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 21:55
Container ID: 1226937007-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	3.08		0.510	0.204	mg/L	1		11/22/22 21:55
Surrogates								
n-Triacontane-d62 (surr)	90.4		50-150		%	1		11/22/22 21:55

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 21:55
Container ID: 1226937007-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Print Date: 11/29/2022 2:28:56PM

J flagging is activated

Results of **GPTF-MW9-111522**

Client Sample ID: **GPTF-MW9-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937007
Lab Project ID: 1226937

Collection Date: 11/15/22 14:44
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW9

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 21:32
Surrogates								
4-Bromofluorobenzene (surr)	73.3		50-150		%	1		11/21/22 21:32

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 21:32
Container ID: 1226937007-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW9-111522**

Client Sample ID: **GPTF-MW9-111522**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937007
Lab Project ID: 1226937

Collection Date: 11/15/22 14:44
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW9

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		11/21/22 18:30
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:30
o-Xylene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:30
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		11/21/22 18:30
Toluene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:30
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		11/21/22 18:30
Surrogates								
1,2-Dichloroethane-D4 (surr)	96		81-118		%	1		11/21/22 18:30
4-Bromofluorobenzene (surr)	101		85-114		%	1		11/21/22 18:30
Toluene-d8 (surr)	99.6		89-112		%	1		11/21/22 18:30

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/21/22 18:30
Container ID: 1226937007-D

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW17-111622**

Client Sample ID: **GPTF-MW17-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937008
Lab Project ID: 1226937

Collection Date: 11/16/22 17:07
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW17

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.256	J	0.566	0.189	mg/L	1		11/22/22 22:05
Surrogates								
5a Androstane (surr)	87.6		50-150		%	1		11/22/22 22:05

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 22:05
Container ID: 1226937008-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.659		0.472	0.189	mg/L	1		11/22/22 22:05
Surrogates								
n-Triacontane-d62 (surr)	84.8		50-150		%	1		11/22/22 22:05

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 22:05
Container ID: 1226937008-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Results of **GPTF-MW17-111622**

Client Sample ID: **GPTF-MW17-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937008
Lab Project ID: 1226937

Collection Date: 11/16/22 17:07
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW17

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 21:50
Surrogates								
4-Bromofluorobenzene (surr)	75.3		50-150		%	1		11/21/22 21:50

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 21:50
Container ID: 1226937008-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW17-111622**

Client Sample ID: **GPTF-MW17-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937008
Lab Project ID: 1226937

Collection Date: 11/16/22 17:07
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW17

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		11/21/22 18:45
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:45
o-Xylene	0.500 U		1.00	0.310	ug/L	1		11/21/22 18:45
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		11/21/22 18:45
Toluene	0.750 J		1.00	0.310	ug/L	1		11/21/22 18:45
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		11/21/22 18:45
Surrogates								
1,2-Dichloroethane-D4 (surr)	113		81-118		%	1		11/21/22 18:45
4-Bromofluorobenzene (surr)	97.9		85-114		%	1		11/21/22 18:45
Toluene-d8 (surr)	104		89-112		%	1		11/21/22 18:45

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/21/22 18:45
Container ID: 1226937008-D

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW1-111622**

Client Sample ID: **GPTF-MW1-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937009
Lab Project ID: 1226937

Collection Date: 11/16/22 17:31
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW1

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.294	U	0.588	0.196	mg/L	1		11/22/22 22:15
Surrogates								
5a Androstane (surr)	85.7		50-150		%	1		11/22/22 22:15

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 22:15
Container ID: 1226937009-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.571		0.490	0.196	mg/L	1		11/22/22 22:15
Surrogates								
n-Triacontane-d62 (surr)	83.5		50-150		%	1		11/22/22 22:15

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 22:15
Container ID: 1226937009-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **GPTF-MW1-111622**

Client Sample ID: **GPTF-MW1-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937009
Lab Project ID: 1226937

Collection Date: 11/16/22 17:31
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW1

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 22:09
Surrogates								
4-Bromofluorobenzene (surr)	74.7		50-150		%	1		11/21/22 22:09

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 22:09
Container ID: 1226937009-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPTF-MW1-111622**

Client Sample ID: **GPTF-MW1-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937009
Lab Project ID: 1226937

Collection Date: 11/16/22 17:31
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW1

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		11/21/22 19:00
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		11/21/22 19:00
o-Xylene	0.500 U		1.00	0.310	ug/L	1		11/21/22 19:00
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		11/21/22 19:00
Toluene	0.500 U		1.00	0.310	ug/L	1		11/21/22 19:00
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		11/21/22 19:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		11/21/22 19:00
4-Bromofluorobenzene (surr)	102		85-114		%	1		11/21/22 19:00
Toluene-d8 (surr)	106		89-112		%	1		11/21/22 19:00

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/21/22 19:00
Container ID: 1226937009-D

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPPF-MW6-111622**

Client Sample ID: **GPPF-MW6-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937010
Lab Project ID: 1226937

Collection Date: 11/16/22 18:07
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW6

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.924		0.577	0.192	mg/L	1		11/22/22 22:26
Surrogates								
5a Androstane (surr)	84.7		50-150		%	1		11/22/22 22:26

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 11/22/22 22:26
Container ID: 1226937010-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	2.49		0.481	0.192	mg/L	1		11/22/22 22:26
Surrogates								
n-Triacontane-d62 (surr)	78		50-150		%	1		11/22/22 22:26

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 11/22/22 22:26
Container ID: 1226937010-G

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/22 17:10
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 11/29/2022 2:28:56PM

J flagging is activated

Results of **GPPF-MW6-111622**

Client Sample ID: **GPPF-MW6-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937010
Lab Project ID: 1226937

Collection Date: 11/16/22 18:07
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW6

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 22:27
Surrogates								
4-Bromofluorobenzene (surr)	72		50-150		%	1		11/21/22 22:27

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 22:27
Container ID: 1226937010-A

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **GPPF-MW6-111622**

Client Sample ID: **GPPF-MW6-111622**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937010
Lab Project ID: 1226937

Collection Date: 11/16/22 18:07
Received Date: 11/17/22 12:24
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location: MW6

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.340	J	0.400	0.120	ug/L	1		11/21/22 19:15
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		11/21/22 19:15
o-Xylene	0.500	U	1.00	0.310	ug/L	1		11/21/22 19:15
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		11/21/22 19:15
Toluene	0.500	U	1.00	0.310	ug/L	1		11/21/22 19:15
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		11/21/22 19:15
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		11/21/22 19:15
4-Bromofluorobenzene (surr)	97.8		85-114		%	1		11/21/22 19:15
Toluene-d8 (surr)	96.5		89-112		%	1		11/21/22 19:15

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/21/22 19:15
Container ID: 1226937010-D

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/29/2022 2:28:56PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937011
Lab Project ID: 1226937

Collection Date: 11/14/22 08:00
Received Date: 11/17/22 12:24
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	0.0500	U	0.100	0.0450	mg/L	1		11/21/22 18:06
Surrogates								
4-Bromofluorobenzene (surr)	81		50-150		%	1		11/21/22 18:06

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 11/21/22 18:06
Container ID: 1226937011-B

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Granite Point Tank Farm**
Lab Sample ID: 1226937011
Lab Project ID: 1226937

Collection Date: 11/14/22 08:00
Received Date: 11/17/22 12:24
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	0.200 U		0.400	0.120	ug/L	1		11/18/22 19:20
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		11/18/22 19:20
o-Xylene	0.500 U		1.00	0.310	ug/L	1		11/18/22 19:20
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		11/18/22 19:20
Toluene	0.500 U		1.00	0.310	ug/L	1		11/18/22 19:20
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		11/18/22 19:20
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		11/18/22 19:20
4-Bromofluorobenzene (surr)	106		85-114		%	1		11/18/22 19:20
Toluene-d8 (surr)	103		89-112		%	1		11/18/22 19:20

Batch Information

Analytical Batch: VMS22151
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 11/18/22 19:20
Container ID: 1226937011-A

Prep Batch: VXX39469
Prep Method: SW5030B
Prep Date/Time: 11/18/22 12:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/29/2022 2:28:56PM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1848440 [VXX/39469]
Blank Lab ID: 1697062

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226937001, 1226937004, 1226937011

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	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
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	108	81-118		%
4-Bromofluorobenzene (surr)	104	85-114		%
Toluene-d8 (surr)	102	89-112		%

Batch Information

Analytical Batch: VMS22151
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: AZL
Analytical Date/Time: 11/18/2022 1:53:00PM

Prep Batch: VXX39469
Prep Method: SW5030B
Prep Date/Time: 11/18/2022 12:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226937 [VXX39469]
Blank Spike Lab ID: 1697063
Date Analyzed: 11/18/2022 14:08

Spike Duplicate ID: LCSD for HBN 1226937 [VXX39469]
Spike Duplicate Lab ID: 1697064
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226937001, 1226937004, 1226937011

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	29.8	99	30	29.6	99	(79-120)	0.88	(< 20)
Ethylbenzene	30	31.6	105	30	30.9	103	(79-121)	2.20	(< 20)
o-Xylene	30	31.3	104	30	30.8	103	(78-122)	1.70	(< 20)
P & M -Xylene	60	63.7	106	60	62.0	103	(80-121)	2.60	(< 20)
Toluene	30	29.9	100	30	29.2	97	(80-121)	2.20	(< 20)
Xylenes (total)	90	94.9	105	90	92.8	103	(79-121)	2.30	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		99	30		99	(81-118)	0.34	
4-Bromofluorobenzene (surr)	30		100	30		101	(85-114)	1.00	
Toluene-d8 (surr)	30		101	30		101	(89-112)	0.46	

Batch Information

Analytical Batch: **VMS22151**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **AZL**

Prep Batch: **VXX39469**
Prep Method: **SW5030B**
Prep Date/Time: **11/18/2022 12:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 11/29/2022 2:29:01PM

Billable Matrix Spike Summary

Original Sample ID: 1226937001
MS Sample ID: 1226937002 BMS
MSD Sample ID: 1226937003 BMSD

Analysis Date: 11/18/2022 19:35
Analysis Date: 11/18/2022 17:05
Analysis Date: 11/18/2022 17:20
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **SW8260D**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.200U	30.0	30.1	100	30.0	29.4	98	79-120	2.40	(< 20)
Ethylbenzene	0.500U	30.0	31.4	105	30.0	31.4	105	79-121	0.13	(< 20)
o-Xylene	0.500U	30.0	31.5	105	30.0	31.3	104	78-122	0.51	(< 20)
P & M -Xylene	1.00U	60.0	63.7	106	60.0	63.7	106	80-121	0.03	(< 20)
Toluene	0.500U	30.0	30.3	101	30.0	30.1	100	80-121	0.66	(< 20)
Xylenes (total)	1.50U	90.0	95.2	106	90.0	95.1	106	79-121	0.19	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.3	98	30.0	29.4	98	81-118	0.51	
4-Bromofluorobenzene (surr)		30.0	29.9	100	30.0	30.0	100	85-114	0.23	
Toluene-d8 (surr)		30.0	30.7	102	30.0	30.8	103	89-112	0.16	

Batch Information

Analytical Batch: VMS22151
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: AZL
Analytical Date/Time: 11/18/2022 5:05:00PM

Prep Batch: VXX39469
Prep Method: Volatiles Extraction 8240/8260
Prep Date/Time: 11/18/2022 12:00:00PM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Print Date: 11/29/2022 2:29:02PM

Method Blank

Blank ID: MB for HBN 1848477 [VXX/39473]
Blank Lab ID: 1697213

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	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
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	116	81-118		%
4-Bromofluorobenzene (surr)	94.7	85-114		%
Toluene-d8 (surr)	96.4	89-112		%

Batch Information

Analytical Batch: VMS22154
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: AZL
Analytical Date/Time: 11/21/2022 1:56:00PM

Prep Batch: VXX39473
Prep Method: SW5030B
Prep Date/Time: 11/21/2022 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 1226937 [VXX39473]
Blank Spike Lab ID: 1697214
Date Analyzed: 11/21/2022 15:59

Spike Duplicate ID: LCSD for HBN 1226937 [VXX39473]
Spike Duplicate Lab ID: 1697215
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	30.0	100	30	30.2	101	(79-120)	0.76	(< 20)
Ethylbenzene	30	30.7	102	30	30.0	100	(79-121)	2.10	(< 20)
o-Xylene	30	30.2	101	30	30.3	101	(78-122)	0.26	(< 20)
P & M -Xylene	60	60.8	101	60	60.2	100	(80-121)	0.98	(< 20)
Toluene	30	28.3	94	30	27.8	93	(80-121)	1.70	(< 20)
Xylenes (total)	90	91.0	101	90	90.5	101	(79-121)	0.56	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		95	30		105	(81-118)	10.70	
4-Bromofluorobenzene (surr)	30		102	30		99	(85-114)	3.30	
Toluene-d8 (surr)	30		101	30		101	(89-112)	0.46	

Batch Information

Analytical Batch: **VMS22154**
Analytical Method: **SW8260D**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **AZL**

Prep Batch: **VXX39473**
Prep Method: **SW5030B**
Prep Date/Time: **11/21/2022 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: 11/29/2022 2:29:06PM

Method Blank

Blank ID: MB for HBN 1848541 [VXX/39482]
Blank Lab ID: 1697436

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226937001, 1226937004, 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010, 1226937011

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	81.7	50-150		%

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: JY
Analytical Date/Time: 11/21/2022 1:09:00PM

Prep Batch: VXX39482
Prep Method: SW5030B
Prep Date/Time: 11/21/2022 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 1226937 [VXX39482]
Blank Spike Lab ID: 1697439
Date Analyzed: 11/21/2022 14:06

Spike Duplicate ID: LCSD for HBN 1226937 [VXX39482]
Spike Duplicate Lab ID: 1697440
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226937001, 1226937004, 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010, 1226937011

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	1.09	109	1.00	1.09	109	(60-120)	0.46	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		92	0.0500		81	(50-150)	13.10	

Batch Information

Analytical Batch: **VFC16335**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **JY**

Prep Batch: **VXX39482**
Prep Method: **SW5030B**
Prep Date/Time: **11/21/2022 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

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Billable Matrix Spike Summary

Original Sample ID: 1226937001
MS Sample ID: 1226937002 BMS
MSD Sample ID: 1226937003 BMSD

Analysis Date: 11/21/2022 19:02
Analysis Date: 11/21/2022 19:21
Analysis Date: 11/21/2022 19:40
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **AK101**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	0.0500U	1.00	1.10	110	1.00	1.09	109	60-120	0.74	(< 20)
Surrogates										
4-Bromofluorobenzene (surr)		0.0500	0.0458	92	0.0500	0.0451	90	50-150	1.60	

Batch Information

Analytical Batch: VFC16335
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: JY
Analytical Date/Time: 11/21/2022 7:21:00PM

Prep Batch: VXX39482
Prep Method: Volatile Fuels Extraction (W)
Prep Date/Time: 11/21/2022 6:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Print Date: 11/29/2022 2:29:12PM

Method Blank

Blank ID: MB for HBN 1848476 [XXX/47348]
Blank Lab ID: 1697210

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226937001, 1226937004, 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	83.6	60-120		%

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 11/22/2022 8:25:00PM

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/2022 5:10:02PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/29/2022 2:29:13PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226937 [XXX47348]
Blank Spike Lab ID: 1697211
Date Analyzed: 11/22/2022 20:34

Spike Duplicate ID: LCSD for HBN 1226937 [XXX47348]
Spike Duplicate Lab ID: 1697212
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226937001, 1226937004, 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010

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	17.1	85	20	17.2	86	(75-125)	0.42	(< 20)
Surrogates									
5a Androstane (surr)	0.4		107	0.4		108	(60-120)	0.56	

Batch Information

Analytical Batch: **XFC16413**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **HMW**

Prep Batch: **XXX47348**
Prep Method: **SW3520C**
Prep Date/Time: **11/21/2022 17:10**
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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Billable Matrix Spike Summary

Original Sample ID: 1226937001
MS Sample ID: 1226937002 BMS
MSD Sample ID: 1226937003 BMSD

Analysis Date: 11/22/2022 20:54
Analysis Date: 11/22/2022 21:04
Analysis Date: 11/22/2022 21:14
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **AK102**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	0.300U	21.3	18.3	86	19.2	17.1	89	75-125	6.80	(< 30)
Surrogates										
5a Androstane (surr)		0.426	.459	108	0.385	0.413	107	50-150	10.60	

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 11/22/2022 9:04:00PM

Prep Batch: XXX47348
Prep Method: Cnt. Liq/Liq Ext. for AK102/3 Low Vol
Prep Date/Time: 11/21/2022 5:10:02PM
Prep Initial Wt./Vol.: 235.00mL
Prep Extract Vol: 1.00mL

Print Date: 11/29/2022 2:29:16PM

Method Blank

Blank ID: MB for HBN 1848476 [XXX/47348]
Blank Lab ID: 1697210

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226937001, 1226937004, 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.200	mg/L
Surrogates				
n-Triacontane-d62 (surr)	92.4	60-120		%

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 11/22/2022 8:25:00PM

Prep Batch: XXX47348
Prep Method: SW3520C
Prep Date/Time: 11/21/2022 5:10:02PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226937 [XXX47348]
Blank Spike Lab ID: 1697211
Date Analyzed: 11/22/2022 20:34

Spike Duplicate ID: LCSD for HBN 1226937 [XXX47348]
Spike Duplicate Lab ID: 1697212
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226937001, 1226937004, 1226937005, 1226937006, 1226937007, 1226937008, 1226937009, 1226937010

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	17.1	86	20	17.3	87	(60-120)	0.93	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		89	0.4		87	(60-120)	1.70	

Batch Information

Analytical Batch: **XFC16413**
Analytical Method: **AK103**
Instrument: **Agilent 7890B R**
Analyst: **HMW**

Prep Batch: **XXX47348**
Prep Method: **SW3520C**
Prep Date/Time: **11/21/2022 17:10**
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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Billable Matrix Spike Summary

Original Sample ID: 1226937001
MS Sample ID: 1226937002 BMS
MSD Sample ID: 1226937003 BMSD

Analysis Date: 11/22/2022 20:54
Analysis Date: 11/22/2022 21:04
Analysis Date: 11/22/2022 21:14
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **AK103**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	0.250U	21.3	18.6	88	19.2	16.7	87	60-140	11.10	(< 30)
Surrogates										
n-Triacontane-d62 (surr)		0.426	.401	94	0.385	0.339	88	50-150	16.80	

Batch Information

Analytical Batch: XFC16413
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 11/22/2022 9:04:00PM

Prep Batch: XXX47348
Prep Method: Cnt. Liq/Liq Ext. for AK102/3 Low Vol
Prep Date/Time: 11/21/2022 5:10:02PM
Prep Initial Wt./Vol.: 235.00mL
Prep Extract Vol: 1.00mL

Print Date: 11/29/2022 2:29:20PM

Profile #364160 DRR Revised Report - Revision 1

Chain-of-Custody Report

Granite Point Tank Farm / Production Facility (GPTF/PF)

Collection Organization: Susitna Environmental LLC | **Chain-of-Custody:** | **Cooler ID:** | **NPDL Number:**

Bill to Hilcorp AFE 225-01403.15.10.28 | **Laboratory:** SGS | **Bill To:** HILCORP ALASKA | **Report To:** Susitna Environmental

COC Sample ID	Loc ID	Collection Date	Collection Time	Sampler	Quantity	Container Type	Preservative	Matrix	Analyses Requested Group	QC	TAT	Notes:
GPTF-MW5-111422	MW5	14-Nov-22	1613	MM/TK	18	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX	MS/MSD	Standard	1AF 2AF 3AF
GPTF-MW5-111422	MW5	14-Nov-22	1613	MM/TK	6	250 ml	HCL	GW	AK102/103 - DRO/RRO	MS/MSD	Standard	1GH 2GH 3GH
GPTF-MW4-111422	MW4	14-Nov-22	1703	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	4AF
GPTF-MW4-111422	MW4	14-Nov-22	1703	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	4GH
GPTF-MW12-111522	MW12	15-Nov-22	1232	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	5AF
GPTF-MW12-111522	MW12	15-Nov-22	1232	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	5GH
GPTF-MW10-111522	MW10	15-Nov-22	1230	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	6AF
GPTF-MW10-111522	MW10	15-Nov-22	1230	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	6GH
GPTF-MW9-111522	MW9	15-Nov-22	1444	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	7AF
GPTF-MW9-111522	MW9	15-Nov-22	1444	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	7GH
GPTF-MW17-111622	MW17	16-Nov-22	1707	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	8AF
GPTF-MW17-111622	MW17	16-Nov-22	1707	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	8GH
GPTF-MW1-111622	MW1	16-Nov-22	1731	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	9AF
GPTF-MW1-111622	MW1	16-Nov-22	1731	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	9GH
GPPF-MW6-111622	MW6	16-Nov-22	1807	MM/TK	6	40 ml -VOA	HCL	GW	AK101/8260D GRO/BTEX		Standard	10AF
GPPF-MW6-111622	MW6	16-Nov-22	1807	MM/TK	2	250 ml	HCL	GW	AK102/103 - DRO/RRO		Standard	10GH
TRIP BLANK	--	14-Nov-22	0800	MM/TK	3	40 ml -VOA	HCL	TB	AK101/8260D GRO/BTEX	trip blank	Standard	11AF

Special Instructions:

Relinquish By: M. Mayo (Signature/Printed Name)	11/17/22 1224 (Date/Time)	Received By: (Signature/Printed Name)	(Date/Time)
Relinquish By: (Signature/Printed Name)	(Date/Time)	Received By: (Signature/Printed Name)	(Date/Time)
Relinquish By: (Signature/Printed Name)	(Date/Time)	Received By: (Signature/Printed Name)	(Date/Time)

Alexandra Flores 11/17/22 1224

23°C DG2

1226937

e-Sample Receipt Form

Revised Report - Revision 1

SGS Workorder #:	1226937	1226937

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. ***Note:*** *If information on containers differs from COC, default to COC information for login. If times differ <1hr, record details & login per COC.*	Yes	
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
1226937001-A	HCL to pH < 2	OK	1226937007-B	HCL to pH < 2	OK
1226937001-B	HCL to pH < 2	OK	1226937007-C	HCL to pH < 2	OK
1226937001-C	HCL to pH < 2	OK	1226937007-D	HCL to pH < 2	OK
1226937001-D	HCL to pH < 2	OK	1226937007-E	HCL to pH < 2	OK
1226937001-E	HCL to pH < 2	OK	1226937007-F	HCL to pH < 2	OK
1226937001-F	HCL to pH < 2	OK	1226937007-G	HCL to pH < 2	OK
1226937001-G	HCL to pH < 2	OK	1226937007-H	HCL to pH < 2	OK
1226937001-H	HCL to pH < 2	OK	1226937008-A	HCL to pH < 2	OK
1226937002-A	HCL to pH < 2	OK	1226937008-B	HCL to pH < 2	OK
1226937002-B	HCL to pH < 2	OK	1226937008-C	HCL to pH < 2	OK
1226937002-C	HCL to pH < 2	OK	1226937008-D	HCL to pH < 2	OK
1226937002-D	HCL to pH < 2	OK	1226937008-E	HCL to pH < 2	OK
1226937002-E	HCL to pH < 2	OK	1226937008-F	HCL to pH < 2	OK
1226937002-F	HCL to pH < 2	OK	1226937008-G	HCL to pH < 2	OK
1226937002-G	HCL to pH < 2	OK	1226937008-H	HCL to pH < 2	OK
1226937002-H	HCL to pH < 2	OK	1226937009-A	HCL to pH < 2	OK
1226937003-A	HCL to pH < 2	OK	1226937009-B	HCL to pH < 2	OK
1226937003-B	HCL to pH < 2	OK	1226937009-C	HCL to pH < 2	OK
1226937003-C	HCL to pH < 2	OK	1226937009-D	HCL to pH < 2	OK
1226937003-D	HCL to pH < 2	OK	1226937009-E	HCL to pH < 2	OK
1226937003-E	HCL to pH < 2	OK	1226937009-F	HCL to pH < 2	OK
1226937003-F	HCL to pH < 2	OK	1226937009-G	HCL to pH < 2	OK
1226937003-G	HCL to pH < 2	OK	1226937009-H	HCL to pH < 2	OK
1226937003-H	HCL to pH < 2	OK	1226937010-A	HCL to pH < 2	OK
1226937004-A	HCL to pH < 2	OK	1226937010-B	HCL to pH < 2	OK
1226937004-B	HCL to pH < 2	OK	1226937010-C	HCL to pH < 2	OK
1226937004-C	HCL to pH < 2	OK	1226937010-D	HCL to pH < 2	OK
1226937004-D	HCL to pH < 2	OK	1226937010-E	HCL to pH < 2	OK
1226937004-E	HCL to pH < 2	OK	1226937010-F	HCL to pH < 2	OK
1226937004-F	HCL to pH < 2	OK	1226937010-G	HCL to pH < 2	OK
1226937004-G	HCL to pH < 2	OK	1226937010-H	HCL to pH < 2	OK
1226937004-H	HCL to pH < 2	OK	1226937011-A	HCL to pH < 2	OK
1226937005-A	HCL to pH < 2	OK	1226937011-B	HCL to pH < 2	OK
1226937005-B	HCL to pH < 2	OK	1226937011-C	HCL to pH < 2	OK
1226937005-C	HCL to pH < 2	OK	1226937011-D	HCL to pH < 2	OK
1226937005-D	HCL to pH < 2	OK	1226937011-E	HCL to pH < 2	OK
1226937005-E	HCL to pH < 2	OK	1226937011-F	HCL to pH < 2	OK
1226937005-F	HCL to pH < 2	OK	1226937011-G	HCL to pH < 2	OK
1226937005-G	HCL to pH < 2	OK	1226937011-H	HCL to pH < 2	OK
1226937005-H	HCL to pH < 2	OK			
1226937006-A	HCL to pH < 2	OK			
1226937006-B	HCL to pH < 2	OK			
1226937006-C	HCL to pH < 2	OK			
1226937006-D	HCL to pH < 2	OK			
1226937006-E	HCL to pH < 2	OK			
1226937006-F	HCL to pH < 2	OK			
1226937006-G	HCL to pH < 2	OK			
1226937006-H	HCL to pH < 2	OK			
1226937007-A	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.

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