January 2024
Monthly Compliance Report

Solid Waste Permit No. 588
Bristol Integrated Solid Waste Management Facility
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SCS ENGINEERS

02218208.05-30 | **February 9, 2024**

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INTRODUCTION

On behalf of the City of Bristol, Virginia (City), SCS Engineers has prepared this report to the Virginia Department of Environmental Quality (VDEQ) in accordance with item 8.iii in Appendix A of the Consent Decree between the City and VDEQ. This report provides updates regarding the progress towards completion of the items outlined in Appendix A of the Consent Decree between the City and VDEQ. The following sections outline progress during the month of January 2024 related to Solid Waste Permit (SWP) No. 588.

1.0 GAS COLLECTION

The following sections describe the steps the City, in collaboration with its consultants and contractors, has taken to improve the operation, monitoring, and performance of the facility's landfill gas collection and control system (GCCS).

1.1 SURFACE AND LEACHATE COLLECTION EMISSIONS

1.1.1 Surface Emissions

1.1.1.1 Quarterly SEM

SCS performed the Fourth Quarter 2023 surface emissions monitoring event on December 14, 2023. The results of the Quarterly SEM were summarized in the December 2023 Compliance Report for the SWP No. 588 Landfill. A report outlining the results and exceedance locations will be included in the Semi-Annual Report to be submitted to VDEQ prior to March 1, 2024.

The First Quarter 2024 SEM Event is scheduled to be completed by March 31, 2024.

1.1.1.2 Weekly SEM

In addition to the standard regulatory quarterly surface emissions monitoring, SCS performed additional surface emissions monitoring on January 4, 2024; January 12, 2024; January 17, 2024; January 23, 2024; and January 31, 2024. These weekly surface emissions monitoring (SEM) events were performed in accordance item 1.i in Appendix A of the Consent Decree between the City and VDEQ.

The monitoring in January generally conforms to the requirements of 40 CFR 63.1960(c) and (d), and 40 CFR 60.36f(c) and (d), and 40 CFR 60, Appendix A, Method 21. The landfill gas (LFG) collection system is required to operate such that the methane concentration is less than 500 ppm above background at the landfill surface.

The surface emission monitoring route included the entire waste footprint of the Permit No. 588 landfill. Sampling was conducted with a Thermo Scientific TVA-2020 Flame Ionization Detector (FID) at 30-meter intervals and where visual observations indicated the potential for elevated concentrations of LFG, such as distressed vegetation and surface cover cracks. In addition, in accordance with 40 CFR 63.1958(d)(ii)(2) and 40 CFR 60.34f(d), monitoring was conducted at all surface cover penetrations within the waste footprint.

The Facility submitted letters to VDEQ outlining the results of the January monitoring events on January 10, 2024; January 17, 2024; January 24, 2024; January 31, 2024; and February 7, 2024.

Table 1. Summary of January Surface Emissions Monitoring

Description	January 4, 2024	January 12, 2024	January 17, 2024	January 23, 2024	January 31, 2024
Number of Points Sampled	172	172	171	171	171
Number of Points in Serpentine Route	100	100	100	100	100
Number of Points at Surface Cover Penetrations	72	72	71	71	71
Number of Exceedances	1	3	8	1	1
Number of Serpentine Exceedances	0	0	0	0	0
Number of Pipe Penetration Exceedances	1	3	8	1	1

There were no serpentine exceedances detected in January 2024. However, new exceedances were detected at pipe penetrations of eight vertical extraction wells (EW-55, EW-58, EW-67, EW-90, EW-94, EW-95 EW-98, and EW-99). The primary cause of these exceedances, particularly the ones identified on January 17, was vacuum loss to portions of the wellfield as a result of system performance issues in excessively cold weather. By the following monitoring event, and once the GCCS was operating as designed, only one exceedance was documented. The other exceedances during this month can be attributed to a variety of factors. Many of these exceedances correspond to periods of pump down time. When operating effectively, the pump lowers the leachate in the well and allows greater gas collection from the area. In addition, insufficient cover soil was identified at a few of the exceedance locations.

By the final weekly monitoring event of the month, the majority of these issues had been resolved. As of the final monitoring event of the month, only one ongoing exceedance still remained (EW-95). Corrective actions taken at this location may include placement of additional soil, addition of a well-bore skirt, installation of a foam or bentonite seal, continued and improved dewatering activities, and well tuning to increase gas extraction. Corrective actions to address the ongoing exceedance are planned for the month of February 2024.

1.1.2 Leachate Collection Emissions

SCS Field Services (SCS-FS) visited the Bristol Landfill on January 11, 2024, and performed monitoring of the leachate, witness zone, and gradient control clean-outs at the northern and southern ends of the landfill. The results of that monitoring are included in Table 2. Table 2 also lists the cleanout pipe description based on site records and a review of correspondence.

LC07 was not monitored during January 2024.

Table 2. Leachate Cleanout Pipe Monitoring Results

Description	ID#	Record Date	CH4 (% by Vol)	CO2 (% by Vol)	O2 (% by Vol)	Balance Gas (% by Vol)	Initial Temp (°F)	Adj Temp (°F)	Initial Static Pressure (in H2O)	Adj Static Pressure (in H2O)	System Pressure (in H2O)
Southern Cleanouts Gradient West	LC01	12/15/2023 10:34:56 AM	45.4	49.4	0.2	5.1	49.4	49.1	-16.72	-16.73	-20.64
Southern Cleanouts Gradient East	LC02	12/15/2023 10:36:50 AM	40.7	49.3	1.1	8.9	47.6	47.4	-16.87	-16.83	-21.20
Southern Cleanouts Leachate Center	LC03	12/15/2023 10:41:12 AM	25.1	26.9	12.6	35.4	46.4	46.3	-21.29	-21.20	-21.03
Southern Cleanouts Witness East	LC04	12/15/2023 10:44:12 AM	20.0	21.4	11.4	47.2	45.3	45.2	-28.36	-21.25	-21.53
Southern Cleanouts Leachate West	LC05	12/15/2023 10:46:01 AM	36.0	32.3	0.4	31.3	44.9	44.9	-17.50	-17.50	-21.39
Southern Cleanouts Gradient Center West	LC06	12/15/2023 10:48:05 AM	44.7	38.4	5.2	11.8	44.4	44.2	-21.25	-21.20	-21.22
Southern Cleanouts Leachate East	LC08	12/15/2023 10:50:19 AM	47.5	50.3	0.0	2.2	43.5	43.5	-17.33	-17.33	-19.32
Southern Cleanouts Gradient Center East	LC09	12/15/2023 10:52:35 AM	24.3	28.2	9.5	38.0	42.5	42.4	-18.52	-18.55	-18.44
Southern Cleanouts Leachate West	LC10	12/15/2023 10:54:19 AM	35.4	39.0	3.7	21.9	41.4	41.4	-21.41	-21.20	-21.37
Northern Cleanouts Leachate East	NC01	12/15/2023 12:53:36 PM	0.0	0.1	20.9	79.1	46.9	46.9	-16.22	-16.49	0.00
Northern Cleanouts Leachate Center	NC02	12/15/2023 12:54:41 PM	0.0	0.0	21.1	78.9	47.3	47.3	-16.26	-16.34	0.00
Northern Cleanouts Leachate West	NC03	12/15/2023 12:57:41 PM	0.0	0.0	21.2	78.8	46.2	46.1	-16.49	-16.38	0.00
Northern Cleanouts Witness East	NC04	12/15/2023 12:37:26 PM	14.0	13.0	15.0	58.0	46.9	47.0	-16.22	-15.48	0.00
Northern Cleanouts Witness Center	NC05	12/15/2023 12:40:38 PM	35.9	30.6	8.1	25.5	47.1	46.8	-15.93	-15.82	0.00

Description	ID#	Record Date	CH4 (% by Vol)	CO2 (% by Vol)	O2 (% by Vol)	Balance Gas (% by Vol)	Initial Temp (°F)	Adj Temp (°F)	Initial Static Pressure (in H2O)	Adj Static Pressure (in H2O)	System Pressure (in H2O)
Northern Cleanouts Witness West	NC06	12/15/2023 12:42:18 PM	20.9	24.5	18.8	35.8	47.0	46.9	-15.94	-15.90	0.00
Northern Cleanouts Gradient East	NC07	12/15/2023 12:45:02 PM	48.5	41.5	1.7	8.4	46.6	46.6	-14.14	-14.14	0.00
Northern Cleanouts Gradient Center East	NC08	12/15/2023 12:48:23 PM	48.8	40.4	2.4	8.4	46.8	46.7	-13.80	-13.80	0.00
Northern Cleanouts Gradient Center West	NC09	12/15/2023 12:50:29 PM	53.3	42.1	0.5	4.1	46.8	46.7	-13.81	-13.80	0.00
Northern Cleanouts Gradient West	NC10	12/15/2023 12:52:04 PM	16.9	17.2	14.9	51.0	46.4	46.6	-13.91	-13.99	0.00

1.2 EXISTING GAS EXTRACTION SYSTEM PERFORMANCE

SCS and SCS-FS have been coordinating with the City to improve the performance of the existing gas system. Specific actions taken to maintain and improve the system are detailed in the following sections of this report.

Additional actions taken by SCS-FS include the following:

- Replacing air regulators at individual wells
- Troubleshooting air compressor
- Adjusting blower set-points
- Investigation of high oxygen levels
- Replacing a Kanaflex on wellheads
- Modifications to lateral piping
- Placement of enhanced posi-shell on Quarry sidewalls
- Replacement of sample ports
- Winterizing GCCS components

1.3 REMOTE MONITORING SYSTEM

In the Fall of 2022, SCS Remote Monitoring & Control (SCS-RMC) installed 25 industrial internet of things (IIoT) temperature sensors in the landfill gas wellheads. The purpose of the sensors is to record and transmit well-head gas temperatures via a cellular connection to a database managed by SCS-RMC.

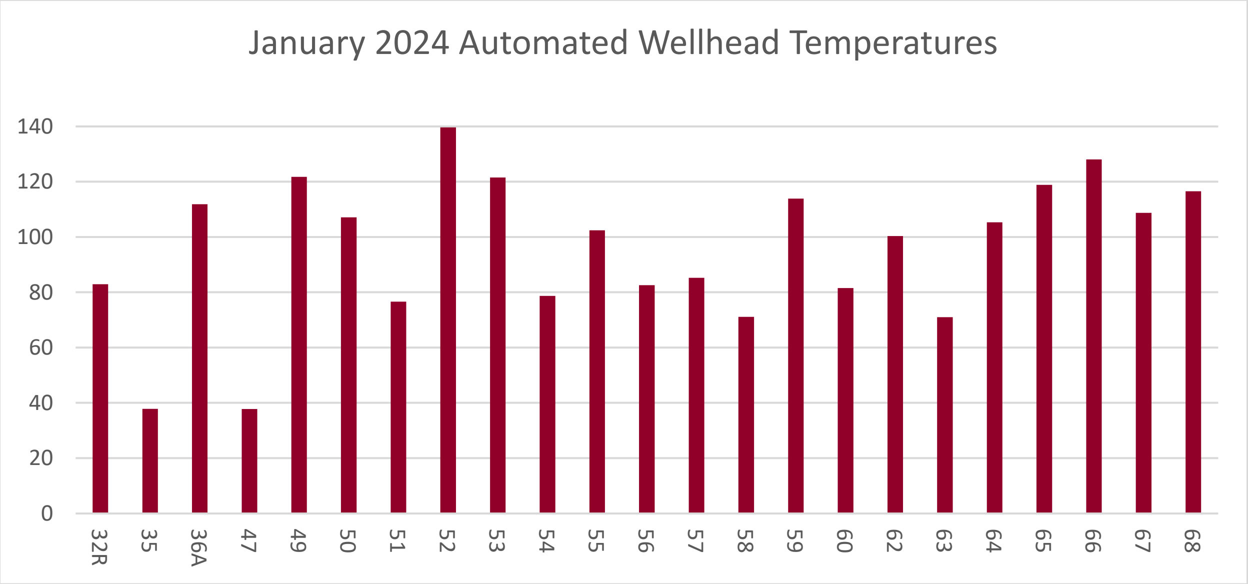
The City is providing average temperatures recorded by the sensors to VDEQ on a daily basis via email. Average daily temperatures recorded by the remote monitoring system during the month of January are included in Appendix C. In addition, SCS previously prepared semi-monthly status updates to satisfy the conditions of compliance provision #2 of the Environmental Protection Agency (EPA) Region III letter, Approval of Higher Operating Temperature Values for Landfill Gas Wells and Submission of Gas Treatment Alternatives at the Bristol Virginia Integrated Solid Waste Management Facility, dated August 23, 2021. On August 2, 2023, VDEQ requested that such updates be included in the monthly compliance reports going forward. Accordingly, this section is a summary of temperature monitoring activities during the monthly monitoring period of January 2024.

1.3.1 Automated Wellhead Temperature Measurements

SCS reviewed the automated hourly temperature measurements from January 2024, and identified the following trends:

- **Temperature probes removed at decommissioned wells:** Temperature probes at EW-34 and EW-40 were removed in December due to the decommissioning of the wells. In January, SCS and the City searched for the proper fittings to deploy these sensors to 3” CPVC wells where temperature measurements would provide pertinent information.
- **Temperatures over 145°F:** Temperatures over the NESHAP AAAA compliance threshold of 145°F were recorded consistently at EW-36A, EW-51, EW-52, EW-53, and EW-54 in January. The highest average temperature, 139.6°F, was measured at EW-52 (see Figure 1). SCS believes that wintry ambient temperatures are reflected in the lower average LFG temperatures recorded by automated wellhead sensors. The highest average automated temperatures in December were between 150 and 160°F while the highest average temperatures in January shown in Figure 1 are between 130 and 140°F.
    - The average temperatures recorded at EW-36A decreased significantly compared to the previous several months. SCS believes that this is the result of a change to the operation of isolation valves in the header pipe that supplies vacuum to EW-36A. In prior months condensate had built up and caused a plug, impeding LFG collection at EW-36A, resulting in heat accumulation. Opening a nearby valve and closing another restored consistent vacuum and allowed hot gas to be removed and the high temperatures alleviated.
- **Low average temperatures at certain wells:** Average temperatures less than 50°F recorded at EW-35 and EW-47 correlate to very low LFG flowrates through the wellheads; both less than 6 scfm in January.

Figure 1. Average Automated Wellhead Temperatures



1.3.2 Comparison with Manual Temperature Measurements

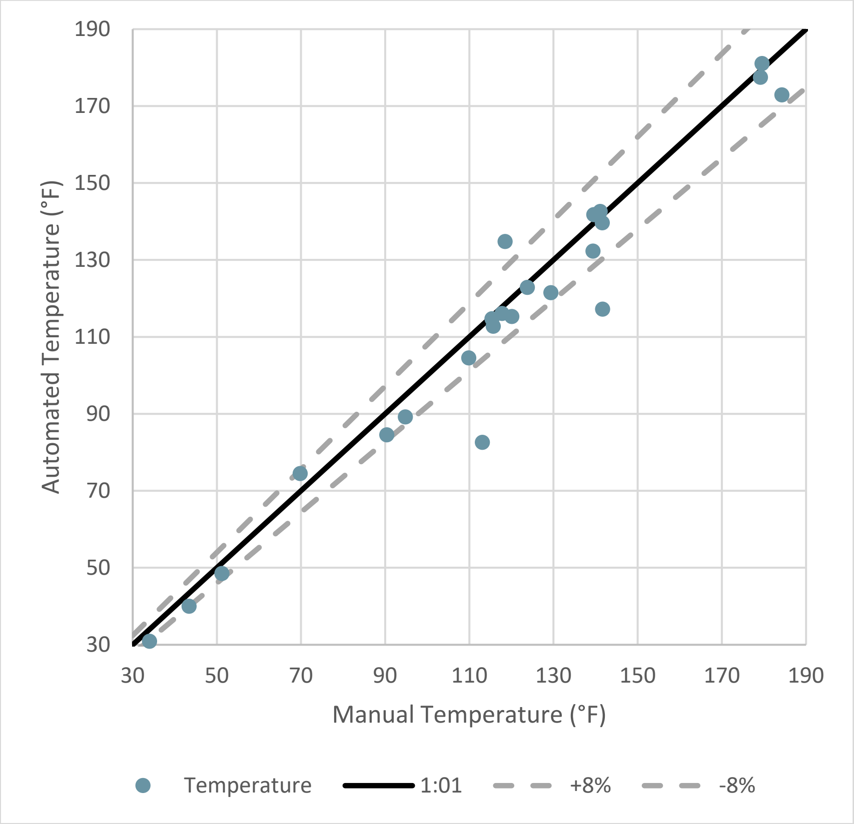
Per the approval issued by VDEQ on August 2, 2023, the Facility ceased dedicated daily manual temperature measurements in the Permit No. 588 Landfill. In lieu of these measurements, the City has agreed to compare instantaneous hourly automated temperature measurements with temperatures measured at each wellhead with a handheld sensor during monthly compliance monitoring. These comparisons are shown in Figure 2, with the ±8% deviation goals as prescribed in the VDEQ approval.

Temperature comparisons outside the ±8% deviation goal lines were found at wells EW-36A, EW-47, EW-51, EW-58 and EW-64. At EW-36A, the stainless-steel well casing appears to be a limiting factor in obtaining precise LFG temperatures with a handheld sensor.

At EW-47 and EW-51, LFG flowrates were consistently low (less than 5 cfm) during the month's wellfield monitoring events, which SCS believes caused the lower automated temperature measurements, just outside the 8% threshold. SCS has historically noted challenges recording precise LFG temperatures at low flow rates when utilizing automated sensors.

The disparity between automated and manual temperature measurements at EW-58 and EW-64 were the most significant in January; 27%, and 17%, respectively. SCS has ruled out known typical causes (battery failure, low LFG flow, and casing material), but is still investigating potential causes of temperature disparity at EW-58 and EW-64 and will provide an update in the February compliance report.

Figure 2. Automated vs. Manual Temperature Measurements



1.3.3 Monthly Regulatory Wellhead Temperature Measurements

Routine monthly temperature monitoring for purposes of complying with 40 CFR 60.36f(a)(5) was conducted November 6, 2023, with follow-up monitoring several days after. Additionally, SCS typically measures wellhead temperatures at the SWP No. 588 Landfill on a semi-monthly basis. During this monitoring period, temperature exceedances were resolved at EW-36A, 65, and 94. See Table 3 for the status of all exceedances recorded during this monitoring period. An HOV request was submitted for EW-52, EW-64, EW-81, EW-85, EW-88, EW-89, EW-91, and EW-99 on November 8, 2023 and was subsequently approved on January 9, 2024.

Table 3. January Temperature Exceedance Summary

Well ID	Initial Exceedance Date	Last date/temperature measured	Duration of Exceedance	Status as of 12/31/23
EW-52	12/18/23	12/27/23 159.6°F	22 days	Resolved within 60 days, HOV approved 1/9/24
EW-52	1/30/24	1/30/24 168.1°F	1 day	Ongoing, within 15-day timeline
EW-53	1/19/24	1/30/24 181.7°F	12 days	Ongoing, within 15-day timeline

Well ID	Initial Exceedance Date	Last date/temperature measured	Duration of Exceedance	Status as of 12/31/23
EW-54	1/19/24	1/24/24 129.8°F	5 days	Resolved within 15-day timeline
EW-77	12/19/23	1/30/24 154.5°F	43 days	Ongoing, within 60-day timeline
EW-79	12/19/23	1/3/24 144.6°F	16 days	Resolved within 60 days
EW-80	12/4/23	1/24/23 152.7°F	58 days	Ongoing, within 60-day timeline
EW-81	9/25/23	1/30/24 174.2°F	106 days	Resolved within 120 days, HOV approved 1/9/24
EW-82	12/18/23	1/10/24 143.2°F	23 days	Resolved within 60 days
EW-83	12/4/23	1/30/24 182.8°F	58 days	Ongoing, within 60-day timeline
EW-85	10/10/23	1/30/24 163.1°F	91 days	Resolved within 120 days, HOV approved 1/9/24
EW-86	1/3/24	1/4/24 147.3°F	1 day	Resolved within 15 days
EW-88	9/25/23	1/19/24 156.8°F	106 days	Resolved within 120 days, HOV approved 1/9/24
EW-89	12/4/23	1/30/24 174.2°F	36 days	Resolved within 60 days, HOV approved 1/9/24
EW-97	1/3/24	1/30/24 157.8°F	28 days	Ongoing, within 60-day timeline

1.3.4 LFG Sampling

SCS collected weekly LFG samples from wells with temperature exceedances lasting more than 7 days using 1.5-L Summa canisters during January. The samples were sent to Enthalpy Analytical for lab analysis of carbon monoxide (CO) and hydrogen (H_2) content. As of 1/31/24, the City is in possession of lab results for sampling on December 21, 27, and January 4, 10, and 19 to fulfill the requirement in 40 CFR 63.1961(a)(5). Lab results are summarized in Table 4.

Table 4. LFG Wellhead Sampling Summary

Sample Date		12/21/2023	12/27/2023	1/4/2024	1/10/2024	1/19/2024
79	CO (ppmv)	218	240			
	H2 (Vol. %)	1.97	1.46			
80	CO (ppmv)	ND	ND	ND	ND	94.1
	H2 (Vol. %)	0.45	0.27	1.76	1.31	1.71
81	CO (ppmv)	189	200	175	255	
	H2 (Vol. %)	4.12	4.03	3.98	5.32	
82	CO (ppmv)	552	565	530		
	H2 (Vol. %)	17.6	17.7	21.1		
83	CO (ppmv)	564	564	512	442	716

	H2 (Vol. %)	16.9	17.3	13.6	14.8	20.5
85	CO (ppmv)	273	212			
	H2 (Vol. %)	5.72	6.49			
88	CO (ppmv)	171	228	284	158	
	H2 (Vol. %)	5.7	7.22	8.06	5.21	
89	CO (ppmv)	1080	1240	1250	1270	
	H2 (Vol. %)	27.1	28.3	28.9	26.6	
97	CO (ppmv)			539		572
	H2 (Vol. %)			10.3		12.8
100	CO (ppmv)					490
	H2 (Vol. %)					13.3

The presence of hydrogen in the samples collected during this monitoring period indicates that combustion reactions are unlikely.

Carbon monoxide and hydrogen at Wells EW-80 and EW-83 for the last five weeks or more are shown in Figures 3 and 4. There have been low concentrations of carbon monoxide and hydrogen at EW-80 compared to other wells under enhanced monitoring at this site. Neither well is showing trends in either compound.

Figure 1. CO and H2 Concentration at EW-80

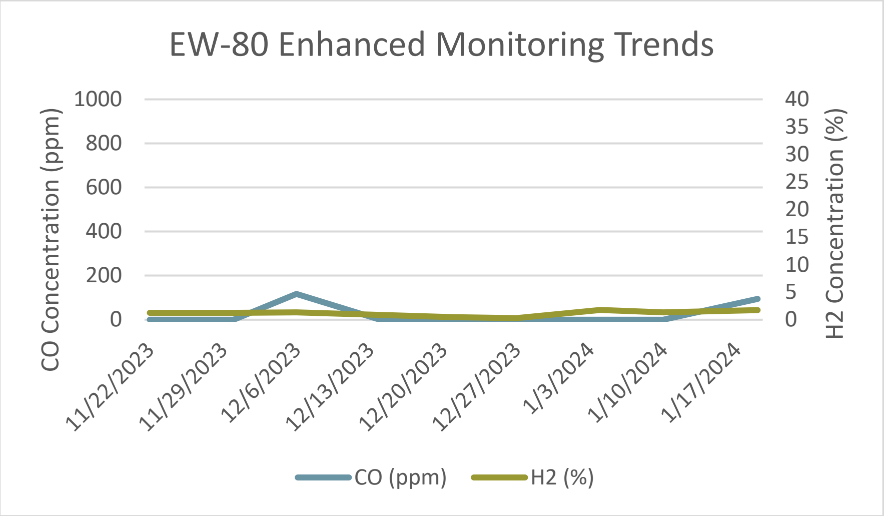
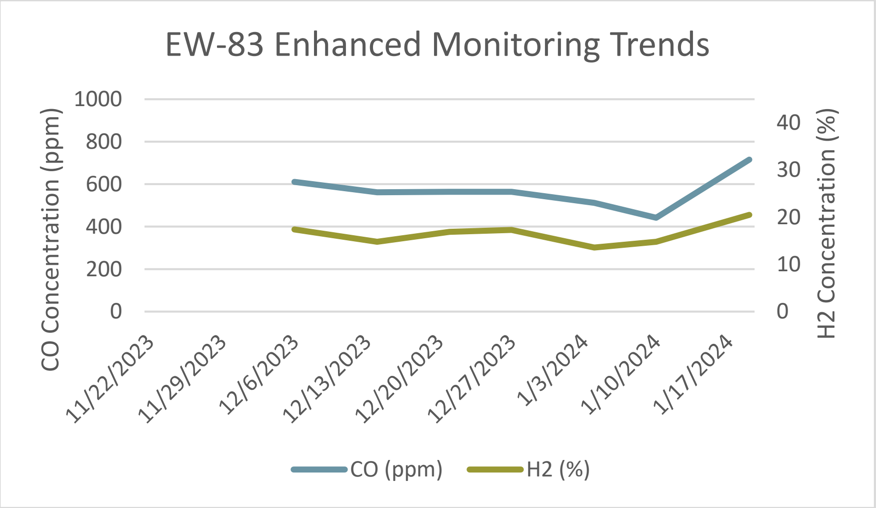


Figure 1. CO and H2 Concentration at EW-83



1.4 LARGE-DIAMETER DUAL-PHASE EXTRACTION WELLS

SCS completed design work on an expansion of the existing GCCS during the month of December 2022. The proposed expansion includes at least 5 large diameter dual-phase extraction wells. SCS submitted the design to VDEQ prior to December 31, 2022. The City commenced solicitation of contractor's bids for this project by advertising for bids and received one bid for the project from SCS Field Services Construction (SCS-CONS). On January 26, 2023, the City awarded the project to SCS-CONS. The City's construction contractor left site as of the GCCS expansion project completion on October 12, 2023.

1.5 VDEQ CONCURRENCE ON WELLS

As described in previous monthly compliance reports, the City engaged with VDEQ in discussions about the proposed approach for landfill GCCS improvements and expansions. Upon completion of the landfill gas collection system, SCS will submit updated as-built drawings depicting the completed system to VDEQ.

2.0 SIDEWALL ODOR MITIGATION

The City has designed and constructed a system to control fugitive emissions emanating from the quarry sidewalls. Specific aspects of the proposed design features are described in the following sections.

2.1 PERIMETER GAS COLLECTION SYSTEM

SCS's design of the GCCS expansion described in Section 1.4 included perimeter LFG wells. These wells are closer to the sidewall to intercept landfill gas that potentially could migrate to the quarry wall. These wells supplement the sidewall odor mitigation system described in Section 2.2. As described in the April 2023 Monthly Compliance Report for the SWP No. 588 Landfill, construction of the perimeter gas collection system was completed. SCS submitted a letter to VDEQ documenting completion of the Perimeter Gas Collection System on May 1, 2023.

2.2 SIDEWALL ODOR MITIGATION SYSTEM

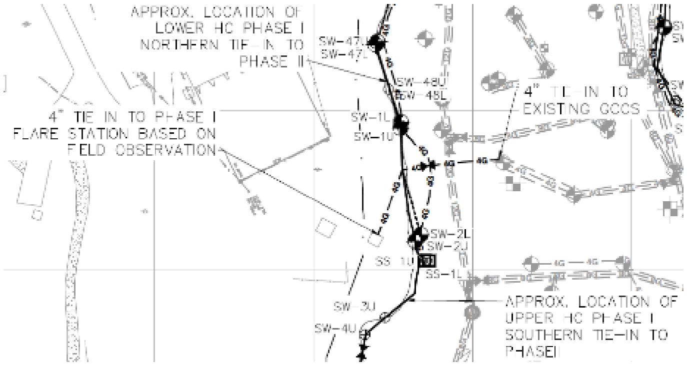
On behalf of the City and in an effort to capture emissions from the quarry sidewall, SCS designed a sidewall odor mitigation system (SOMS) during the month of October 2022. On October 20, 2022 SCS provided an overview of the proposed system to VDEQ staff. The design of this system was prepared and submitted to VDEQ on November 1, 2022. A project manual detailing the specifications of the system was developed concurrently with the design of the system.

2.3 PILOT SYSTEM CONSTRUCTION

SCS-CONS completed substantial construction of Phase 1 of the SOMS during the month of February 2023, SCS-FS began monitoring Phase 1 connected Horizontal Collector (HC) wellheads during the month of March, and SCS-FS continued weekly wellhead monitoring into the month of May 2023. Phase 1 is considered the pilot system portion of the SOMS. SCS submitted a design engineer certification to VDEQ on February 10, 2023 that documented the substantial completion of Phase 1 of the SOMS. Details of Phase 1 construction progress and monitoring can be found in the monthly compliance reports for the SWP No. 588 landfill.

Figure 5 shows the Phase 1 as-built, which includes the locations of the HC wellheads and HC sumps installed in Phase I, as well as the 4" header connection to the existing LFGCCS. The lower collector installed as part of Phase II was tied-in to the north end of the Phase I lower collector, and the upper collector installed as part of Phase II was tied-in to the south end of the Phase I upper collector.

Figure 2. SOMS Phase I As-Built[1]



Both the upper and lower collectors of Phase 1 of the system have been connected to the substantially completed Phase 2 of the system. Collection of landfill gas by both the upper and lower collectors indicates that the system is working as intended. Based on this data, Phase 2 was constructed utilizing the same general configuration.

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[1] Location data was collected using mapping grade global positioning system equipment.

2.4 FULL SYSTEM CONSTRUCTION

SCS-CONS substantially completed construction of Phase 2 of the SOMS during the month of June 2023 as Phase 2 was connected to vacuum as of June 14, 2023. Cover soil placement continued into the month of October, and ceased when the construction crew left site on October 12, 2023 upon project final completion. Figure 6 shows SOMS Phase 2 wellhead installation and connections at HC wells along the southeastern perimeter of the landfill.

Figure 3. Phase 2 SOMS Wellhead Connections

During the month of January 2024, SCS-FS collected monitoring data at each wellhead under vacuum. A summary of those measurements is shown in Table 5.

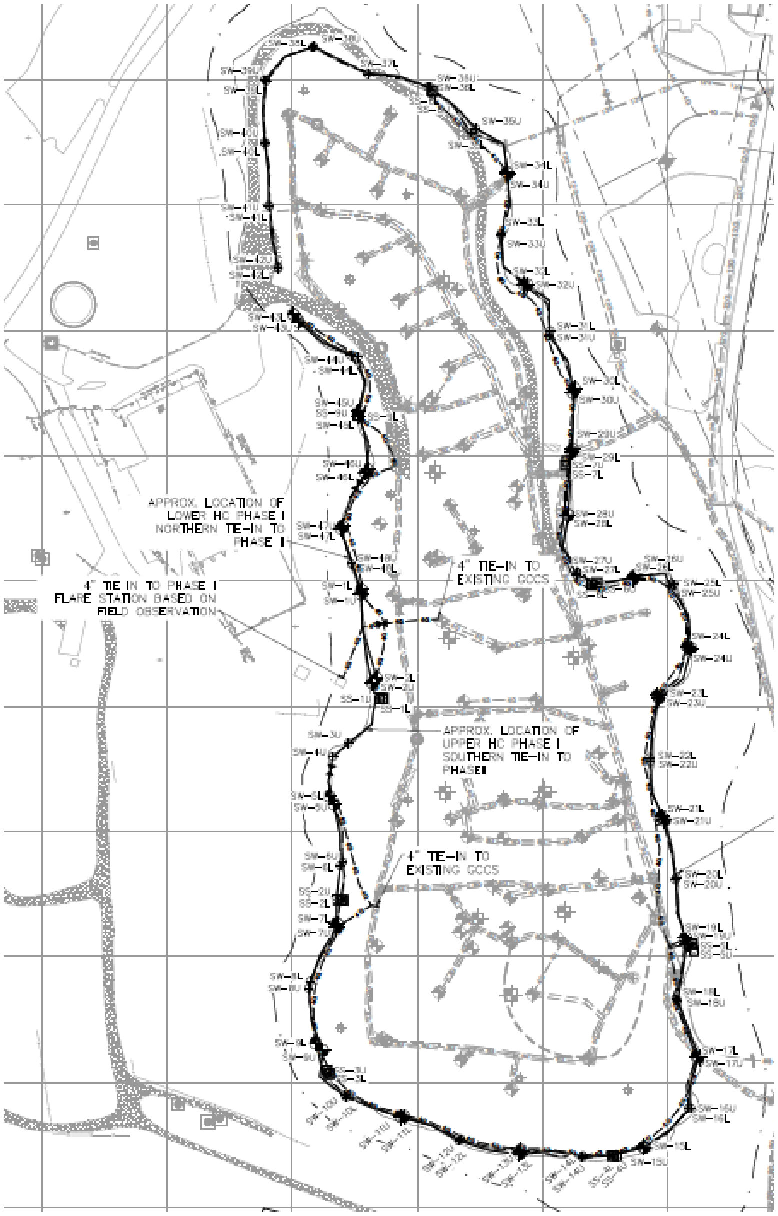
Table 5. System Averages of Sidewall Wellhead Gas Quality

Record Date	Average CH4 [%]	Average CO2 [%]	Average O2 [%]	Average Bal Gas [%]
1/8/2024	3.3	6.8	18.2	71.6
12/(19-26)/2023	5.7	10.1	16.8	67.4

Isolation valves have been installed on the SOMS to allow for manipulation of flow routed to the supplemental flare, currently being leased. The flare was constructed by Perennial Energy Incorporated (PEI). The gas is being re-routed to the supplemental flare because of the lower quality of the gas. The City is attempting to improve the quality of the gas directed to the primary flare and energy generation facility.

The sidewall system average gas composition indicates lower methane content than typical landfill gas collection systems. The gas quality measurements indicate that the SOMS is functioning as designed because landfill gas is being withdrawn and oxygen intrusion is acceptable. The wide-ranged gas composition may indicate that some areas of the landfill may be experiencing higher landfill gas concentrations than areas where methane content is seemingly insignificant. SCS-FS will adjust SOMS wellheads based on gas quality to increase flow from sections of the system with high methane content and reduce flow from sections of the system with low methane content. Phase 2 lower and upper collectors locations, including HC wellhead riser and sump locations, are shown in the as-built depicted as Figure 7[2].

Figure 4. Phase 2 Sidewall Odor Mitigation System As-Built[3]



At this time, not every SOMS horizontal collector riser (HC) has a wellhead installed, but HC risers may receive a wellhead at a future date as warranted by field conditions.

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[2] During construction, redundant risers were put in place to accommodate supplemental wellhead and installation in the future. Figure 10 shows all riser and sump locations. The final submittal to VDEQ, Revised June 26, 2023, shows the locations of actual wellhead installation. The facility may relocate wellheads based on field conditions.

[3] Location data was collected using mapping grape global positioning system equipment.

3.0 WASTE TEMPERATURE MONITORING

On behalf of the City, SCS designed a temperature monitoring system to collect temperature data throughout the waste mass. The steps taken by the City to implement this system are described in the following sections.

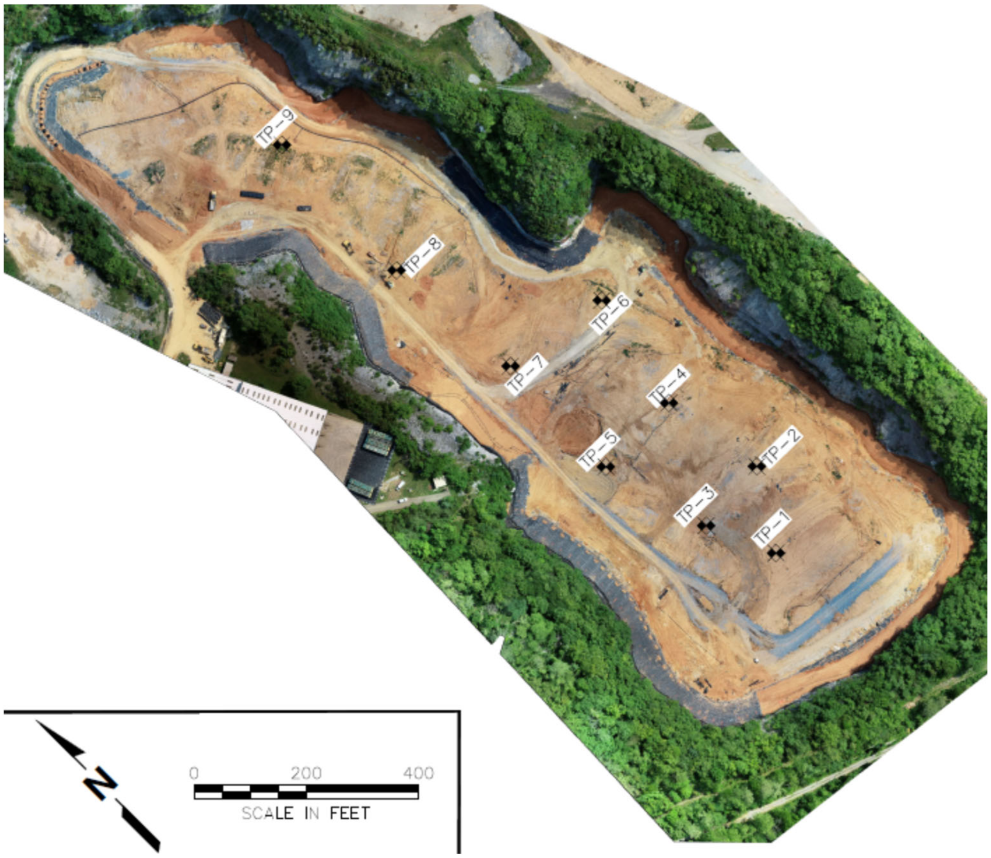
3.1 TEMPERATURE MONITORING SYSTEM DESIGN

The temperature monitoring system consists of 9 boreholes drilled into the waste mass. A steel casing was placed in each borehole and the hole was backfilled around the casing with aggregate. A series of temperature sensors was placed inside the steel casing. At the top of each borehole, an IIoT transmitter collects the data from the sensors and transmits it to a cloud-based RMC system. The City submitted design of the temperature monitoring system to VDEQ on November 30, 2022.

3.2 TEMPERATURE MONITORING SYSTEM INSTALLATION

Installation of the in-situ Landfill Temperature Monitoring System began in October of 2022 and installation of replacement sensors was completed in February of 2023. Details of construction progress can be found in the monthly compliance reports for the SWP No. 588 Landfill. The locations of the temperature probes are shown in Figure 8.

Figure 5. Temperature Monitoring Probe Locations



SCS began collecting temperature data daily on February 15, 2023. The temperature sensors continued to transmit temperature data during the month of January. Average daily temperatures recorded by the sensors for the Month of January are included in Appendix D. Each week the average temperatures from a select day of that week are downloaded and compared to temperatures recorded during the previous week. Average daily temperatures recorded on select days during the month of January are shown in Appendix B. The average temperatures recorded during the months of March 2023 through January 2024 are shown in Figures 9 through 17 on the following pages.

Figure 9 shows daily average temperatures record by Temperature Probe 1 (TP-1) during the months of March 2023 through January 2024. Based on the data, temperatures were consistent from March through May and saw increases during the months of June, July and August at depths or 100 feet and below. In September, average temperatures showed little change when compared to August and in some cases, show a small decrease. Temperatures have stayed generally consistent based on measurements collected between September 2023 and December 2024.

TP-1 was originally drilled to a depth of 180 feet, but the contractor was unable to install the casing beyond a depth of 160 feet. TP-1 did not record temperatures between July 23, 2023 and July 30, 2023 due to a dead battery. The battery was replaced and TP-1 began recording temperatures again on July 31, 2023.

Figure 6. TP-1 Average Temperatures for the Months of March 2023 through January 2024

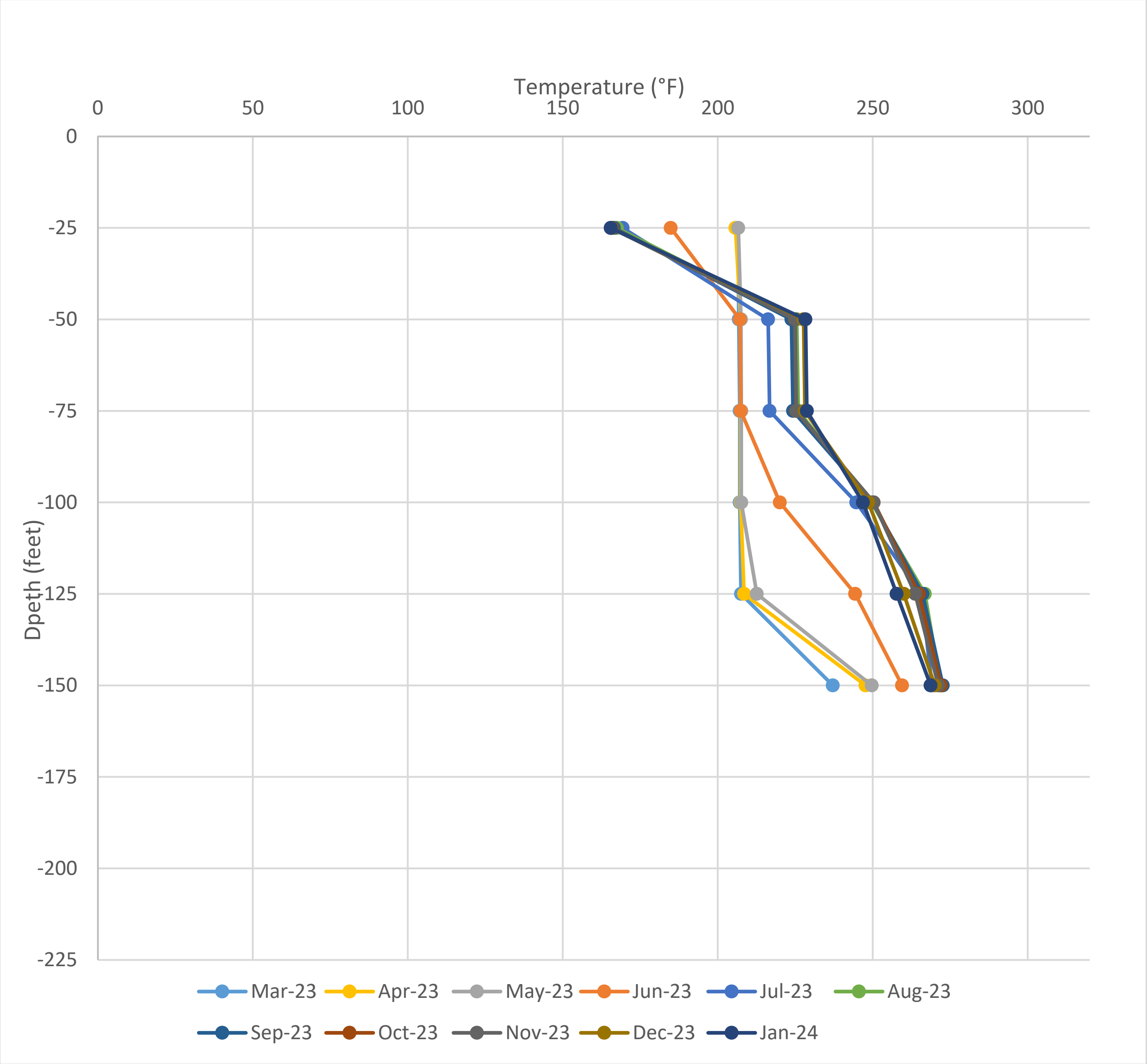


Figure 10 shows daily average temperatures in Temperature Probe 2 (TP-2) during the months of March 2023 through January 2024. Based on the data, temperatures have been consistent during the last eleven months, with an increase at 25 ft. during January 2024.

TP-2 was originally drilled to a depth of 160 feet. TP-2 did not record temperatures between August 15, 2023 and September 17, 2023 due to a dead battery. A replacement battery was installed in September of 2023 and TP-2 recording temperatures again on September 18, 2023.

Figure 7. TP-2 Average Temperatures for the Months of March 2023 through January 2024

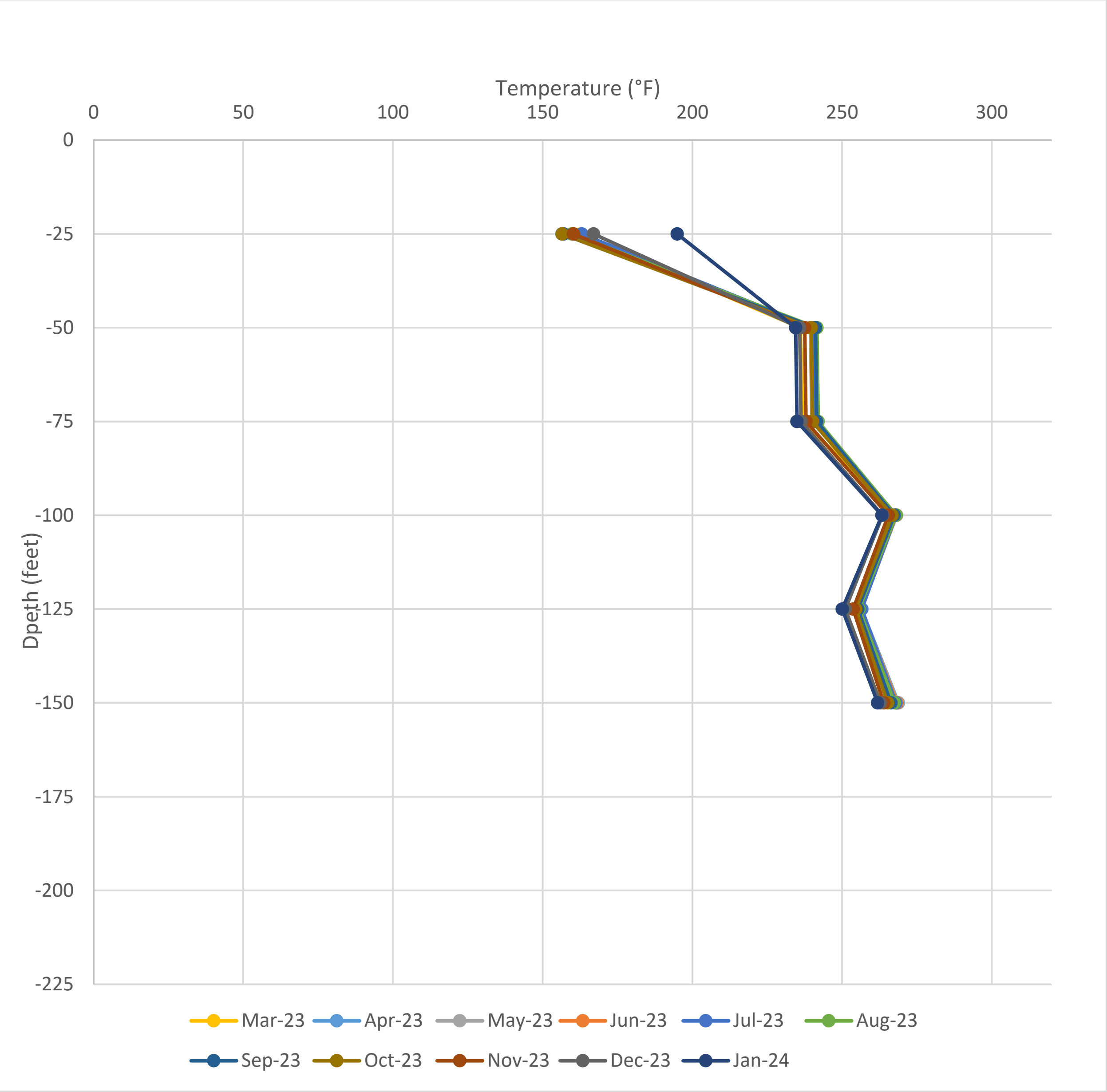


Figure 11 shows daily average temperatures in Temperature Probe 3 (TP-3) during the months of March 2023 through January 2024. Based on the data, temperatures have been generally consistent during the last eleven months. There has been an increase in temperatures during the months of October 2023 through January 2024 at the 50-foot and 75-foot depths. SCS noted that a forcemain check valve near an adjacent well had failed. This may have limited liquids removal in the area and resulted in higher temperatures. Temperatures were consistent during the months of November 2023, December of 2023, and January 2024. SCS will continue to review temperature data recorded by this probe.

Figure 8. TP-3 Average Temperatures for the Months of March 2023 through January 2024

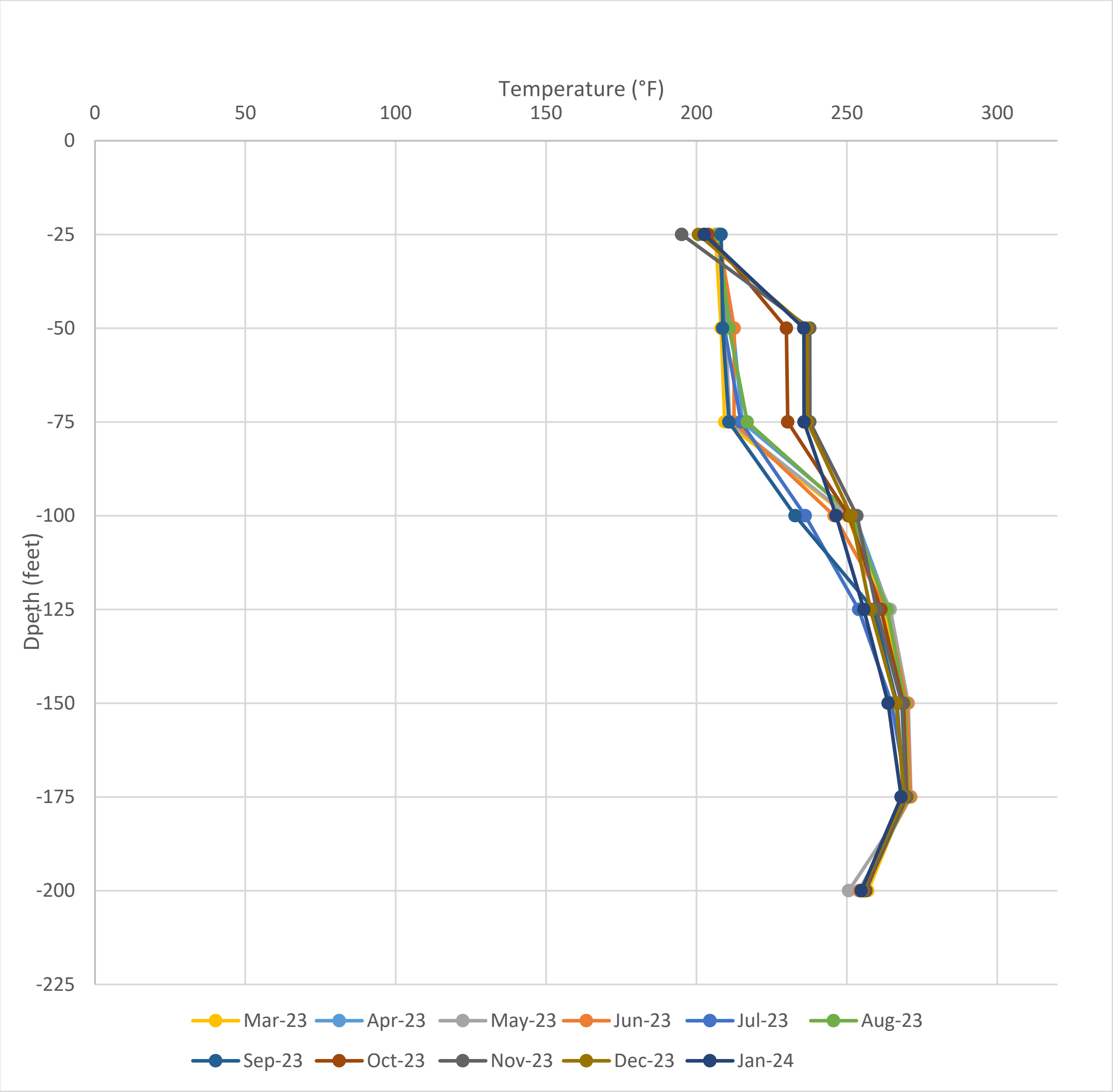


Figure 12 shows daily average temperatures in Temperature Probe 4 (TP-4) during the months of March 2023 through January 2024. Based on the data, temperatures appeared to drop during the months of April 2023 and May 2023, but returned to levels closer to baseline during the months of June 2023 through January 2024. December temperatures appear to be closer to baseline than the low temperatures observed in April and May.

Figure 9. TP-4 Average Temperatures for the Months of March 2023 through January 2024

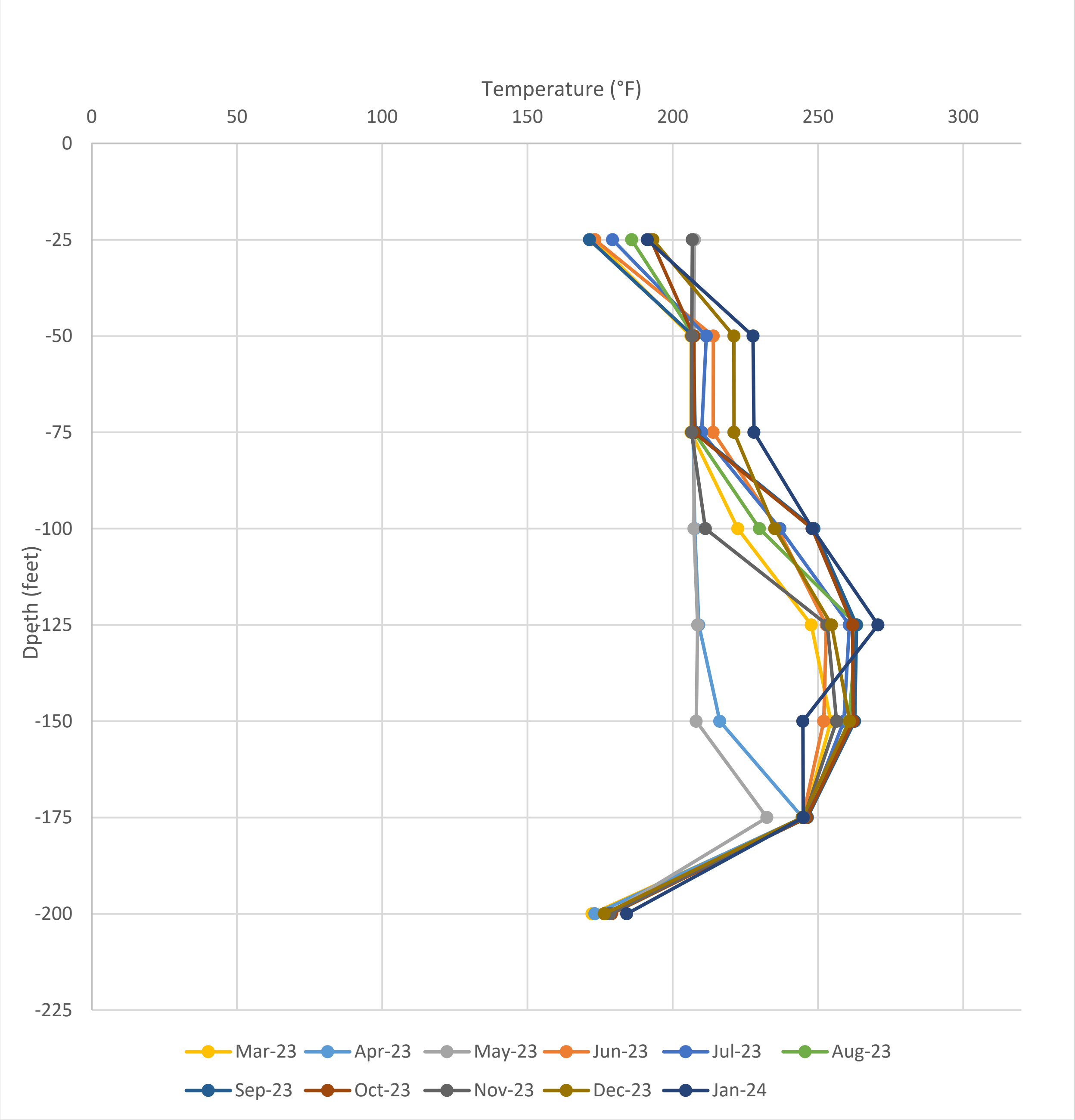


Figure 13 shows daily average temperatures in Temperature Probe 5 (TP-5) during the months of March 2023 through January 2024. Based on the data, temperatures have been consistent during the last nine months.

TP-5 was damaged in late October 2023 and the sensors at the 125-foot, 150-foot, 175-foot, and 200-foot depths stopped functioning. SCS completed troubleshooting during the month of November 2023 and the sensors returned to operation later that month.

Figure 10. TP-5 Average Temperatures for the Months of March 2023 through January 2024

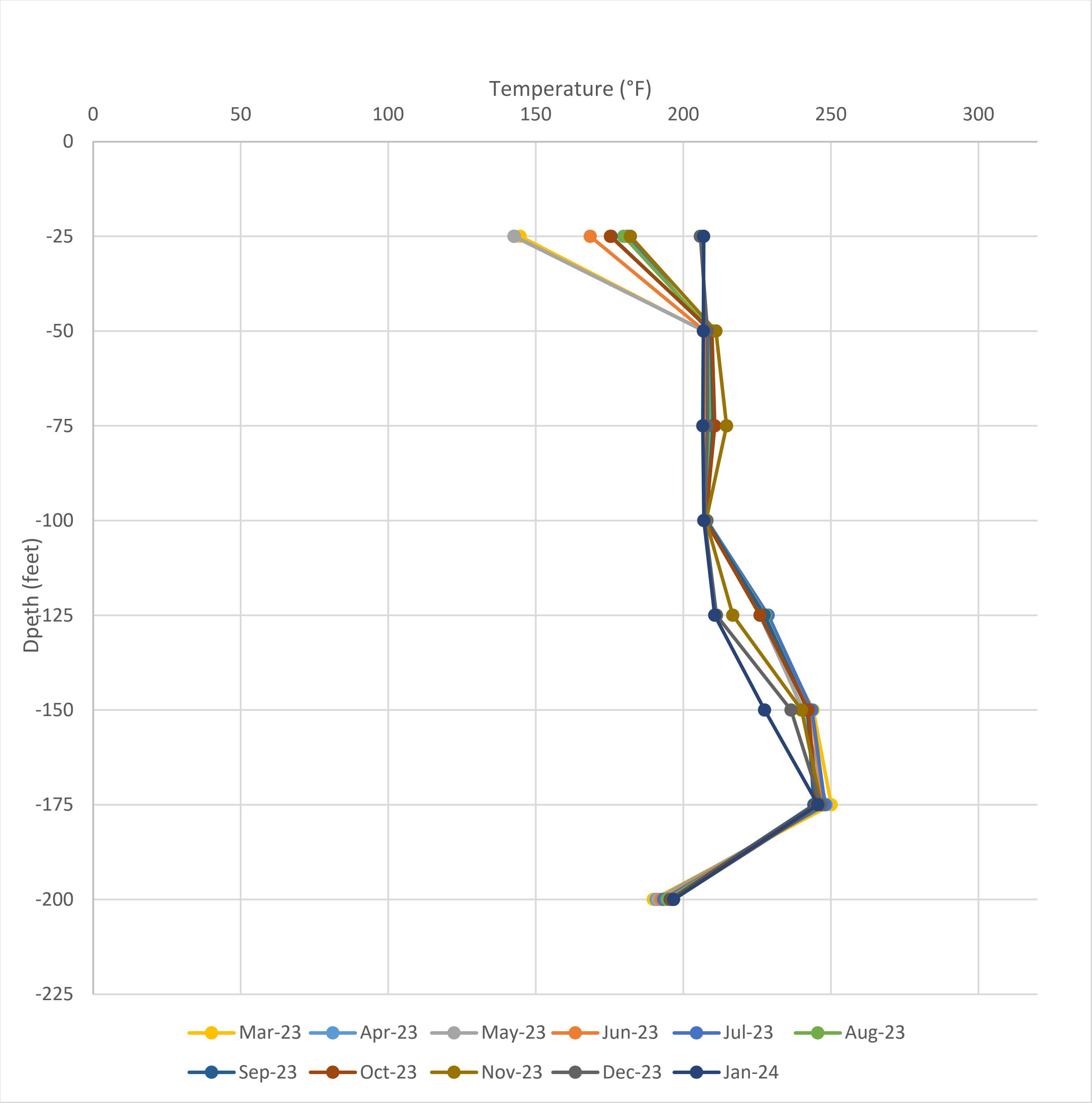


Figure 14 shows daily average temperatures in Temperature Probe 6 (TP-6) during the months of March 2023 through January 2024. Based on the data, temperatures have been generally consistent during the last nine months below the 25-foot level. A decrease at the 25-foot level was observed during the months of June 2023, September 2023, and October 2023. Temperatures returned to baseline during the months of July 2023 and August 2023. Temperatures at the 25-foot level dropped again in December 2023 and rose in January 2024. There was also an increase at the 125-foot level in January 2024.

TP-6 was originally drilled to a depth of 208 feet and casing was installed to the full depth. During the installation of the installation of replacement sensors, a blockage within the casing prevented placement of sensors below the 125-foot depth.

Figure 11. TP-6 Average Temperatures for the Months of March 2023 through January 2024

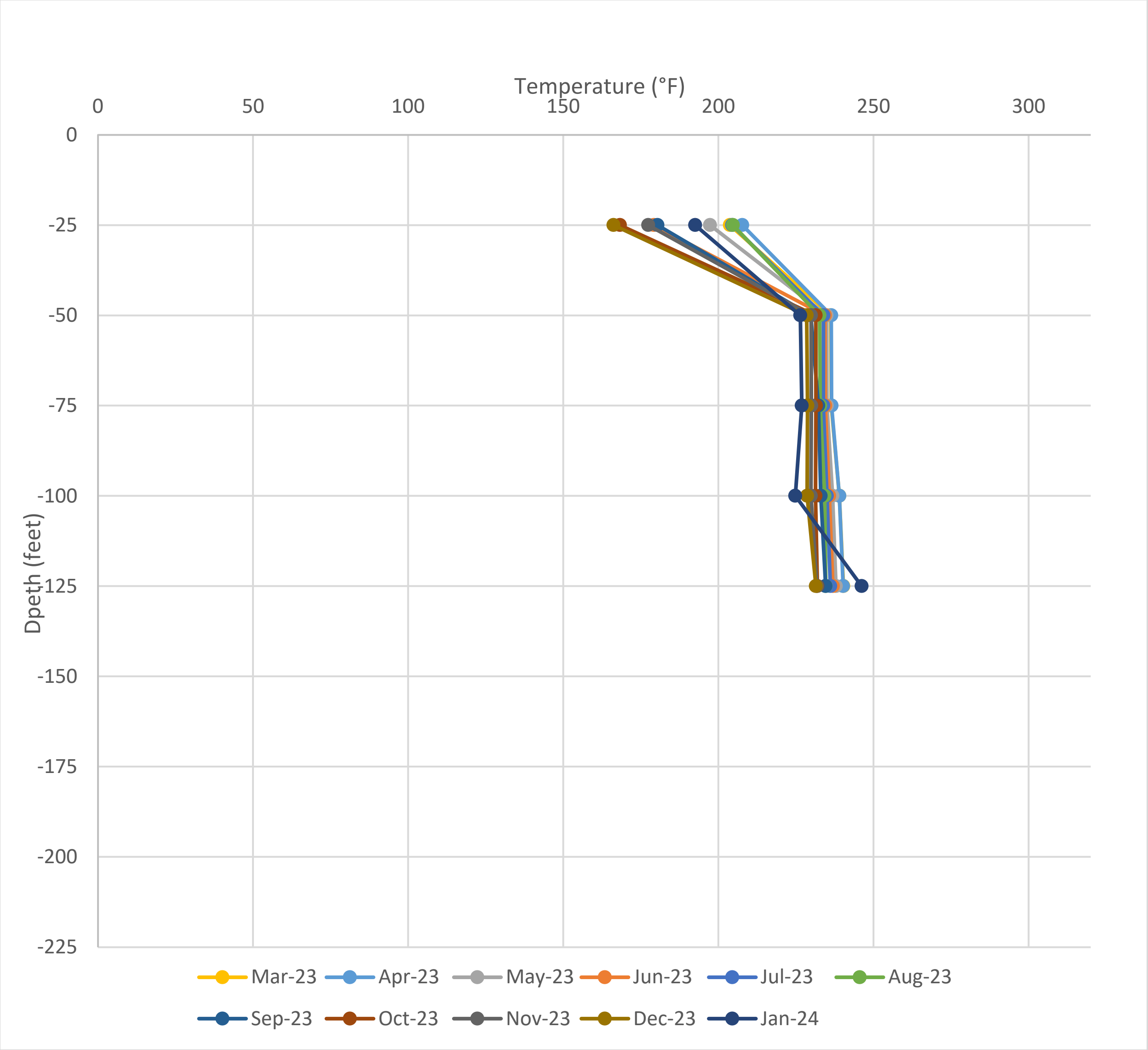


Figure 15 shows daily average temperatures in Temperature Probe 7 (TP-7) during the months of March 2023 through January 2024. Based on the data, temperatures have been consistent during the months of March 2023 through November 2023. Average temperatures dropped during the month of December 2023. Changes in temperatures observed during the month of January 2024 varied by depth. Observations of adjacent wells indicate that there may be below grade settlement of waste occurring in this area.

TP-7 did not record temperatures between August 15, 2023 and September 17, 2023 due to a dead battery. A replacement battery was installed in September of 2023 and TP-7 recording temperatures again on September 18, 2023.

Figure 12. TP-7 Average Temperatures for the Months of March 2023 through January 2024

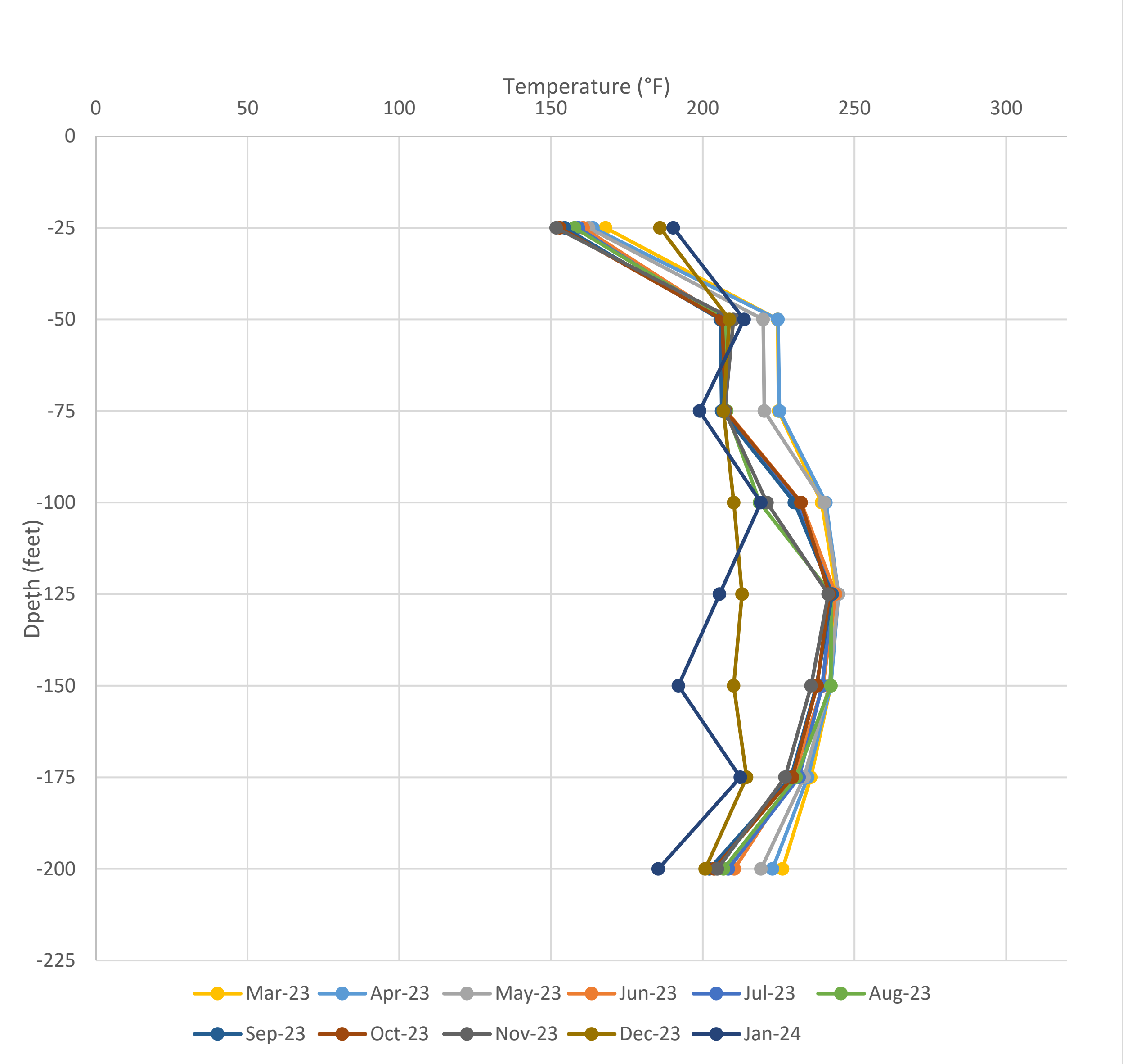


Figure 16 shows daily average temperatures in Temperature Probe 8 (TP-8) during the months of March 2023 through January 2024. Based on the data, temperatures increased throughout 2023. The rate of increase appears to have slowed between September 2023 and January 2024. At some depths average temperatures decreased in January 2024.

TP-8 Did not read from November 8 to November 27 due to faulty battery which was replaced on November 28.

Figure 13. TP-8 Average Temperatures for the Months of March 2023 through January 2024

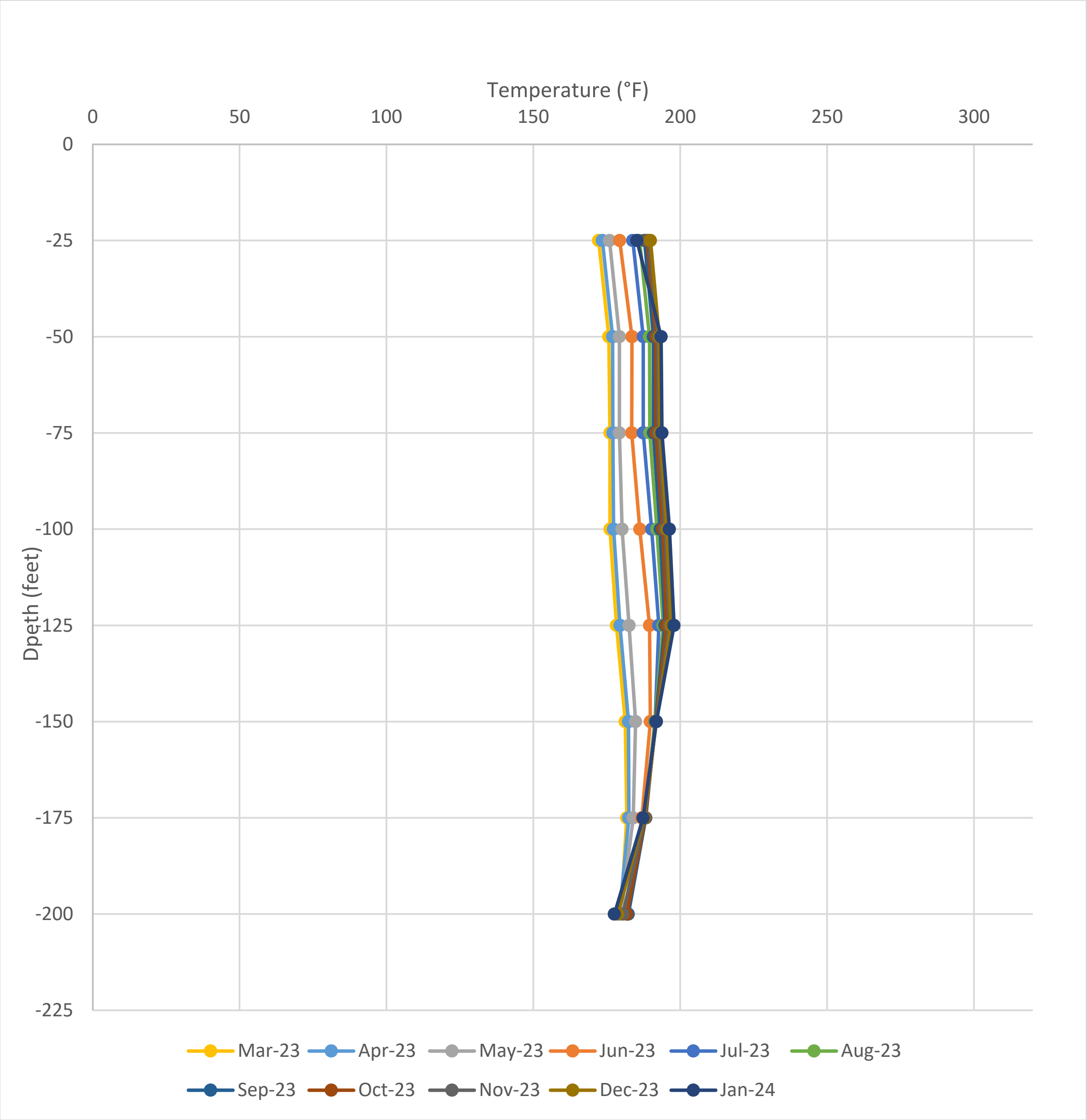
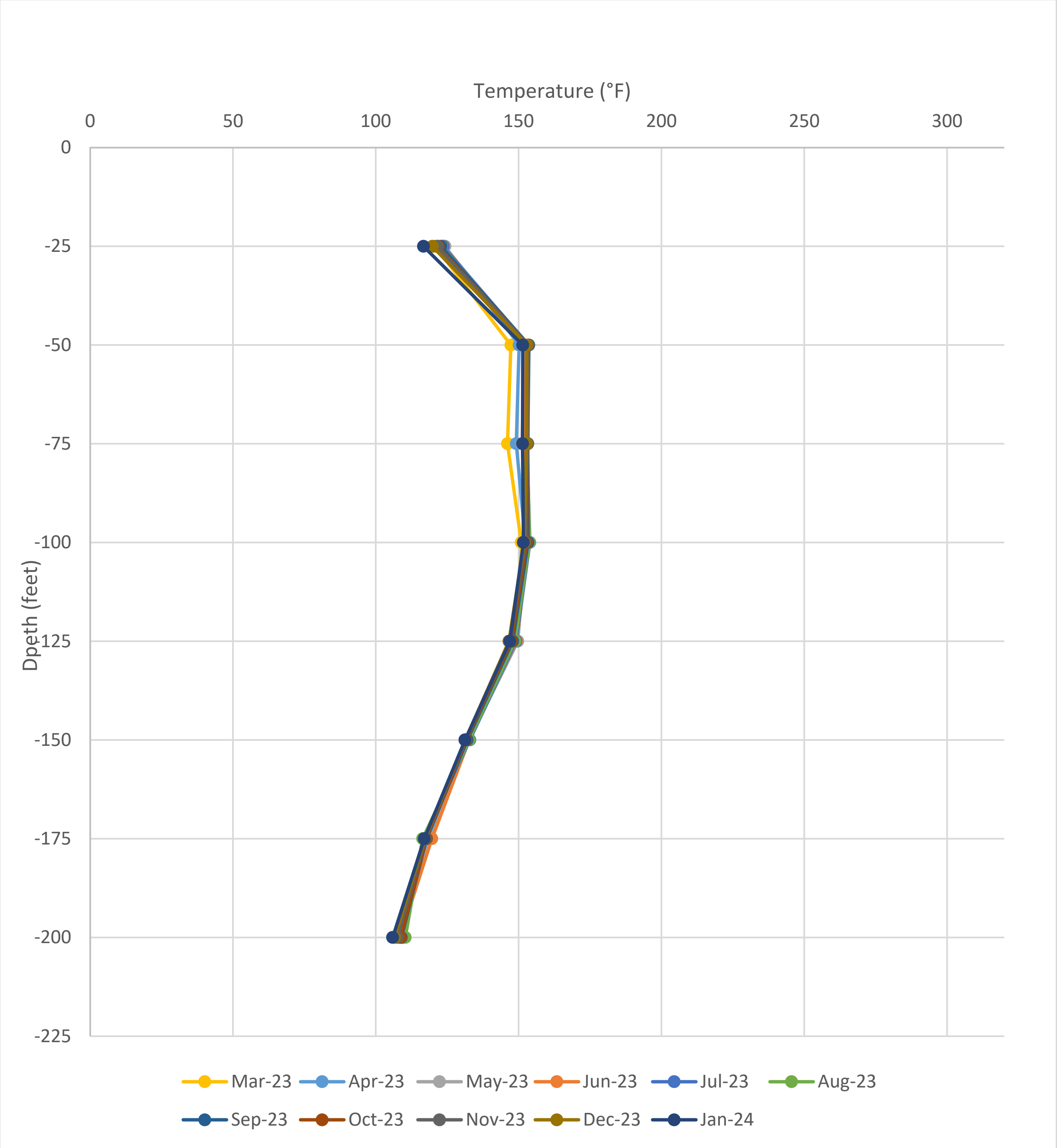


Figure 17 shows daily average temperatures in Temperature Probe 9 (TP-9) during the months of March 2023 through January 2024. Based on the data, temperatures have been consistent during the last eleven months.

Figure 14. TP-9 Average Temperatures for the Months of March 2023 through January 2024



The data indicates that temperatures within the landfill are generally stable and are typical of those observed at elevated temperature landfills (ETLFs). During the months of May 2023 through September 2023, substantial construction occurred at the landfill including deep dual extraction wells that may have impacted temperatures within the waste mass adjacent to the probes. While quantifying the effect of the construction of addition wells is difficult, changes in wellhead temperature have been observed in existing wells adjacent to newly installed wells. The temperatures recorded are substantially lower than those associated with landfill fires or other combustion processes, which can exceed 1000°F. This further indicates that the elevated temperatures are due to sources other than combustion.

4.0 LEACHATE EXTRACTION AND MONITORING

The City has begun taking steps to improve the extraction of leachate from the waste mass and collect analytical data on leachate characteristics. The following sections detail steps taken to achieve these goals.

4.1 EXISTING SYSTEM OPTIMIZATION

During bimonthly gas extraction well monitoring, SCS also collected stroke counter data from the pumps installed in the GCCS extraction wells. Stroke count measurements are also collected weekly as part of routine pump maintenance. These stroke counts were collected from 40 wells on 5 consecutive weeks, as shown Table 6. Cells marked with "*" represent dates when the pump was removed from the well for maintenance or had not yet been installed.

Table 6. Summary of Dual Extraction Well Pump Stroke Counter Data

Well	1/5/2024	1/12/2024	1/18/2024	1/23/2024	2/1/2024
EW33B	17	17	17	24	28
EW36A	335,026	335,026	335,026	335,026	335,039
EW49	777,893	777,893	777,893	777,893	777,893
EW50	1,389,036	1,395,359	1,398,255	1,398,255	1,404,522
EW51	140,310	153,163	161,853	164,342	169,923
EW52	443,827	451,926	454,804	454,897	471,027
EW53	2,471,563	2,503,204	2,515,110	2,547,136	2,606,985
EW54	597,301	609,757	634,705	651,468	701,908
EW55	713,760	713,760	713,760	713,760	713,760
EW57	44,644	44,644	44,644	44,644	44,644
EW58	*	2,490,489	2,490,489	2,490,489	2,490,489
EW59	2,503,520	2,545,230	2,646,688	2,701,037	2,701,037
EW60	617,075	617,362	617,704	617,720	617,734
EW61	24,065	24,491	25,503	26,480	26,505
EW62	202,629	202,630	202,635	203,402	203,911
EW64	177,605	177,605	177,605	177,605	177,633
EW65	4,817	4,817	4,817	4,817	4,818
EW67	865,688	865,688	865,688	865,688	865,688

Well	1/5/2024	1/12/2024	1/18/2024	1/23/2024	2/1/2024
EW68	2,272,399	2,280,685	2,281,285	2,287,633	2,287,633
EW69	9	9	9	9	15
EW70	*	*	*	*	*
EW74	25	25	25	25	30
EW75	11	11	11	11	12
EW76	23	23	24	24	25
EW78	88,027	90,167	95,426	97,428	100,224
EW81	304,902	329,326	329,326	329,326	329,326
EW82	98,268	105,540	105,540	105,540	105,540
EW83	*	428,888	428,888	428,888	428,902
EW85	144,790	161,388	201,929	210,062	254,137
EW87	940,779	940,819	940,819	940,819	953,645
EW88	413,403	413,407	413,414	413,414	427,990
EW89	529,293	571,881	629,462	670,238	720,561
EW90	170,679	170,679	170,679	170,679	170,679
EW91	265,766	265,766	265,766	265,766	265,766
EW92	391,956	391,973	391,973	391,973	391,973
EW93	302,227	302,227	302,227	302,227	302,227
EW94	520,385	520,385	520,385	520,385	520,385
EW96	596,985	605,564	605,564	605,564	605,564
EW98	1,852,381	1,904,850	1,904,850	2,063,181	2,127,274
EW100	470,180	485,577	486,051	524,903	554,027

Based on this data, SCS can estimate the number of gallons of liquid pumped from each well. SCS assumed that each stroke from a float-style pneumatic pump correlates to approximately 0.3 gallons of liquid removed from the well. Additionally, Blackhawk piston-style pumps remove approximately 0.11 gallons per stroke recorded. This data will then be used to identify pumps for repair or replacements or identify nonfunctional stroke counters for replacement. Estimates of the quantities of liquids removed between the reading dates are shown in Table 7.

Table 7. Summary of Dual Extraction Well Pump Liquids Removal

Well	Liquids Removed (gal) 12/28/23 to 1/5/24	Liquids Removed (gal) 1/5/24 to 1/12/24	Liquids Removed (gal) 1/12/24 to 1/18/24	Liquids Removed (gal) 1/18/24 to 1/23/24	Liquids Removed (gal) 1/23/24 to 2/1/24
EW33B	-	-	-	2	1
EW36A	22,070	-	-	-	1
EW49	-	-	-	-	-
EW50	584	1,897	869	-	1,880
EW51	-	3,856	2,607	747	1,674
EW52	6,652	2,430	863	28	4,839

Well	Liquids Removed (gal) 12/28/23 to 1/5/24	Liquids Removed (gal) 1/5/24 to 1/12/24	Liquids Removed (gal) 1/12/24 to 1/18/24	Liquids Removed (gal) 1/18/24 to 1/23/24	Liquids Removed (gal) 1/23/24 to 2/1/24
EW53	10,899	9,492	3,572	9,608	17,955
EW54	-	3,737	7,484	5,029	15,132
EW55	-	-	-	-	-
EW57	-	-	-	-	-
EW58	-	-	-	-	-
EW59	611	12,513	30,437	16,305	-
EW60	11	86	103	5	4
EW61	503	128	304	293	8
EW62	80	0	2	230	153
EW64	-	-	-	-	8
EW65	-	-	-	-	0
EW67	-	-	-	-	-
EW68	1,960	2,486	180	1,904	-
EW69	-	-	-	-	2
EW70	-	-	-	-	-
EW74	-	-	-	-	2
EW75	-	-	-	-	0
EW76	-	-	0	-	0
EW78	848	642	1,578	601	839
EW81	-	2,735	-	-	-
EW82	-	814	-	-	-
EW83	-	-	-	-	14
EW85	6,200	4,979	12,162	2,440	13,223
EW87	-	4	-	-	1,437
EW88	1,810	1	2	-	4,373
EW89	1,979	4,770	6,449	4,567	5,636
EW90	-	-	-	-	-
EW91	-	-	-	-	-
EW92	274	2	-	-	-
EW93	1	-	-	-	-
EW94	-	-	-	-	-
EW96	2,864	961	-	-	-
EW98	33,785	15,741	-	47,499	19,228
EW100	7	4,619	142	11,656	8,737

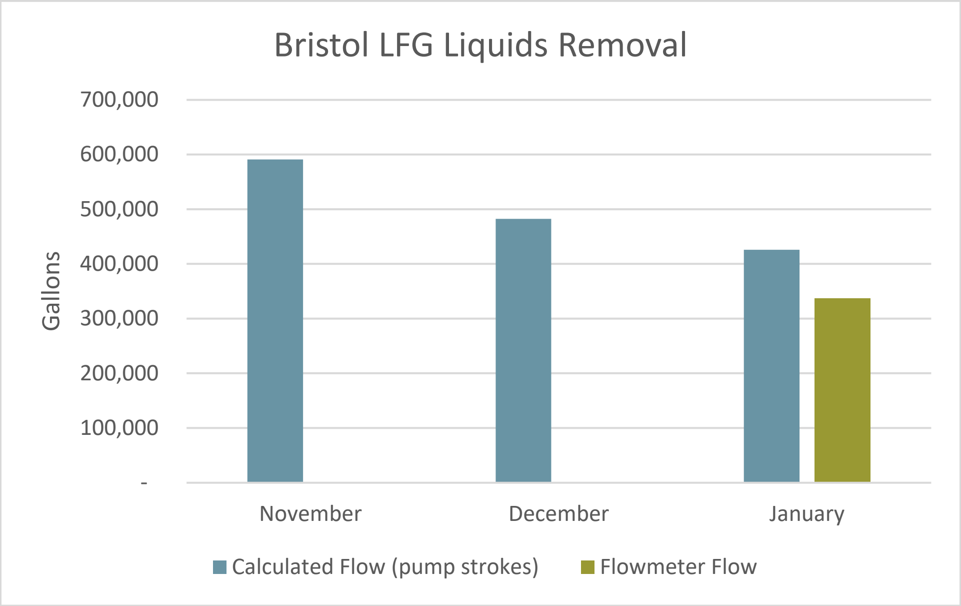
These pump stroke counter data and calculations estimate that approximately 426,000 gallons of liquids were removed from the landfill gas collection and control system during the month of January.

SCS-FS continues to implement an aggressive maintenance schedule for landfill gas liquids removal pumps. The pump at EW-98 was the best performing pump at 116,253 gallons in January.

To improve the accuracy of the landfill gas liquids flow rates, two flow meters were installed on the landfill gas liquid forcemains in December 2023. One flow meter was installed on the SWP No. 588 primary landfill gas liquid forcemain. The other was installed on the SWP No. 588 alternate landfill gas liquids forcemain, which also serves as the conduit for condensate from the temporary perennial flare and the SWP No. 588 stormwater pump. The SWP No. 588 alternate landfill gas liquids forcemain will also serve as the SWP No. 498 landfill gas liquids forcemain in the future. In January, the total liquids flow recorded by the SWP No. 588 landfill flowmeters was 337,000 gallons.

The progress in landfill gas liquids removal over the last three months is depicted in Figure 21.

Figure 15. Estimated Volume of Liquids Removed from Landfill Gas Wells



The City and SCS understand that operations of dewatering pumps are critical to address issues related to heat, odors, and the efficient operation of the GCCS. The landfill conditions present a challenging environment for pump operations. Pumps require servicing after relatively short intervals. During the month of January 2024 pump maintenance occurred on the dates shown in Tables 6 and 7. Freezing temperatures in January impacted the compressed air distribution system used to operate the pumps as well as the forcemain piping, which interfered with pump operations. Additionally, minor pump modifications and repairs were made throughout the month to extend pump runtimes before failure. The SWP No. 588 Landfill's float-style pumps are bump-checked daily, and Blackhawk piston drive rods are cleaned routinely each week.

In some cases, low volumes of landfill liquids removed correlate to low measured liquid levels within the gas wells. During the landfill gas well liquids monitoring event, the following wells were noted to be dry or have low liquid levels: EW-63, EW-69, EW-72, EW-78, and EW-80, EW-81, EW-82, and EW-99. When this condition is identified, pumps may be relocated to wells with consistently higher liquid levels. Pumps that were removed previously due to wells being dry were relocated to EW-65, EW-93, and EW-95 in December 2023.

During the construction of the LFGCCS expansion outlined in Sections 1.4 and 2.1, multiple types of leachate extraction pumps were installed. The City and SCS will continue to evaluate the performance of those pumps in the coming months. Based on that evaluation, the City may replace pumps identified in particularly challenging well with a pump type that has been determined to be more effective.

4.2 SAMPLING AND ANALYSIS PLAN

On November 1, 2022, SCS submitted to VDEQ the Dual Phase Landfill Gas Extraction Well Leachate Monitoring Plan for the Bristol Integrated Solid Waste Management Facility Solid Waste Permit No. 588 Landfill and the plan was subsequently revised on December 1, 2022. Refer to the November 2022 and December 2022 Compliance Reports for the SWP No. 588 Landfill for additional information.

4.2.1 Sample Collection

On January 8 and 11, 2024, SCS collected leachate samples from three Dual Phase LFG-EWs (EW-51, EW-59, and EW-98). At the time of sample collection dissolved oxygen, oxidation-reduction potential, pH, specific conductance, temperature, and turbidity were measured and recorded. The sample collection log is included in Appendix F.

SCS' field staff were not able to collect samples from the following wells for the following reasons:

- Pump was not running at the time of monitoring for the following wells: EW-50, EW-52, EW-54, EW-58, EW-60, EW-61, EW-62, EW-64, EW-68, EW-72, EW-73, EW-74, EW-75, EW-76, EW-78, EW-82, EW-83, EW-85, EW-87, EW-88, EW-91, EW-94, EW-96, and EW-100.
- Pump was disconnected at the time of monitoring for the following wells: EW-49, EW-53, EW-55, EW-57, EW-63, EW-90, and EW-92.
- There was no sample port, and the pump was disconnected at the time of monitoring for the following well: EW-67. The City and SCS-FS are coordinating to get sample port installed on this well.
- Pump was not running and the well appeared dry at the time of monitoring for the following wells: EW-36A and EW-81.
- There is no pump at the time of the monitoring for the following wells: EW-65, EW-69, EW-71, EW-77, EW-79, EW-80, EW-84, EW-86, EW-93, EW-95, EW-97, and EW-99.
- There is no pump and the well appeared dry at the time of monitoring for the following well: EW-56.
- Well EW-70 was not accessible during the monitoring event.
- There was no sample port at the time of monitoring for the following wells: EW-33B and EW-89. The City and SCS-FS are coordinating to get a sample port installed on this well.

The samples were delivered to Enthalpy Analytical (Enthalpy) in Richmond, Virginia and Pace Analytical Services, LLC (Pace) in Baton Rouge, Louisiana for analysis. The Enthalpy's and Pace's Virginia Division of Consolidated Laboratory Services (VELAP) certifications are provided on the certificate of analysis (COA) included in **Appendix F**. The samples were analyzed for the parameters utilizing the analytical methods described in the Dual Phase Landfill Gas Extraction Well Leachate Monitoring Plan.

4.2.2 Quality Assurance and Quality Control

Field quality control (QC) involved the collection and analysis of trip blanks to verify that the sample collection and handling processes did not impair the quality of the samples. Trip blanks were prepared for VOC analysis via Solid Waste (SW)-846 Method 8260D. In conjunction with the preparation of the groundwater sample collection bottle set, laboratory personnel filled each trip blank sample bottle with distilled/deionized water and transported them with the empty bottle kits to SCS. Field personnel handled the trip blanks like a sample; they remained un-opened, were transported in the sample cooler, and were returned to the laboratory for analyses. A trip blank is used to indicate potential contamination due to the potential migration of VOCs from the air at the site or in the sample shipping containers, through the septum or around the lid of the sampling vials and into the sample.

Laboratory quality assurance/quality control (QA/QC) involves the routine collection and analysis of method reagent blanks, matrix spike (MS) and matrix spike duplicate (MSD) samples, and laboratory control samples (LCS). A summary of each of these is presented below:

- **Method Blank** – The method blank is deionized water subjected to the same reagents and manipulations to which site samples are subjected. Positive results in the method blanks may indicate either contamination of the chemical reagents or the glassware and implements used to store or prepare the sample and resulting solutions.

- **MS/MSD** – A MS is an aliquot of a field sample with a known concentration of target parameter added to it. An MSD is an intra-laboratory split sample spiked with a known concentration of target parameter. Spiking for each occurs prior to sample analysis. MS/MSD samples are collected for every batch of twenty or fewer samples. Matrix spike recoveries are used to indicate what effect the sample matrix may have on the reported concentration and/or the performance of the sample preparation and analysis.

- **LCS** – These samples consist of distilled/deionized water injected with the parameters of interest for single parameter methods and selected parameters for multi-parameter methods according to the appropriate analytical method. LCS samples are prepared and analyzed for each batch containing twenty or fewer samples. LCS recoveries are used to monitor analytical accuracy.

Surrogate recoveries are also measured as a part of laboratory QA/QC. Surrogates are organic compounds that are like the parameters of interest in chemical composition, extraction, and chromatography, but are not normally found in environmental samples. These compounds are inserted into blank, standards, samples, and spiked samples prior to analysis for organic parameters only. Percent recoveries are calculated for each surrogate. Spike recoveries at or below acceptance criteria indicate whether analytical results can be considered biased high or biased low.

No trip or method blank detects were identified for the January 2024 monitoring event. The laboratory analysis reports for the January 2024 monitoring event trip blanks are included in

Appendix F. The January 2024 monitoring event laboratory QA/QC reports, including the method blank results, are included in the COA in **Appendix F.**

4.2.3 Data Validation

To identify analytical data that may not represent valid results, data from the monitoring events were validated by the Laboratory and SCS in accordance with United States Environmental Protection Agency (EPA) guidance[4]. Data flagged with a "J" qualifier indicates the quantitation of the parameter is less than the laboratory's limit of quantitation but greater than the laboratory's limit of detection (LOD); thus, the concentration is considered estimated. Samples with parameter detections less than five times that of the trip blank, field blank, and/or method blank detection but greater than the laboratory's LOD are flagged with a "B" qualifier. Samples with common laboratory contaminant parameter detections less than 10 times that of the trip blank, field blank, and/or method/laboratory blank detection but greater than the laboratory's LOD are flagged with a "B" qualifier. Data with a "B" qualifier are considered not validated as the detection may be anomalous due to cross-contamination during sampling, transportation of samples, or laboratory analysis.

No leachate results were flagged with a "B" qualifier for the January 2024 monitoring event as no detections were identified in the trip or method blanks. The January 2024 detections flagged with a "J" qualifier are shown on **Table 8.**

4.2.4 Laboratory Analytical Results

The analytical results for the January 2024 leachate samples collected from extraction wells EW-51, EW-59, and EW-98 are summarized in **Table 8.** The associated COAs are included in **Appendix F.** Parameter results from January 2024 and previous monitoring events (November 2022 – December 2023) are presented on a table in **Appendix F.** Time-series plots of each VOC for the wells that have historically been sampled are also included in **Appendix F.**

Table 8. Monthly LFG-EW Leachate Monitoring Event Summary

Well ID	**EW-51**	**EW-59**	**EW-98**	**LOD**	**LOQ**
Parameter	**January 2024 Concentration**				
Ammonia as N (mg/L)	**2160**	**2400**	**1610**	146	200
Biological Oxygen Demand (mg/L)	**26000**	**17100**	**14000**	0.2	2
Chemical Oxygen Demand (mg/L)	**48600**	**59800**	**38200**	5000	5000
Nitrate as N (mg/L)	**2.01**	ND	ND	1.5	5.5
Nitrite as N (mg/L)	**1.7 J**	ND	ND	1	5
Total Kjeldahl Nitrogen (mg/L)	**2450**	**3020**	**1810**	100	250
Total Recoverable Phenolics (mg/L)	**38**	---	**22.7**	1.5	2.5
	---	**39.2**	---	3	5

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[4] United States Environmental Protection Agency. Guidance for Data Usability in Risk Assessment (Part A-14). April 1992.
United States Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. National Functional Guidelines for Inorganic Superfund Methods Data Review. November 2020.
United States Environmental Protection Agency. Office of Superfund Remediation and Technology Innovation. National Functional Guidelines for Organic Superfund Methods Data Review. November 2020.

Table 8. Monthly LFG-EW Leachate Monitoring Event Summary

Well ID	**EW-51**	**EW-59**	**EW-98**	**LOD**	**LOQ**
Parameter	**January 2024 Concentration**				
SEMI-VOLATILE ORGANIC COMPOUND (ug/L)					
Anthracene	ND	---	---	100	200
	---	---	ND	250	500
	---	ND	---	1000	2000
TOTAL METALS (mg/L)					
Arsenic	**0.47**	**0.23**	**0.18**	0.0025	0.005
Barium	---	**1.92**	**1.91**	0.005	0.025
	3.27	---	---	0.01	0.05
Cadmium	ND	ND	ND	0.0005	0.005
Chromium	**0.17**	**0.193**	**0.128**	0.002	0.005
Copper	ND	**0.019**	ND	0.0015	0.005
Lead	ND	**0.0081**	ND	0.005	0.005
Mercury	ND	ND	ND	0.001	0.001
Nickel	**0.06308**	**0.04911**	**0.0326**	0.005	0.005
Selenium	ND	ND	ND	0.00425	0.005
Silver	ND	ND	ND	0.0003	0.005
Zinc	**0.117**	**0.0974**	**0.0261**	0.0125	0.025
VOLATILE FATTY ACIDS (mg/L)					
Acetic Acid	**4410**	**5290**	**3080**	---	250
Butyric Acid	**813**	**1230**	**594**	---	250
Lactic Acid	**629**	**979**	**256**	---	250
Propionic Acid	**1680**	**1970**	**1030**	---	250
Pyruvic Acid	ND	ND	ND	---	250
VOLATILE ORGANIC COMPOUNDS (ug/L)					
2-Butanone (MEK)	---	**10800**	---	150	500
	34700	---	**28900**	1500	5000
Acetone	**96600**	**22800**	**47300**	3500	5000
Benzene	**1410**	**662**	**2900**	20	50
Ethylbenzene	**99**	**28 J**	**248**	20	50
Tetrahydrofuran	**5160**	**1040**	**10900**	500	500
Toluene	**95.5**	**60**	**310**	25	50
Xylenes, Total	**142 J**	ND	**534**	50	150

--- = not available

J = Constituent was detected at a concentration above the laboratory's LOD but below the laboratory's LOQ. Concentration is estimated and not validated.

LOD = laboratory's Limit of Detection

LOQ = laboratory's Limit of Quantitation

mg/L = milligrams per liter

ND = Not Detected

ug/L = micrograms per liter

5.0 SETTLEMENT MONITORING AND MANAGEMENT

The City is taking steps to track and manage settlement occurring in the landfill. A summary of actions taken to quantify and manage settlement is included in the sections below.

5.1 SETTLEMENT MONITORING AND MANAGEMENT PLAN

On behalf of the City, SCS submitted a settlement monitoring and management plan to VDEQ on November 15, 2022. Refer to the 2022 November Monthly Compliance Report for the SWP No. 588 Landfill for additional information.

5.2 MONTHLY SURVEYS

5.2.1 Topographic Data Collection

The City, through SCS, collected topographic data of the Solid Waste Permit No. 588 Landfill using photogrammetric methods via an unmanned aerial vehicle (UAV or drone). On January 23, 2024, the flight was completed and the topographic data collected. The topographic data collected is shown on Sheet 4 in Appendix E. On the date that the data was collected, there was snow on the ground in parts of the landfill. This may have impacted the imagery used to calculate elevations.

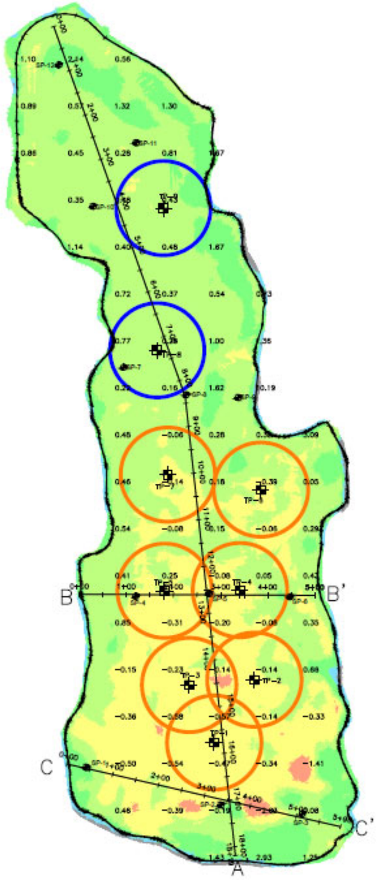
The topography within the landfill footprint was compared to topographic data collected by SCS using photogrammetric methods on December 20, 2024. A drawing depicting the December 20, 2023 topography is included as Sheet 3 in Appendix E.

Based on a comparison of the topographic data collected on those two dates, settlement occurred that reduced the volume of waste in the landfill by approximately 2,800 cubic yards. During that same time period, calculations indicate approximately 14,000 cubic yards of fill was placed during this time on the landfill. SCS could not identify the source of most of this fill, but suspects that snow on the landfill surface may have impacted elevation measurements. This resulted in a net volume increase of approximately 11,200 cubic yards. During the month of January, there was presence of snow and ice on the ground that likely effected the elevation data captured by the drone. Since there was not any construction-related filling happening during this timeframe, it is reasonable to assume the topography elevations were slightly impacted due to these winter weather conditions.

SCS attempted to delay data collection until later in the month to allow time for snow and ice to melt. Ultimately freezing temperatures prevented melting of snow and ice and topographic data was collected late in the month.

A visual depiction of settlement and filling at the landfill during this time is depicted in Figure 19. Areas in yellow, orange, and red indicate where elevations decreased and areas in green indicate areas where elevations have increased. Darker colors indicate greater changes in elevation. This drawing is also included as Sheet 5 in Appendix E.

Figure 16. 1-Month Elevation Change Color Map



The locations of in-waste temperature monitoring probes are also shown on Figure 26, Figure 27, and Figure 28. The circles around the probes are indicative of the average borehole temperature. The circles shown are offset from the probes for clarity only and do not necessarily indicate temperatures measured at locations away from the probe. Probes with a blue circle around them typically have an average temperature less than 200°F across the full depth of the probe. Probes with an orange circle around them typically have an average temperature greater than 200°F and less than 250°F across the full depth of the probe. Probes with a red circle around them typically have an average temperature greater than 250 °F and less than 300°F across the full depth of the probe. There were no probes measuring average temperatures greater than 250°F and less than 300°F during the month of January 2024.

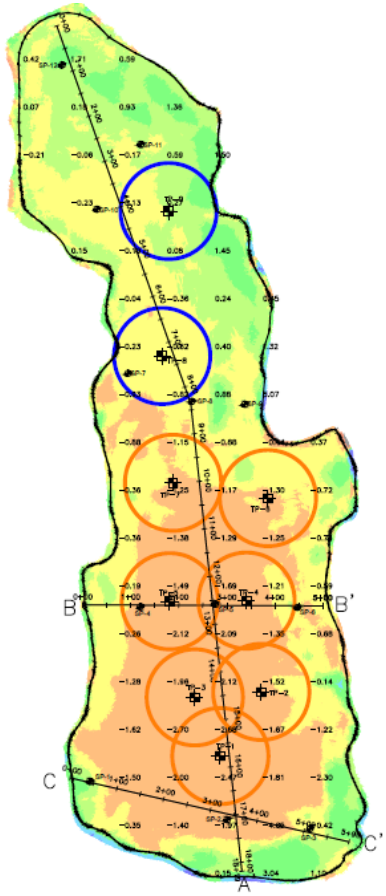
The largest settlement occurred primarily in the middle-southern end of the landfill where the waste settled by approximately 1 foot or more in some areas. The southern end of the landfill is the location of the gas wells and temperature probes exhibiting higher temperatures. The waste is thicker and newer in this region as well. These higher settlement values are typical of elevated temperature landfill conditions. Some areas of the landfill exhibited an increase in elevation, likely due to snow and ice affecting the elevation measurement.

SCS calculated the waste footprint for purposes of analysis to be 752,610 square feet. Based on that area and the net volume change, the average elevation increase was approximately 0.4 feet. This value likely reflects snow and ice on the ground and the time topographic data was collected.

SCS also compared the topographic data collected in January to the topographic data collected on October 12, 2023. Based on a comparison of the topographic data collected on those two dates, settlement occurred that reduced the volume of waste in the landfill by approximately 23,400 cubic yards. During that same time period calculations indicate approximately 6,200 cubic yards of fill were placed on the landfill. This fill may have been soil placed as part of the maintenance of the sidewall odor mitigation system construction, but this volume may also have been impacted by snow and ice on the ground in January of 2024. This resulted in a net volume decrease of approximately 17,200 cubic yards.

A visual depiction of settlement and filling at the landfill during this time is depicted in Figure 20. Areas in red indicate where elevations decreased and areas in green indicate areas where elevations have increased. Darker colors indicate greater changes in elevation. This drawing is also included as Sheet 6 in Appendix E.

Figure 17. 3-Month Elevation Change Color Map



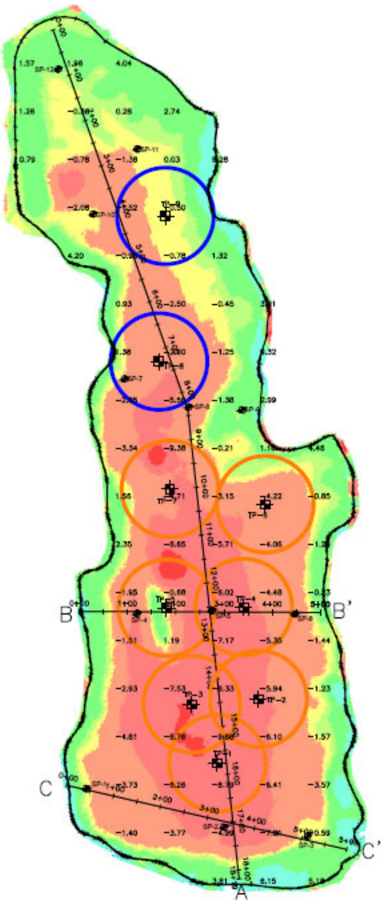
Based on the area of the landfill and the net volume change, the average elevation decrease was approximately 0.6 feet.

The largest settlement occurred primarily in the southern end of the landfill where the waste settled by approximately 3 feet or more in some areas. The southern end of the landfill is the location of the gas wells and temperature probes exhibiting higher temperatures, and where the waste is deepest. Higher settlements are typical of elevated temperature landfill conditions. Settlement in the northern portion of the landfill was generally less substantial or was offset by soil placement associated with construction activities. Changes in elevation in these areas are more representative of typical settlement at municipal landfills. Some portions of the landfill perimeter exhibited an increase in elevation, likely due to sediment deposition during storm events and soil placement associated with construction and maintenance of the sidewall odor mitigation system. There were some large variations in elevation associated with soil stockpiling operations.

SCS also compared the topographic data collected in January to the drone topographic data collected on January 10, 2023 by SCS. Based on a comparison of the topographic data collected on those two dates, settlement occurred that reduced the volume of waste in the landfill by approximately 75,200 cubic yards. During that same time period approximately 21,800 cubic yards of construction-related fill were placed on the landfill. This fill was primarily soil placed as part of the sidewall odor mitigation system construction. This resulted in a net volume decrease of approximately 53,400 cubic yards.

A visual depiction of settlement and filling at the landfill during this time is depicted in Figure 21. Areas in red indicate where elevations decreased and areas in green indicate areas where elevations have increased. Darker colors indicate greater changes in elevation. This drawing is also included as Sheet 7 in Appendix E.

Figure 18. 1-Year Elevation Change Color Map



The largest settlement occurred primarily in the southern end of the landfill where the waste settled by approximately 16 feet or more in some areas. These significant settlement values are typical of elevated temperature landfill conditions. The landfill perimeter exhibited an increase in elevation, likely due to soil placement associated with construction of the Sidewall Odor Mitigation System. There were variations in elevation associated with soil stockpiling operations.

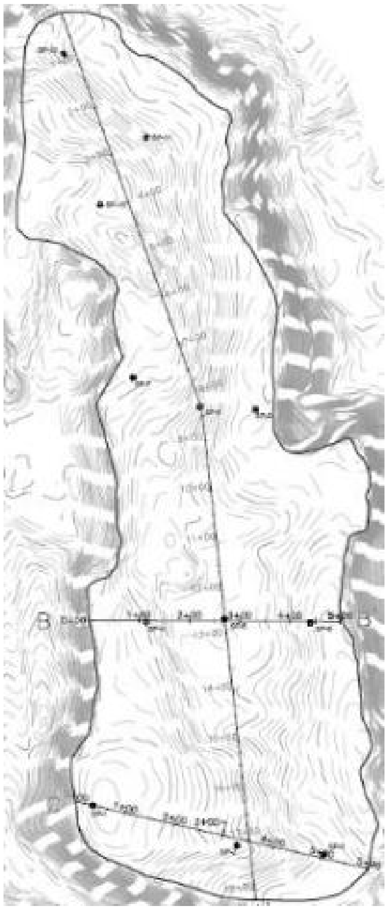
Based on the landfill area and the net volume change, the average elevation decrease was approximately 1.9 feet.

SCS will collect topographic data covering the landfill surface again in February using photogrammetric methods via UAV. This data will be compared to the data collected in February 2023, November 2023, and January 2024.

5.2.2 Settlement Plate Surveys

On November 7, 2022 SCS field services installed 12 settlement plates on the Solid Waste Permit No. 588 landfill. The construction and installation of the settlement plates generally conforms to the design outline in the Settlement Monitoring and Management Plan. The tops of the PVC pipes were spray painted orange to improve visibility. The settlement plate locations are depicted in Figure 22 and on Sheet 1 in Appendix E.

Figure 19. Settlement Plate Locations



The locations of the settlement plates were surveyed by the City's surveyor on November 14, 2022. The settlement plates were surveyed again on December 13, 2022; January 3, 2023; February 6, 2023; March 8, 2023; April 3, 2023; May 11, 2023; June 5, 2023; July 10, 2023; August 17, 2023; September 11, 2023; October 11, 2023; November 6, 2023; December 12, 2023; and January 11, 2024. The surveyed coordinates[5] and elevation changes of the settlement plates are shown in Table 9.

Table 9. Elevation and Strain Data at Settlement Plate Locations

Settlement Plate	Northing	Easting	Elevation on January 11, 2024	Elevation Change Since December 12, 2023	Strain[6] Since December 12, 2023	Elevation Change Since Installation	Strain/Year
SP-1	3,397,887.1	10,412,079.5	1,830.6	-0.1	-0.2%	-3.8	-2.6%
SP-2	3,397,809.9	10,412,365.9	1,802.1	-0.5	-0.3%	-8.5	-3.7%
SP-3[7]	3,397,787.5	10,412,537.9	N/A	N/A	N/A	N/A	N/A
SP-4[8]	3,398,250.2	10,412,187.6	1,808.3	-0.4	-0.3%	-9.1	-3.1%
SP-5	3,398,255.8	10,412,338.9	1,793.2	-0.4	-0.2%	-7.6	-2.0%
SP-6	3,398,248.9	10,412,510.4	1,774.9	-0.1	-0.1%	-2.8	-0.8%
SP-7[9]	3,398,735.0	10,412,158.4	1,825.5	-0.2	-0.2%	-3.1	-2.6%
SP-8	3,398,678.3	10,412,291.0	1,802.2	-0.3	-0.1%	-5.1	-1.4%
SP-9[10]	3,398,673.4	10,412,400.9	N/A	N/A	N/A	N/A	N/A
SP-10	3,399,080.3	10,412,092.9	1,838.3	-0.1	0.0%	-1.9	-0.4%
SP-11	3,399,216.3	10,412,184.0	1,815.3	-0.1	0.0%	-1.0	-0.5%
SP-12	3,399,381.9	10,412,019.5	1,810.2	0.0	0.0%	-0.5	0.0%

Settlement Plates 1, 2, 4, 5, and 7 demonstrated larger settlements than at other locations. Settlement Plates 4 and 7 were damaged during construction operations. Settlement Plates 1, 2, and 5 are located in the southern end of the landfill. This area is the location of the gas wells and temperature probes exhibiting higher temperatures. These higher settlement values are typical of elevated temperature landfill conditions.

The change in elevation at Settlement Plates 10, 11, and 12 was lower and more representative of typical settlement at municipal landfills with waste of similar depth. The change in elevation at Settlement Plates 6 and 8 falls somewhere in between these two categories. Settlement Plate 3 was damaged and unable to be measured during September 2023, October 2023, November 2023,

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[5] Settlement plate locations and coordinates are based on a local coordinate system.

[6] Strain is defined as the change in elevation divided by the estimated waste depth.

[7] SCS suspects that SP-3 was damaged as a result of construction activities.

[8] Based on field observations SP-4 appears to have been disturbed during grading on an adjacent roadway.

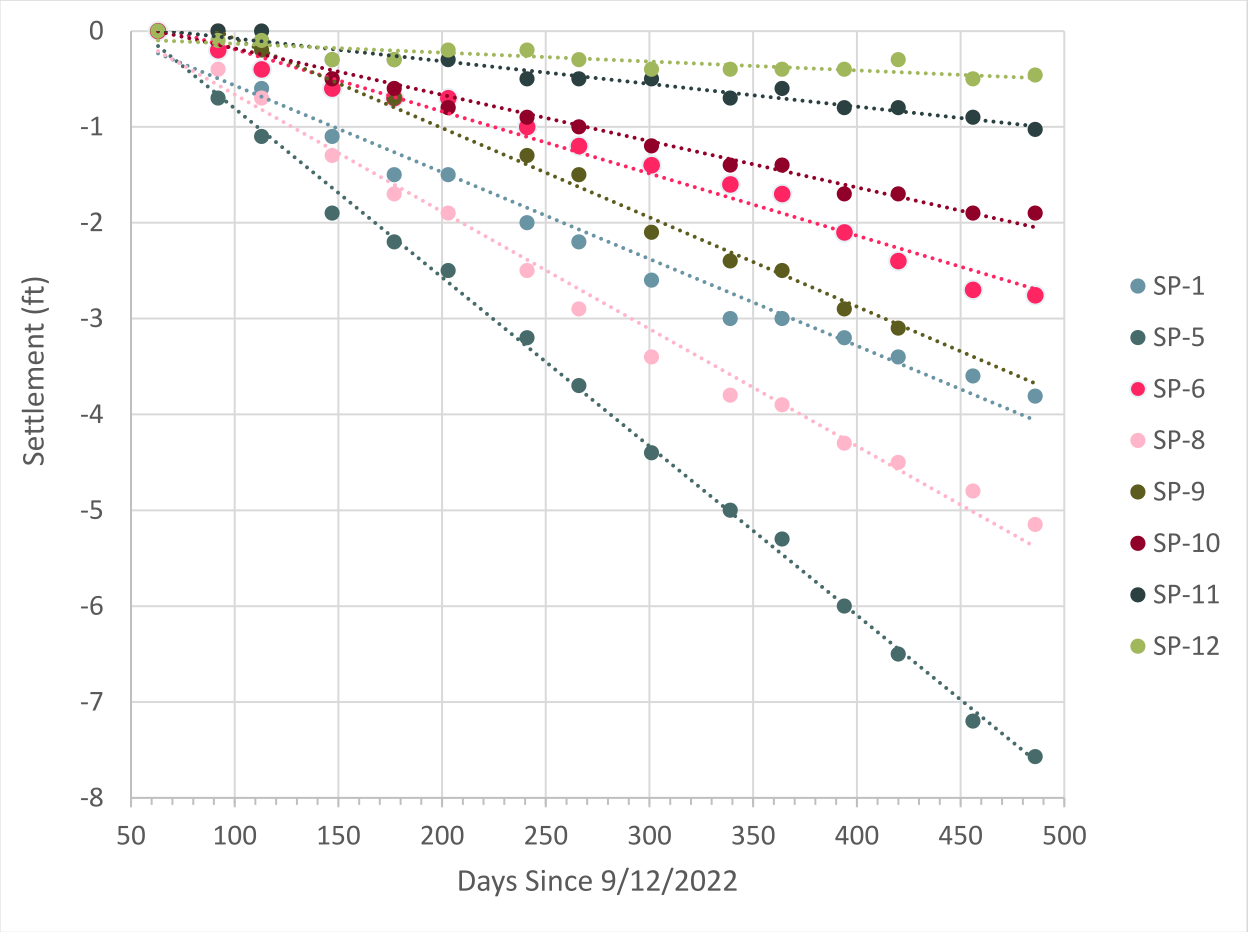
[9] Based on field observations SP-7 appears to have been disturbed during grading on an adjacent stockpile.

[10] SCS suspects that SP-9 was damaged as a result of construction activities.

December 2023, and January 2024. Settlement Plate 9 was located in standing water and was unable to be read for the month of December 2023 and January 2024.

Figure 23 shows the changes in elevation of select settlement plates over time. Best-fit lines for these changes in elevation are also shown on the graph. Currently settlement rates are represented better by best-fit lines generated using linear equations that logarithmic equations. For the purposes of recording data in this figure, times are measured in days since the landfill was required to stop accepting waste.

Figure 20. Linear Settlement



The settlement plates will be surveyed again during the month of February 2024. The elevations surveyed will be compared to the elevations surveyed the previous months.

6.0 INTERMEDIATE COVER AND EVOH COVER SYSTEM

The City is taking steps to provide intermediate and temporary cover of the wastes in the landfill. The sections below outline the steps taken by the City.

6.1 INTERMEDIATE COVER INSTALLATION

The City completed hauling and placement of a 12-inch-thick intermediate cover across the entire landfill prior to October 10, 2022. The cover was placed in accordance with 9VAC20-81-140(B)(1)(d). SCS coordinated with the City to dig a series of test holes to verify cover thickness in select locations. Details of these verifications were discussed in the October 2022 Monthly Compliance Report for the SWP No. 588 Landfill.

6.2 EVOH COVER SYSTEM DESIGN

On December 4, 2023, SCS submitted a revised stormwater management plan to submit to VDEQ, including revised drawings and calculations. The revised SWMP includes the three quarry basins, additional stormwater pumps, new stormwater force mains, and the preliminary layout of the new electrical infrastructure along the quarry rim.

On December 18, 2023 SCS and VDEQ met to discuss concerns about the impact of settlement on the proposed EVOH Cover System. SCS and VDEQ are engaged in ongoing discussions regarding the timing to the EVOH installation.

6.3 EVOH COVER SYSTEM PROCUREMENT

Drawings used for the purposes of bidding, procurement and construction of the EVOH cover system will generally conform to the layout and details in the drawings described in section 6.2. SCS also prepared and submitted to VDEQ a specification for the EVOH geomembrane on January 30, 2023 based upon industry standards and discussions with material manufacturers. This specification and drawing set represent the first steps in the procurement process. SCS and the City have coordinated with potential suppliers to specify a product that is not currently anticipated to have long lead times. SCS has received a pro-forma data sheet from one manufacturer which is preparing a customized EVOH product for the No. 588 landfill.

6.4 EVOH COVER SYSTEM INSTALLATION

Timeline discussions are ongoing for the EVOH Cover System installation. Ongoing settlement concerns and other work at the site are being considered.

7.0 STORMWATER MANAGEMENT

The City is taking steps to implement a stormwater management plan at the landfill. The sections below outline the steps taken by the City.

7.1 STORMWATER MANAGEMENT PLAN DEVELOPMENT

The initial stormwater management plan (SWMP) was submitted to VDEQ on April 28, 2023.

The revised SWMP was submitted to VDEQ on December 4, 2023. The plan proposes a stormwater pumping system to convey stormwater collected atop the EVOH cover system to an existing discharge point permitted under VPDES permit VAR050053. The proposed system includes the construction of three stormwater collection basins in the quarry and the installation of pairs of skidmounted stormwater pumps. The stormwater will be conveyed by force main pipes to the existing stormwater basins located west of the quarry.

The plan proposes modifications to the existing stormwater basins west of the quarry to achieve discharge quantity targets. Modifications include increasing the basin depths and installing new outlet riser structures.

7.2 STORMWATER MANAGEMENT BASIN DESIGN AND CONSTRUCTION

The landfill surface will be regraded to form the SWM basins proposed in the stormwater management plan. The earthwork will be completed as the first stage of the interim EVOH cover system installation project. A revised landfill gas management plan is being prepared to facilitate the regrading of the landfill, which will affect existing landfill gas infrastructure. The landfill gas system will be modified to accommodate the earthwork.

Attention is being given to settlement concerns in the vicinity of the stormwater basin or basins. Calculations provided to VDEQ on June 23, 2023 demonstrate the weight of the ponded water should not cause excessive settlement relative to ongoing settlement observed within the quarry. Including additional stormwater basins within the quarry will distribute the weight of ponded water over a wider area relative to the single stormwater basin design.

7.3 STORMWATER MANAGEMENT PLAN IMPLEMENTATION

The stormwater management plan design drawings are being incorporated into the overall construction drawings for the interim EVOH cover system. The interim EVOH cover system installation and stormwater management features will be bid and constructed as one project to facilitate simultaneous progress and completion.

7.4 LONG-TERM STORMWATER CONTROL AND REMOVAL

The stormwater management plan is designed with resiliency and redundancy to promote long-term operation. Two stormwater pumps will be installed for each basin, with each pump capable of operating independently. The pumps may be operated in parallel in contingency scenarios. The City plans to install a backup generator for the stormwater pumps to allow for continued operation in the event of a temporary power loss. The pumps have been selected to include additional pumping capacity to allow for future settlement.

A variable frequency drive control system is planned for the stormwater pumping system. The water level will be gauged using a transducer cable or comparable monitoring system to allow for automation of the pumping system. Appropriate telemetry will be used to allow for remote monitoring of the pumping system.

The operations manual will be updated to discuss the long-term operation and maintenance of the pumping system and other stormwater management features. Periodic inspections of the stormwater management system will be completed. The regular inspections will include monitoring the rate of settlement. If excessive settlement occurs, repairs will be planned and conducted as necessary to maintain the stormwater management system and cover system integrity.

7.5 STORMWATER MONITORING

Stormwater monitoring will commence upon initial discharge of stormwater from the quarry stormwater pumping system. As stated in the stormwater management plan drawings, the stormwater shall be monitored in accordance with the facility's VPDES general permit for discharge of stormwater associated with industrial activity. Additional requirements include collecting additional stormwater samples at the discharge pipes for the quarry stormwater pumping system. The stormwater from the quarry basins will be sampled on a monthly basis prior to discharge to the upper stormwater ponds. The Operations Manual will be revised to include these additional requirements.

If the stormwater becomes contaminated or sampling indicates contamination above discharge limits, the stormwater will be diverted to the sanitary sewer system. The diversion to the sanitary sewer system will continue until the source of contamination is identified and resolved. The stormwater discharge pipe alignment will pass adjacent to the existing sanitary sewer manhole. A tee with isolation valves will be used to direct the stormwater to the upper basins or the sanitary sewer manhole.

8.0 MISCELLANEOUS

8.1 CEASE WASTE ACCEPTANCE

The City ceased acceptance of offsite waste at the Solid Waste Permit No. 588 landfill prior to September 12, 2022.

8.2 LONG-TERM PLAN

SCS submitted the Monitoring, Maintenance, and Repair Plan to VDEQ for the SWP No. 588 landfill on December 30, 2022. Refer to the December 2022 Monthly Compliance Report for the SWP No. 588 Landfill for additional information. The City has taken steps to implement the plan that were detailed in the March 2023 Monthly Compliance Report for the SWP No. 588 Landfill.

8.3 MONTHLY COMPLIANCE REPORTS

As described in the introduction this report is intended to provide comprehensive updates regarding progress towards completion of each item described in Appendix A of the Consent Decree between the City and VDEQ,

8.4 COMMUNITY OUTREACH PROGRAM

The City's consultant leading community outreach, McGuireWoods Consulting, described the actions taken as part of their community outreach efforts. For the month of January, those actions include:

- Ongoing basis: Four posts on the BristalVALandfill.org site and the existing City of Bristol Landfill Notifications and Information page covering important updates including:
    - Progress updates related to remediation efforts at the quarry landfill

  - Included updates as well as related to steps towards closing landfill 498 in order to make sure residents are aware activities are occurring on another site in addition to ongoing work at the 588 landfill

- Weekly updates on landing page on Bristolvalandfill.org titled “Air Sampling and Air Monitoring” that includes a summary of the air sampling and monitoring being conducted by Bristol, VA around the quarry landfill.
  - Website now includes weekly air monitoring reports starting with May 15th, 2023 and running through January 7th of 2024.

- E-mail communication sent to the list of members of the public signed up through the Bristol, VA website, the BristolVALandfill.org website, or at subsequent Open Houses to receive information via e-mail
  - E-mails sent included weekly remediation progress update and links to website updates and latest news articles on the following days:
    - Wednesday, January 3rd
    - Friday, January 5th
    - Friday, January 19th
    - Friday, January 26th

Appendix A

Surface Emissions Monitoring Summary Letters

SCS ENGINEERS
Environmental Consulting & Contracting

January 10, 2024
File No. 02218208.04

Mr. Jonathan Chapman
Enforcement Specialist
Virginia Department of Environmental Quality
SW Regional Office
355-A Deadmore Street
Abingdon, VA 24210

Subject: Weekly Surface Emissions Monitoring Event – January 4, 2024
Bristol Integrated Solid Waste Facility – Bristol, Virginia

Dear Mr. Chapman:

On behalf of the City of Bristol (City), SCS Engineers (SCS), is pleased to submit the results of the Weekly Surface Emissions Monitoring event performed at the Bristol Integrated Solid Waste Facility located in Bristol, Virginia on January 4, 2024. This Weekly Surface Emissions Monitoring (SEM) Event was performed in accordance with Appendix A.1.i of the Consent Decree between the Commonwealth of Virginia and the City of Bristol.

The monitoring generally conforms to the requirements of 40 CFR 63.1960(c) and (d), and 40 CFR 60.36f(c) and (d), and 40 CFR 60, Appendix A, Method 21. The landfill gas (LFG) collection system is required to operate such that the methane concentration is less than 500 ppm above background at the landfill surface.

The monitoring route includes the entire waste footprint of the Permit No. 588 Landfill. Sampling was conducted with a Thermo Scientific TVA-2020 Flame Ionization Detector (FID) at 30-meter intervals and where visual observations indicated the potential for elevated concentrations of LFG, such as distressed vegetation and surface cover cracks. In addition, in accordance with 40 CFR 63.1958(d)(ii)(2) and 40 CFR 60.34f(d), monitoring was conducted at all surface cover penetrations within the waste footprint, including at the temperature probes and the newly installed and connected gas extraction wells. The approximate monitoring route and sampling locations are presented in the attached Drawing.

At the time of monitoring, all areas of the Permit No. 588 Landfill footprint are subject to regulatory monitoring based on the regulatory time schedule stipulated in 40 CFR 63.1960(b) and 40 CFR 60.36f(b). The Permit No. 588 Landfill has a surface area of approximately 17.3 acres. Therefore, the minimum number of sampling points to cover the appropriate portion of the landfill footprint, utilizing a 30-meter grid interval, is approximately 82 (4.75 points per acre). A summary of the results of the surface emissions monitoring is provided in Table 1.

Table 1. Summary of Surface Emissions Monitoring

Description	Quantity
Number of Points Sampled	172
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	72
Number of Exceedances	1
Number of Serpentine Exceedances	0
Number of Pipe Penetration Exceedances	1

REMONITORING OF ONGOING EXCEEDANCES

In accordance with 40 CFR 63.1960(c)(4)(ii) and 40 CFR 60.36f(c)(4)(ii), corrective actions and a remonitoring event are to be performed within 10 days of the initial exceedance. In accordance with 40 CFR 63.1960(c)(4)(iii) and 40 CFR 60.36f(c)(4)(iii) additional corrective actions and a second 10-day retest are to be performed if the initial 10-day retest indicates methane values greater than the regulatory threshold. The Facility performs corrective actions, as necessary, including wellhead vacuum adjustments, the installation of well-bore seals, and addition of soil cover prior to weekly monitoring events at locations that previously exhibited elevated methane concentrations.

In accordance with 40 CFR 63.1960(c)(4)(v) and 40 CFR 60.36f(c)(4)(v) a new well or collection device must be installed or an alternate remedy must be submitted within 120 days at locations that continue to exhibit methane concentrations above the regulatory threshold for two consecutive re-tests.

A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

Point ID	Initial Exceedance Date	1/4/24 Event	1/4/24 Event Result	Comments
EW-51	12/7/23	30-Day Retest	Passed	Exceedance Resolved
EW-67	12/7/23	30-Day Retest	Passed	Exceedance Resolved
EW-97	12/7/23	30-Day Retest	Passed	Exceedance Resolved
EW-98	12/7/23	30-Day Retest	Passed	Exceedance Resolved
EW-99	12/7/23	30-Day Retest	Passed	Exceedance Resolved
EW-90	12/14/23	N/A	Failed	Requires 2nd 10-Day Retest
EW-87	12/21/23	2nd 10-Day Retest	Passed	Requires 30-Day Retest
EW-95	12/21/23	2nd 10-Day Retest	Passed	Requires 30-Day Retest

If you have questions or require additional information, please contact either of the undersigned.

Sincerely,

Lucas S. Nachman

Quinn F. Bernier, PE
Project Professional
SCS Engineers

Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WRH/cjw

cc: Randall Eads, City of Bristol
Jonathan Hayes, City of Bristol
Jake Chandler, City of Bristol
Laura Socia, City of Bristol
Susan “Tracey” Blalock, VDEQ

Encl. Surface Emissions Monitoring Results
Bristol SEM Route Drawing

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 4, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	GPS Coordinates Long.	Comments
1	1.7 PPM	OK			Start Serpentine Route
2	2.7 PPM	OK			
3	1.8 PPM	OK			
4	1.8 PPM	OK			
5	1.7 PPM	OK			
6	1.6 PPM	OK			
7	1.6 PPM	OK			
8	1.6 PPM	OK			
9	1.5 PPM	OK			
10	1.5 PPM	OK			
11	1.5 PPM	OK			
12	1.5 PPM	OK			
13	1.4 PPM	OK			
14	1.5 PPM	OK			
15	1.5 PPM	OK			
16	2.1 PPM	OK			
17	2.7 PPM	OK			
18	2.2 PPM	OK			
19	1.8 PPM	OK			
20	2.3 PPM	OK			
21	2.1 PPM	OK			
22	2.1 PPM	OK			
23	2.7 PPM	OK			
24	1.9 PPM	OK			
25	4.3 PPM	OK			
26	2.2 PPM	OK			
27	2.5 PPM	OK			
28	1.7 PPM	OK			
29	2.0 PPM	OK			
30	3.1 PPM	OK			
31	3.1 PPM	OK			
32	10.3 PPM	OK			
33	78.2 PPM	OK			
34	88.6 PPM	OK			
35	14.6 PPM	OK			
36	22.4 PPM	OK			
37	307.0 PPM	OK			
38	4.9 PPM	OK			
39	13.9 PPM	OK			
40	131.0 PPM	OK			
41	1.8 PPM	OK			
42	1.6 PPM	OK			
43	1.6 PPM	OK			
44	1.6 PPM	OK			
45	1.4 PPM	OK			
46	1.4 PPM	OK			
47	1.4 PPM	OK			
48	1.5 PPM	OK			
49	1.3 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 4, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
50	1.3 PPM	OK			
51	1.3 PPM	OK			
52	1.3 PPM	OK			
53	1.3 PPM	OK			
54	1.2 PPM	OK			
55	1.2 PPM	OK			
56	1.2 PPM	OK			
57	1.2 PPM	OK			
58	1.2 PPM	OK			
59	1.2 PPM	OK			
60	1.1 PPM	OK			
61	1.1 PPM	OK			
62	1.1 PPM	OK			
63	1.1 PPM	OK			
64	2.8 PPM	OK			
65	3.1 PPM	OK			
66	1.2 PPM	OK			
67	4.3 PPM	OK			
68	1.3 PPM	OK			
69	2.4 PPM	OK			
70	5.0 PPM	OK			
71	11.4 PPM	OK			
72	5.6 PPM	OK			
73	1.4 PPM	OK			
74	96.0 PPM	OK			
75	32.8 PPM	OK			
76	5.9 PPM	OK			
77	8.2 PPM	OK			
78	1.2 PPM	OK			
79	3.5 PPM	OK			
80	1.3 PPM	OK			
81	1.5 PPM	OK			
82	1.1 PPM	OK			
83	1.1 PPM	OK			
84	1.1 PPM	OK			
85	1.1 PPM	OK			
86	1.1 PPM	OK			
87	1.1 PPM	OK			
88	1.1 PPM	OK			
89	1.1 PPM	OK			
90	1.1 PPM	OK			
91	1.1 PPM	OK			
92	1.1 PPM	OK			
93	4.4 PPM	OK			
94	13.2 PPM	OK			
95	37.4 PPM	OK			
96	14.8 PPM	OK			
97	10.7 PPM	OK			
98	2.0 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 4, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
99	1.7 PPM	OK			
100	11.2 PPM	OK			End Serpentine Route
101	244.0 PPM	OK			EW-35
102	83.8 PPM	OK			EW-52
103	22.0 PPM	OK			TP-4
104	114.0 PPM	OK			EW-60
105	5.0 PPM	OK			EW-48
106	1.1 PPM	OK			TP-6
107	1.2 PPM	OK			EW-61
108	1.6 PPM	OK			EW-50
109	7.5 PPM	OK			EW-67
110	4.1 PPM	OK			EW-47
111	12.7 PPM	OK			EW-54
112	1.4 PPM	OK			EW-55
113	1.2 PPM	OK			EW-92
114	19.9 PPM	OK			EW-91
115	3.4 PPM	OK			EW-96
116	3.9 PPM	OK			TP-2
117	1.9 PPM	OK			EW-66
118	2.4 PPM	OK			EW-58
119	4.8 PPM	OK			EW-57
120	36.3 PPM	OK			TP-1
121	2.2 PPM	OK			EW-59
122	2.7 PPM	OK			EW-100
123	34.2 PPM	OK			EW-56
124	7.0 PPM	OK			EW-97
125	2.3 PPM	OK			EW-41
126	1.9 PPM	OK			EW-53
127	1.8 PPM	OK			TP-3
128	95.2 PPM	OK			EW-51
129	4.8 PPM	OK			EW-39
130	2.4 PPM	OK			TP-5
131	96.6 PPM	OK			EW-68
132	41.2 PPM	OK			EW-87
133	2.0 PPM	OK			EW-38
134	182.0 PPM	OK			TP-7
135	1.2 PPM	OK			EW-49
136	1.3 PPM	OK			EW-83
137	1.0 PPM	OK			EW-65
138	1.0 PPM	OK			EW-81
139	1.0 PPM	OK			TP-8
140	1.0 PPM	OK			EW-64
141	1.0 PPM	OK			EW-63
142	1.0 PPM	OK			EW-42
143	1.0 PPM	OK			EW-76
144	1.0 PPM	OK			TP-9
145	1.1 PPM	OK			EW-62
146	1.0 PPM	OK			EW-29R

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 4, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	GPS Coordinates Long.	Comments
147	1.3 PPM	OK			EW-74
148	15.0 PPM	OK			EW-32R
149	1.1 PPM	OK			EW-69
150	1.0 PPM	OK			EW-71
151	1.0 PPM	OK			EW-72
152	1.0 PPM	OK			EW-70
153	1.0 PPM	OK			EW-73
154	1.0 PPM	OK			EW-78
155	4.0 PPM	OK			EW-82
156	1.4 PPM	OK			EW-36A
157	2.7 PPM	OK			EW-85
158	1.2 PPM	OK			EW-88
159	2.7 PPM	OK			EW-89
160	2.6 PPM	OK			EW-93
161	1.3 PPM	OK			EW-94
162	1.4 PPM	OK			EW-98
163	7.1 PPM	OK			EW-99
164	104.0 PPM	OK			EW-95
165	800.0 PPM	HIGH_ALRM	36.59877	-82.14825	EW-90
166	76.3 PPM	OK			EW-86
167	1.3 PPM	OK			EW-84
168	1.5 PPM	OK			EW-80
169	1.0 PPM	OK			EW-79
170	1.1 PPM	OK			EW-77
171	1.1 PPM	OK			EW-33B
172	1.5 PPM	OK			EW-75

Number of locations sampled:	172
Number of exceedance locations:	1

NOTES:

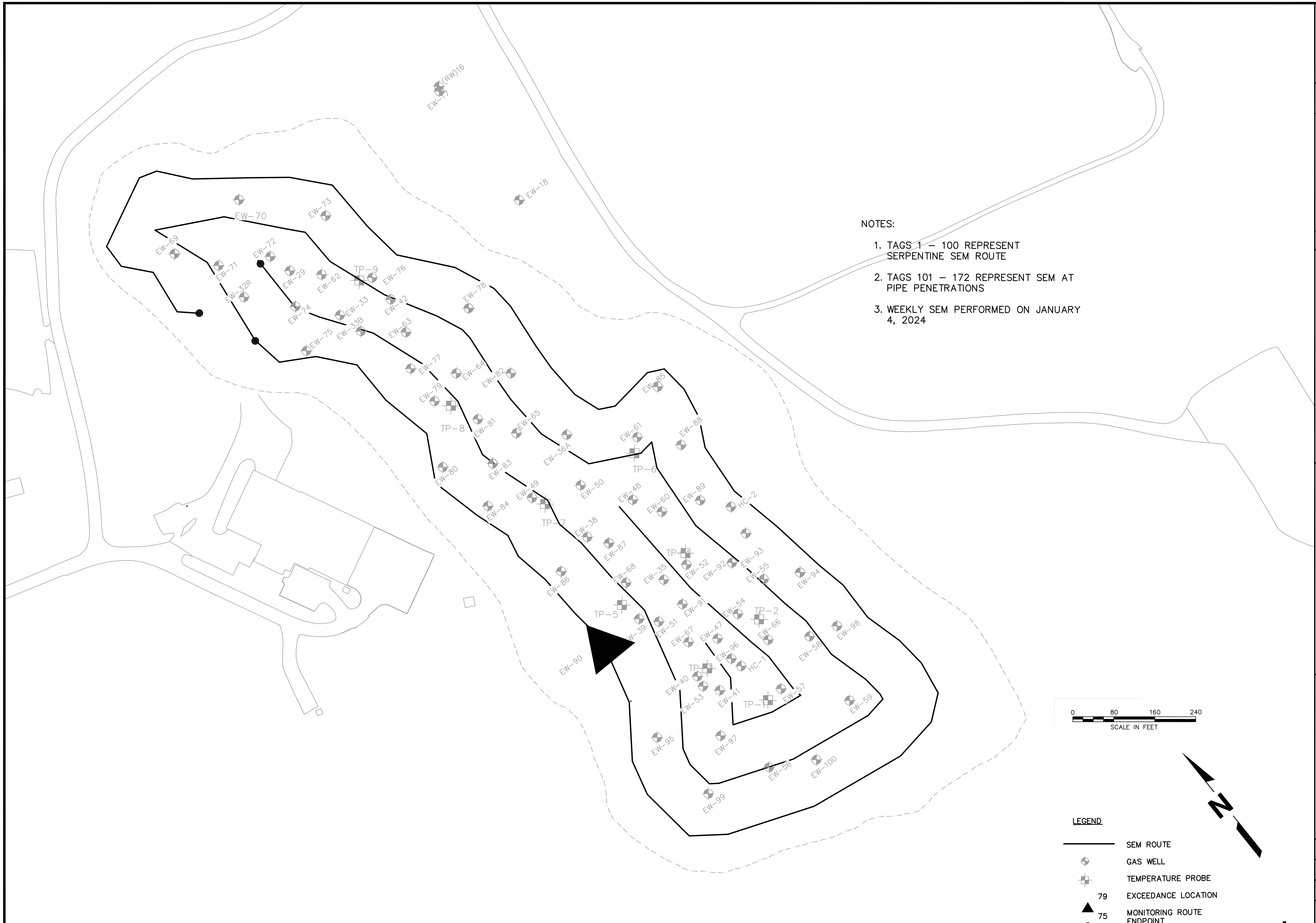
Points 1 through 100 represent serpentine SEM route.
Points 101 through 172 represent SEM at Pipe Penetrations
Weather Conditions: Cloudy 34°F Wind: 7 SW

Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm

1/4/2024	10:38	ZERO	0.1	PPM
1/4/2024	10:40	SPAN	501.0	PPM

Background Reading:

1/4/2024	10:42	Upwind	2.0	PPM
1/4/2024	10:48	Downwind	1.7	PPM



NOTES:

1. TAGS 1 – 100 REPRESENT SERPENTINE SEM ROUTE
2. TAGS 101 – 172 REPRESENT SEM AT PIPE PENETRATIONS
3. WEEKLY SEM PERFORMED ON JANUARY 4, 2024

LEGEND

—	SEM ROUTE
⊕	GAS WELL
⊞	TEMPERATURE PROBE
79	EXCEEDANCE LOCATION
▲ 75	MONITORING ROUTE
●	ENDPOINT

NO.	REVISION	DATE
△		
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△		

SHEET TITLE
WEEKLY SEM ROUTE

PROJECT TITLE
SURFACE EMISSIONS MONITORING
SOLID WASTE PERMIT #588

CLIENT
CITY OF BRISTOL INTEGRATED SOLID
WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
15521 MIDLOTHIAN TNPK - MIDLOTHIAN, VA 23113
PH. (804) 378-7440 FAX. (804) 378-7433

PROJ. NO. 02218208.04
DWN. BY: LSN
Q/A RVW BY:
DSN. BY: LSN
CHK. BY: DBK
APP. BY:

FILE: 02218208.04

DATE: 1/4/24

SCALE: AS SHOWN

DRAWING NO.

1

of 1

SCS ENGINEERS

Environmental Consulting & Contracting

January 17, 2024
File No. 02218208.04

Mr. Jonathan Chapman
Enforcement Specialist
Virginia Department of Environmental Quality
SW Regional Office
355-A Deadmore Street
Abingdon, VA 24210

Subject: Weekly Surface Emissions Monitoring Event – January 12, 2024
Bristol Integrated Solid Waste Facility – Bristol, Virginia

Dear Mr. Chapman:

On behalf of the City of Bristol (City), SCS Engineers (SCS), is pleased to submit the results of the Weekly Surface Emissions Monitoring event performed at the Bristol Integrated Solid Waste Facility located in Bristol, Virginia on January 12, 2024. This Weekly Surface Emissions Monitoring (SEM) Event was performed in accordance with Appendix A.1.i of the Consent Decree between the Commonwealth of Virginia and the City of Bristol.

The monitoring generally conforms to the requirements of 40 CFR 63.1960(c) and (d), and 40 CFR 60.36f(c) and (d), and 40 CFR 60, Appendix A, Method 21. The landfill gas (LFG) collection system is required to operate such that the methane concentration is less than 500 ppm above background at the landfill surface.

The monitoring route includes the entire waste footprint of the Permit No. 588 Landfill. Sampling was conducted with a Thermo Scientific TVA-2020 Flame Ionization Detector (FID) at 30-meter intervals and where visual observations indicated the potential for elevated concentrations of LFG, such as distressed vegetation and surface cover cracks. In addition, in accordance with 40 CFR 63.1958(d)(ii)(2) and 40 CFR 60.34f(d), monitoring was conducted at all surface cover penetrations within the waste footprint, including at the temperature probes and the newly installed and connected gas extraction wells. The approximate monitoring route and sampling locations are presented in the attached Drawing.

At the time of monitoring, all areas of the Permit No. 588 Landfill footprint are subject to regulatory monitoring based on the regulatory time schedule stipulated in 40 CFR 63.1960(b) and 40 CFR 60.36f(b). The Permit No. 588 Landfill has a surface area of approximately 17.3 acres. Therefore, the minimum number of sampling points to cover the appropriate portion of the landfill footprint, utilizing a 30-meter grid interval, is approximately 82 (4.75 points per acre). A summary of the results of the surface emissions monitoring is provided in Table 1.

Table 1. Summary of Surface Emissions Monitoring

Description	Quantity
Number of Points Sampled	172
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	72
Number of Exceedances	3
Number of Serpentine Exceedances	0
Number of Pipe Penetration Exceedances	3

REMONITORING OF ONGOING EXCEEDANCES

In accordance with 40 CFR 63.1960(c)(4)(ii) and 40 CFR 60.36f(c)(4)(ii), corrective actions and a remonitoring event are to be performed within 10 days of the initial exceedance. In accordance with 40 CFR 63.1960(c)(4)(iii) and 40 CFR 60.36f(c)(4)(iii) additional corrective actions and a second 10-day retest are to be performed if the initial 10-day retest indicates methane values greater than the regulatory threshold. The Facility performs corrective actions, as necessary, including wellhead vacuum adjustments, the installation of well-bore seals, and addition of soil cover prior to weekly monitoring events at locations that previously exhibited elevated methane concentrations.

In accordance with 40 CFR 63.1960(c)(4)(v) and 40 CFR 60.36f(c)(4)(v) a new well or collection device must be installed or an alternate remedy must be submitted within 120 days at locations that continue to exhibit methane concentrations above the regulatory threshold for two consecutive re-tests.

A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

Point ID	Initial Exceedance Date	1/12/24 Event	1/12/24 Event Result	Comments
EW-90	12/14/23	30-Day Retest	Passed	Exceedance Resolved
Tag 74	12/21/23	N/A	Passed	Requires 30-Day Retest
EW-87	12/21/23	N/A	Failed	Requires 30-Day Retest
EW-95	12/21/23	N/A	Passed	Requires 30-Day Retest

If you have questions or require additional information, please contact either of the undersigned.

Sincerely,

Wylie Hicklin

Lucas S. Nachman

Wylie R Hicklin
Associate Staff Professional
SCS Engineers

Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WRH/cjw

cc: Randall Eads, City of Bristol
Jonathan Hayes, City of Bristol
Jake Chandler, City of Bristol
Laura Socia, City of Bristol
Susan “Tracey” Blalock, VDEQ

Encl. Surface Emissions Monitoring Results
Bristol SEM Route Drawing

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 12, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
1	2.0 PPM	OK			Start Serpentine Route
2	2.5 PPM	OK			
3	2.0 PPM	OK			
4	1.8 PPM	OK			
5	1.7 PPM	OK			
6	1.6 PPM	OK			
7	1.8 PPM	OK			
8	1.7 PPM	OK			
9	1.8 PPM	OK			
10	1.7 PPM	OK			
11	1.7 PPM	OK			
12	1.8 PPM	OK			
13	1.8 PPM	OK			
14	2.3 PPM	OK			
15	2.9 PPM	OK			
16	2.3 PPM	OK			
17	154.0 PPM	OK			
18	15.7 PPM	OK			
19	8.7 PPM	OK			
20	8.5 PPM	OK			
21	6.4 PPM	OK			
22	29.7 PPM	OK			
23	17.2 PPM	OK			
24	19.4 PPM	OK			
25	24.1 PPM	OK			
26	17.3 PPM	OK			
27	10.8 PPM	OK			
28	41.4 PPM	OK			
29	89.6 PPM	OK			
30	155.0 PPM	OK			
31	111.0 PPM	OK			
32	95.6 PPM	OK			
33	152.0 PPM	OK			
34	83.2 PPM	OK			
35	377.0 PPM	OK			
36	272.0 PPM	OK			
37	5.3 PPM	OK			
38	13.3 PPM	OK			
39	28.0 PPM	OK			
40	12.9 PPM	OK			
41	21.7 PPM	OK			
42	19.1 PPM	OK			
43	1.3 PPM	OK			
44	1.4 PPM	OK			
45	2.3 PPM	OK			
46	1.5 PPM	OK			
47	1.5 PPM	OK			
48	1.2 PPM	OK			
49	1.2 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 12, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
50	1.2 PPM	OK			
51	1.4 PPM	OK			
52	1.2 PPM	OK			
53	1.2 PPM	OK			
54	1.4 PPM	OK			
55	1.2 PPM	OK			
56	1.1 PPM	OK			
57	2.0 PPM	OK			
58	2.0 PPM	OK			
59	2.4 PPM	OK			
60	5.5 PPM	OK			
61	5.9 PPM	OK			
62	5.6 PPM	OK			
63	4.9 PPM	OK			
64	8.8 PPM	OK			
65	12.5 PPM	OK			
66	193.0 PPM	OK			
67	1.7 PPM	OK			
68	199.0 PPM	OK			
69	24.6 PPM	OK			
70	31.1 PPM	OK			
71	1.5 PPM	OK			
72	5.2 PPM	OK			
73	33.7 PPM	OK			
74	13.6 PPM	OK			
75	9.8 PPM	OK			
76	135.0 PPM	OK			
77	8.1 PPM	OK			
78	99.4 PPM	OK			
79	9.6 PPM	OK			
80	6.3 PPM	OK			
81	1.3 PPM	OK			
82	3.1 PPM	OK			
83	3.7 PPM	OK			
84	1.6 PPM	OK			
85	1.5 PPM	OK			
86	1.1 PPM	OK			
87	1.5 PPM	OK			
88	1.2 PPM	OK			
89	1.5 PPM	OK			
90	0.9 PPM	OK			
91	3.9 PPM	OK			
92	17.3 PPM	OK			
93	21.3 PPM	OK			
94	1.3 PPM	OK			
95	0.8 PPM	OK			
96	0.5 PPM	OK			
97	4.1 PPM	OK			
98	5.2 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 12, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
99	7.2 PPM	OK			
100	2.6 PPM	OK			End Serpentine Route
101	150.0 PPM	OK			EW-35
102	48.1 PPM	OK			EW-52
103	2.8 PPM	OK			TP-4
104	89.5 PPM	OK			EW-60
105	26.3 PPM	OK			EW-48
106	0.5 PPM	OK			TP-6
107	0.6 PPM	OK			EW-61
108	0.9 PPM	OK			EW-50
109	988.0 PPM	HIGH_ALRM	36.59866	-82.14779	EW-67
110	0.9 PPM	OK			EW-47
111	0.5 PPM	OK			EW-54
112	0.4 PPM	OK			EW-55
113	27.6 PPM	OK			EW-92
114	13.9 PPM	OK			EW-91
115	3.6 PPM	OK			EW-96
116	0.6 PPM	OK			TP-2
117	8.4 PPM	OK			EW-66
118	122.0 PPM	OK			EW-58
119	14.6 PPM	OK			EW-57
120	34.7 PPM	OK			TP-1
121	2.7 PPM	OK			EW-59
122	1.2 PPM	OK			EW-100
123	34.7 PPM	OK			EW-56
124	40.0 PPM	OK			EW-97
125	252.0 PPM	OK			EW-41
126	165.0 PPM	OK			EW-53
127	1.0 PPM	OK			TP-3
128	11.6 PPM	OK			EW-51
129	0.9 PPM	OK			EW-39
130	20.0 PPM	OK			TP-5
131	12.2 PPM	OK			EW-68
132	4112.0 PPM	HIGH_ALRM	36.59934	-82.14782	EW-87
133	60.8 PPM	OK			EW-38
134	68.8 PPM	OK			TP-7
135	1.4 PPM	OK			EW-49
136	4.5 PPM	OK			EW-83
137	2.0 PPM	OK			EW-65
138	0.9 PPM	OK			EW-81
139	0.6 PPM	OK			TP-8
140	0.9 PPM	OK			EW-64
141	0.7 PPM	OK			EW-63
142	0.5 PPM	OK			EW-42
143	0.6 PPM	OK			EW-76
144	0.4 PPM	OK			TP-9
145	0.5 PPM	OK			EW-62
146	10.2 PPM	OK			EW-29R

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 12, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	GPS Coordinates Long.	Comments
147	1.1 PPM	OK			EW-74
148	4.5 PPM	OK			EW-32R
149	0.3 PPM	OK			EW-69
150	0.3 PPM	OK			EW-71
151	121.0 PPM	OK			EW-72
152	0.7 PPM	OK			EW-70
153	0.9 PPM	OK			EW-73
154	12.9 PPM	OK			EW-78
155	3.7 PPM	OK			EW-82
156	3.1 PPM	OK			EW-36A
157	2.5 PPM	OK			EW-85
158	3.3 PPM	OK			EW-88
159	19.6 PPM	OK			EW-89
160	3.8 PPM	OK			EW-93
161	6.3 PPM	OK			EW-94
162	144.0 PPM	OK			EW-98
163	2945.0 PPM	HIGH_ALRM	36.59795	-82.14829	EW-99
164	153.0 PPM	OK			EW-95
165	9.5 PPM	OK			EW-90
166	11.7 PPM	OK			EW-86
167	46.9 PPM	OK			EW-84
168	4.7 PPM	OK			EW-80
169	1.1 PPM	OK			EW-79
170	0.9 PPM	OK			EW-77
171	1.4 PPM	OK			EW-33B
172	1.0 PPM	OK			EW-75

Number of locations sampled:	172
Number of exceedance locations:	3

NOTES:

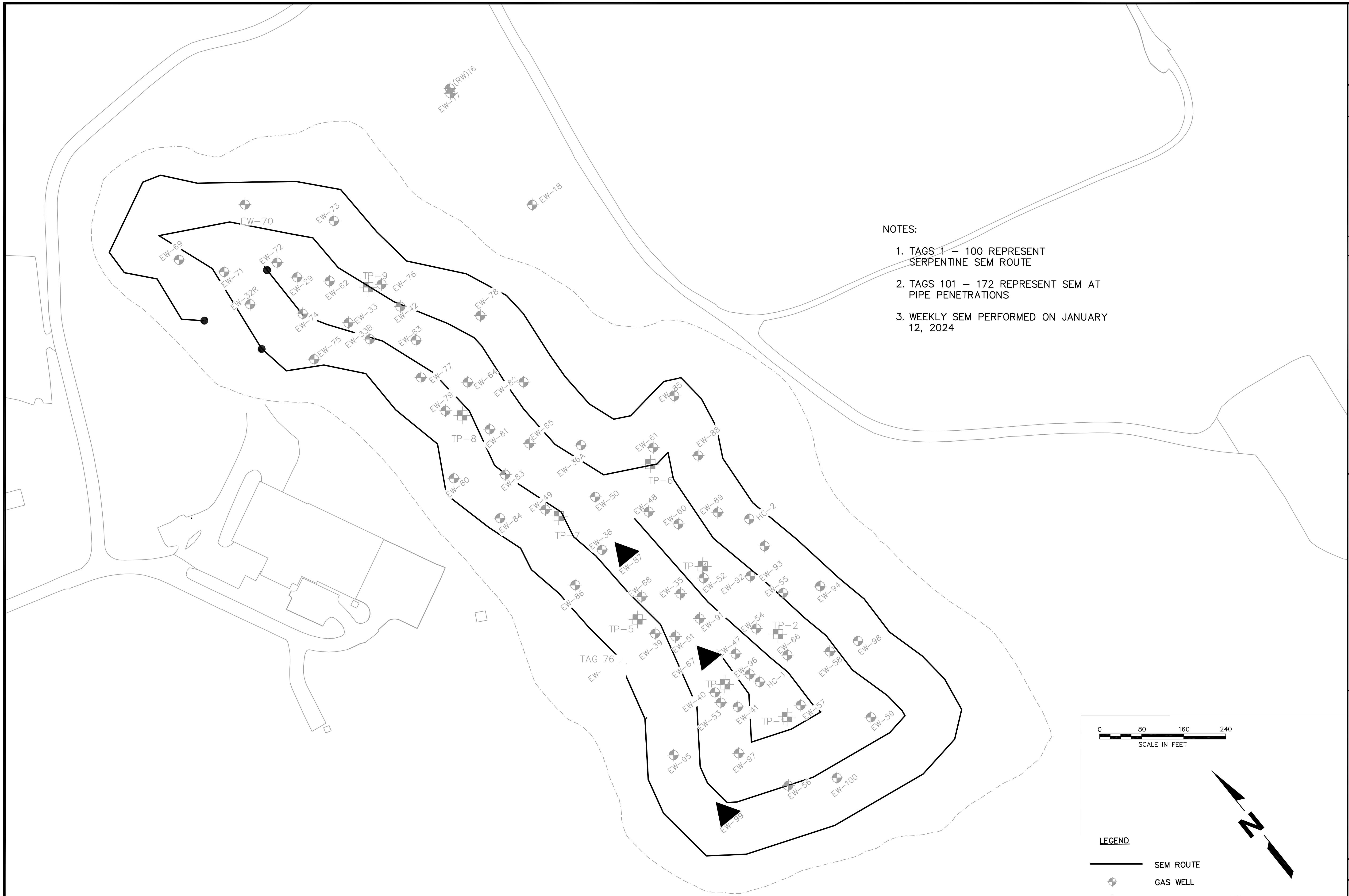
Points 1 through 100 represent serpentine SEM route.
Points 101 through 172 represent SEM at Pipe Penetrations
Weather Conditions: Suny, 51˚F Wind: 20 MPH N

Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm

1/12/2024	9:37	ZERO	0.0	PPM
1/12/2024	9:39	SPAN	500.0	PPM

Background Reading:

1/12/2024	9:44	Upwind	1.9	PPM
1/12/2024	9:49	Downwind	3.4	PPM



NOTES:

1. TAGS 1 – 100 REPRESENT SERPENTINE SEM ROUTE
2. TAGS 101 – 172 REPRESENT SEM AT PIPE PENETRATIONS
3. WEEKLY SEM PERFORMED ON JANUARY 12, 2024

LEGEND

—	SEM ROUTE
⊕	GAS WELL
⊞	TEMPERATURE PROBE
79	EXCEEDANCE LOCATION
▲ 75	MONITORING ROUTE
●	ENDPOINT

1

NO.	REVISION	DATE
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SHEET TITLE
WEEKLY SEM ROUTE

PROJECT TITLE
SURFACE EMISSIONS MONITORING
SOLID WASTE PERMIT #588

CLIENT
CITY OF BRISTOL INTEGRATED SOLID
WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
15521 MIDLOTHIAN TNPK - MIDLOTHIAN, VA 23113
PH. (804) 378-7440 FAX. (804) 378-7433

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FILE: 02218208.04
DATE: 1/12/24
SCALE: AS SHOWN
DRAWING NO.

of 1

SCS ENGINEERS

Environmental Consulting & Contracting

January 24, 2024
File No. 02218208.04

Mr. Jonathan Chapman
Enforcement Specialist
Virginia Department of Environmental Quality
SW Regional Office
355-A Deadmore Street
Abingdon, VA 24210

Subject: Weekly Surface Emissions Monitoring Event – January 17, 2024
Bristol Integrated Solid Waste Facility – Bristol, Virginia

Dear Mr. Chapman:

On behalf of the City of Bristol (City), SCS Engineers (SCS), is pleased to submit the results of the Weekly Surface Emissions Monitoring event performed at the Bristol Integrated Solid Waste Facility located in Bristol, Virginia on January 17, 2024. This Weekly Surface Emissions Monitoring (SEM) Event was performed in accordance with Appendix A.1.i of the Consent Decree between the Commonwealth of Virginia and the City of Bristol.

The monitoring generally conforms to the requirements of 40 CFR 63.1960(c) and (d), and 40 CFR 60.36f(c) and (d), and 40 CFR 60, Appendix A, Method 21. The landfill gas (LFG) collection system is required to operate such that the methane concentration is less than 500 ppm above background at the landfill surface.

The monitoring route includes the entire waste footprint of the Permit No. 588 Landfill. Sampling was conducted with a Thermo Scientific TVA-2020 Flame Ionization Detector (FID) at 30-meter intervals and where visual observations indicated the potential for elevated concentrations of LFG, such as distressed vegetation and surface cover cracks. In addition, in accordance with 40 CFR 63.1958(d)(ii)(2) and 40 CFR 60.34f(d), monitoring was conducted at all surface cover penetrations within the waste footprint, including at the temperature probes and the newly installed and connected gas extraction wells. The approximate monitoring route and sampling locations are presented in the attached Drawing.

At the time of monitoring, all areas of the Permit No. 588 Landfill footprint are subject to regulatory monitoring based on the regulatory time schedule stipulated in 40 CFR 63.1960(b) and 40 CFR 60.36f(b). The Permit No. 588 Landfill has a surface area of approximately 17.3 acres. Therefore, the minimum number of sampling points to cover the appropriate portion of the landfill footprint, utilizing a 30-meter grid interval, is approximately 82 (4.75 points per acre). A summary of the results of the surface emissions monitoring is provided in Table 1.

Table 1. Summary of Surface Emissions Monitoring

Description	Quantity
Number of Points Sampled	171
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	71
Number of Exceedances	8
Number of Serpentine Exceedances	0
Number of Pipe Penetration Exceedances	8

REMONITORING OF ONGOING EXCEEDANCES

In accordance with 40 CFR 63.1960(c)(4)(ii) and 40 CFR 60.36f(c)(4)(ii), corrective actions and a remonitoring event are to be performed within 10 days of the initial exceedance. In accordance with 40 CFR 63.1960(c)(4)(iii) and 40 CFR 60.36f(c)(4)(iii) additional corrective actions and a second 10-day retest are to be performed if the initial 10-day retest indicates methane values greater than the regulatory threshold. The Facility performs corrective actions, as necessary, including wellhead vacuum adjustments, the installation of well-bore seals, and addition of soil cover prior to weekly monitoring events at locations that previously exhibited elevated methane concentrations.

In accordance with 40 CFR 63.1960(c)(4)(v) and 40 CFR 60.36f(c)(4)(v) a new well or collection device must be installed or an alternate remedy must be submitted within 120 days at locations that continue to exhibit methane concentrations above the regulatory threshold for two consecutive re-tests.

An increase in exceedances was observed during this monitoring event. This was likely a result of reduced vacuum to select wellheads following a winter storm and extreme cold temperatures. As conditions improve, it is anticipated that adequate vacuum to control emissions at surface cover penetrations will be restored.

A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

Point ID	Initial Exceedance Date	1/17/24 Event	1/17/24 Event Result	Comments
Tag 74	12/21/23	30-Day Retest	Passed	Exceedance Resolved
EW-87	12/21/23	30-Day Retest	Failed	Subject to 40 CFR 63.1960(c)(4)(v)
EW-95	12/21/23	30-Day Retest	Passed	Exceedance Resolved
EW-67	1/12/24	10-Day Retest	Failed	Requires 2nd 10-Day Retest
EW-99	1/12/24	10-Day Retest	Failed	Requires 2nd 10-Day Retest

If you have questions or require additional information, please contact either of the undersigned.

Sincerely,

William J. Fabrie

Lucas S. Nachman

William J. Fabrie
Staff Professional
SCS Engineers

Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WJF/cjw

cc: Randall Eads, City of Bristol
Jonathan Hayes, City of Bristol
Jake Chandler, City of Bristol
Laura Socia, City of Bristol
Susan “Tracey” Blalock, VDEQ

Encl. Surface Emissions Monitoring Results
Bristol SEM Route Drawing

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 17, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
1	1.8 PPM	OK			Start Serpentine Route
2	1.7 PPM	OK			
3	1.7 PPM	OK			
4	1.6 PPM	OK			
5	1.6 PPM	OK			
6	1.6 PPM	OK			
7	1.6 PPM	OK			
8	1.6 PPM	OK			
9	1.6 PPM	OK			
10	1.6 PPM	OK			
11	1.5 PPM	OK			
12	1.5 PPM	OK			
13	1.5 PPM	OK			
14	1.6 PPM	OK			
15	1.5 PPM	OK			
16	5.6 PPM	OK			
17	2.2 PPM	OK			
18	75.6 PPM	OK			
19	1.7 PPM	OK			
20	2.7 PPM	OK			
21	1.9 PPM	OK			
22	3.9 PPM	OK			
23	70.6 PPM	OK			
24	39.7 PPM	OK			
25	3.6 PPM	OK			
26	4.7 PPM	OK			
27	4.4 PPM	OK			
28	4.1 PPM	OK			
29	15.5 PPM	OK			
30	11.7 PPM	OK			
31	30.6 PPM	OK			
32	74.2 PPM	OK			
33	101.0 PPM	OK			
34	27.5 PPM	OK			
35	18.6 PPM	OK			
36	7.1 PPM	OK			
37	11.3 PPM	OK			
38	2.6 PPM	OK			
39	1.9 PPM	OK			
40	2.3 PPM	OK			
41	1.5 PPM	OK			
42	1.5 PPM	OK			
43	1.4 PPM	OK			
44	1.4 PPM	OK			
45	1.4 PPM	OK			
46	1.4 PPM	OK			
47	1.4 PPM	OK			
48	1.3 PPM	OK			
49	1.3 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 17, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
50	1.3 PPM	OK			
51	1.3 PPM	OK			
52	1.3 PPM	OK			
53	1.3 PPM	OK			
54	1.3 PPM	OK			
55	1.3 PPM	OK			
56	1.3 PPM	OK			
57	1.2 PPM	OK			
58	1.3 PPM	OK			
59	5.2 PPM	OK			
60	3.6 PPM	OK			
61	1.3 PPM	OK			
62	1.4 PPM	OK			
63	4.4 PPM	OK			
64	1.3 PPM	OK			
65	21.3 PPM	OK			
66	5.6 PPM	OK			
67	28.3 PPM	OK			
68	269.0 PPM	OK			
69	74.1 PPM	OK			
70	16.3 PPM	OK			
71	6.6 PPM	OK			
72	7.4 PPM	OK			
73	104.0 PPM	OK			
74	64.6 PPM	OK			
75	7.5 PPM	OK			
76	11.1 PPM	OK			
77	7.3 PPM	OK			
78	1.7 PPM	OK			
79	5.6 PPM	OK			
80	3.5 PPM	OK			
81	2.8 PPM	OK			
82	2.0 PPM	OK			
83	12.9 PPM	OK			
84	2.2 PPM	OK			
85	1.2 PPM	OK			
86	1.1 PPM	OK			
87	1.1 PPM	OK			
88	1.1 PPM	OK			
89	1.1 PPM	OK			
90	1.1 PPM	OK			
91	1.4 PPM	OK			
92	106.0 PPM	OK			
93	14.4 PPM	OK			
94	5.2 PPM	OK			
95	38.6 PPM	OK			
96	18.4 PPM	OK			
97	6.0 PPM	OK			
98	12.1 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 17, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
99	7.3 PPM	OK			
100	23.9 PPM	OK			End Serpentine Route
101	369.0 PPM	OK			EW-35
102	111.0 PPM	OK			EW-52
103	4.2 PPM	OK			TP-4
104	31.0 PPM	OK			EW-60
105	31.2 PPM	OK			EW-48
106	38.1 PPM	OK			TP-6
107	39.7 PPM	OK			EW-61
108	90.3 PPM	OK			EW-50
109	1690.0 PPM	HIGH_ALRM	36.59866	-82.14779	EW-67
110	201.0 PPM	OK			EW-47
111	128.0 PPM	OK			EW-54
112	673.0 PPM	HIGH_ALRM	36.59868	-82.14715	EW-55
113	20.3 PPM	OK			EW-92
114	5.6 PPM	OK			EW-91
115	69.8 PPM	OK			EW-96
116	90.0 PPM	OK			TP-2
117	6.8 PPM	OK			EW-66
118	687.0 PPM	HIGH_ALRM	36.59830	-82.14714	EW-58
119	26.2 PPM	OK			EW-57
120	9.8 PPM	OK			TP-1
121	10.5 PPM	OK			EW-59
122	35.2 PPM	OK			EW-100
123	286.0 PPM	OK			EW-56
124	101.0 PPM	OK			EW-97
125	12.1 PPM	OK			EW-41
126	288.0 PPM	OK			EW-53
127	87.3 PPM	OK			TP-3
128	6.9 PPM	OK			EW-51
129	10.3 PPM	OK			EW-39
130	11.1 PPM	OK			TP-5
131	13.0 PPM	OK			EW-68
132	1392.0 PPM	HIGH_ALRM	36.59934	-82.14782	EW-87
133	378.0 PPM	OK			EW-38
134	164.0 PPM	OK			TP-7
135	11.3 PPM	OK			EW-49
136	3.7 PPM	OK			EW-83
137	140.0 PPM	OK			EW-65
138	131.0 PPM	OK			EW-81
139	1.4 PPM	OK			TP-8
140	1.0 PPM	OK			EW-64
141	0.9 PPM	OK			EW-63
142	1.5 PPM	OK			EW-42
143	1.2 PPM	OK			EW-76
144	1.0 PPM	OK			TP-9
145	0.9 PPM	OK			EW-62
146	1.0 PPM	OK			EW-29R

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 17, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
147	0.8 PPM	OK			EW-74
148	1.4 PPM	OK			EW-32R
149	1.1 PPM	OK			EW-69
150	1.0 PPM	OK			EW-71
151	0.9 PPM	OK			EW-72
152	0.9 PPM	OK			EW-73
153	0.9 PPM	OK			EW-78
154	46.2 PPM	OK			EW-82
155	2.8 PPM	OK			EW-36A
156	19.2 PPM	OK			EW-85
157	111.0 PPM	OK			EW-88
158	2.5 PPM	OK			EW-89
159	3.0 PPM	OK			EW-93
160	1256.0 PPM	HIGH_ALRM	36.59860	-82.14692	EW-94
161	1313.0 PPM	HIGH_ALRM	36.59827	-82.14693	EW-98
162	1310.0 PPM	HIGH_ALRM	36.59799	-82.14829	EW-99
163	116.0 PPM	OK			EW-95
164	1069.0 PPM	HIGH_ALRM	36.59892	-82.14826	EW-90
165	37.1 PPM	OK			EW-86
166	7.4 PPM	OK			EW-84
167	1.6 PPM	OK			EW-80
168	1.5 PPM	OK			EW-79
169	1.8 PPM	OK			EW-77
170	0.9 PPM	OK			EW-33B
171	1.0 PPM	OK			EW-75

Number of locations sampled:	171
Number of exceedance locations:	8

NOTES:

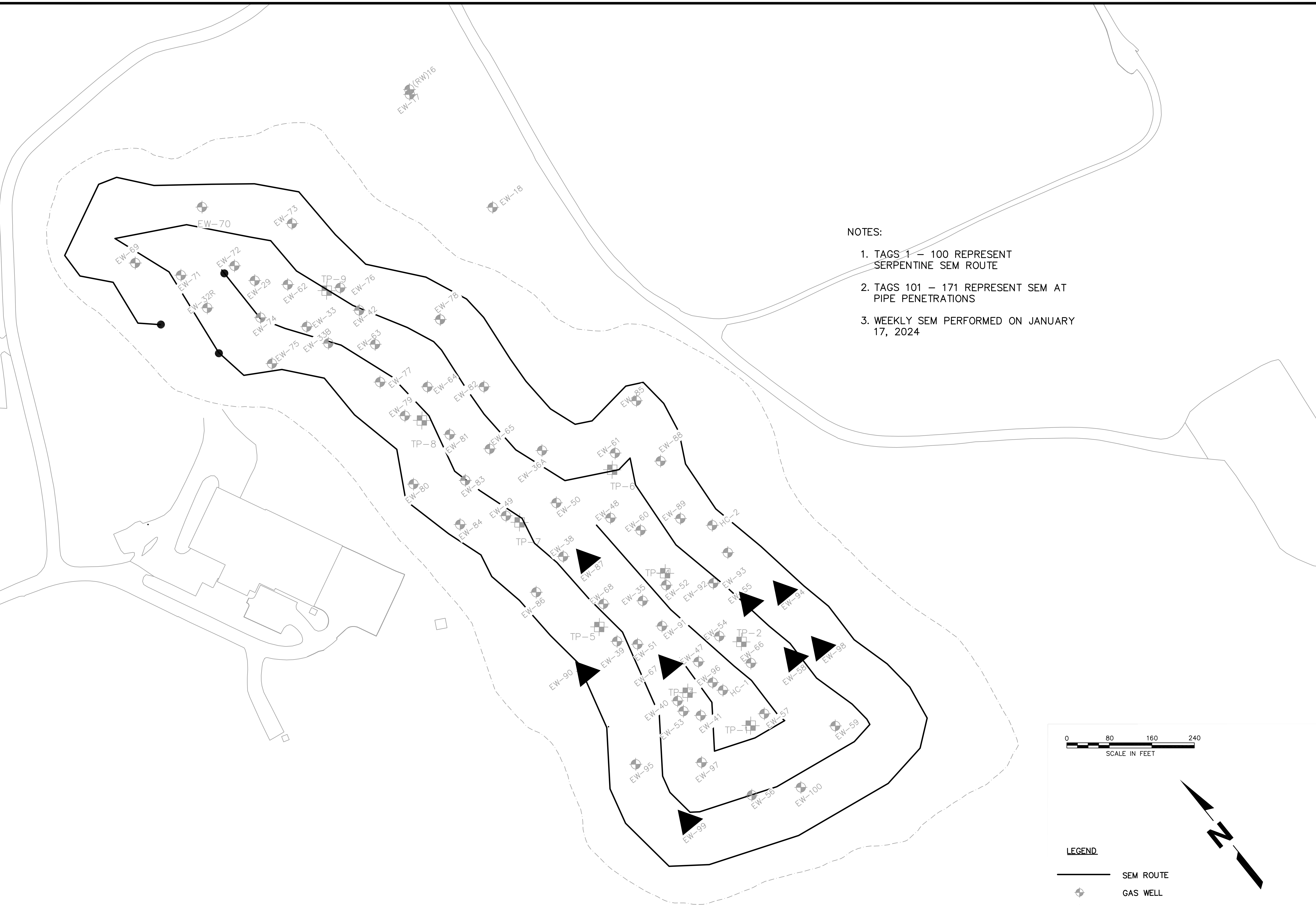
Points 1 through 100 represent serpentine SEM route.
Points 101 through 171 represent SEM at Pipe Penetrations
Weather Conditions: Sunny, 14°F Wind: 7 MPH W

Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm

1/17/2024	11:06	ZERO	0.0	PPM
1/17/2024	11:25	SPAN	502.0	PPM

Background Reading:

1/17/2024	11:29	Upwind	2.7	PPM
1/17/2024	11:35	Downwind	2.5	PPM



NOTES:

1. TAGS 1 – 100 REPRESENT SERPENTINE SEM ROUTE
2. TAGS 101 – 171 REPRESENT SEM AT PIPE PENETRATIONS
3. WEEKLY SEM PERFORMED ON JANUARY 17, 2024

LEGEND

— SEM ROUTE
⊕ GAS WELL
⊞ TEMPERATURE PROBE
▲ 79 EXCEEDANCE LOCATION
● 75 MONITORING ROUTE ENDPOINT

1

NO.	REVISION	DATE
△		
△		
△		
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SHEET TITLE
WEEKLY SEM ROUTE

PROJECT TITLE
SURFACE EMISSIONS MONITORING
SOLID WASTE PERMIT #588

CLIENT
CITY OF BRISTOL INTEGRATED SOLID
WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
15521 MIDLOTHIAN TNPK - MIDLOTHIAN, VA 23113
PH. (804) 378-7440 FAX. (804) 378-7433

PROJ. NO. 02218208.04	DWN. BY: LSN	Q/A RVW BY:
DSN. BY: LSN	CHK. BY: DBK	APP. BY:

FILE:
02218208.04

DATE:
1/17/24

SCALE:
AS SHOWN

DRAWING NO.
of 1

SCS ENGINEERS
Environmental Consulting & Contracting

January 31, 2024
File No. 02218208.04

Mr. Jonathan Chapman
Enforcement Specialist
Virginia Department of Environmental Quality
SW Regional Office
355-A Deadmore Street
Abingdon, VA 24210

Subject: Weekly Surface Emissions Monitoring Event – January 23, 2024
Bristol Integrated Solid Waste Facility – Bristol, Virginia

Dear Mr. Chapman:

On behalf of the City of Bristol (City), SCS Engineers (SCS), is pleased to submit the results of the Weekly Surface Emissions Monitoring event performed at the Bristol Integrated Solid Waste Facility located in Bristol, Virginia on January 23, 2024. This Weekly Surface Emissions Monitoring (SEM) Event was performed in accordance with Appendix A.1.i of the Consent Decree between the Commonwealth of Virginia and the City of Bristol.

The monitoring generally conforms to the requirements of 40 CFR 63.1960(c) and (d), and 40 CFR 60.36f(c) and (d), and 40 CFR 60, Appendix A, Method 21. The landfill gas (LFG) collection system is required to operate such that the methane concentration is less than 500 ppm above background at the landfill surface.

The monitoring route includes the entire waste footprint of the Permit No. 588 Landfill. Sampling was conducted with a Thermo Scientific TVA-2020 Flame Ionization Detector (FID) at 30-meter intervals and where visual observations indicated the potential for elevated concentrations of LFG, such as distressed vegetation and surface cover cracks. In addition, in accordance with 40 CFR 63.1958(d)(ii)(2) and 40 CFR 60.34f(d), monitoring was conducted at all surface cover penetrations within the waste footprint, including at the temperature probes and the newly installed and connected gas extraction wells. The approximate monitoring route and sampling locations are presented in the attached Drawing.

At the time of monitoring, all areas of the Permit No. 588 Landfill footprint are subject to regulatory monitoring based on the regulatory time schedule stipulated in 40 CFR 63.1960(b) and 40 CFR 60.36f(b). The Permit No. 588 Landfill has a surface area of approximately 17.3 acres. Therefore, the minimum number of sampling points to cover the appropriate portion of the landfill footprint, utilizing a 30-meter grid interval, is approximately 82 (4.75 points per acre). A summary of the results of the surface emissions monitoring is provided in Table 1.

Table 1. Summary of Surface Emissions Monitoring

Description	Quantity
Number of Points Sampled	171
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	71
Number of Exceedances	1
Number of Serpentine Exceedances	0
Number of Pipe Penetration Exceedances	1

REMONITORING OF ONGOING EXCEEDANCES

In accordance with 40 CFR 63.1960(c)(4)(ii) and 40 CFR 60.36f(c)(4)(ii), corrective actions and a remonitoring event are to be performed within 10 days of the initial exceedance. In accordance with 40 CFR 63.1960(c)(4)(iii) and 40 CFR 60.36f(c)(4)(iii) additional corrective actions and a second 10-day retest are to be performed if the initial 10-day retest indicates methane values greater than the regulatory threshold. The Facility performs corrective actions, as necessary, including wellhead vacuum adjustments, the installation of well-bore seals, and addition of soil cover prior to weekly monitoring events at locations that previously exhibited elevated methane concentrations.

In accordance with 40 CFR 63.1960(c)(4)(v) and 40 CFR 60.36f(c)(4)(v) a new well or collection device must be installed or an alternate remedy must be submitted within 120 days at locations that continue to exhibit methane concentrations above the regulatory threshold for two consecutive re-tests.

During the previous monitoring event, an increase of exceedances was observed that were likely attributed to reduced vacuum as a result of a winter storm and extreme cold conditions. As weather conditions returned to seasonal, normal operating conditions of the GCCS were restored. As a result, seven of the eight exceedances observed during the previous event returned to compliance.

A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

Point ID	Initial Exceedance Date	1/23/24 Event	1/23/24 Event Result	Comments
EW-87	12/21/23	N/A	Passed	Subject to 40 CFR 63.1960(c)(4)(v)
EW-67	1/12/24	2nd 10-Day Retest	Passed	Requires 1-Month Retest
EW-99	1/12/24	2nd 10-Day Retest	Passed	Requires 1-Month Retest
EW-55	1/17/24	10-Day Retest	Passed	Requires 1-Month Retest
EW-58	1/17/24	10-Day Retest	Passed	Requires 1-Month Retest
EW-98	1/17/24	10-Day Retest	Passed	Requires 1-Month Retest
EW-94	1/17/24	10-Day Retest	Passed	Requires 1-Month Retest
EW-90	1/17/24	10-Day Retest	Failed	Requires 2nd 10-Day Retest

If you have questions or require additional information, please contact either of the undersigned.

Sincerely,

William J. Fabrie

Lucas S. Nachman

William J. Fabrie
Staff Professional
SCS Engineers

Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WJF/cjw

cc: Randall Eads, City of Bristol
Jonathan Hayes, City of Bristol
Jake Chandler, City of Bristol
Laura Socia, City of Bristol
Susan “Tracey” Blalock, VDEQ

Encl. Surface Emissions Monitoring Results
Bristol SEM Route Drawing

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 23, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
1	6.1 PPM	OK			Start Serpentine Route
2	2.2 PPM	OK			
3	8.8 PPM	OK			
4	3.5 PPM	OK			
5	3.2 PPM	OK			
6	3.1 PPM	OK			
7	3.8 PPM	OK			
8	3.2 PPM	OK			
9	3.6 PPM	OK			
10	3.7 PPM	OK			
11	3.8 PPM	OK			
12	3.7 PPM	OK			
13	3.9 PPM	OK			
14	5.3 PPM	OK			
15	9.2 PPM	OK			
16	37.1 PPM	OK			
17	42.0 PPM	OK			
18	13.7 PPM	OK			
19	6.8 PPM	OK			
20	71.7 PPM	OK			
21	6.7 PPM	OK			
22	11.1 PPM	OK			
23	10.9 PPM	OK			
24	14.5 PPM	OK			
25	18.2 PPM	OK			
26	60.5 PPM	OK			
27	42.0 PPM	OK			
28	36.7 PPM	OK			
29	16.3 PPM	OK			
30	50.3 PPM	OK			
31	186.0 PPM	OK			
32	178.0 PPM	OK			
33	221.0 PPM	OK			
34	366.0 PPM	OK			
35	5.5 PPM	OK			
36	55.3 PPM	OK			
37	41.4 PPM	OK			
38	87.8 PPM	OK			
39	83.2 PPM	OK			
40	3.2 PPM	OK			
41	1.9 PPM	OK			
42	5.3 PPM	OK			
43	2.4 PPM	OK			
44	2.4 PPM	OK			
45	3.6 PPM	OK			
46	3.2 PPM	OK			
47	1.6 PPM	OK			
48	2.7 PPM	OK			
49	2.6 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 23, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
50	3.3 PPM	OK			
51	4.5 PPM	OK			
52	6.2 PPM	OK			
53	3.0 PPM	OK			
54	2.8 PPM	OK			
55	2.8 PPM	OK			
56	4.1 PPM	OK			
57	5.1 PPM	OK			
58	6.3 PPM	OK			
59	11.6 PPM	OK			
60	17.8 PPM	OK			
61	19.0 PPM	OK			
62	16.9 PPM	OK			
63	16.7 PPM	OK			
64	10.0 PPM	OK			
65	27.6 PPM	OK			
66	28.1 PPM	OK			
67	30.5 PPM	OK			
68	57.0 PPM	OK			
69	106.0 PPM	OK			
70	90.2 PPM	OK			
71	81.6 PPM	OK			
72	63.1 PPM	OK			
73	30.9 PPM	OK			
74	94.4 PPM	OK			
75	81.3 PPM	OK			
76	33.6 PPM	OK			
77	14.4 PPM	OK			
78	23.9 PPM	OK			
79	13.7 PPM	OK			
80	5.0 PPM	OK			
81	1.9 PPM	OK			
82	1.7 PPM	OK			
83	1.7 PPM	OK			
84	3.0 PPM	OK			
85	4.8 PPM	OK			
86	3.8 PPM	OK			
87	1.5 PPM	OK			
88	1.4 PPM	OK			
89	1.3 PPM	OK			
90	1.2 PPM	OK			
91	6.8 PPM	OK			
92	15.8 PPM	OK			
93	62.8 PPM	OK			
94	26.6 PPM	OK			
95	77.8 PPM	OK			
96	33.0 PPM	OK			
97	36.2 PPM	OK			
98	26.3 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 23, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
99	9.6 PPM	OK			
100	8.7 PPM	OK			End Serpentine Route
101	291.0 PPM	OK			EW-35
102	421.0 PPM	OK			EW-52
103	7.8 PPM	OK			TP-4
104	87.3 PPM	OK			EW-60
105	42.8 PPM	OK			EW-48
106	68.5 PPM	OK			TP-6
107	1.4 PPM	OK			EW-61
108	1.4 PPM	OK			EW-50
109	4.6 PPM	OK			EW-67
110	26.6 PPM	OK			EW-47
111	35.9 PPM	OK			EW-54
112	42.2 PPM	OK			EW-55
113	98.0 PPM	OK			EW-92
114	23.3 PPM	OK			EW-91
115	2.4 PPM	OK			EW-96
116	2.4 PPM	OK			TP-2
117	4.0 PPM	OK			EW-66
118	244.0 PPM	OK			EW-58
119	146.0 PPM	OK			EW-57
120	3.9 PPM	OK			TP-1
121	64.0 PPM	OK			EW-59
122	9.1 PPM	OK			EW-100
123	189.0 PPM	OK			EW-56
124	83.8 PPM	OK			EW-97
125	22.9 PPM	OK			EW-41
126	16.5 PPM	OK			EW-53
127	37.2 PPM	OK			TP-3
128	132.0 PPM	OK			EW-51
129	66.0 PPM	OK			EW-39
130	58.7 PPM	OK			TP-5
131	3.4 PPM	OK			EW-68
132	12.3 PPM	OK			EW-87
133	10.7 PPM	OK			EW-38
134	425.0 PPM	OK			TP-7
135	1.5 PPM	OK			EW-49
136	1.5 PPM	OK			EW-83
137	3.0 PPM	OK			EW-65
138	1.7 PPM	OK			EW-81
139	1.6 PPM	OK			TP-8
140	1.6 PPM	OK			EW-64
141	1.7 PPM	OK			EW-63
142	1.7 PPM	OK			EW-42
143	1.6 PPM	OK			EW-76
144	4.3 PPM	OK			TP-9
145	3.0 PPM	OK			EW-62
146	1.9 PPM	OK			EW-29R

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS
WEEKLY MONITORING EVENT - JANUARY 23, 2024
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA

ID #	Methane Concentration	Compliance	GPS Coordinates Lat.	Long.	Comments
147	2.7 PPM	OK			EW-74
148	3.6 PPM	OK			EW-32R
149	3.0 PPM	OK			EW-69
150	2.8 PPM	OK			EW-71
151	3.0 PPM	OK			EW-72
152	2.5 PPM	OK			EW-73
153	9.8 PPM	OK			EW-78
154	57.7 PPM	OK			EW-82
155	9.4 PPM	OK			EW-36A
156	11.4 PPM	OK			EW-85
157	12.9 PPM	OK			EW-88
158	141.0 PPM	OK			EW-89
159	17.8 PPM	OK			EW-93
160	11.5 PPM	OK			EW-94
161	23.6 PPM	OK			EW-98
162	214.0 PPM	OK			EW-99
163	218.0 PPM	OK			EW-95
164	1205.0 PPM	HIGH_ALRM	36.59892	-82.14826	EW-90
165	2.7 PPM	OK			EW-86
166	3.1 PPM	OK			EW-84
167	1.0 PPM	OK			EW-80
168	1.5 PPM	OK			EW-79
169	2.5 PPM	OK			EW-77
170	1.2 PPM	OK			EW-33B
171	1.2 PPM	OK			EW-75

Number of locations sampled:	171
Number of exceedance locations:	1

NOTES:

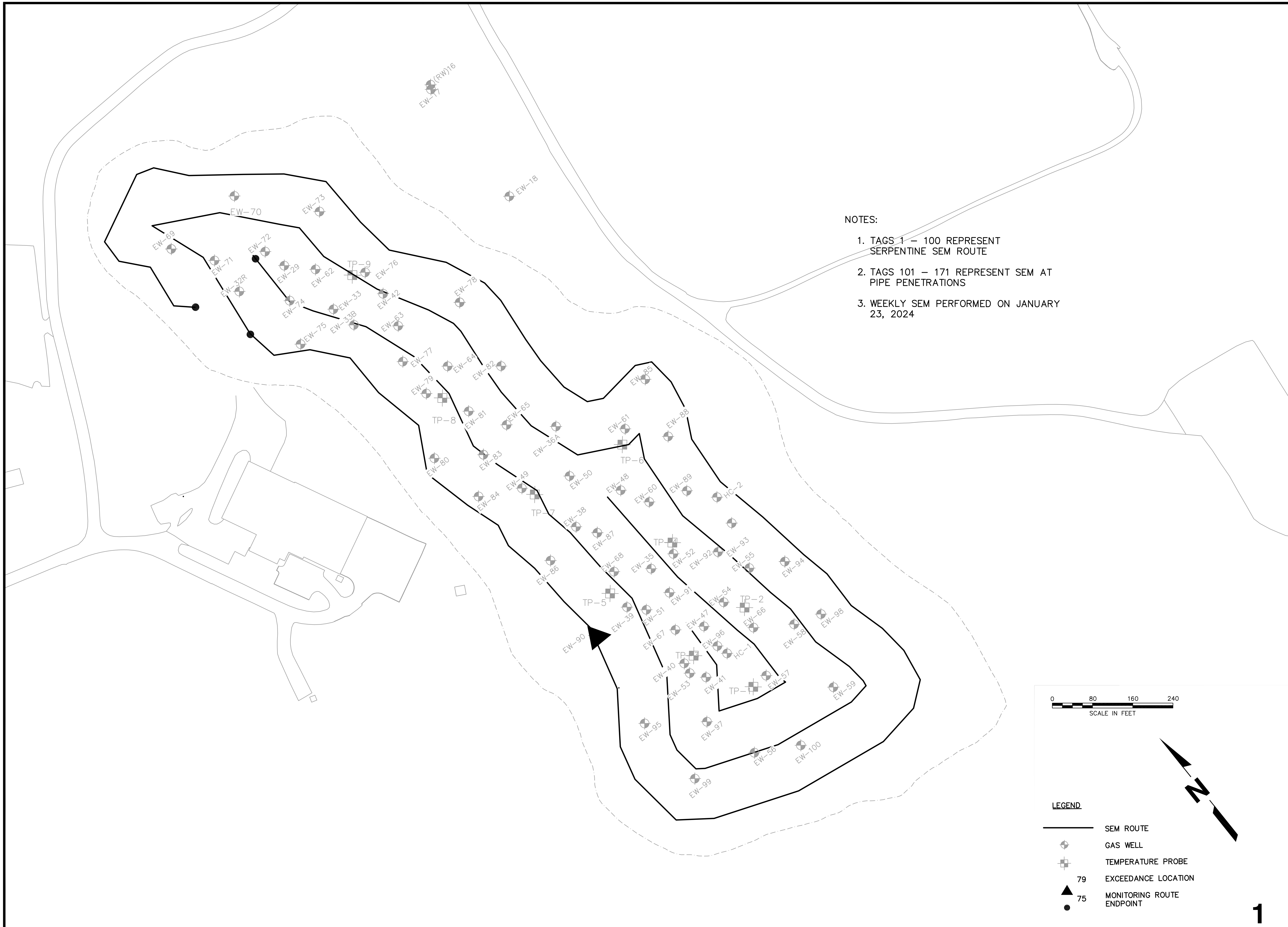
Points 1 through 100 represent serpentine SEM route.
Points 101 through 171 represent SEM at Pipe Penetrations
Weather Conditions: Overcast 45°F Wind: 2 MPH SE

Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm

1/23/2024	10:19	ZERO	0.0	PPM
1/23/2024	10:24	SPAN	500.0	PPM

Background Reading:

1/23/2024	10:25	Upwind	2.6	PPM
1/23/2024	10:28	Downwind	2.9	PPM



NOTES:

1. TAGS 1 – 100 REPRESENT SERPENTINE SEM ROUTE
2. TAGS 101 – 171 REPRESENT SEM AT PIPE PENETRATIONS
3. WEEKLY SEM PERFORMED ON JANUARY 23, 2024

LEGEND

―	SEM ROUTE
⊕	GAS WELL
⊞	TEMPERATURE PROBE
79	EXCEEDANCE LOCATION
▲ 75	MONITORING ROUTE
●	ENDPOINT

NO.	REVISION	DATE
△		
△		
△		
△		
△		
△		

SHEET TITLE
WEEKLY SEM ROUTE

PROJECT TITLE
SURFACE EMISSIONS MONITORING
SOLID WASTE PERMIT #588

CLIENT
CITY OF BRISTOL INTEGRATED SOLID
WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
15521 MIDLOTHIAN TNPK - MIDLOTHIAN, VA 23113
PH. (804) 378-7440 FAX. (804) 378-7433

PROJ. NO. 02218208.04
DSN. BY: LSN
DWN. BY: LSN
CHK. BY: DBK
Q/A RVW BY:
APP. BY:

FILE: 02218208.04
DATE: 1/23/24
SCALE: AS SHOWN
DRAWING NO. 1 of 1

Appendix B

In-Waste Temperatures on Select Days in January

Appendix B Figures

Figure B - 1 Average Temperatures Recorded by TP-1 on January 3, 2024

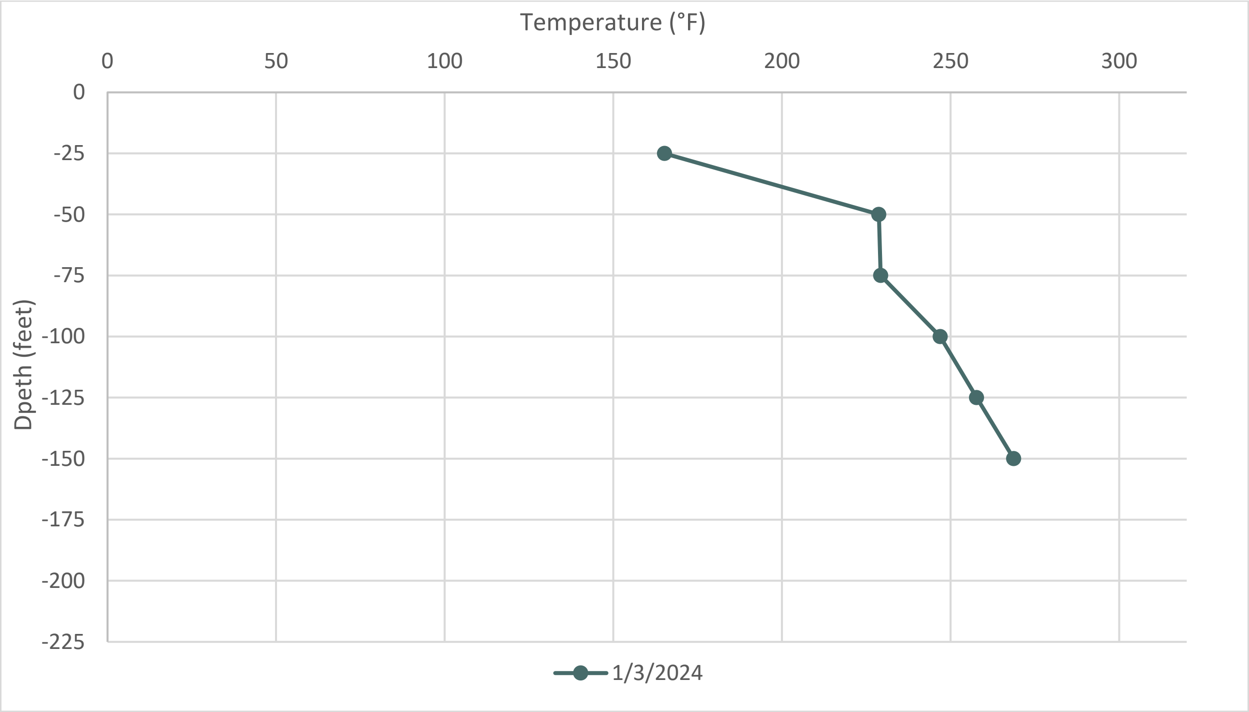


Figure B - 2 Average Temperatures Recorded by TP-1 on January 10, 2024

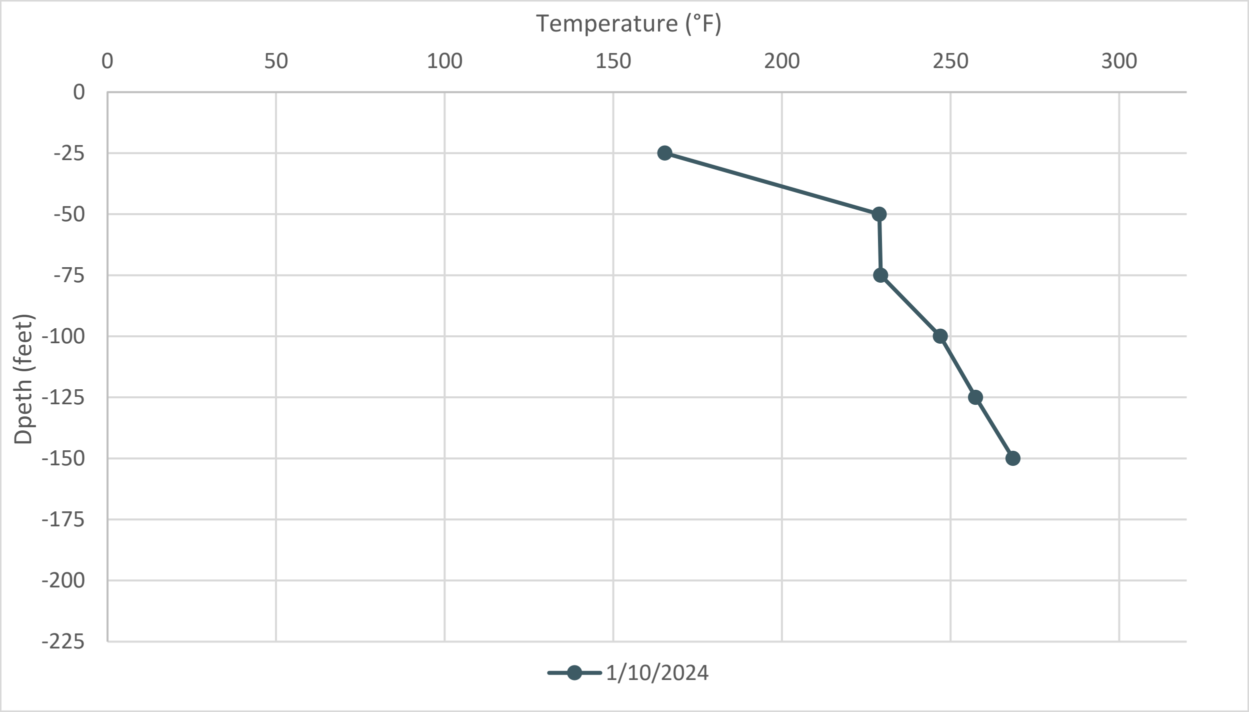


Figure B - 3 Average Temperatures Recorded by TP-1 on January 17, 2024

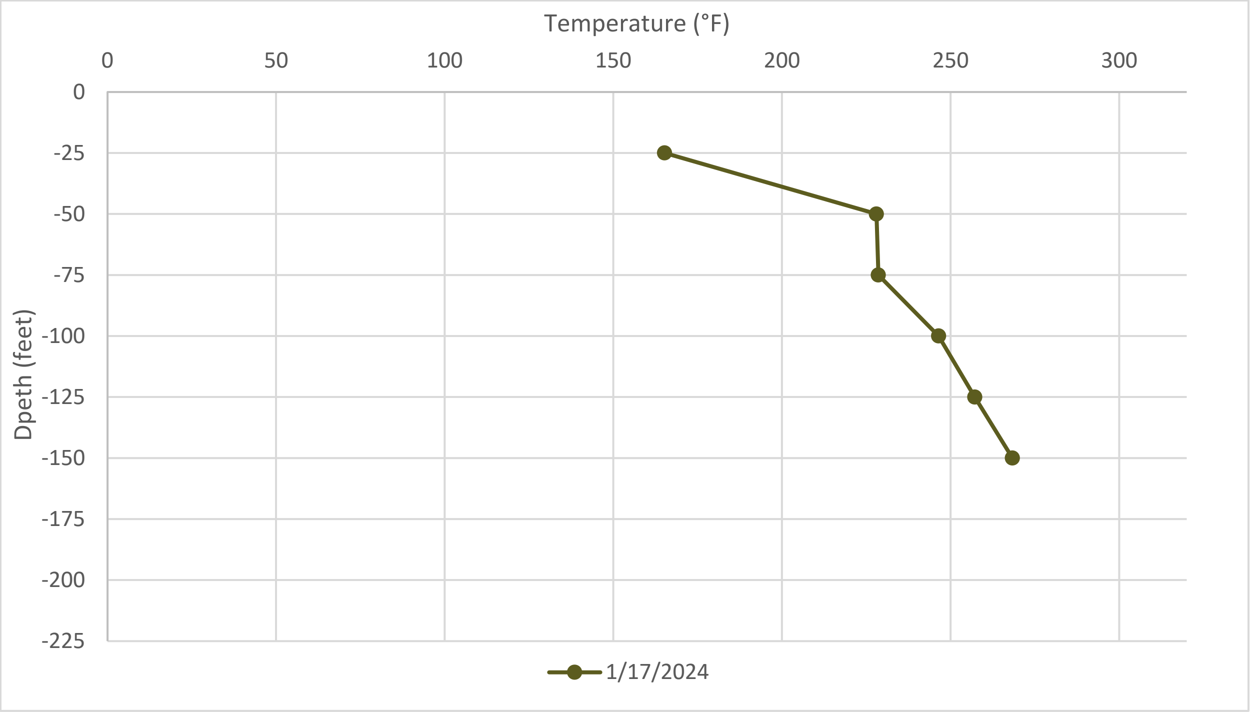


Figure B - 4 Average Temperatures Recorded by TP-1 on January 24, 2024

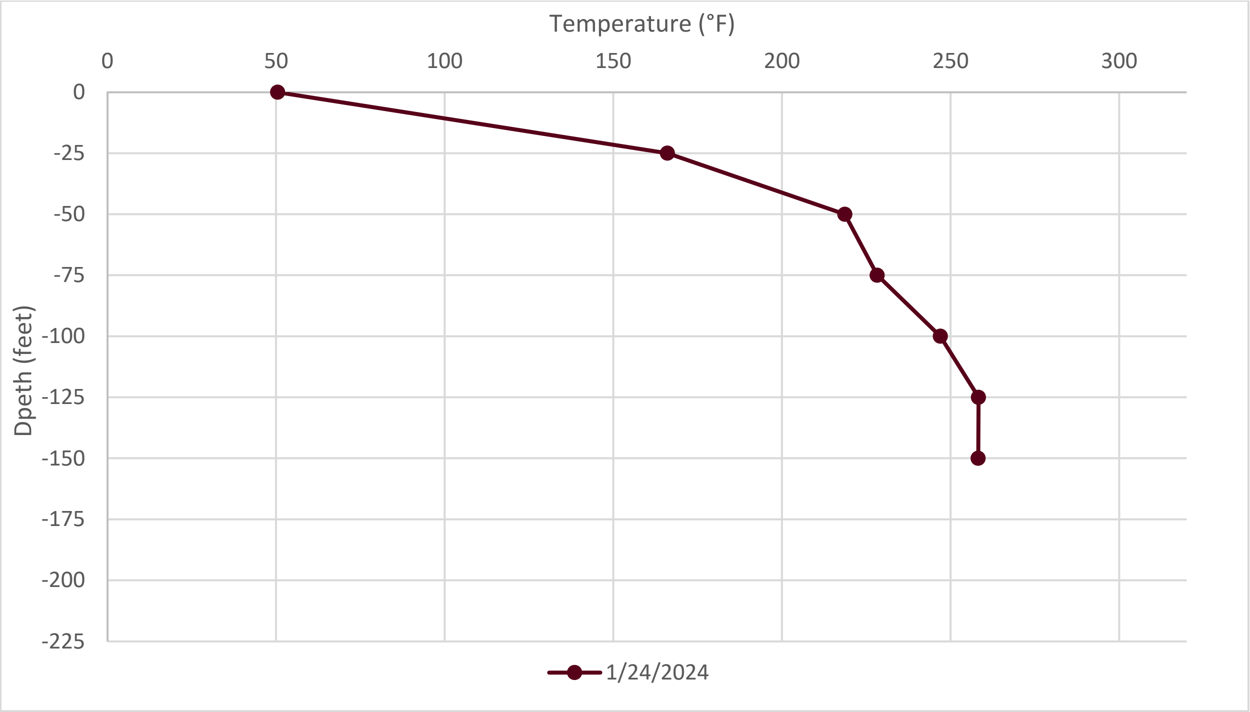


Figure B - 5 Average Temperatures Recorded by TP-1 on January 31, 2024

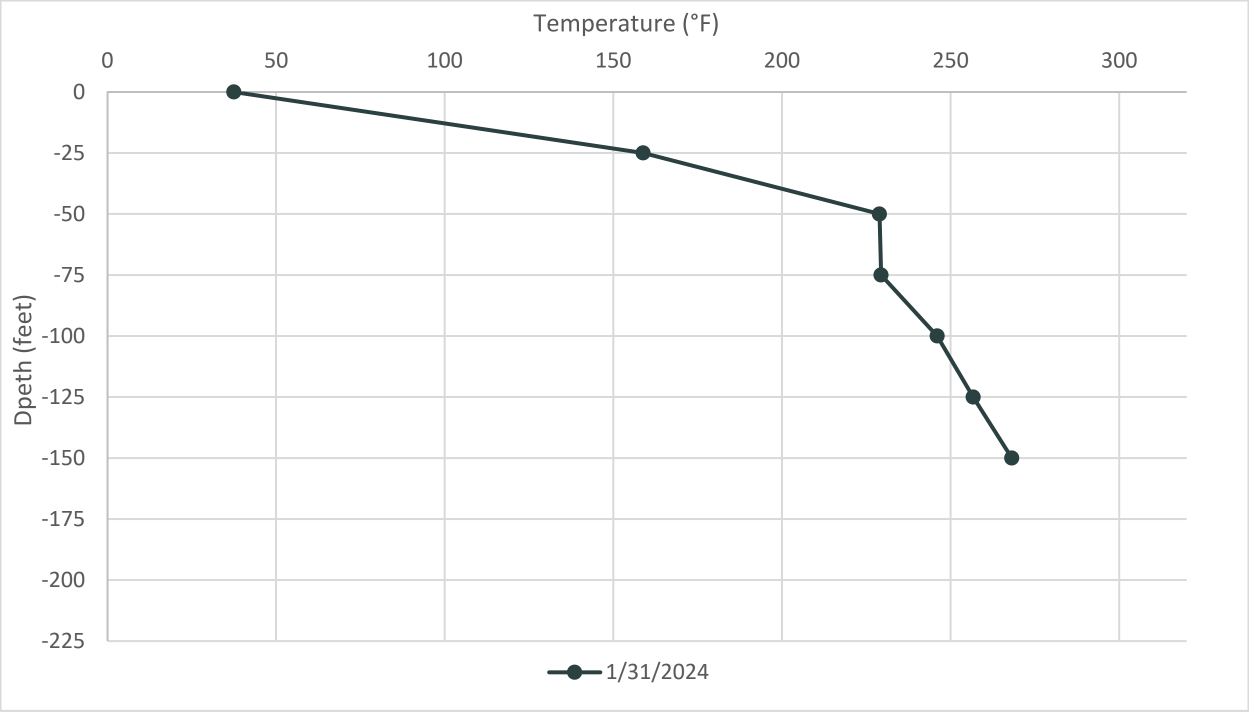


Figure B - 6 Average Temperatures Recorded by TP-2 on January 3, 2024

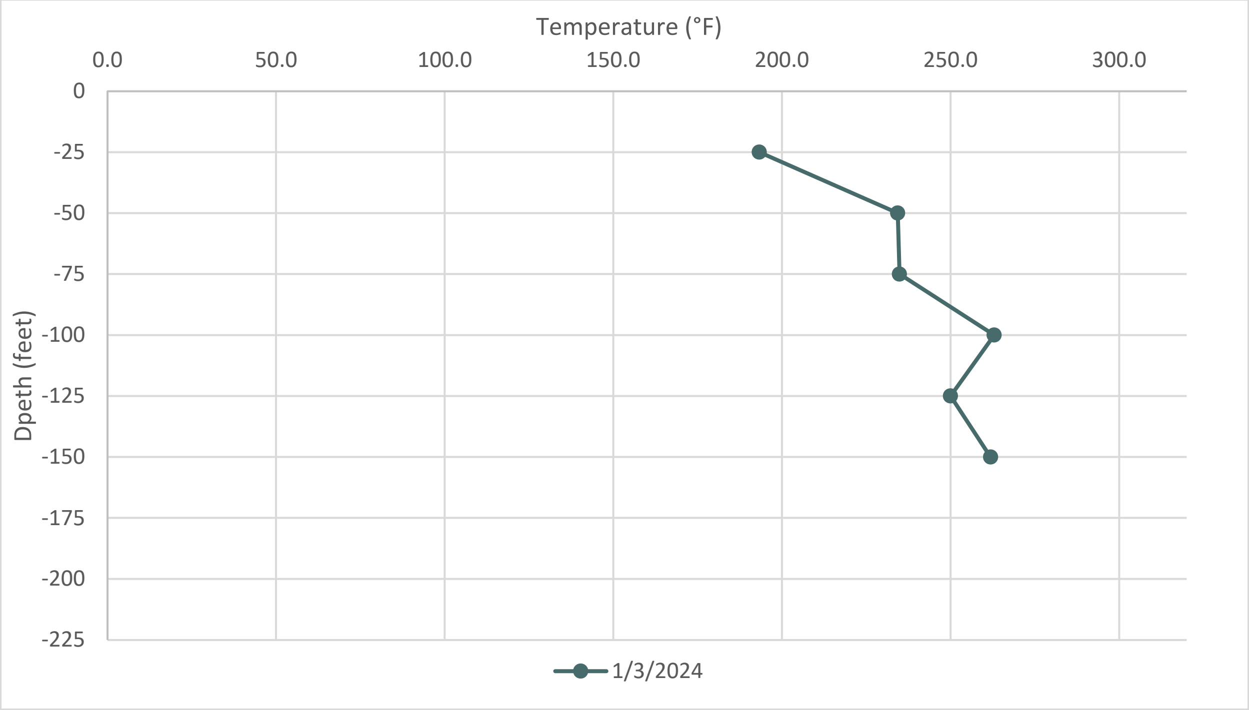


Figure B - 7 Average Temperatures Recorded by TP-2 on January 10, 2024

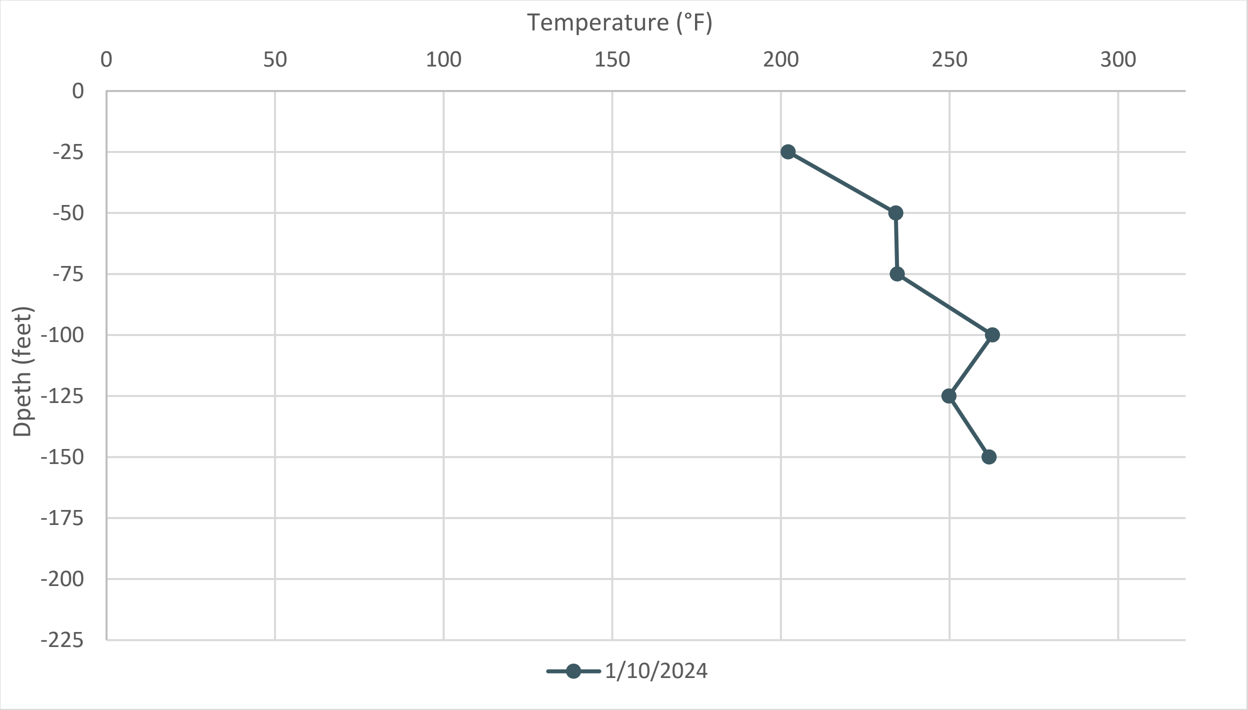


Figure B - 8 Average Temperatures Recorded by TP-2 on January 17, 2024

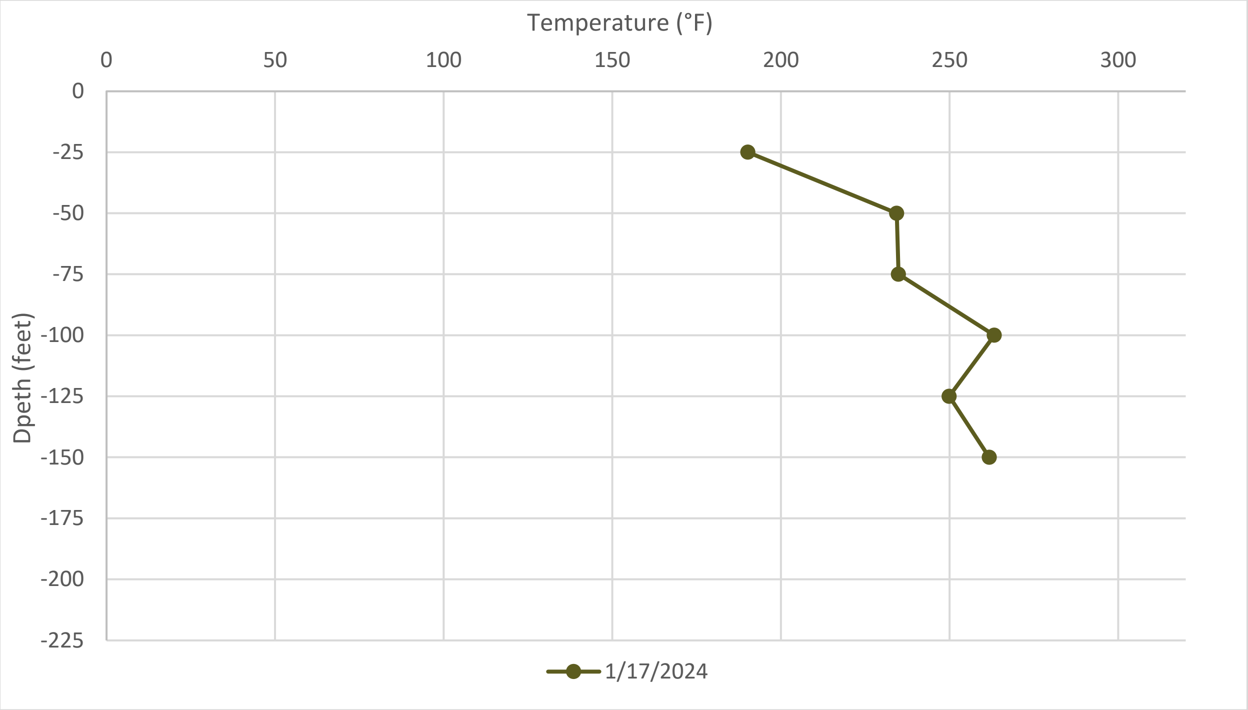


Figure B - 9 Average Temperatures Recorded by TP-2 on January 24, 2024

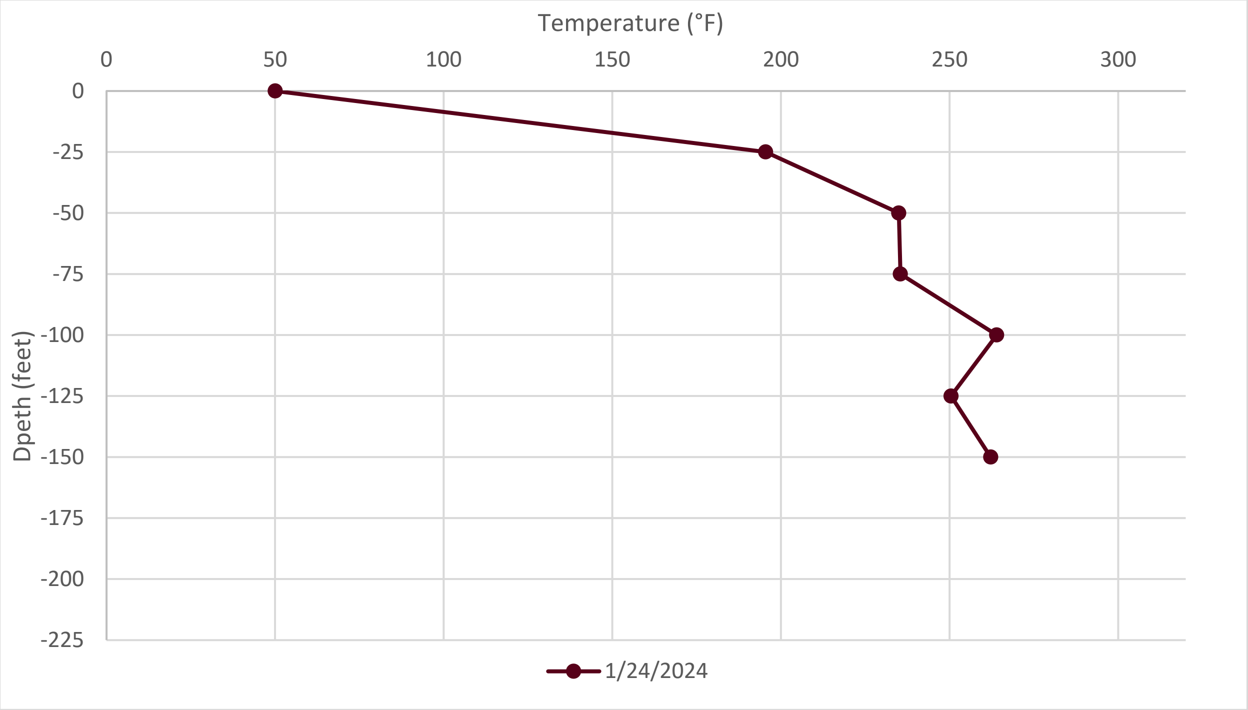


Figure B - 10 Average Temperatures Recorded by TP-2 on January 31, 2024

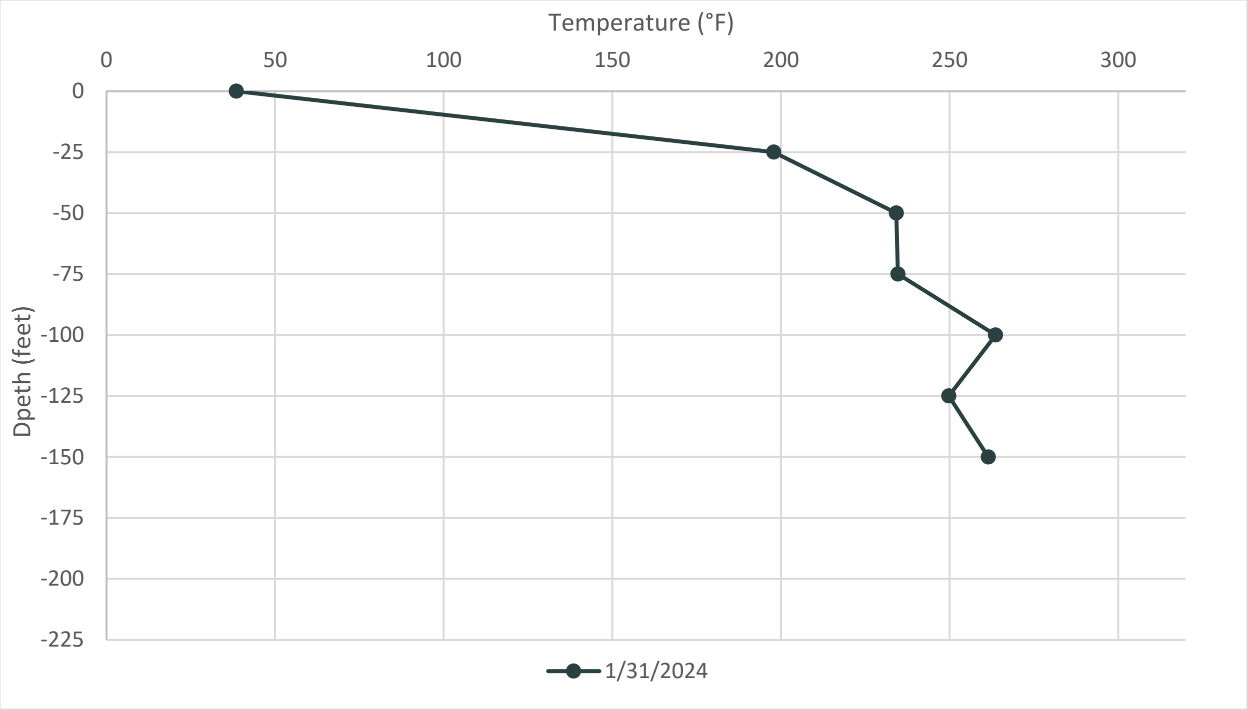


Figure B - 11 Average Temperatures Recorded by TP-3 on January 3, 2024

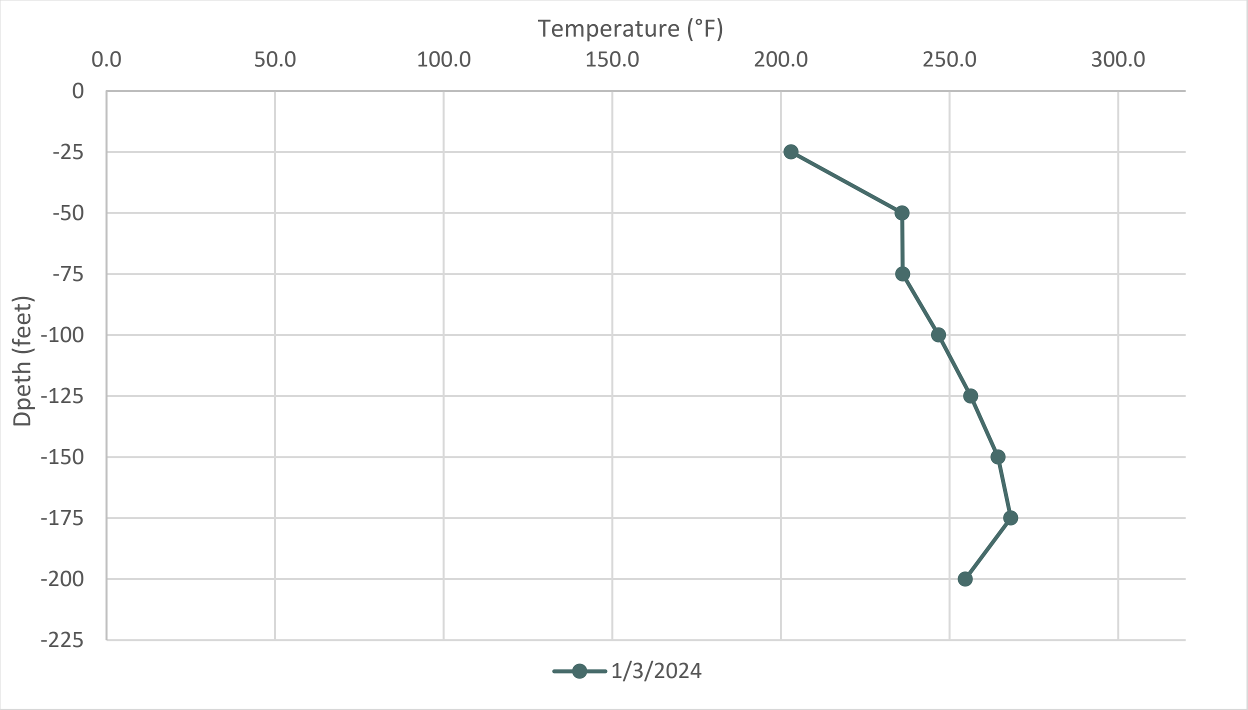


Figure B - 12 Average Temperatures Recorded by TP-3 on January 10, 2024

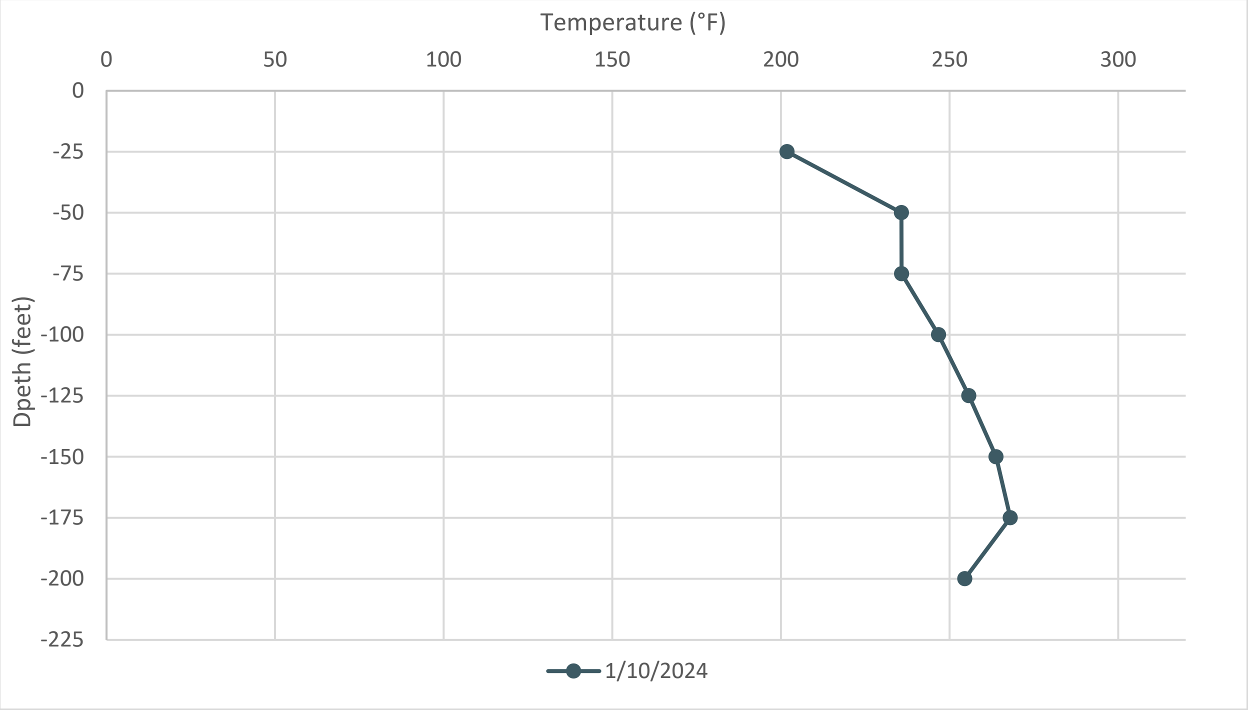


Figure B - 13 Average Temperatures Recorded by TP-3 on January 17, 2024

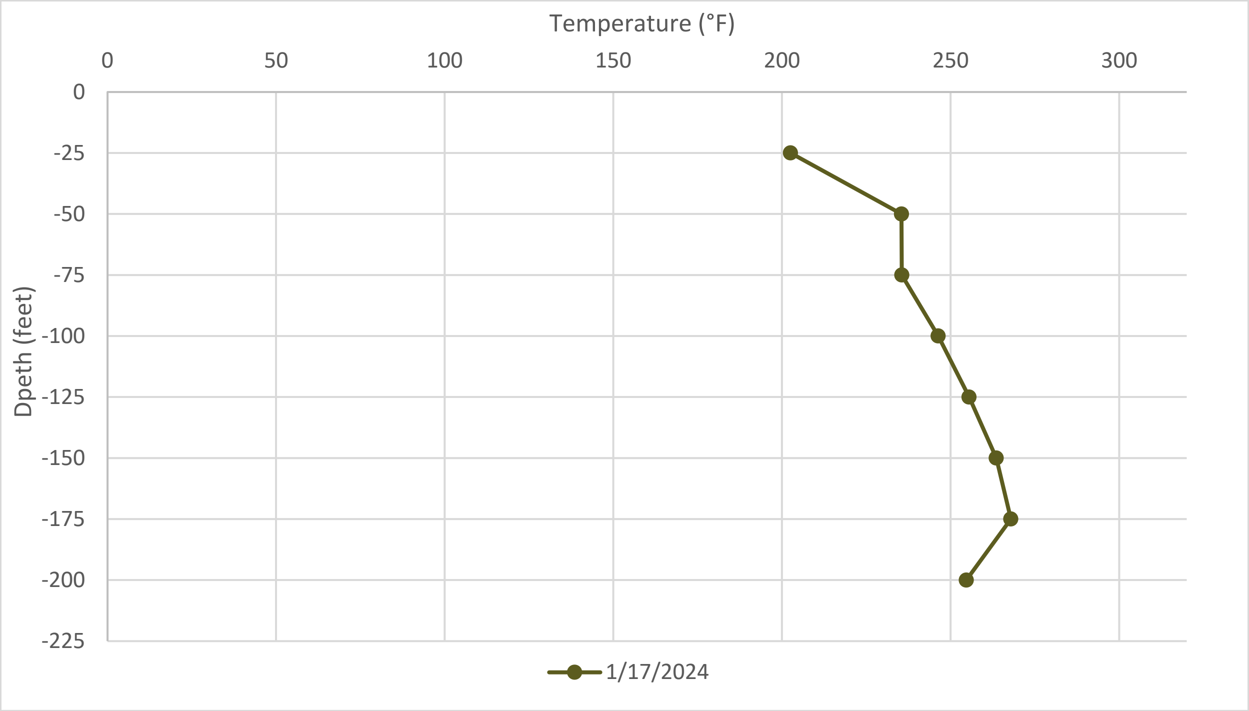


Figure B - 14 Average Temperatures Recorded by TP-3 on January 24, 2024

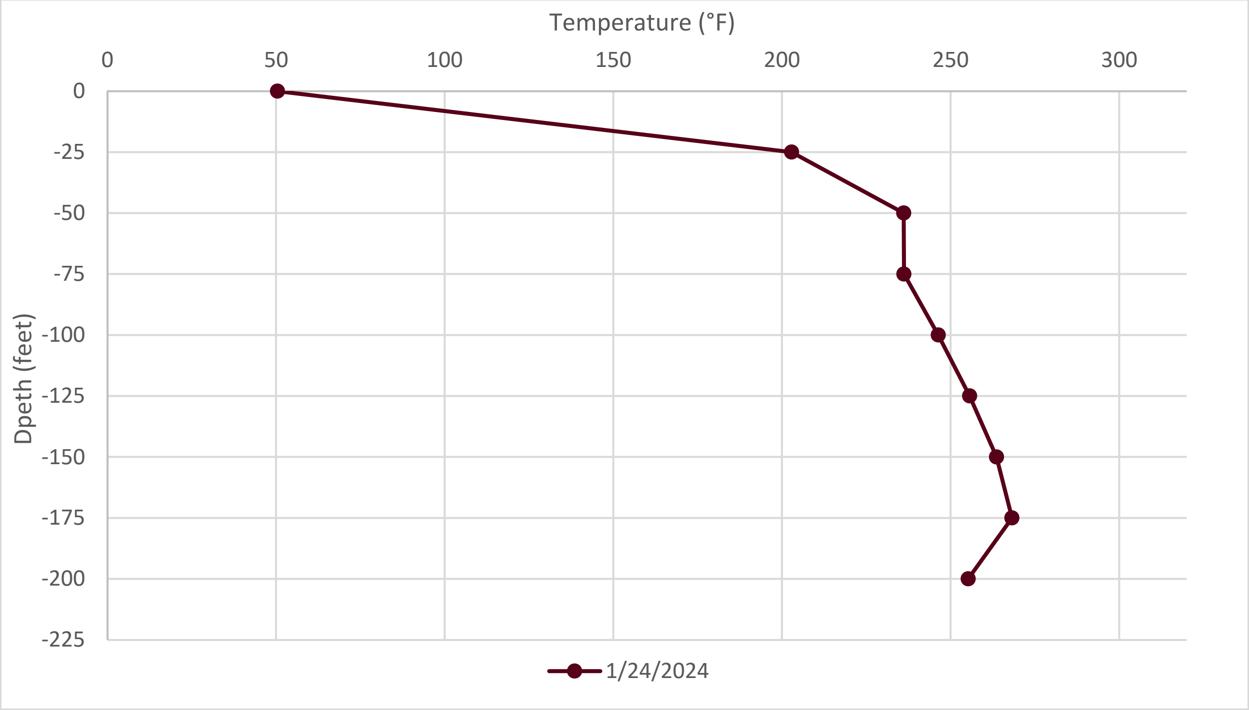


Figure B - 15 Average Temperatures Recorded by TP-3 on January 31, 2024

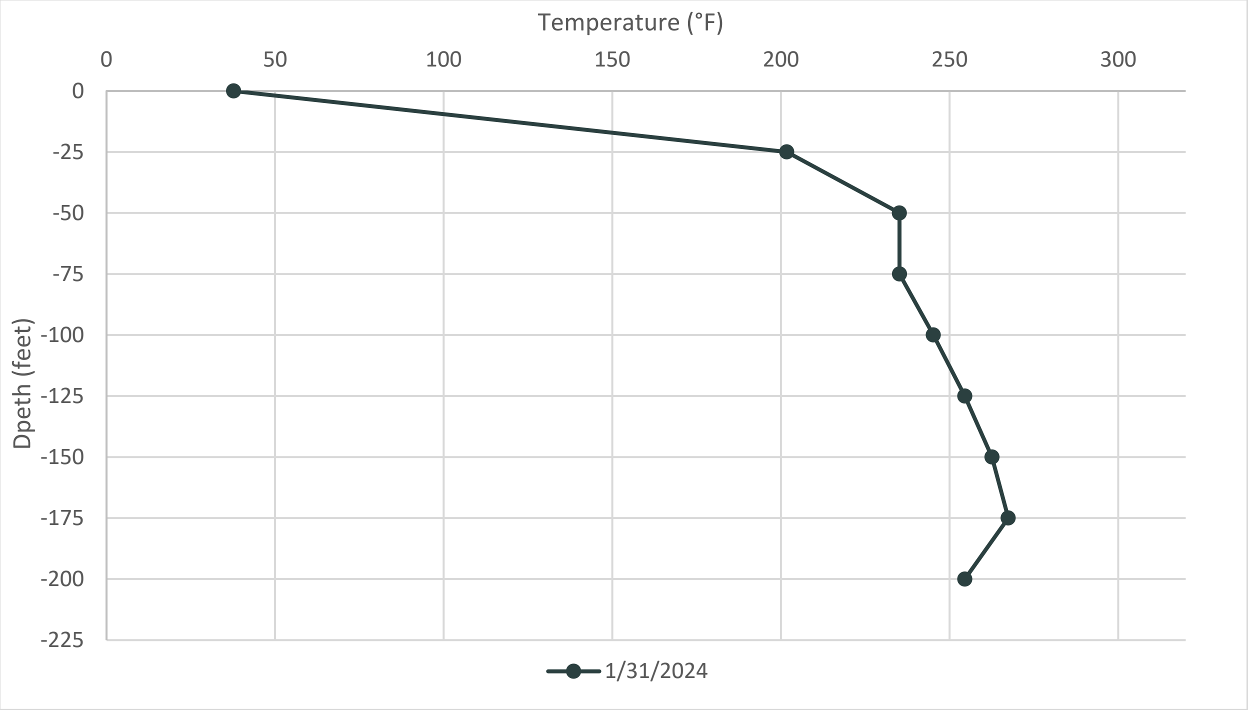


Figure B - 16 Average Temperatures Recorded by TP-4 on January 3, 2024

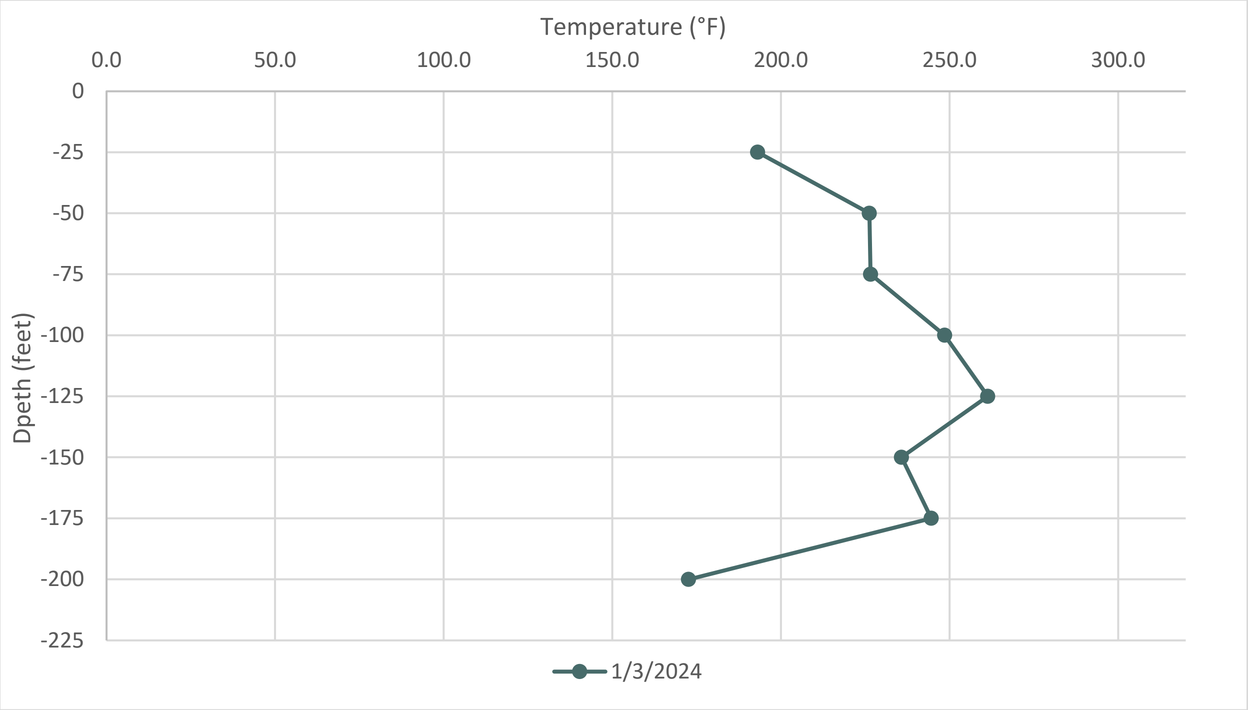


Figure B - 17 Average Temperatures Recorded by TP-4 on January 10, 2024

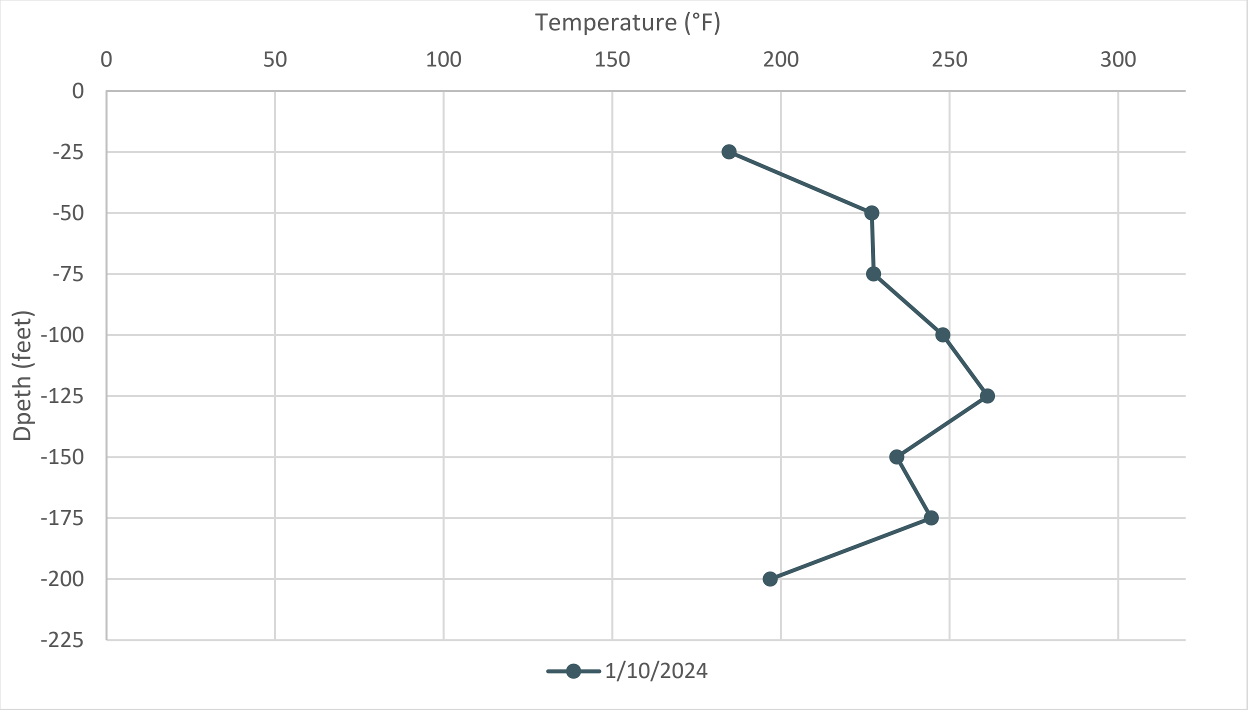


Figure B - 18 Average Temperatures Recorded by TP-4 on January 17, 2024

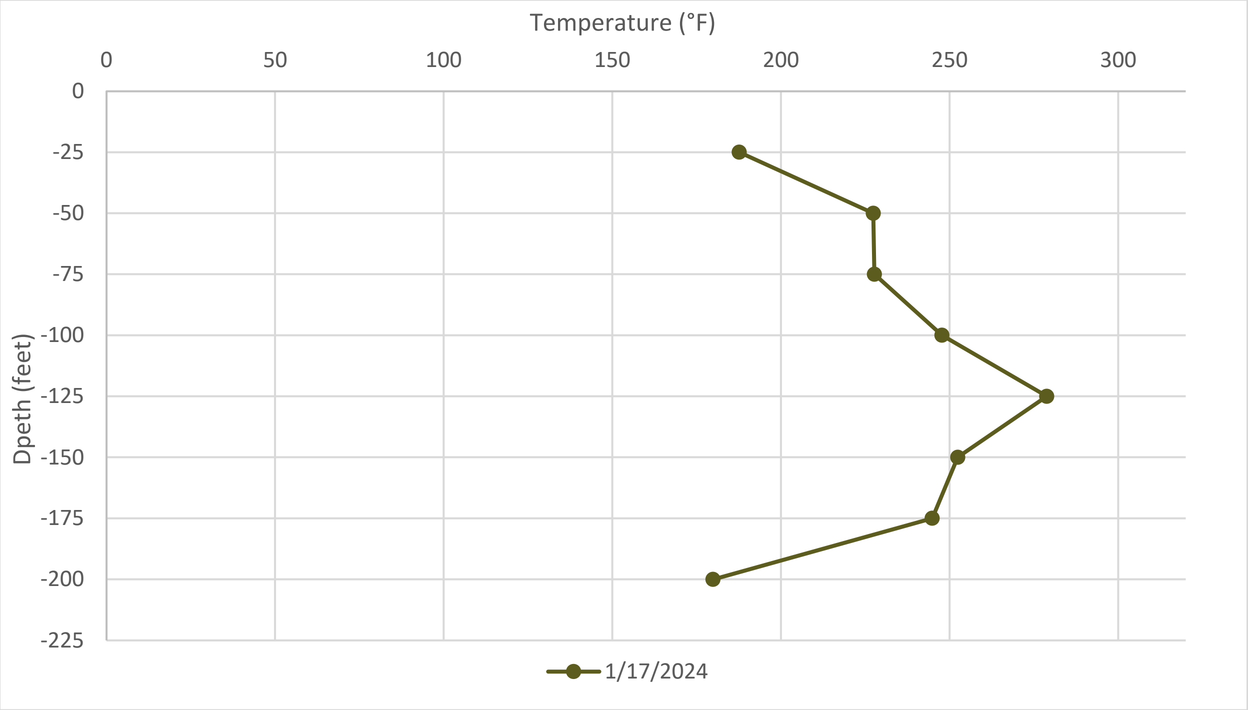


Figure B - 19 Average Temperatures Recorded by TP-4 on January 24, 2024

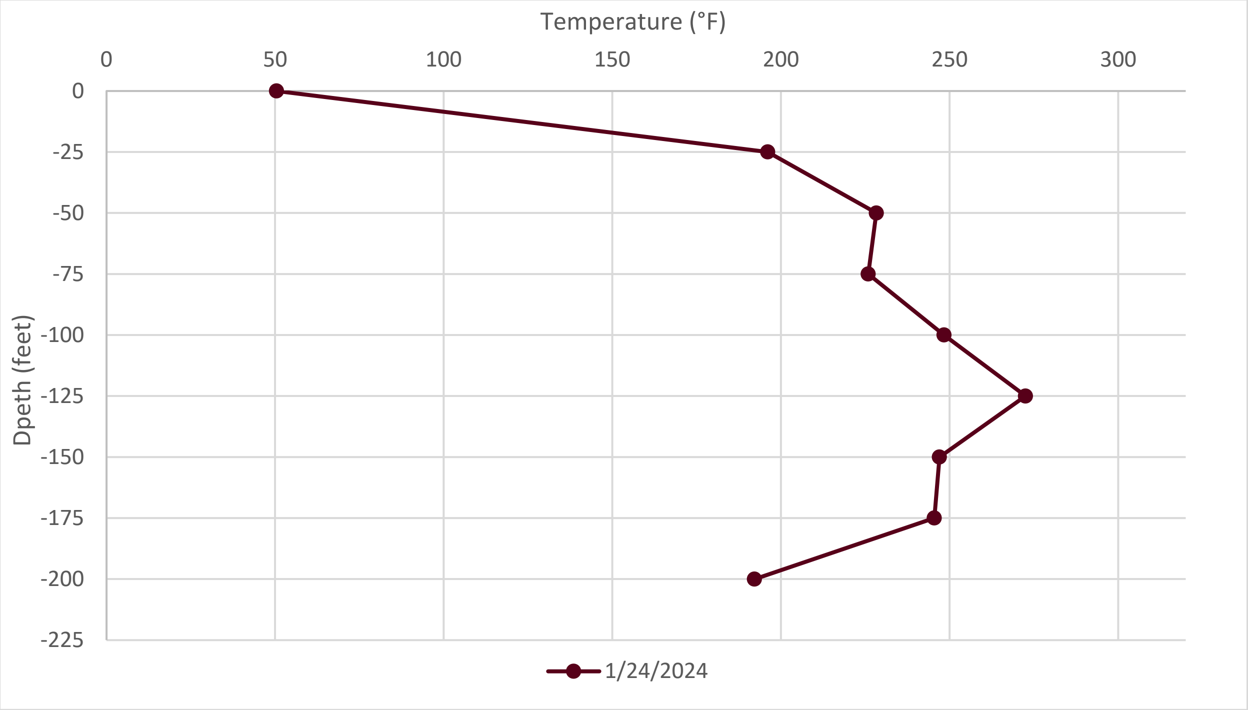


Figure B - 20 Average Temperatures Recorded by TP-4 on January 24, 2024

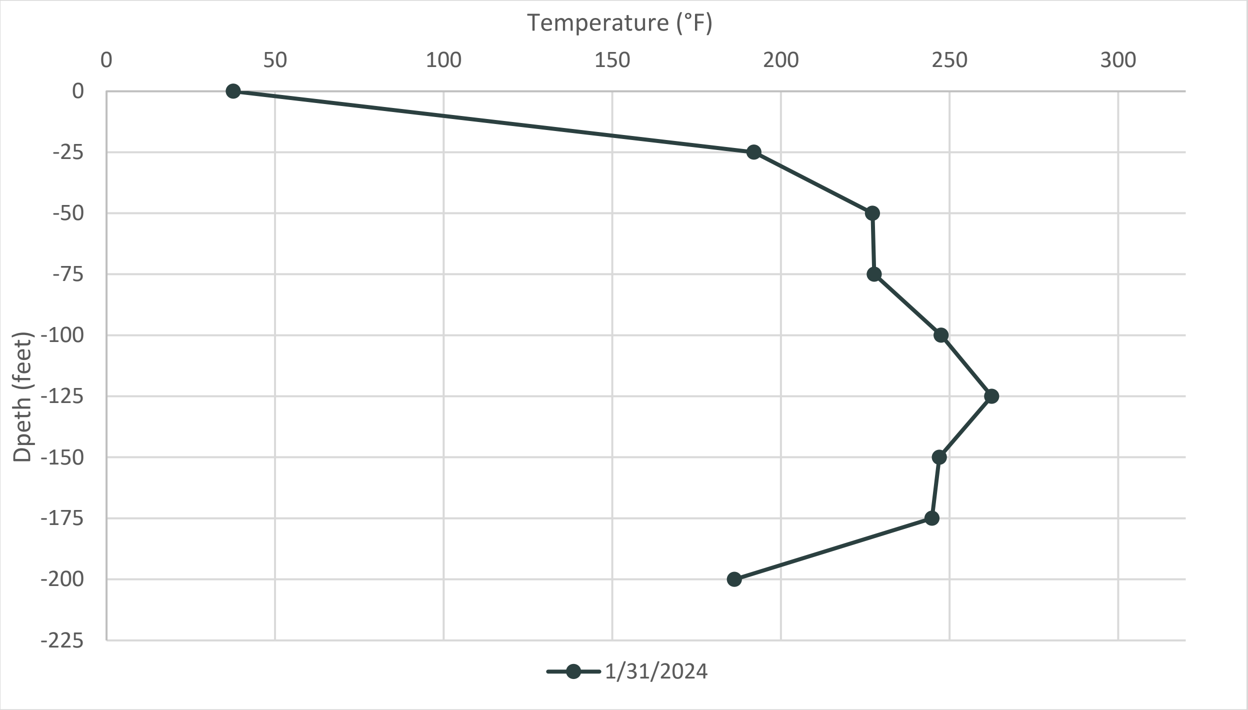


Figure B - 21 Average Temperatures Recorded by TP-5 on January 3, 2024

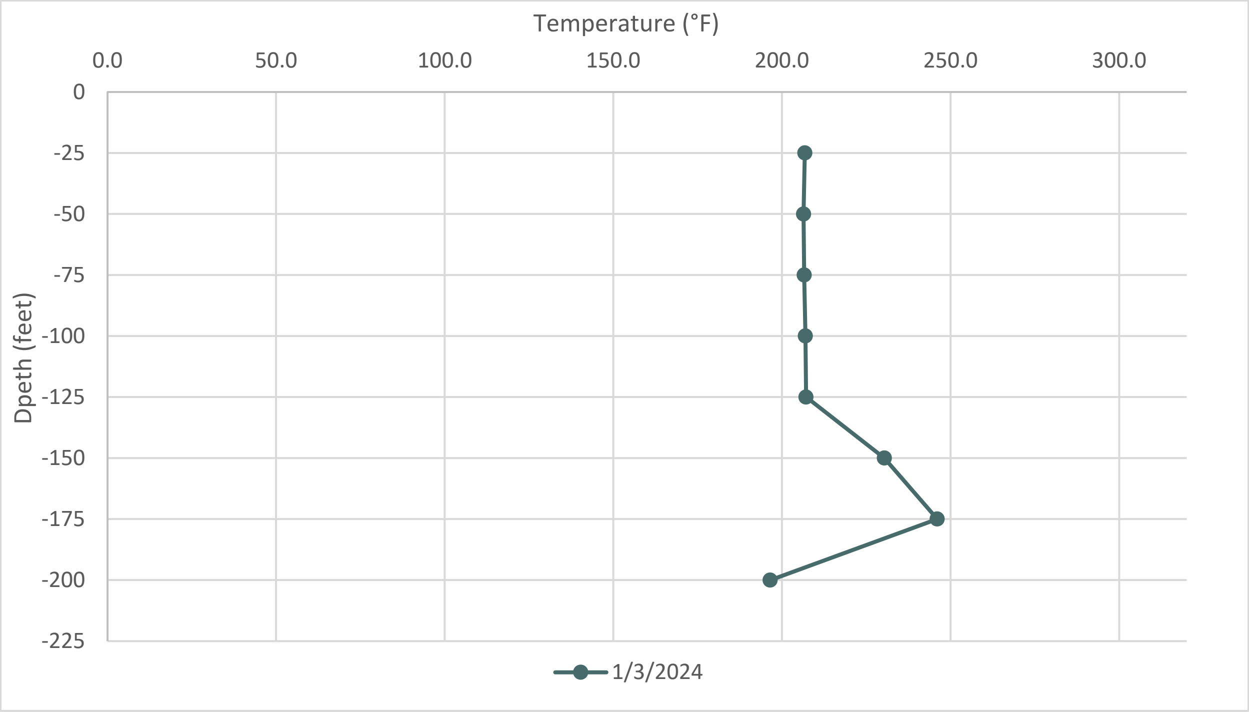


Figure B - 22 Average Temperatures Recorded by TP-5 on January 10, 2024

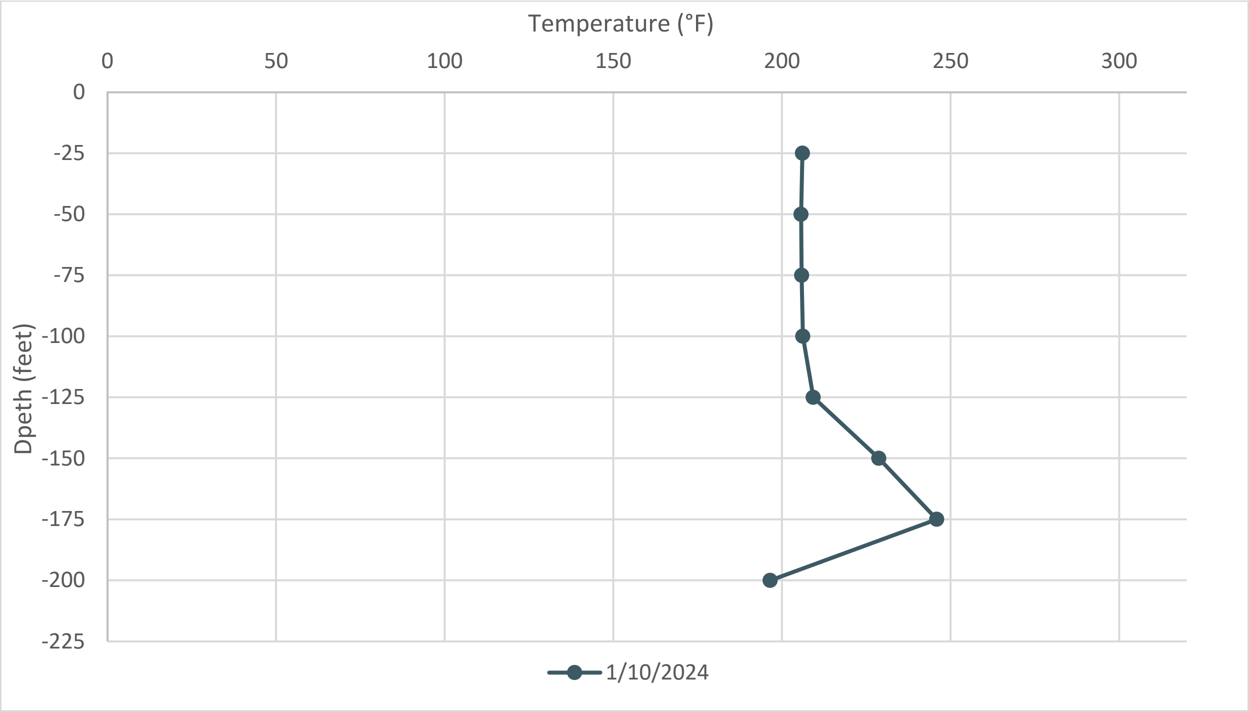


Figure B - 23 Average Temperatures Recorded by TP-5 on January 17, 2024

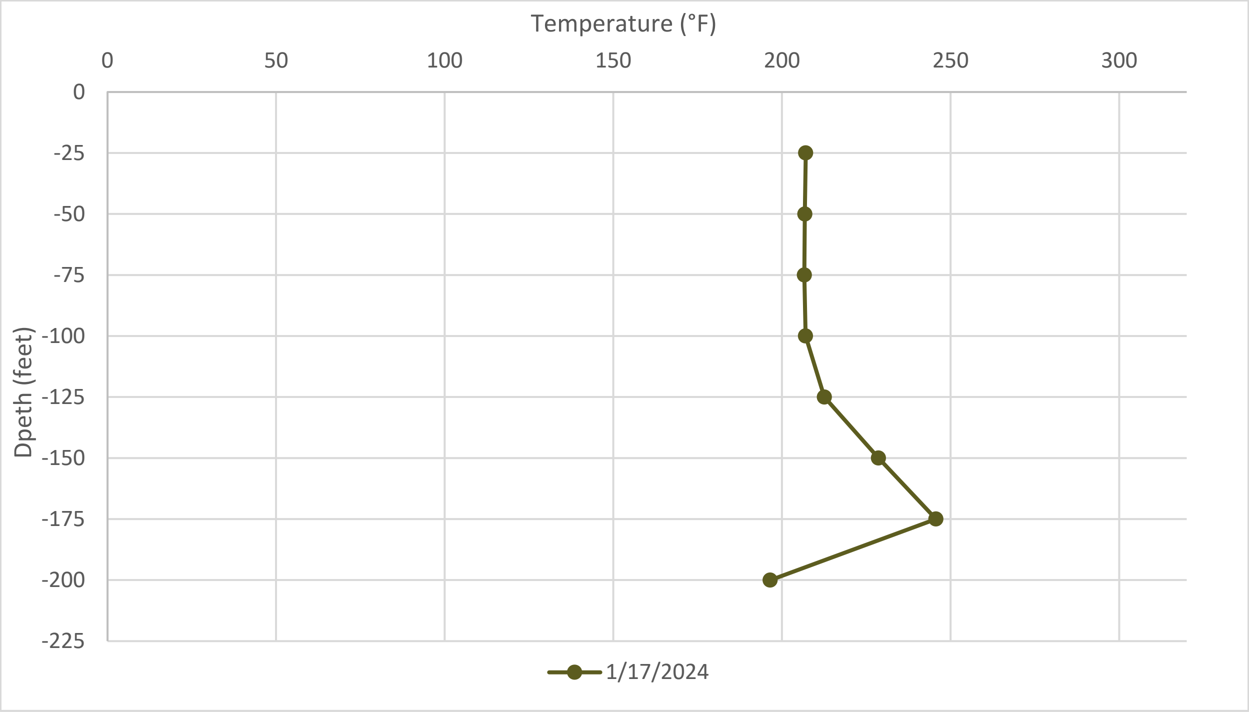


Figure B - 24 Average Temperatures Recorded by TP-5 on January 24, 2024

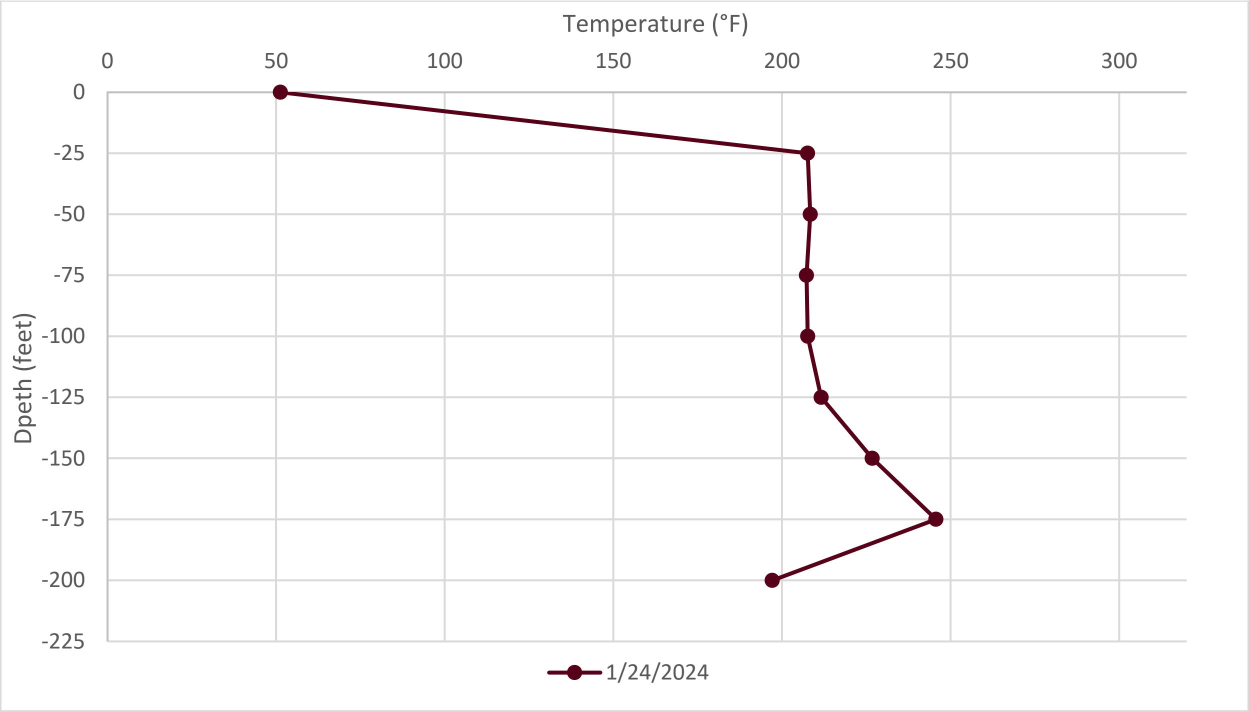


Figure B - 25 Average Temperatures Recorded by TP-5 on January 31, 2024

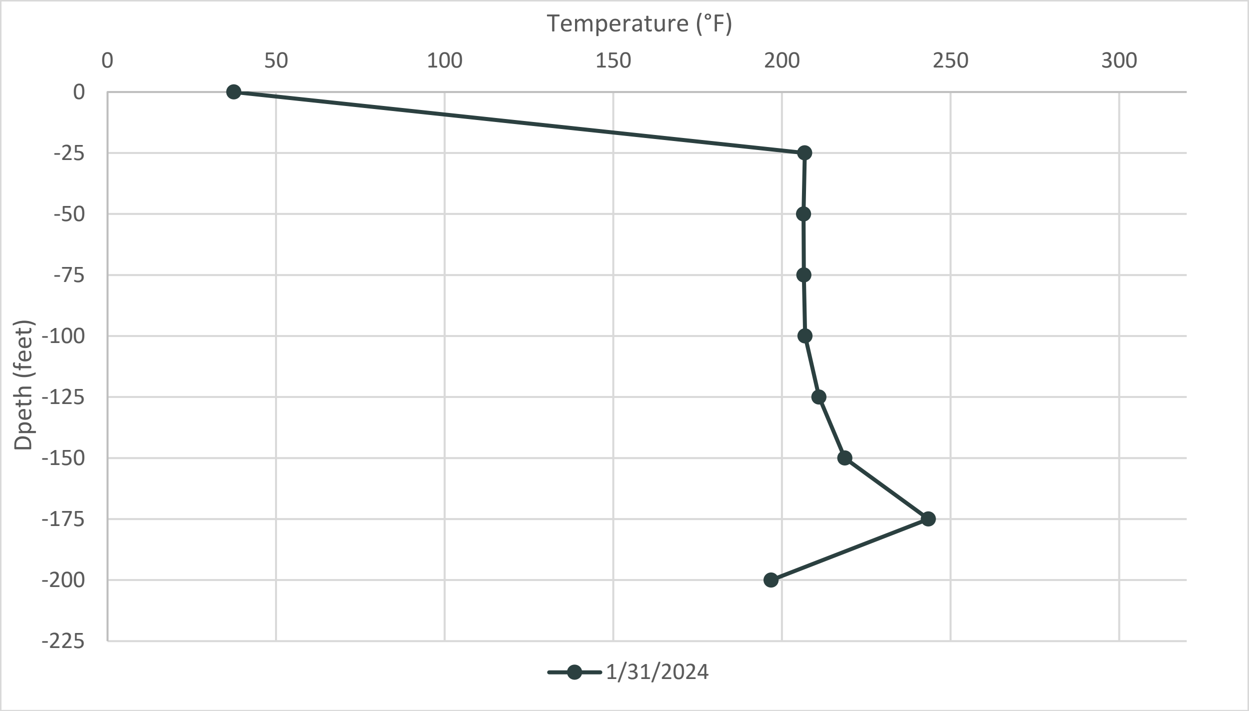


Figure B - 26 Average Temperatures Recorded by TP-6 on January 3, 2024

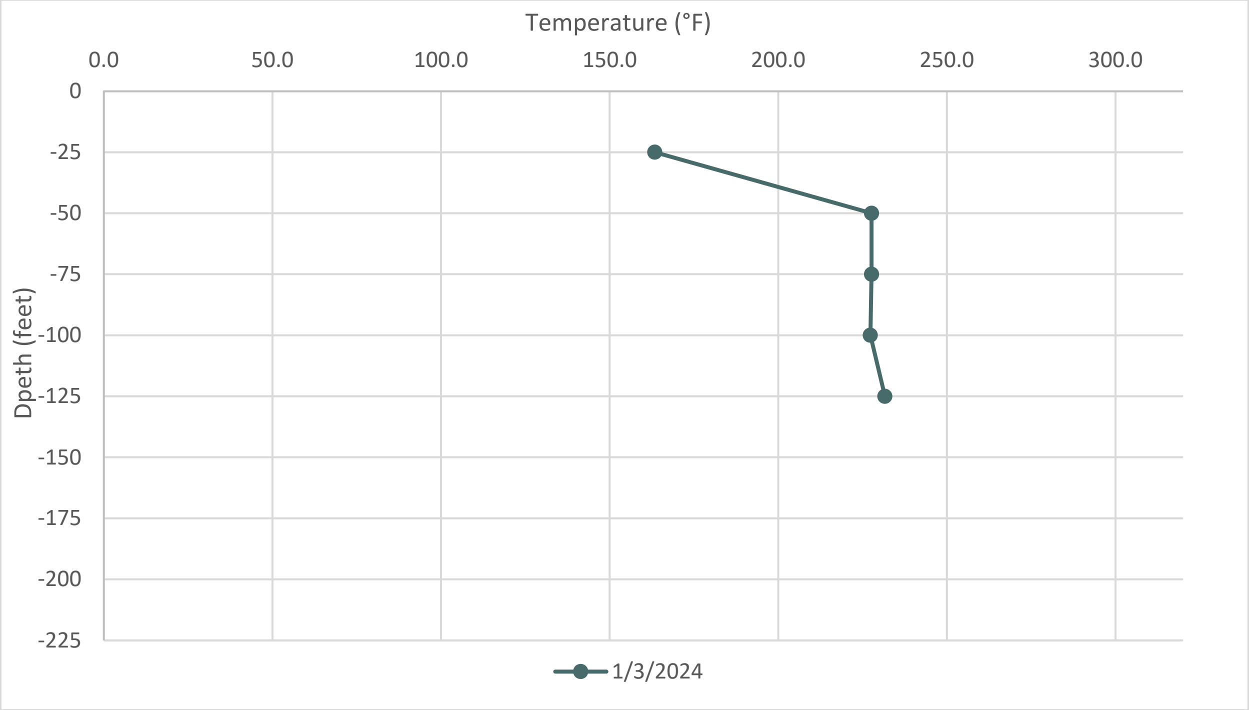


Figure B - 27 Average Temperatures Recorded by TP-6 on January 10, 2024

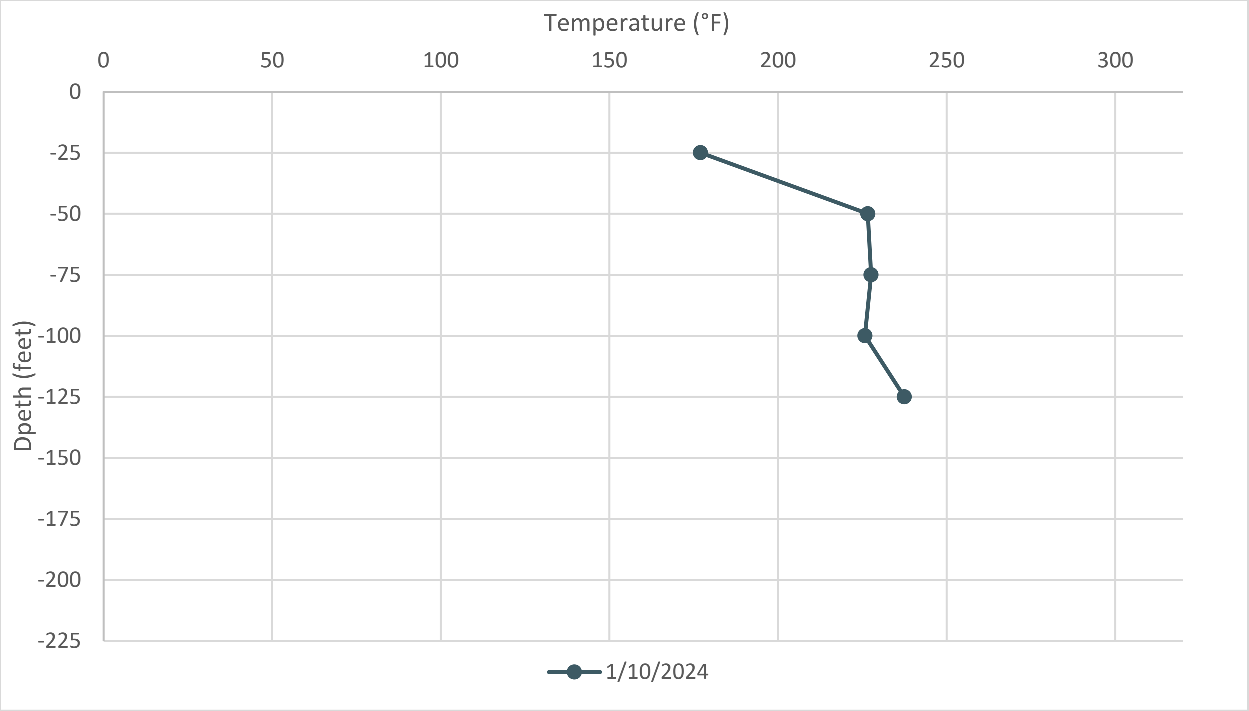


Figure B - 28 Average Temperatures Recorded by TP-6 on January 17, 2024

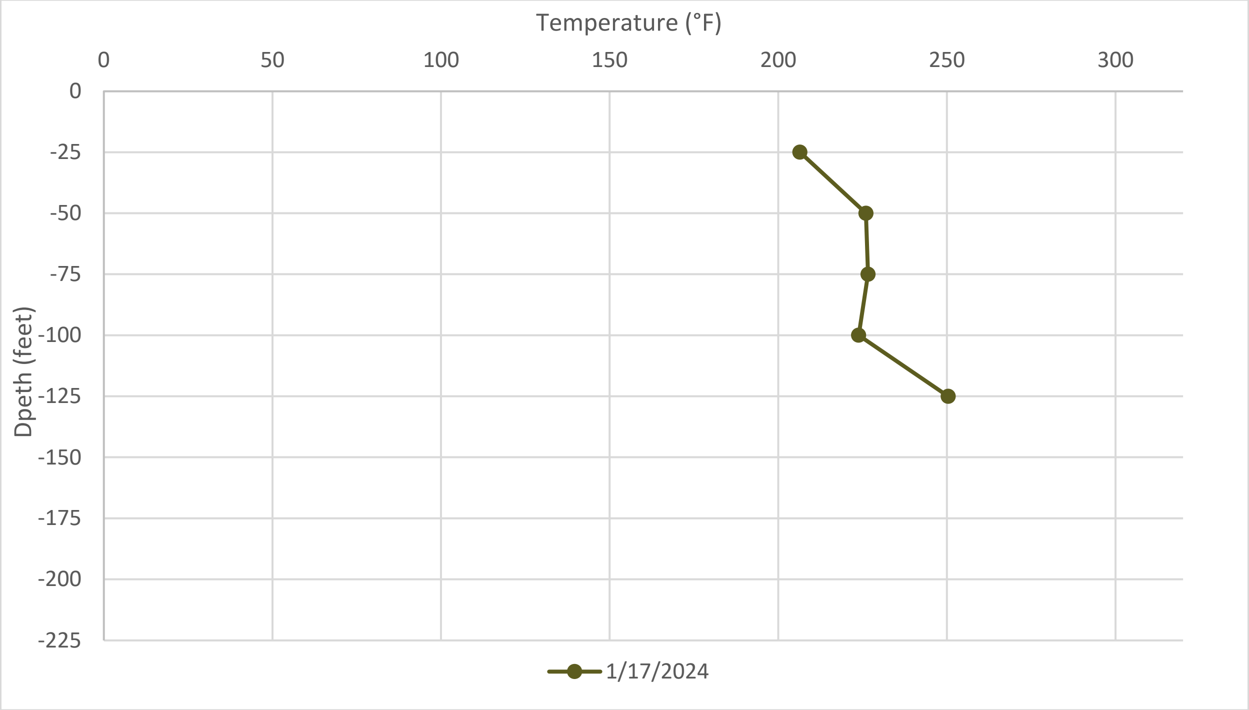


Figure B - 29 Average Temperatures Recorded by TP-6 on January 24, 2024

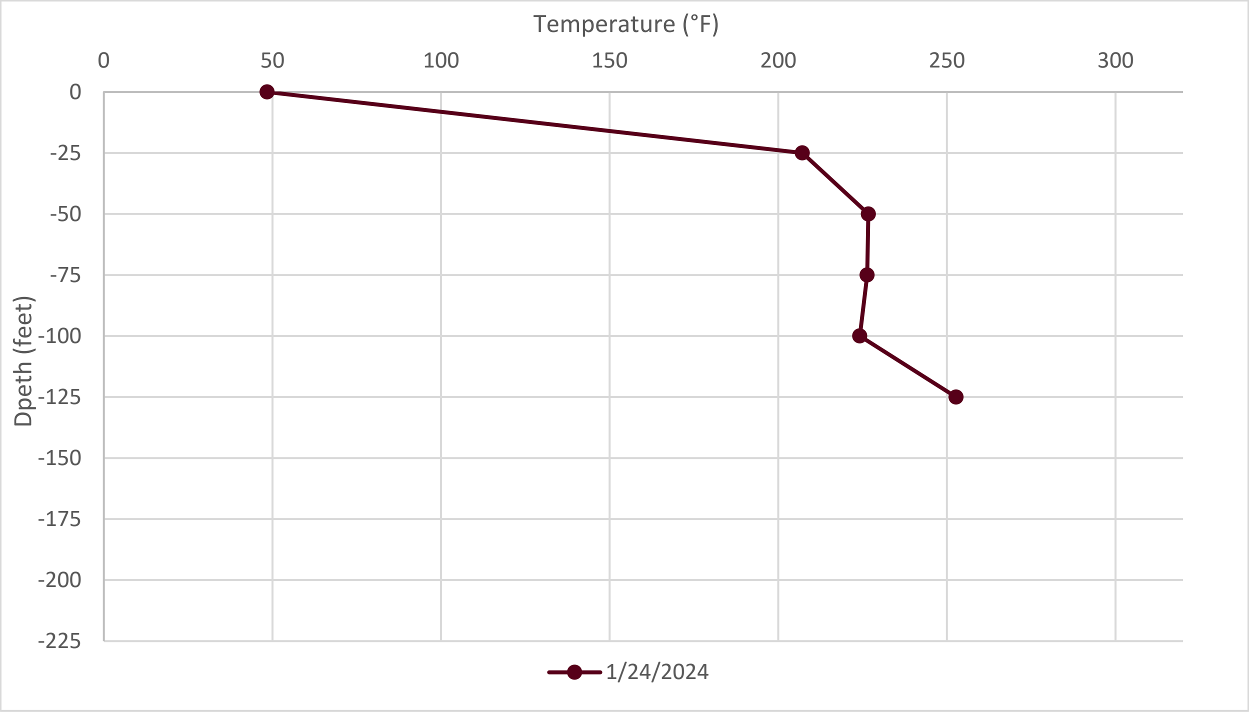


Figure B - 30 Average Temperatures Recorded by TP-6 on January 31, 2024

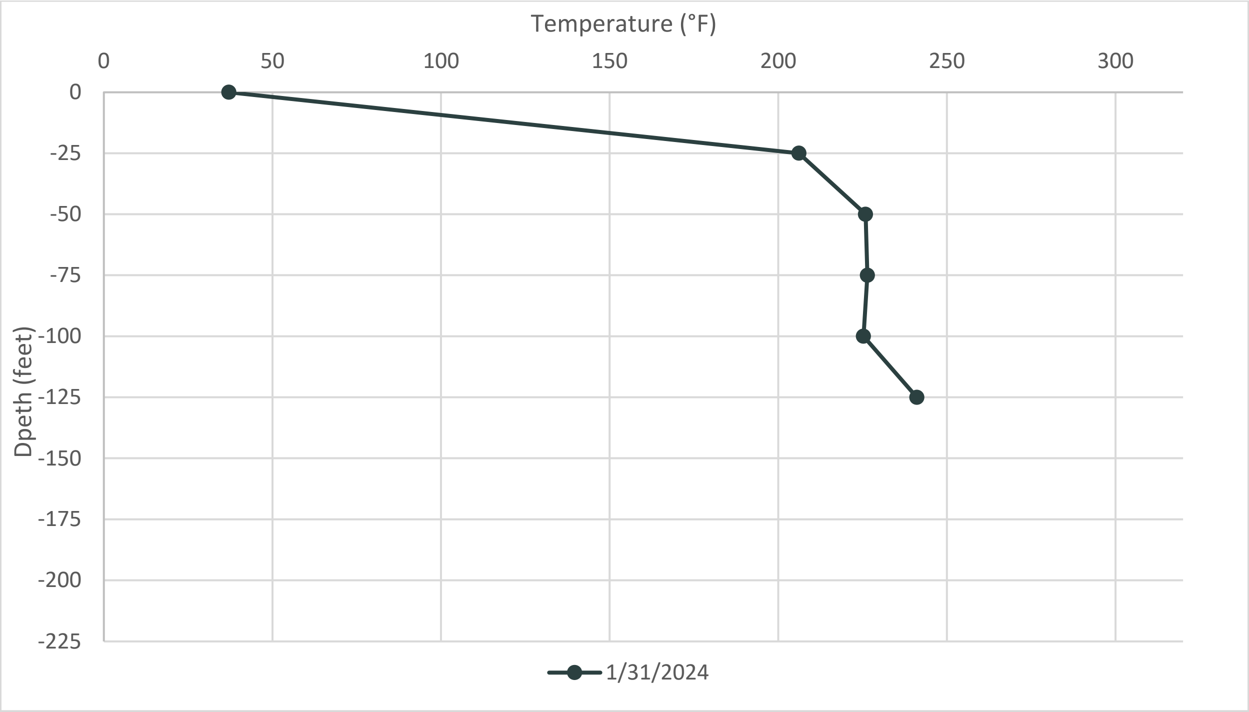


Figure B - 31 Average Temperatures Recorded by TP-7 on January 3, 2024

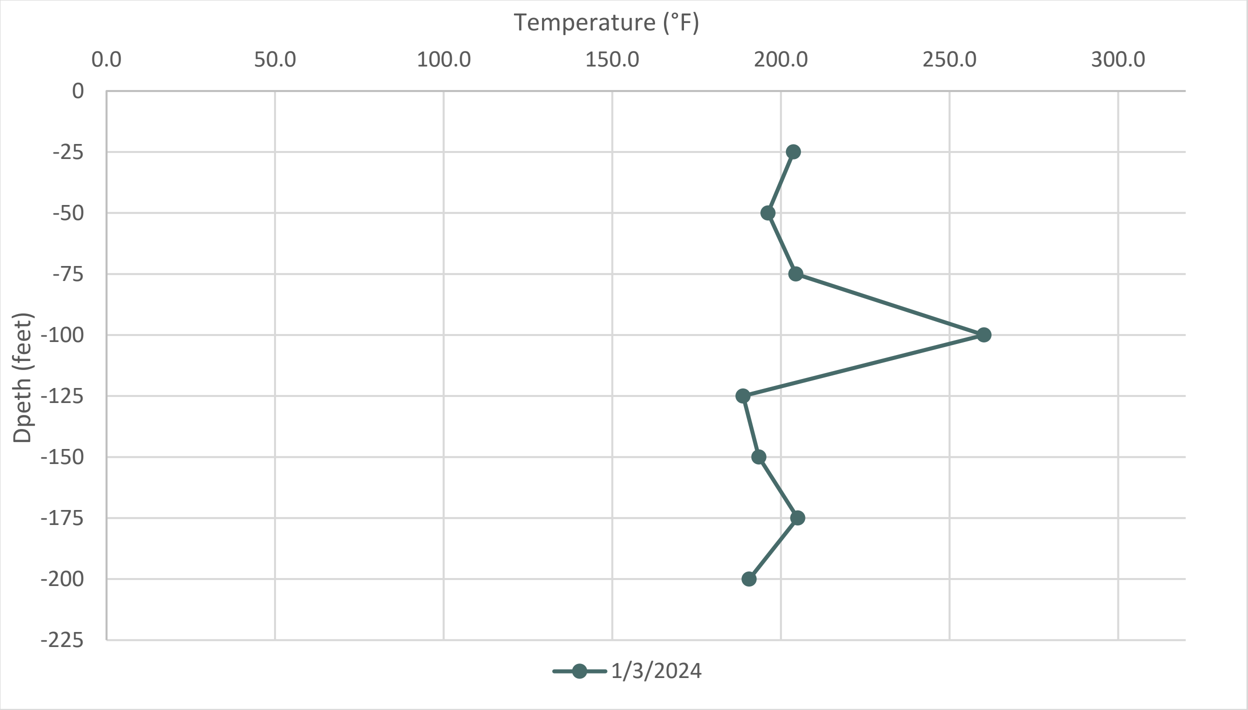


Figure B - 32 Average Temperatures Recorded by TP-7 on January 10, 2024

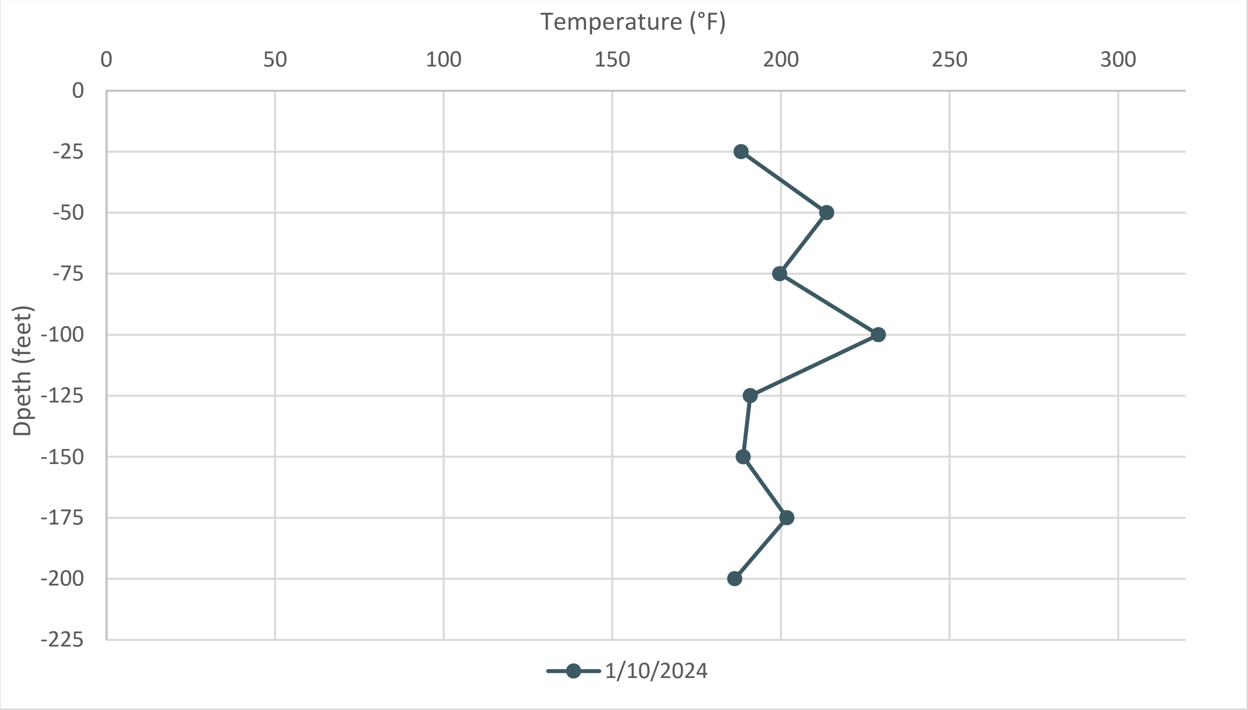


Figure B - 33 Average Temperatures Recorded by TP-7 on January 17, 2024

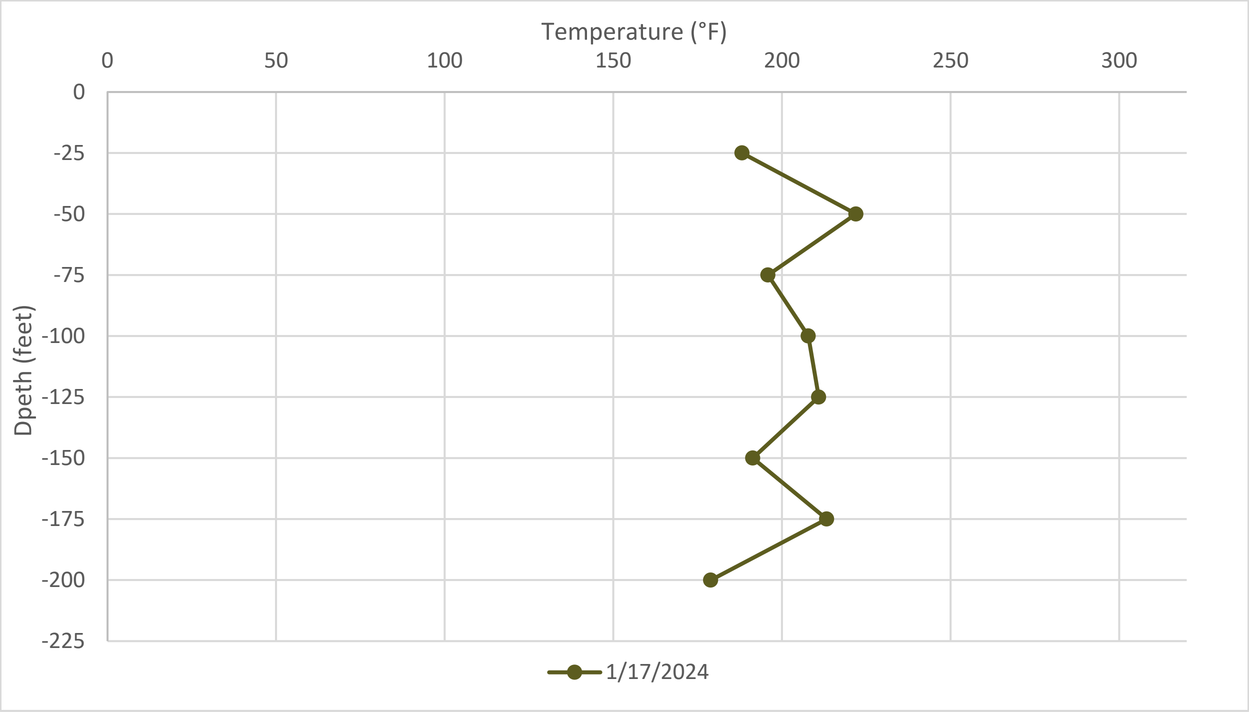


Figure B - 34 Average Temperatures Recorded by TP-7 on January 24, 2024

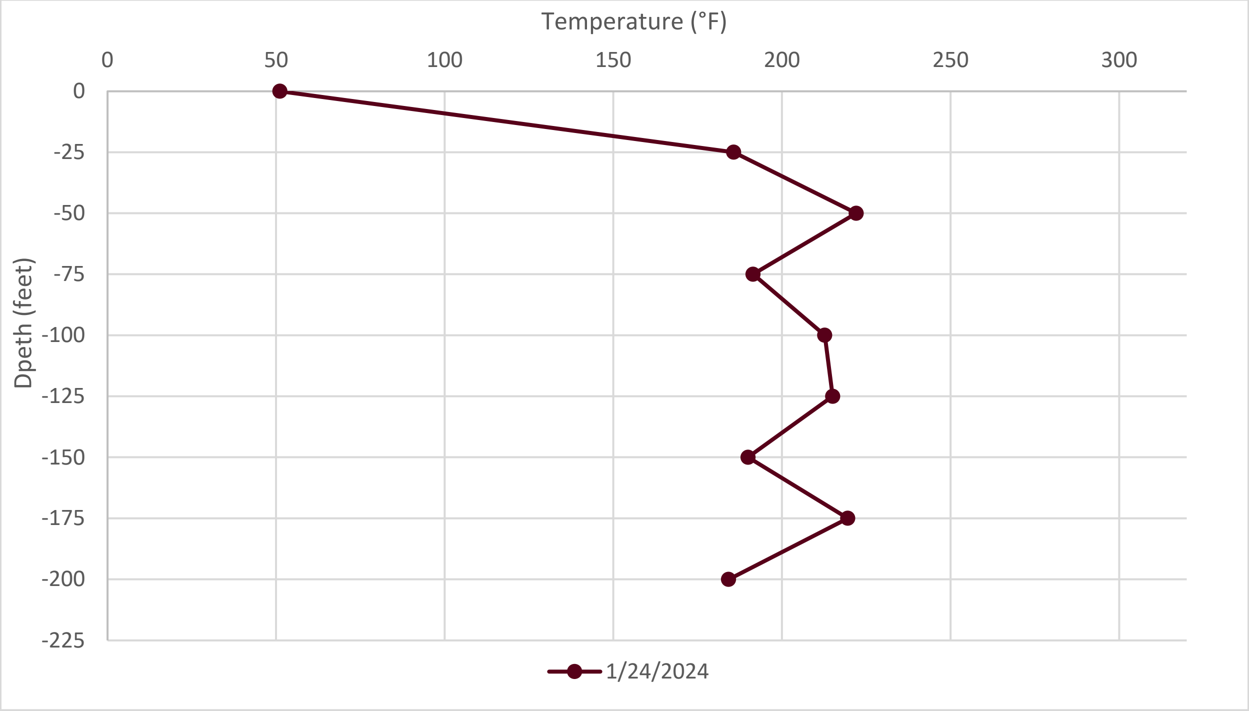


Figure B - 35 Average Temperatures Recorded by TP-7 on January 31, 2024

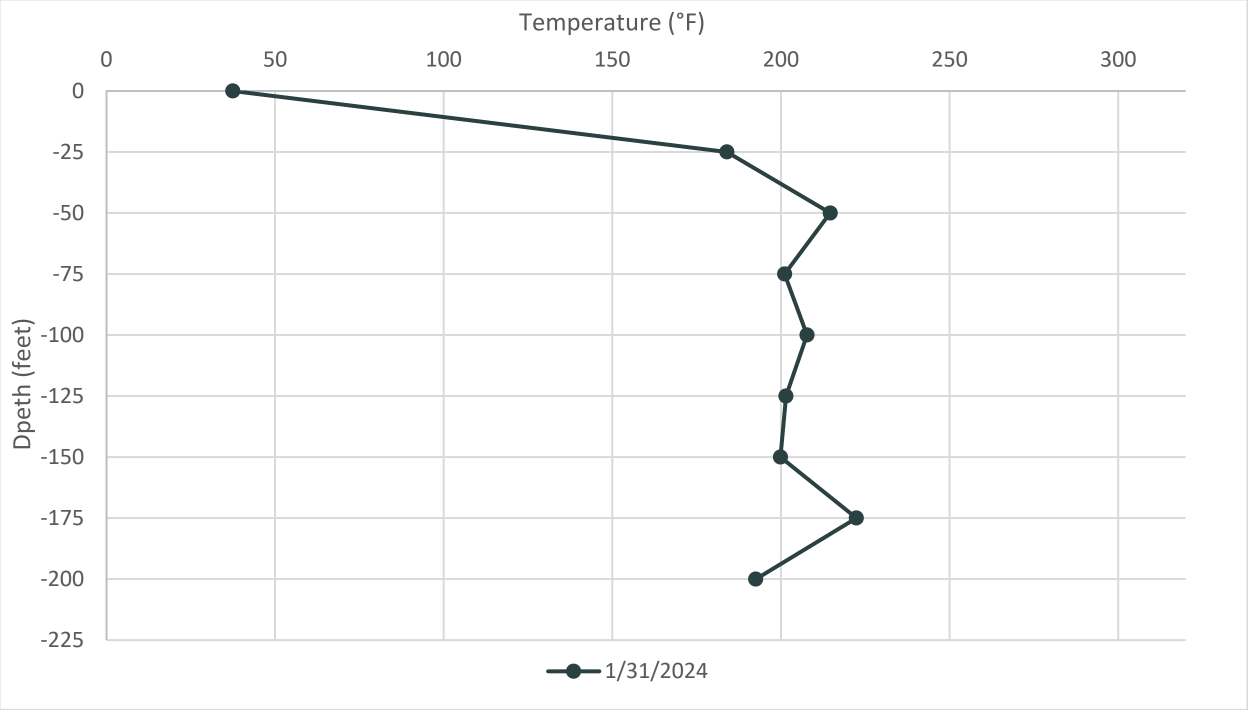


Figure B - 36 Average Temperatures Recorded by TP-8 on January 3, 2024

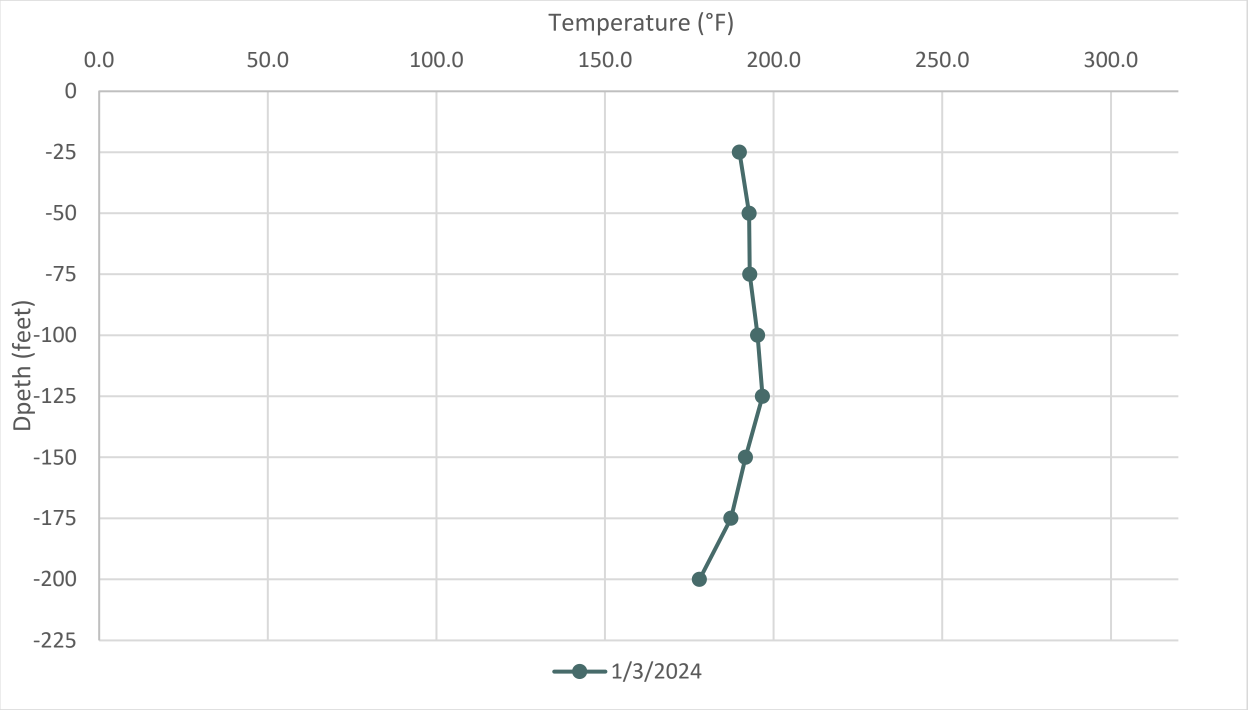


Figure B - 37 Average Temperatures Recorded by TP-8 on January 10, 2024

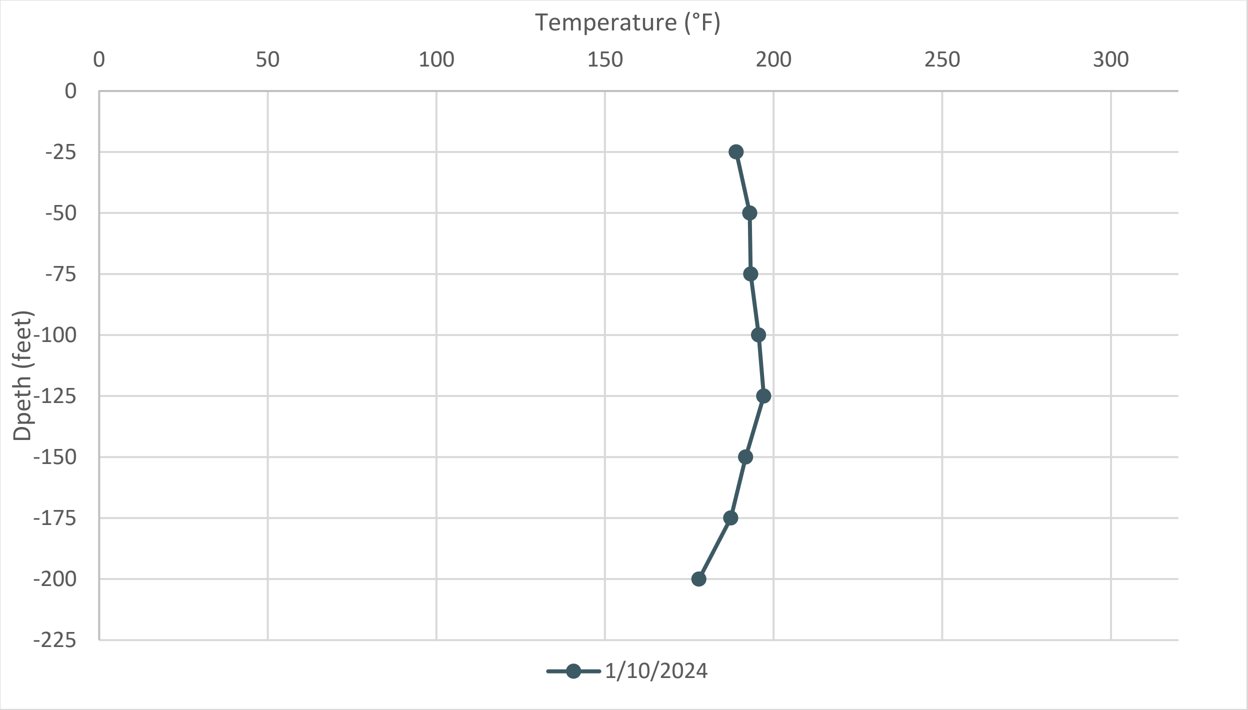


Figure B - 38 Average Temperatures Recorded by TP-8 on January 17, 2024

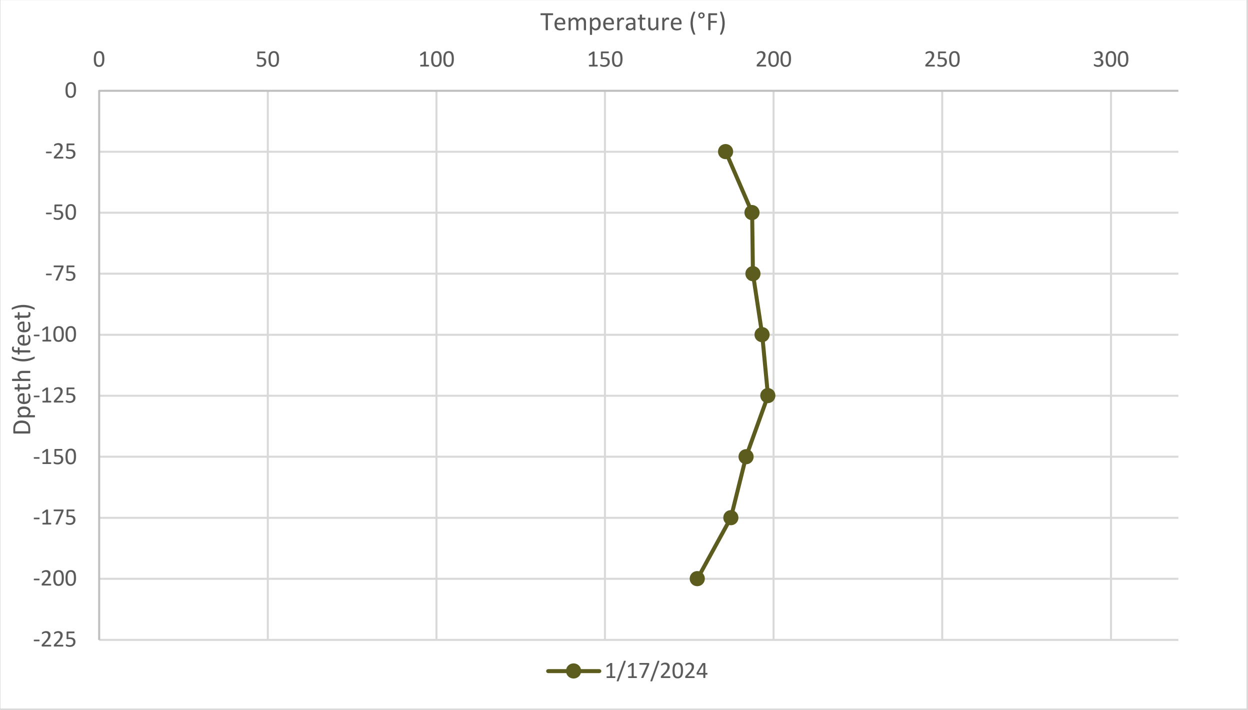


Figure B - 39 Average Temperatures Recorded by TP-8 on January 24, 2024

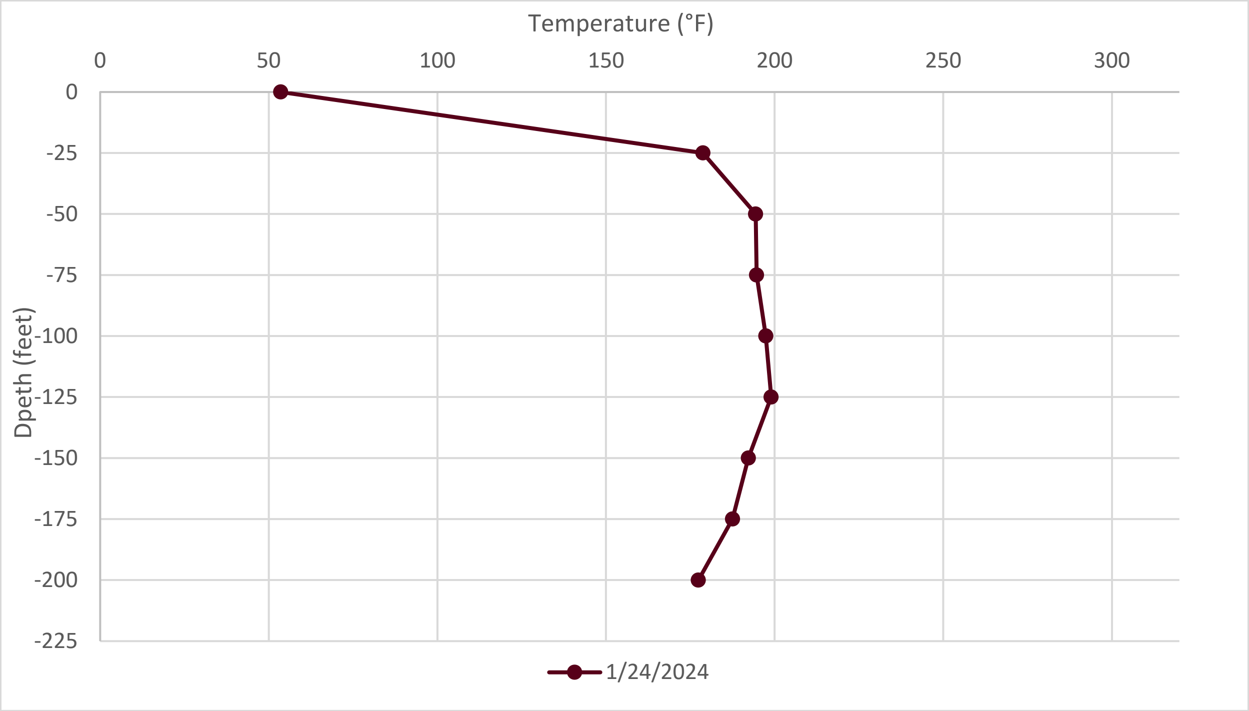


Figure B - 40 Average Temperatures Recorded by TP-8 on *January 31, 2024*

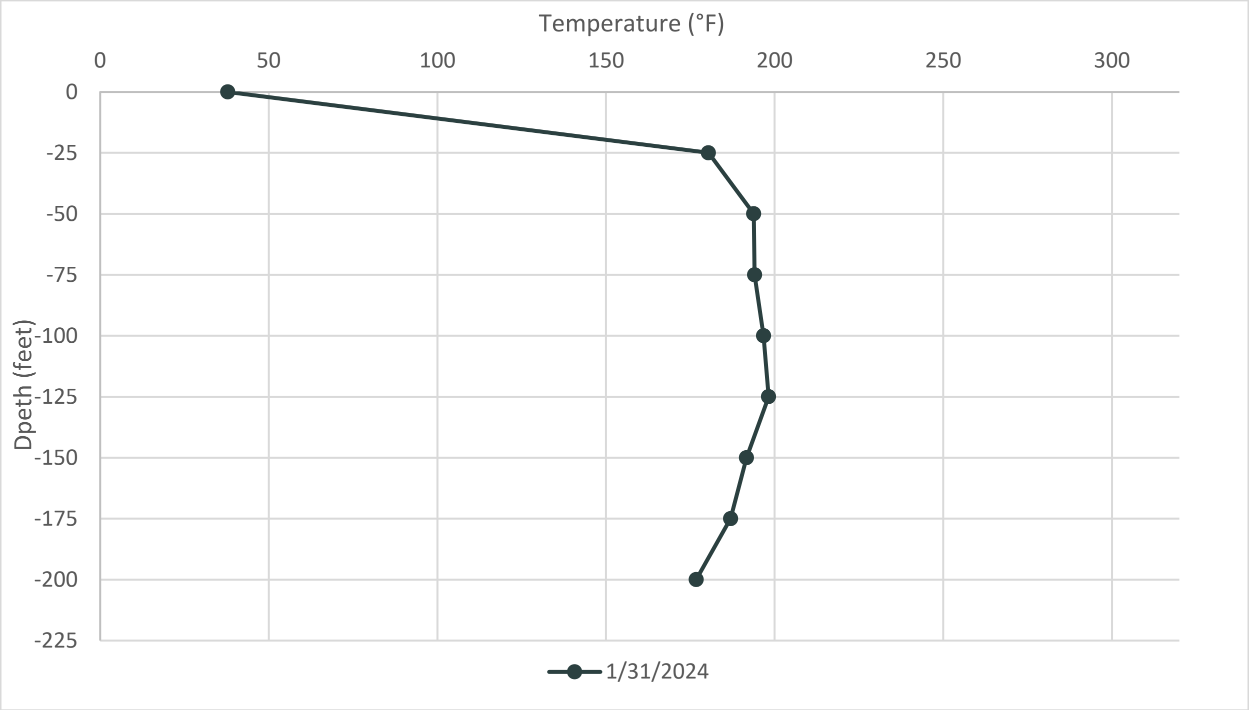


Figure B - 41 Average Temperatures Recorded by TP-9 on January 3, 2024

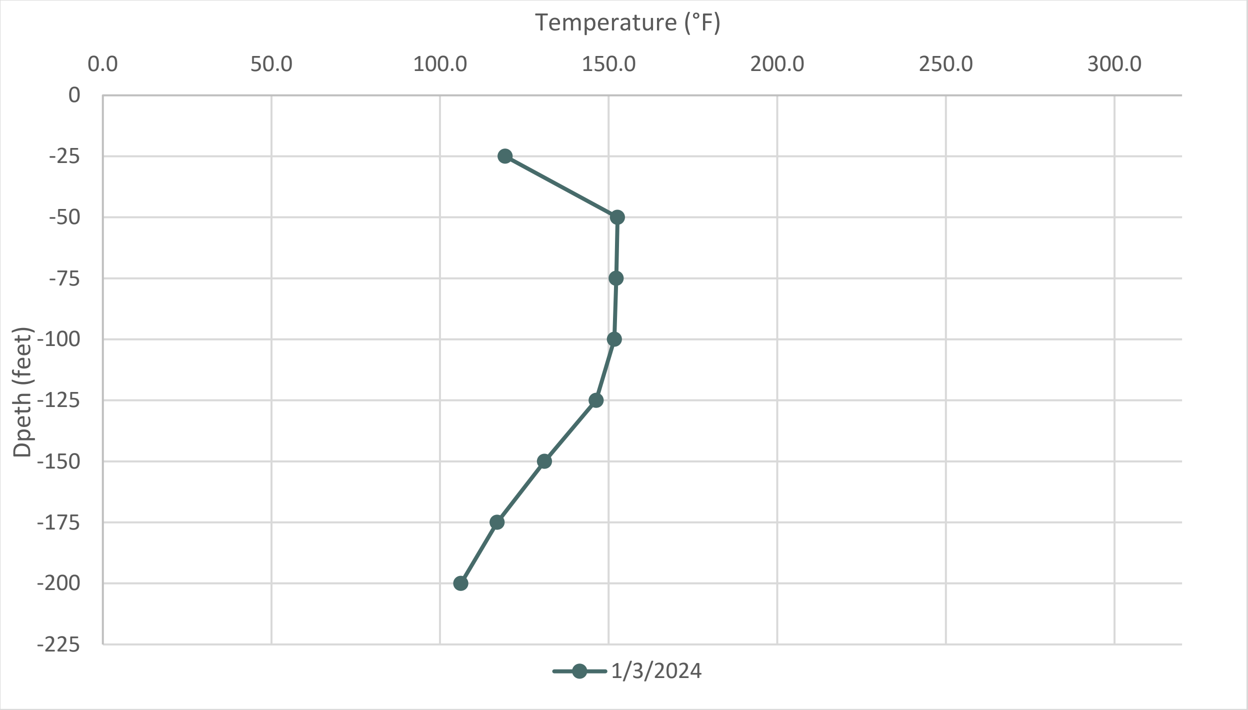


Figure B - 42 Average Temperatures Recorded by TP-9 on January 10, 2024

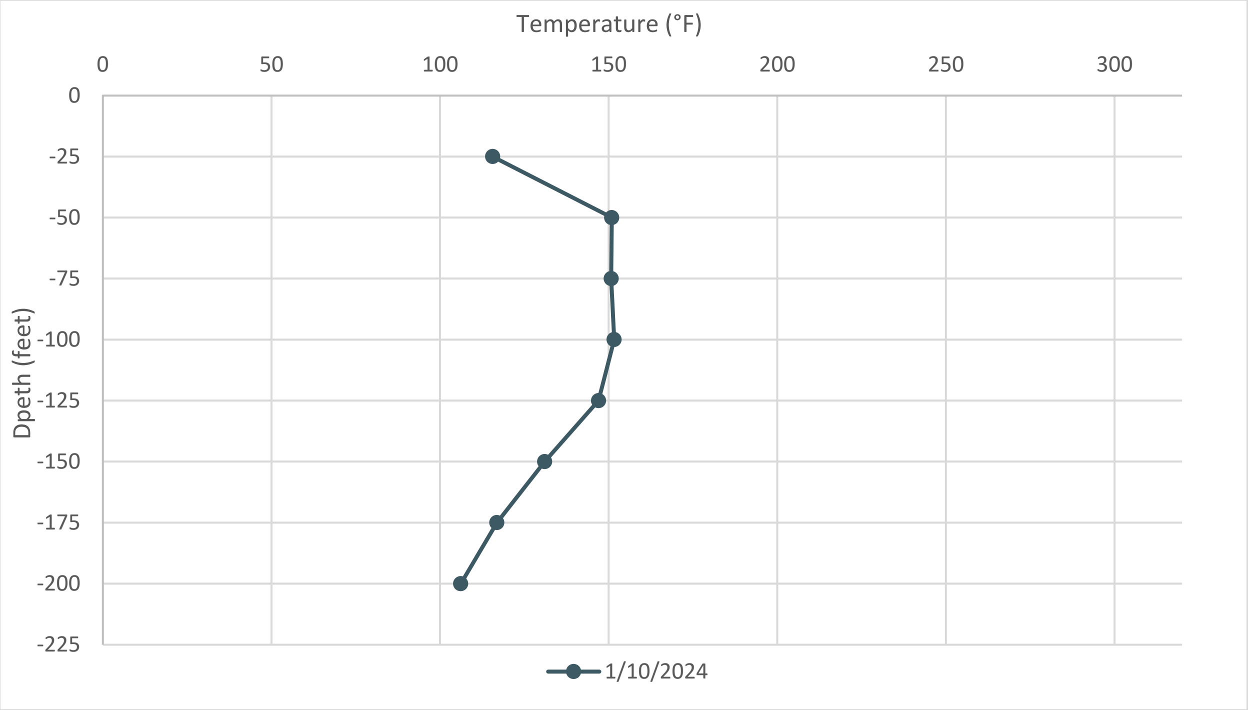


Figure B - 43 Average Temperatures Recorded by TP-9 on January 17, 2024

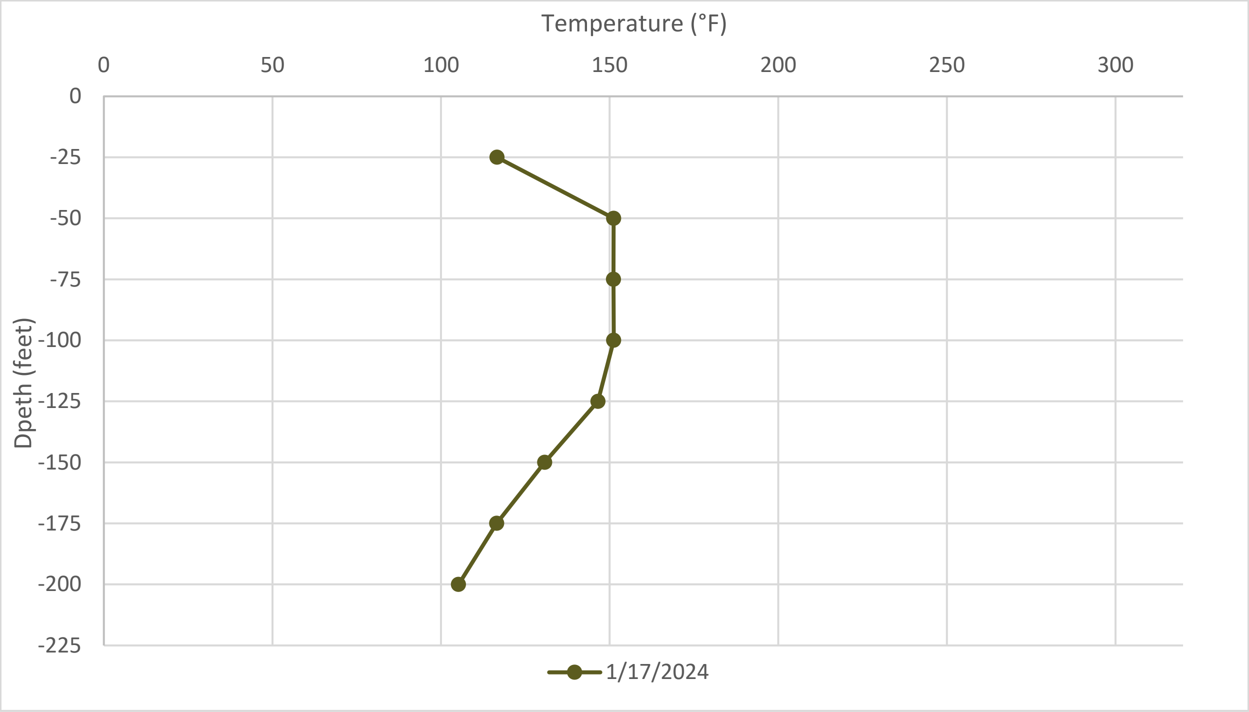


Figure B - 44 Average Temperatures Recorded by TP-9 on January 24, 2024

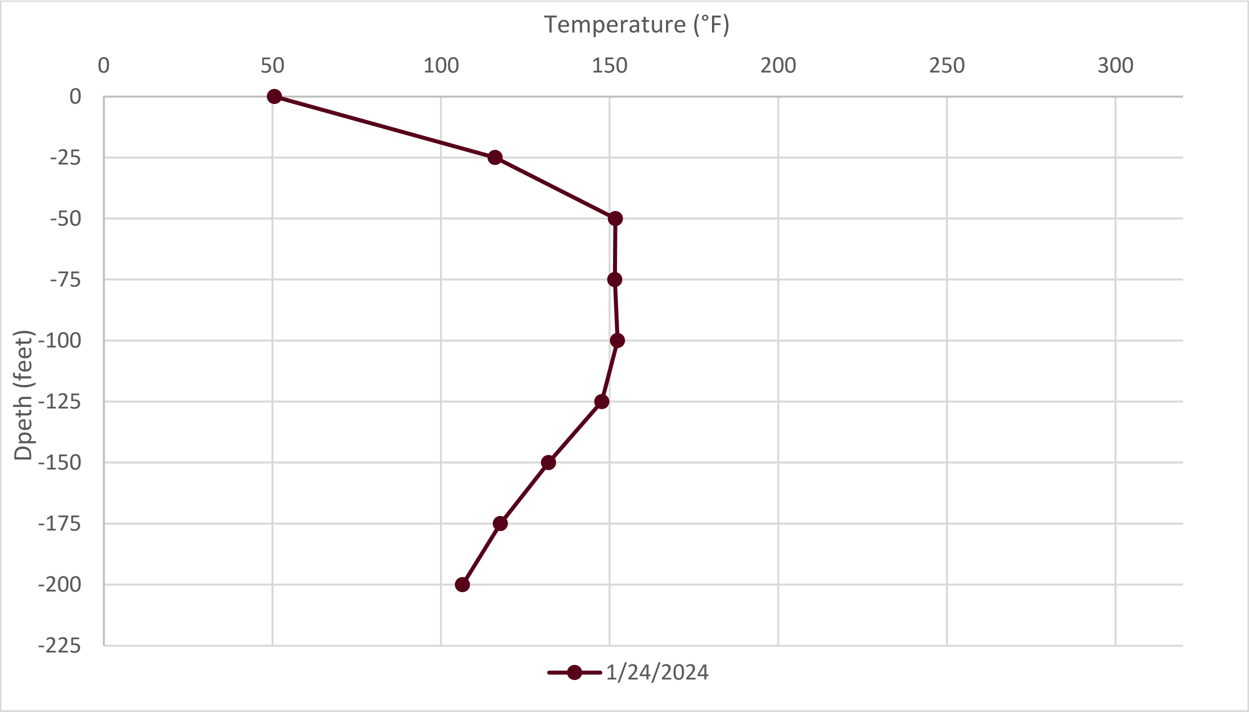
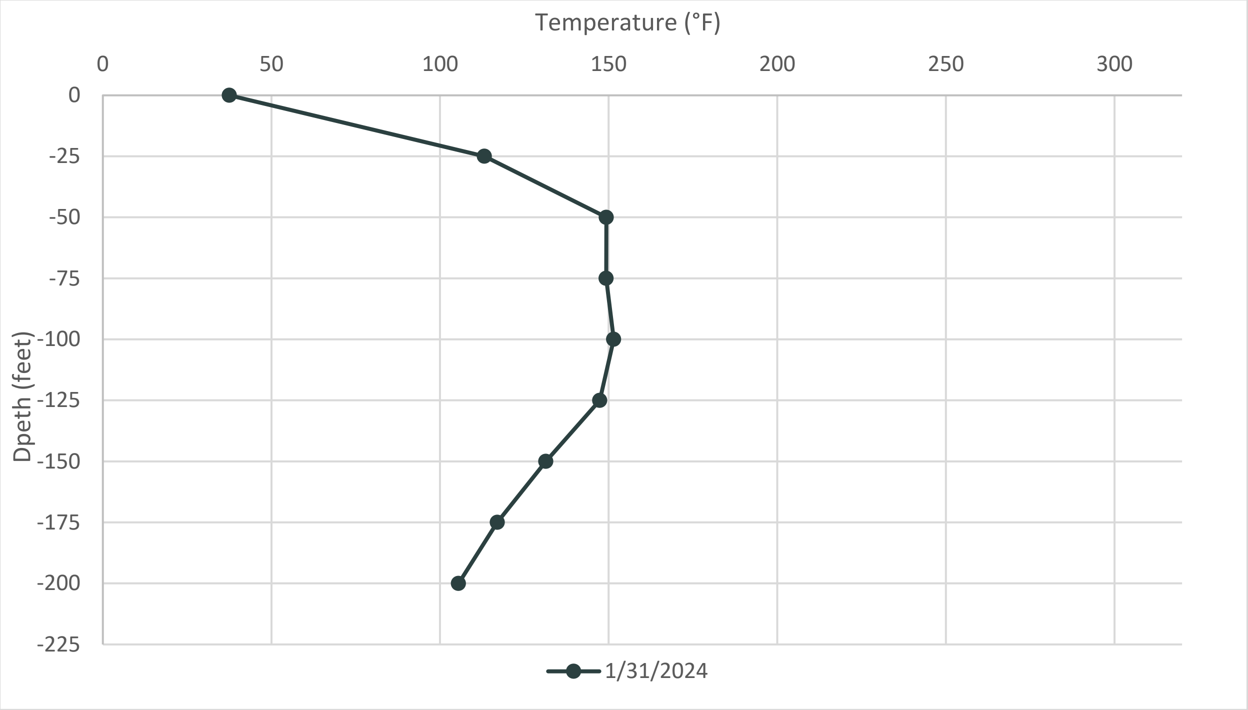


Figure B - 45 Average Temperatures Recorded by TP-9 on January 31, 2024



Appendix C

Daily Wellhead Temperature Averages

Solid Waste Permit 588 Daily Wellhead Temperature Averages

The data provided in this report represent initial readings provided by field instrumentation without Validation, analysis, quality assurance review, or context based on operating conditions. This report is subject to revision following quality assurance review and an analysis of operating conditions. SCS will continue to provide a supplemental report with additional information and further analysis on a monthly basis at a minimum.

SCS ENGINEERS

07222143.00 | February 6, 2024

274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 32R

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	40.0	36.1	45.5
Jan 2	71.5	35.5	122.1
Jan 3	110.0	99.2	116.6
Jan 4	97.7	94.2	100.5
Jan 5	102.3	95.9	111.5
Jan 6	104.2	100.2	109.0
Jan 7	94.2	90.6	99.1
Jan 8	98.9	92.6	109.3
Jan 9	104.1	95.4	113.1
Jan 10	90.5	86.9	95.2
Jan 11	96.8	92.0	102.6
Jan 12	102.3	97.9	107.4
Jan 13	68.9	33.4	102.8
Jan 14	95.1	91.1	100.1
Jan 15	88.1	78.1	97.1
Jan 16	77.2	68.9	86.9
Jan 17	72.7	68.5	79.5
Jan 18	81.9	74.4	89.8
Jan 19	76.4	70.1	81.1
Jan 20	68.4	63.2	76.5
Jan 21	73.2	68.0	83.9
Jan 22	80.8	69.3	97.2
Jan 23	84.7	78.0	92.6
Jan 24	87.4	74.3	99.3
Jan 25	87.3	85.0	91.8
Jan 26	84.1	79.6	88.1
Jan 27	75.1	57.7	85.9
Jan 28	46.5	41.3	58.1
Jan 29	65.8	41.1	84.6
Jan 30	76.7	49.0	90.3
Summary	**83.4**	**40.0**	**110.0**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 34

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	0.0	31.4	31.4
Jan 2	0.0	31.4	31.4
Jan 3	0.0	31.4	31.4
Jan 4	0.0	31.4	31.4
Jan 5	0.0	31.4	31.4
Jan 6	0.0	31.4	31.4
Jan 7	0.0	31.4	31.4
Jan 8	0.0	31.4	31.4
Jan 9	0.0	31.4	31.4
Jan 10	0.0	31.4	31.4
Jan 11	0.0	31.4	31.4
Jan 12	0.0	31.4	31.4
Jan 13	0.0	31.4	31.4
Jan 14	0.0	31.4	31.4
Jan 15	0.0	31.4	31.4
Jan 16	0.0	31.4	31.4
Jan 17	0.0	31.4	31.4
Jan 18	0.0	31.4	31.4
Jan 19	0.0	31.4	31.4
Jan 20	0.0	31.4	31.4
Jan 21	0.0	31.4	31.4
Jan 22	0.0	31.4	31.4
Jan 23	0.0	31.4	31.4
Jan 24	0.0	31.4	31.4
Jan 25	0.0	31.4	31.4
Jan 26	0.0	31.4	31.4
Jan 27	0.0	31.4	31.4
Jan 28	0.0	31.4	31.4
Jan 29	0.0	31.4	31.4
Jan 30	0.0	31.4	31.4
Summary	**0.0**	**0.0**	**0.0**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 35

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	36.8	34.6	40.7
Jan 2	36.9	29.6	50.8
Jan 3	36.4	26.5	52.4
Jan 4	34.3	26.5	41.5
Jan 5	37.0	26.5	58.0
Jan 6	43.7	37.2	47.8
Jan 7	38.7	35.6	43.0
Jan 8	41.1	29.3	57.6
Jan 9	45.3	38.8	53.2
Jan 10	34.1	29.2	36.6
Jan 11	36.4	26.5	56.2
Jan 12	41.3	29.6	55.7
Jan 13	34.2	26.5	41.8
Jan 14	33.1	26.5	47.3
Jan 15	31.6	28.6	34.6
Jan 16	28.6	26.5	32.9
Jan 17	27.7	26.5	35.2
Jan 18	32.2	26.5	48.5
Jan 19	29.8	26.5	35.0
Jan 20	26.5	26.5	26.5
Jan 21	29.8	26.5	41.9
Jan 22	36.1	26.5	64.5
Jan 23	39.0	26.5	54.7
Jan 24	51.2	36.6	71.0
Jan 25	53.0	48.3	61.6
Jan 26	55.9	45.7	65.6
Jan 27	49.1	41.6	56.7
Jan 28	41.6	36.2	52.1
Jan 29	38.9	30.0	50.0
Jan 30	38.9	26.5	55.9
Summary	**38.0**	**26.5**	**55.9**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 36A

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	176.8	173.9	179.4
Jan 2	179.4	176.8	180.5
Jan 3	180.2	179.5	181.2
Jan 4	180.3	178.0	182.0
Jan 5	182.1	181.2	183.1
Jan 6	181.5	180.5	182.6
Jan 7	179.9	178.3	182.0
Jan 8	179.4	171.9	182.0
Jan 9	168.7	155.4	178.0
Jan 10	136.4	128.1	148.2
Jan 11	129.2	122.4	136.3
Jan 12	116.9	104.3	125.5
Jan 13	97.5	86.9	112.8
Jan 14	96.1	87.9	104.1
Jan 15	96.3	87.8	105.0
Jan 16	83.5	71.2	104.2
Jan 17	73.1	52.7	81.3
Jan 18	80.9	70.0	96.4
Jan 19	71.9	62.8	80.3
Jan 20	63.4	58.5	69.7
Jan 21	71.7	64.4	84.1
Jan 22	77.5	63.8	100.0
Jan 23	80.6	71.6	92.8
Jan 24	85.8	77.8	97.1
Jan 25	83.6	79.8	87.9
Jan 26	81.2	78.3	84.9
Jan 27	76.7	73.3	82.9
Jan 28	61.4	55.0	79.0
Jan 29	60.5	56.0	71.7
Jan 30	65.4	53.5	77.8
Summary	**113.3**	**60.5**	**182.1**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 40

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	0.0	32.1	32.1
Jan 2	0.0	32.1	32.1
Jan 3	0.0	32.1	32.1
Jan 4	0.0	32.1	32.1
Jan 5	0.0	32.1	32.1
Jan 6	0.0	32.1	32.1
Jan 7	0.0	32.1	32.1
Jan 8	0.0	32.1	32.1
Jan 9	0.0	32.1	32.1
Jan 10	0.0	32.1	32.1
Jan 11	0.0	32.1	32.1
Jan 12	0.0	32.1	32.1
Jan 13	0.0	32.1	32.1
Jan 14	0.0	32.1	32.1
Jan 15	0.0	32.1	32.1
Jan 16	0.0	32.1	32.1
Jan 17	0.0	32.1	32.1
Jan 18	0.0	32.1	32.1
Jan 19	0.0	32.1	32.1
Jan 20	0.0	32.1	32.1
Jan 21	0.0	32.1	32.1
Jan 22	0.0	32.1	32.1
Jan 23	0.0	32.1	32.1
Jan 24	0.0	32.1	32.1
Jan 25	0.0	32.1	32.1
Jan 26	0.0	32.1	32.1
Jan 27	0.0	32.1	32.1
Jan 28	0.0	32.1	32.1
Jan 29	0.0	32.1	32.1
Jan 30	0.0	32.1	32.1
Summary	**0.0**	**0.0**	**0.0**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 47

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	35.8	33.1	40.6
Jan 2	35.7	28.2	51.9
Jan 3	34.5	26.6	48.1
Jan 4	32.5	26.6	38.1
Jan 5	36.5	26.6	59.4
Jan 6	42.2	34.2	46.7
Jan 7	38.2	35.1	42.3
Jan 8	41.4	27.8	59.5
Jan 9	45.7	38.0	55.0
Jan 10	34.0	27.9	36.5
Jan 11	36.5	26.6	56.8
Jan 12	42.1	30.3	58.5
Jan 13	34.0	26.6	42.3
Jan 14	33.3	26.6	45.8
Jan 15	31.0	28.4	33.0
Jan 16	28.3	26.6	32.3
Jan 17	26.6	26.6	26.6
Jan 18	31.2	26.6	45.4
Jan 19	29.2	26.6	31.4
Jan 20	26.6	26.6	26.6
Jan 21	29.8	26.6	39.6
Jan 22	36.6	26.6	69.3
Jan 23	39.5	26.6	57.4
Jan 24	53.0	37.0	75.4
Jan 25	54.4	49.7	63.4
Jan 26	57.3	47.2	67.2
Jan 27	50.0	43.1	57.5
Jan 28	41.9	36.2	52.9
Jan 29	38.7	29.7	48.7
Jan 30	39.2	26.6	58.4
Summary	**37.9**	**26.6**	**57.3**

SCS ENGINEERS

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 49

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	116.0	105.5	133.6
Jan 2	126.3	115.6	134.2
Jan 3	127.7	118.1	134.3
Jan 4	119.4	103.7	129.1
Jan 5	127.1	115.6	137.3
Jan 6	127.8	118.0	132.6
Jan 7	110.8	94.2	128.4
Jan 8	123.9	104.8	135.1
Jan 9	121.1	108.2	139.0
Jan 10	107.1	92.2	131.5
Jan 11	128.6	119.9	135.9
Jan 12	128.2	117.9	136.8
Jan 13	107.1	90.5	127.6
Jan 14	117.5	103.1	129.0
Jan 15	125.5	115.4	132.4
Jan 16	103.8	82.0	134.3
Jan 17	88.9	54.6	102.6
Jan 18	113.2	77.3	144.9
Jan 19	114.9	99.7	133.9
Jan 20	102.6	93.3	112.7
Jan 21	123.4	109.6	135.2
Jan 22	133.1	124.3	141.1
Jan 23	135.3	130.9	138.7
Jan 24	136.9	109.8	141.4
Jan 25	138.2	136.6	139.7
Jan 26	137.1	134.1	138.4
Jan 27	136.1	130.4	138.2
Jan 28	118.5	109.0	136.8
Jan 29	125.4	112.5	135.0
Jan 30	135.4	99.3	141.7
Summary	**121.9**	**88.9**	**138.2**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 50

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	111.6	110.4	113.5
Jan 2	112.3	111.3	114.3
Jan 3	112.3	111.0	113.9
Jan 4	111.5	110.3	112.6
Jan 5	112.3	110.6	114.9
Jan 6	113.1	111.4	114.9
Jan 7	113.3	112.2	114.6
Jan 8	112.1	109.9	114.3
Jan 9	110.2	108.2	111.9
Jan 10	107.9	106.8	109.5
Jan 11	109.7	108.2	111.2
Jan 12	109.2	108.1	110.7
Jan 13	107.6	105.6	111.0
Jan 14	107.5	106.6	108.2
Jan 15	108.4	106.7	111.0
Jan 16	105.2	102.5	109.0
Jan 17	76.7	45.5	104.3
Jan 18	91.6	64.4	115.4
Jan 19	106.8	104.8	108.8
Jan 20	104.3	102.8	105.5
Jan 21	107.5	103.9	111.4
Jan 22	110.8	108.2	114.9
Jan 23	111.0	108.0	113.6
Jan 24	109.9	91.2	114.7
Jan 25	109.6	108.7	110.8
Jan 26	109.3	108.6	110.3
Jan 27	108.0	105.4	109.5
Jan 28	103.3	102.0	106.8
Jan 29	106.7	102.3	111.0
Jan 30	111.1	109.9	113.0
Summary	**107.7**	**76.7**	**113.3**

SCS ENGINEERS

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 51

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	35.3	32.6	40.0
Jan 2	34.3	27.6	45.5
Jan 3	73.3	26.0	173.3
Jan 4	177.7	174.7	181.2
Jan 5	182.2	150.8	184.6
Jan 6	49.6	37.9	109.9
Jan 7	37.8	34.0	41.8
Jan 8	83.4	27.3	156.3
Jan 9	165.8	154.7	174.8
Jan 10	166.1	159.7	174.1
Jan 11	153.9	59.4	184.5
Jan 12	175.7	173.0	178.3
Jan 13	175.4	171.6	178.9
Jan 14	111.5	32.1	180.6
Jan 15	67.0	28.9	126.3
Jan 16	39.9	25.9	100.8
Jan 17	26.5	25.9	30.7
Jan 18	35.5	25.9	53.7
Jan 19	37.1	27.8	41.1
Jan 20	27.4	25.9	32.8
Jan 21	41.1	27.4	59.1
Jan 22	43.7	25.9	75.4
Jan 23	47.6	38.7	63.5
Jan 24	56.1	39.2	76.2
Jan 25	60.2	54.4	67.0
Jan 26	62.8	54.8	68.9
Jan 27	55.2	49.6	61.1
Jan 28	43.7	38.1	55.2
Jan 29	40.0	32.7	46.9
Jan 30	39.2	27.4	54.4
Summary	**78.2**	**26.5**	**182.2**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 52

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	142.5	140.6	146.1
Jan 2	152.8	140.5	176.2
Jan 3	159.0	146.6	178.2
Jan 4	155.7	146.2	177.0
Jan 5	154.8	148.1	175.6
Jan 6	147.8	146.4	149.6
Jan 7	143.4	141.3	145.8
Jan 8	150.6	141.1	171.2
Jan 9	146.7	144.4	149.4
Jan 10	140.5	73.3	144.7
Jan 11	152.7	143.2	177.0
Jan 12	156.2	147.6	177.5
Jan 13	94.4	29.0	150.8
Jan 14	79.2	27.4	154.7
Jan 15	93.8	28.5	153.8
Jan 16	145.4	140.8	151.5
Jan 17	134.9	126.1	143.8
Jan 18	141.1	131.6	150.7
Jan 19	143.7	141.4	146.7
Jan 20	138.8	38.9	147.7
Jan 21	90.5	27.4	150.2
Jan 22	109.7	27.4	151.6
Jan 23	154.0	145.4	174.1
Jan 24	156.4	148.1	176.0
Jan 25	156.0	150.1	171.3
Jan 26	150.2	148.9	151.6
Jan 27	147.7	145.7	148.9
Jan 28	144.2	142.5	146.8
Jan 29	151.3	143.0	169.4
Jan 30	154.8	147.6	171.8
Summary	**139.6**	**79.2**	**159.0**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 53

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	56.6	52.1	64.0
Jan 2	112.5	51.6	189.1
Jan 3	178.0	143.8	193.4
Jan 4	125.1	112.6	141.6
Jan 5	117.1	106.5	132.5
Jan 6	114.1	104.6	119.3
Jan 7	100.6	93.1	109.7
Jan 8	100.7	92.8	114.9
Jan 9	103.2	94.6	117.7
Jan 10	126.3	88.2	185.1
Jan 11	183.3	151.4	193.1
Jan 12	161.4	128.7	192.6
Jan 13	120.2	110.4	145.6
Jan 14	107.3	98.3	112.6
Jan 15	101.9	95.5	107.3
Jan 16	89.3	69.5	108.9
Jan 17	78.6	66.2	136.3
Jan 18	112.5	64.1	181.4
Jan 19	184.0	143.3	192.7
Jan 20	121.7	98.4	162.9
Jan 21	102.7	92.3	116.2
Jan 22	104.4	88.1	127.9
Jan 23	143.2	96.4	188.7
Jan 24	152.6	118.5	191.2
Jan 25	156.5	107.5	193.0
Jan 26	146.0	122.2	188.0
Jan 27	112.5	103.9	122.0
Jan 28	95.4	87.5	109.0
Jan 29	116.1	84.6	178.1
Jan 30	140.5	96.1	188.9
Summary	**122.1**	**56.6**	**184.0**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 54

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	35.2	32.7	40.0
Jan 2	35.6	27.5	55.5
Jan 3	34.5	27.4	48.0
Jan 4	32.2	27.4	37.7
Jan 5	40.6	27.4	69.8
Jan 6	48.7	39.2	53.5
Jan 7	45.2	40.8	51.3
Jan 8	49.9	36.8	74.2
Jan 9	52.3	44.1	69.4
Jan 10	87.3	35.7	177.8
Jan 11	121.2	65.2	178.0
Jan 12	138.9	105.8	178.2
Jan 13	74.3	54.4	123.4
Jan 14	51.8	46.0	62.0
Jan 15	116.0	43.1	177.8
Jan 16	77.9	30.3	134.4
Jan 17	32.9	27.4	50.0
Jan 18	104.3	27.4	178.2
Jan 19	144.4	98.6	177.7
Jan 20	63.6	35.9	98.5
Jan 21	40.3	27.5	61.1
Jan 22	48.8	27.4	90.9
Jan 23	114.7	40.4	179.0
Jan 24	148.0	103.5	179.9
Jan 25	156.6	123.2	181.3
Jan 26	112.5	74.3	148.0
Jan 27	69.3	63.6	97.4
Jan 28	136.2	72.0	179.5
Jan 29	108.4	55.1	177.6
Jan 30	69.9	51.4	98.2
Summary	**79.7**	**32.2**	**156.6**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 55

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	110.6	102.9	121.0
Jan 2	113.3	107.3	119.8
Jan 3	115.5	109.6	123.1
Jan 4	107.8	101.0	112.8
Jan 5	112.7	102.8	124.1
Jan 6	114.5	111.3	120.8
Jan 7	104.9	96.5	111.7
Jan 8	110.3	94.3	120.1
Jan 9	106.8	95.9	121.1
Jan 10	99.1	91.0	109.3
Jan 11	107.1	99.2	115.5
Jan 12	103.7	97.6	113.2
Jan 13	93.8	84.1	110.7
Jan 14	97.6	85.9	107.4
Jan 15	101.0	93.6	111.4
Jan 16	88.6	75.2	106.4
Jan 17	66.9	49.1	85.9
Jan 18	82.2	50.3	110.0
Jan 19	83.6	63.0	102.6
Jan 20	77.4	62.0	87.3
Jan 21	92.2	77.8	103.6
Jan 22	103.3	86.2	123.6
Jan 23	106.2	95.3	116.8
Jan 24	113.8	101.5	125.4
Jan 25	117.7	112.4	123.5
Jan 26	117.8	111.9	121.0
Jan 27	115.4	110.3	118.8
Jan 28	97.5	88.3	117.5
Jan 29	102.9	94.5	113.4
Jan 30	110.1	99.7	121.0
Summary	**102.5**	**66.9**	**117.8**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 56

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	83.5	78.3	91.1
Jan 2	86.2	82.3	91.4
Jan 3	88.7	82.9	94.5
Jan 4	84.4	79.5	89.2
Jan 5	84.9	75.1	95.3
Jan 6	92.9	81.8	98.6
Jan 7	87.9	82.3	93.0
Jan 8	86.6	79.5	91.0
Jan 9	90.2	83.6	103.6
Jan 10	80.0	76.5	84.7
Jan 11	81.5	75.3	88.6
Jan 12	85.1	74.7	93.3
Jan 13	77.5	70.5	90.1
Jan 14	79.2	75.5	83.7
Jan 15	82.1	78.8	87.2
Jan 16	74.3	52.4	90.1
Jan 17	54.9	46.3	61.0
Jan 18	70.0	47.8	90.3
Jan 19	81.3	68.2	87.5
Jan 20	68.6	64.9	75.2
Jan 21	73.4	66.6	82.3
Jan 22	80.4	71.3	95.2
Jan 23	87.4	78.1	97.1
Jan 24	96.4	88.0	104.2
Jan 25	98.4	91.5	104.0
Jan 26	98.7	95.9	101.9
Jan 27	94.1	89.6	97.7
Jan 28	85.1	79.5	94.8
Jan 29	82.8	78.0	86.9
Jan 30	84.6	73.0	96.5
Summary	**83.4**	**54.9**	**98.7**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 57

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	133.4	128.1	140.0
Jan 2	136.1	132.1	143.5
Jan 3	137.5	130.5	142.5
Jan 4	133.8	127.4	139.4
Jan 5	138.0	128.6	148.4
Jan 6	140.7	135.4	145.0
Jan 7	134.5	127.8	139.6
Jan 8	120.0	88.5	144.2
Jan 9	94.7	89.2	101.5
Jan 10	87.5	84.8	90.0
Jan 11	92.7	87.2	99.1
Jan 12	97.6	91.4	103.4
Jan 13	53.5	32.7	103.7
Jan 14	42.8	32.1	57.0
Jan 15	76.1	35.2	113.7
Jan 16	64.8	32.1	108.2
Jan 17	45.6	32.1	109.1
Jan 18	69.2	32.1	123.7
Jan 19	100.3	91.4	111.1
Jan 20	94.4	90.4	99.7
Jan 21	99.1	88.9	111.1
Jan 22	108.7	97.9	122.2
Jan 23	115.0	109.6	120.4
Jan 24	112.3	67.9	124.9
Jan 25	118.6	115.3	120.6
Jan 26	123.9	126.6	126.6
Jan 27	129.3	132.1	132.1
Jan 28	134.8	137.5	137.5
Jan 29	140.2	142.9	142.9
Jan 30	143.4	138.3	146.2
Summary	**107.3**	**42.8**	**143.4**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 58

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	66.0	62.3	72.4
Jan 2	66.2	60.7	73.1
Jan 3	66.1	56.7	74.9
Jan 4	66.5	62.7	71.9
Jan 5	69.3	58.1	81.6
Jan 6	72.2	68.8	75.9
Jan 7	67.6	64.2	70.8
Jan 8	71.2	64.6	78.6
Jan 9	71.6	65.9	79.8
Jan 10	65.8	37.6	77.1
Jan 11	75.6	67.6	84.5
Jan 12	78.8	73.2	87.3
Jan 13	72.6	68.4	80.3
Jan 14	73.7	69.7	77.3
Jan 15	73.3	68.9	76.7
Jan 16	66.8	58.5	76.9
Jan 17	36.5	26.7	61.0
Jan 18	48.1	26.7	78.9
Jan 19	70.3	63.7	73.3
Jan 20	64.0	60.4	67.5
Jan 21	70.4	63.0	80.7
Jan 22	75.3	63.5	91.8
Jan 23	80.4	72.2	88.1
Jan 24	84.7	69.6	93.8
Jan 25	86.1	82.0	91.0
Jan 26	88.2	85.8	90.8
Jan 27	85.1	82.4	90.0
Jan 28	74.9	71.5	82.8
Jan 29	77.1	72.9	80.7
Jan 30	78.6	70.7	86.0
Summary	**71.4**	**36.5**	**88.2**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 59

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	114.7	114.0	115.8
Jan 2	114.7	114.1	115.1
Jan 3	114.8	113.8	115.5
Jan 4	114.0	112.2	118.9
Jan 5	113.3	110.2	115.4
Jan 6	115.1	114.6	115.7
Jan 7	113.9	113.1	114.7
Jan 8	118.8	76.1	131.8
Jan 9	118.8	113.2	132.9
Jan 10	112.1	110.7	113.9
Jan 11	119.3	111.3	133.6
Jan 12	122.6	115.5	135.9
Jan 13	113.7	112.2	116.7
Jan 14	113.2	112.6	114.1
Jan 15	123.6	113.4	136.2
Jan 16	130.4	111.6	138.1
Jan 17	94.6	66.1	138.5
Jan 18	102.2	56.2	138.9
Jan 19	127.7	112.0	136.8
Jan 20	111.2	110.4	112.3
Jan 21	111.0	110.1	111.9
Jan 22	112.1	109.8	114.8
Jan 23	113.2	112.0	114.6
Jan 24	113.1	95.1	115.2
Jan 25	113.8	113.0	114.6
Jan 26	113.4	112.9	114.0
Jan 27	112.7	111.7	113.3
Jan 28	111.2	110.4	112.7
Jan 29	111.3	110.4	112.4
Jan 30	112.0	110.6	114.0
Summary	**114.4**	**94.6**	**130.4**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 60

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	98.9	96.0	103.2
Jan 2	100.6	98.1	104.7
Jan 3	101.0	98.5	104.5
Jan 4	99.5	97.0	102.4
Jan 5	101.4	97.4	106.8
Jan 6	101.5	99.9	102.9
Jan 7	99.0	96.7	101.6
Jan 8	101.7	96.5	106.7
Jan 9	99.2	96.3	104.8
Jan 10	92.7	88.8	94.0
Jan 11	94.1	89.7	100.2
Jan 12	91.6	89.3	97.9
Jan 13	85.7	78.1	93.5
Jan 14	80.0	50.6	89.5
Jan 15	54.9	29.0	84.7
Jan 16	76.8	63.2	88.5
Jan 17	41.2	26.6	67.7
Jan 18	49.6	26.6	81.2
Jan 19	75.2	71.0	79.9
Jan 20	70.2	66.1	77.1
Jan 21	76.6	71.1	85.9
Jan 22	83.5	72.3	97.4
Jan 23	87.0	81.3	93.9
Jan 24	91.0	76.0	98.8
Jan 25	91.1	88.3	95.8
Jan 26	86.2	82.2	89.7
Jan 27	78.1	70.6	83.8
Jan 28	58.0	51.0	71.2
Jan 29	58.2	51.5	68.2
Jan 30	60.0	52.0	73.8
Summary	**82.8**	**41.2**	**101.7**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 62

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	39.3	36.2	44.1
Jan 2	70.7	36.4	119.7
Jan 3	115.5	113.2	119.4
Jan 4	112.5	109.9	114.9
Jan 5	114.4	110.9	119.9
Jan 6	113.2	108.0	115.4
Jan 7	109.8	107.1	112.4
Jan 8	113.3	109.1	120.9
Jan 9	113.0	109.1	118.8
Jan 10	109.3	103.1	113.5
Jan 11	112.9	108.6	116.7
Jan 12	111.1	106.9	114.2
Jan 13	76.7	35.3	111.5
Jan 14	108.1	105.7	109.9
Jan 15	107.6	103.6	110.0
Jan 16	105.5	100.5	110.5
Jan 17	105.4	98.1	109.2
Jan 18	109.0	106.4	113.7
Jan 19	104.4	97.3	107.6
Jan 20	100.8	96.5	104.0
Jan 21	102.3	74.1	108.0
Jan 22	107.3	100.1	115.7
Jan 23	109.7	106.6	118.4
Jan 24	109.8	77.0	118.6
Jan 25	112.2	109.7	115.1
Jan 26	109.1	106.1	112.0
Jan 27	95.1	61.5	107.1
Jan 28	50.4	44.7	62.2
Jan 29	82.1	44.2	107.5
Jan 30	96.4	48.2	105.6
Summary	**100.9**	**39.3**	**115.5**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 63

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	36.0	32.9	42.2
Jan 2	53.4	32.2	88.4
Jan 3	81.2	68.6	91.9
Jan 4	79.9	74.1	84.8
Jan 5	88.4	76.8	104.2
Jan 6	84.8	80.1	88.0
Jan 7	76.6	71.7	81.5
Jan 8	82.8	72.8	99.8
Jan 9	78.9	73.5	96.2
Jan 10	71.8	66.9	77.3
Jan 11	80.0	69.7	92.5
Jan 12	77.5	71.4	88.4
Jan 13	55.8	33.0	81.5
Jan 14	72.5	65.5	83.5
Jan 15	70.2	64.5	74.6
Jan 16	63.2	53.8	74.0
Jan 17	63.4	56.5	75.0
Jan 18	76.8	65.6	85.4
Jan 19	67.5	58.5	75.6
Jan 20	56.6	46.6	65.3
Jan 21	66.8	58.3	81.6
Jan 22	73.6	53.5	98.2
Jan 23	78.7	67.6	89.9
Jan 24	86.1	71.1	102.7
Jan 25	85.4	81.5	92.4
Jan 26	84.0	78.2	88.0
Jan 27	72.0	55.5	83.9
Jan 28	43.2	37.3	55.1
Jan 29	48.4	36.6	64.9
Jan 30	65.5	32.7	102.4
Summary	**70.7**	**36.0**	**88.4**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 64

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	55.1	50.2	60.3
Jan 2	84.9	52.2	121.8
Jan 3	116.6	108.4	123.1
Jan 4	109.7	105.4	112.8
Jan 5	113.4	107.0	118.9
Jan 6	113.0	111.0	115.0
Jan 7	108.2	104.9	112.4
Jan 8	112.3	105.9	117.1
Jan 9	111.4	107.0	120.7
Jan 10	105.9	102.4	112.6
Jan 11	112.2	106.8	118.8
Jan 12	111.3	108.2	116.4
Jan 13	82.1	44.5	116.4
Jan 14	108.8	105.7	112.4
Jan 15	109.4	104.8	112.3
Jan 16	106.2	99.5	113.4
Jan 17	103.9	100.6	107.4
Jan 18	109.2	103.9	114.4
Jan 19	103.8	100.0	108.7
Jan 20	100.4	97.4	105.2
Jan 21	104.7	90.7	109.0
Jan 22	111.2	103.9	119.8
Jan 23	114.3	108.4	119.5
Jan 24	117.4	82.8	126.6
Jan 25	119.9	117.3	123.3
Jan 26	118.9	116.9	120.7
Jan 27	111.5	95.1	119.2
Jan 28	86.5	80.9	99.7
Jan 29	102.9	85.1	114.2
Jan 30	110.3	68.4	117.9
Summary	**105.8**	**55.1**	**119.9**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 65

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	130.0	126.8	134.1
Jan 2	131.2	128.4	133.9
Jan 3	132.6	127.6	136.7
Jan 4	131.8	127.6	135.2
Jan 5	135.6	130.4	140.6
Jan 6	136.8	132.5	139.3
Jan 7	134.3	131.1	137.2
Jan 8	135.2	127.7	138.6
Jan 9	134.0	129.8	141.9
Jan 10	135.8	130.1	142.8
Jan 11	141.5	139.4	144.8
Jan 12	138.3	134.8	141.1
Jan 13	131.5	127.9	140.3
Jan 14	130.0	126.1	132.7
Jan 15	126.4	119.3	130.7
Jan 16	113.2	98.4	126.9
Jan 17	47.4	26.5	102.0
Jan 18	66.7	26.5	132.6
Jan 19	123.4	118.1	129.8
Jan 20	119.8	115.7	123.7
Jan 21	120.4	116.8	124.5
Jan 22	122.2	116.1	131.1
Jan 23	119.5	115.6	123.9
Jan 24	118.8	71.3	127.6
Jan 25	121.2	114.4	127.4
Jan 26	121.0	118.2	122.8
Jan 27	115.5	106.1	120.3
Jan 28	94.9	88.3	111.3
Jan 29	99.7	90.4	110.1
Jan 30	100.5	90.5	108.8
Summary	**120.3**	**47.4**	**141.5**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 66

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	132.9	127.7	138.4
Jan 2	134.7	131.7	137.9
Jan 3	135.5	130.9	139.7
Jan 4	133.9	129.2	137.5
Jan 5	136.5	131.5	141.5
Jan 6	137.4	134.5	140.8
Jan 7	133.2	126.9	138.0
Jan 8	134.8	126.9	138.7
Jan 9	135.1	130.5	142.4
Jan 10	131.5	127.4	136.5
Jan 11	133.3	128.6	137.4
Jan 12	134.3	130.3	139.8
Jan 13	127.3	116.1	138.7
Jan 14	130.2	122.5	135.9
Jan 15	131.4	123.2	136.4
Jan 16	123.9	112.4	137.0
Jan 17	76.7	26.6	125.7
Jan 18	86.5	26.6	143.3
Jan 19	129.3	120.5	137.4
Jan 20	124.0	118.3	134.0
Jan 21	131.8	128.4	136.1
Jan 22	134.2	123.5	143.5
Jan 23	128.8	106.5	142.5
Jan 24	129.8	109.6	140.7
Jan 25	139.1	132.7	143.4
Jan 26	137.9	134.2	141.5
Jan 27	135.2	125.1	139.1
Jan 28	119.3	113.6	132.0
Jan 29	126.6	116.8	137.6
Jan 30	132.5	127.2	137.8
Summary	**128.6**	**76.7**	**139.1**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 67

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	104.4	94.0	124.3
Jan 2	112.5	102.4	124.1
Jan 3	114.6	102.6	123.4
Jan 4	103.4	89.1	116.1
Jan 5	110.7	89.5	130.6
Jan 6	115.0	100.4	122.9
Jan 7	105.7	93.6	116.4
Jan 8	107.3	70.2	123.1
Jan 9	112.5	96.9	136.8
Jan 10	102.8	95.4	113.9
Jan 11	110.2	98.9	120.2
Jan 12	108.1	89.9	124.5
Jan 13	100.1	84.4	126.0
Jan 14	104.2	94.0	112.8
Jan 15	109.1	98.6	117.1
Jan 16	96.1	78.5	118.4
Jan 17	91.7	82.1	106.7
Jan 18	106.3	86.2	127.2
Jan 19	102.7	83.4	119.3
Jan 20	87.8	77.5	98.1
Jan 21	104.9	93.0	118.2
Jan 22	115.8	98.2	139.6
Jan 23	119.3	109.7	131.1
Jan 24	129.5	120.9	138.8
Jan 25	130.1	122.5	135.4
Jan 26	128.7	122.9	132.9
Jan 27	120.5	113.1	129.0
Jan 28	107.1	96.2	121.6
Jan 29	105.9	96.5	115.0
Jan 30	114.8	104.1	124.6
Summary	**109.4**	**87.8**	**130.1**

Solid Waste Permit 588 Daily Wellhead Temperature Averages for Well 68

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jan 1	122.0	120.7	123.8
Jan 2	126.5	121.3	133.7
Jan 3	133.0	124.8	141.1
Jan 4	133.1	129.6	137.2
Jan 5	134.6	124.6	144.5
Jan 6	146.1	137.8	150.7
Jan 7	131.7	126.6	139.1
Jan 8	130.3	125.1	136.9
Jan 9	125.4	120.8	128.6
Jan 10	118.6	116.8	120.0
Jan 11	120.0	118.8	121.9
Jan 12	120.5	118.2	122.3
Jan 13	72.0	33.4	121.9
Jan 14	66.9	31.4	117.7
Jan 15	82.9	38.0	123.4
Jan 16	117.4	108.9	124.7
Jan 17	102.0	84.4	118.3
Jan 18	112.1	94.5	125.6
Jan 19	123.5	121.6	125.8
Jan 20	119.6	55.4	123.6
Jan 21	94.1	48.7	133.8
Jan 22	109.3	39.4	141.8
Jan 23	127.2	124.2	129.3
Jan 24	124.6	107.9	127.3
Jan 25	123.2	121.8	124.5
Jan 26	121.6	120.7	122.3
Jan 27	120.6	115.7	122.4
Jan 28	116.1	114.9	118.6
Jan 29	118.7	115.1	122.9
Jan 30	120.9	119.3	124.3
Summary	**117.1**	**66.9**	**146.1**

Appendix D

Solid Waste Permit 588 Daily Borehole Temperature Averages

Appendix D Table of Contents

Section Page

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 1

	Depth from Surface					
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft
1-Jan	165.3	227.0	227.4	247.6	259.0	269.1
2-Jan	165.5	228.4	228.8	247.6	258.6	269.2
3-Jan	165.3	229.0	229.4	247.2	257.8	269.0
4-Jan	165.2	229.1	229.5	247.2	257.8	268.8
5-Jan	165.5	229.6	230.1	247.6	258.1	269.1
6-Jan	165.4	229.5	230.0	247.4	257.8	268.9
7-Jan	165.4	229.2	229.7	247.2	257.7	268.7
8-Jan	165.6	229.3	229.7	247.5	258.0	269.0
9-Jan	165.7	229.2	229.6	247.4	257.8	268.9
10-Jan	165.3	228.9	229.3	247.0	257.4	268.5
11-Jan	165.6	229.0	229.4	247.3	257.8	269.0
12-Jan	165.5	228.8	229.3	247.0	257.5	268.7
13-Jan	165.4	228.6	229.0	246.8	257.4	268.5
14-Jan	165.4	228.5	229.0	246.8	257.5	268.7
15-Jan	165.3	228.3	228.7	246.6	257.2	268.4
16-Jan	165.2	228.2	228.7	246.4	257.1	268.2
17-Jan	165.2	228.0	228.6	246.5	257.2	268.4
18-Jan	165.3	228.5	229.0	246.5	257.2	268.3
19-Jan	165.4	228.5	229.0	246.4	257.1	268.2
20-Jan	165.1	228.2	228.7	246.2	256.9	268.0
21-Jan	165.3	228.0	228.5	246.4	257.4	268.4
22-Jan	165.7	227.6	228.1	246.7	258.0	268.7
23-Jan	165.6	228.0	228.5	246.5	257.6	268.4
24-Jan	166.1	227.8	228.3	247.0	258.3	269.0
25-Jan	165.6	227.0	227.4	246.9	258.5	268.8
26-Jan	165.9	226.9	227.4	247.0	258.7	269.0
27-Jan	165.8	226.7	227.2	246.7	258.3	268.6
28-Jan	165.5	226.4	226.8	246.4	258.0	268.4
29-Jan	165.6	227.5	228.0	246.4	257.8	268.5
30-Jan	165.7	229.0	229.4	246.3	257.1	268.6
31-Jan	165.5	228.9	229.4	246.0	256.7	268.2
Average	**165.5**	**228.3**	**228.8**	**246.8**	**257.7**	**268.7**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 2

	Depth from Surface					
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft
1-Jan	190.1	234.8	235.2	262.9	250.1	262.0
2-Jan	187.5	235.0	235.4	263.0	250.1	262.2
3-Jan	192.0	234.7	235.1	262.9	250.1	262.0
4-Jan	191.1	234.7	235.1	262.8	249.9	261.9
5-Jan	191.4	234.8	235.4	263.0	250.2	262.2
6-Jan	199.6	234.4	234.8	262.9	250.1	262.0
7-Jan	197.5	234.4	234.9	262.8	249.9	261.9
8-Jan	192.5	234.9	235.3	263.1	250.3	262.2
9-Jan	203.1	234.2	234.6	263.0	250.0	262.1
10-Jan	202.2	234.1	234.5	262.7	249.8	261.7
11-Jan	196.9	234.5	235.0	263.1	250.2	262.0
12-Jan	197.8	234.2	234.6	263.1	250.2	261.8
13-Jan	199.8	234.0	234.4	262.9	249.8	261.8
14-Jan	194.0	234.3	234.7	263.0	249.9	261.7
15-Jan	191.2	234.3	234.7	263.1	249.9	261.6
16-Jan	194.9	234.0	234.5	263.0	249.6	261.5
17-Jan	190.2	234.4	234.9	263.3	249.9	261.8
18-Jan	191.2	234.4	234.9	263.5	250.1	261.8
19-Jan	195.7	234.2	234.7	263.5	250.1	261.7
20-Jan	190.8	234.5	235.0	263.4	249.8	261.7
21-Jan	185.7	234.7	235.3	263.5	250.0	261.9
22-Jan	186.6	235.0	235.5	263.9	250.4	262.1
23-Jan	190.9	234.9	235.3	263.7	250.2	261.9
24-Jan	195.3	235.0	235.4	264.0	250.4	262.2
25-Jan	199.1	234.8	235.3	263.9	250.4	262.1
26-Jan	199.8	234.8	235.3	264.0	250.4	262.2
27-Jan	200.0	234.5	235.0	263.8	250.2	261.9
28-Jan	202.3	234.1	234.5	263.6	249.9	261.6
29-Jan	197.6	234.4	234.8	263.6	249.9	261.7
30-Jan	198.4	234.4	234.8	263.8	250.0	261.7
31-Jan	197.9	234.2	234.7	263.7	249.8	261.5
Average	**195.0**	**234.5**	**234.9**	**263.3**	**250.1**	**261.9**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 3

	Depth from Surface							
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jan	201.0	236.1	236.2	249.1	256.3	264.6	268.3	254.6
2-Jan	201.5	236.5	236.6	247.9	256.6	264.7	268.6	254.9
3-Jan	202.7	236.2	236.3	247.1	256.5	264.7	268.4	254.8
4-Jan	203.1	235.8	235.9	246.6	256.2	264.3	268.2	254.5
5-Jan	203.5	236.1	236.2	247.1	256.6	264.8	268.6	255.0
6-Jan	203.2	235.9	236.0	247.0	256.3	264.5	268.2	254.7
7-Jan	202.5	235.8	235.9	246.8	256.1	264.3	268.1	254.6
8-Jan	202.7	236.3	236.4	247.3	256.5	264.6	268.6	255.1
9-Jan	202.3	236.1	236.1	247.0	256.1	264.2	268.2	254.8
10-Jan	201.8	235.7	235.8	246.7	255.7	263.8	268.0	254.5
11-Jan	203.0	236.1	236.3	246.8	256.2	264.2	268.5	255.2
12-Jan	203.2	235.7	235.8	246.3	255.9	263.9	268.2	254.8
13-Jan	203.1	235.3	235.4	246.0	255.7	263.7	268.0	254.6
14-Jan	203.3	235.5	235.5	246.3	255.8	263.9	268.1	254.8
15-Jan	203.1	235.4	235.4	246.2	255.6	263.6	267.8	254.6
16-Jan	202.7	235.4	235.4	246.2	255.4	263.5	267.7	254.5
17-Jan	202.5	235.5	235.6	246.4	255.5	263.6	267.9	254.7
18-Jan	202.5	235.6	235.7	246.5	255.5	263.5	268.0	254.7
19-Jan	202.6	235.5	235.5	246.0	255.2	263.2	267.7	254.5
20-Jan	202.4	235.1	235.2	245.5	254.9	262.9	267.5	254.3
21-Jan	202.9	235.4	235.5	245.9	255.3	263.2	267.9	254.8
22-Jan	203.1	235.8	235.9	246.2	255.5	263.5	268.2	255.2
23-Jan	203.0	235.8	235.8	246.2	255.3	263.2	267.9	254.8
24-Jan	202.9	236.1	236.2	246.4	255.7	263.6	268.2	255.2
25-Jan	202.6	235.9	236.0	246.1	255.5	263.4	268.0	255.0
26-Jan	202.5	235.8	235.9	246.0	255.5	263.5	268.2	255.1
27-Jan	202.6	235.4	235.5	245.6	255.1	263.1	267.8	254.8
28-Jan	202.1	235.1	235.2	245.5	254.8	262.8	267.5	254.6
29-Jan	202.1	235.3	235.3	245.6	254.8	262.8	267.6	254.7
30-Jan	202.1	235.4	235.5	245.8	255.0	263.0	267.8	254.9
31-Jan	201.7	235.1	235.2	245.2	254.5	262.6	267.4	254.5
Average	**202.6**	**235.7**	**235.8**	**246.4**	**255.7**	**263.7**	**268.0**	**254.8**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 4

	Depth from Surface							
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jan	190.9	228.3	228.6	248.5	261.1	236.9	244.6	174.5
2-Jan	191.7	228.3	228.7	249.0	261.2	237.3	244.9	175.0
3-Jan	192.8	228.9	229.1	248.7	261.4	239.1	244.9	174.6
4-Jan	192.2	228.5	228.9	248.4	260.8	236.9	244.6	175.1
5-Jan	193.4	228.5	228.9	248.8	260.9	237.1	245.0	176.0
6-Jan	190.9	227.7	227.7	248.7	261.0	236.7	244.8	175.6
7-Jan	187.1	228.5	228.8	248.1	260.9	236.8	244.7	179.9
8-Jan	187.9	228.4	228.7	248.5	261.8	236.7	245.2	199.4
9-Jan	186.3	227.9	228.2	248.1	261.6	235.8	244.8	197.5
10-Jan	184.6	227.1	227.6	248.0	261.2	234.4	244.6	196.8
11-Jan	187.4	227.7	228.1	248.3	263.2	236.2	245.1	197.1
12-Jan	188.4	228.7	229.0	247.9	275.2	248.6	244.8	184.4
13-Jan	187.5	227.2	227.3	248.0	276.3	249.3	244.8	181.8
14-Jan	188.9	226.9	227.3	248.1	277.7	250.0	244.9	181.0
15-Jan	188.5	228.3	228.6	247.9	277.0	250.4	244.6	181.9
16-Jan	187.4	228.0	228.3	247.7	277.0	250.2	244.6	181.0
17-Jan	187.7	227.4	227.8	247.8	278.8	252.5	244.9	179.9
18-Jan	188.1	226.8	227.1	247.7	278.7	250.8	244.8	179.1
19-Jan	190.3	227.1	227.6	247.7	276.8	249.5	244.7	181.0
20-Jan	192.7	227.2	227.7	247.5	275.8	248.5	244.7	183.0
21-Jan	194.2	227.2	227.8	247.7	274.0	247.5	245.1	186.8
22-Jan	195.8	226.4	226.9	247.8	273.4	246.3	245.4	189.9
23-Jan	197.1	227.6	228.1	247.8	269.9	244.8	245.0	193.9
24-Jan	196.0	228.4	225.9	248.4	272.4	247.0	245.5	192.3
25-Jan	197.8	227.4	228.0	247.8	276.4	249.1	245.3	188.5
26-Jan	196.2	226.4	227.0	247.9	280.1	250.6	245.4	185.1
27-Jan	195.3	226.4	227.0	247.6	282.4	251.6	245.1	182.2
28-Jan	193.2	228.0	228.3	247.6	281.9	251.8	244.9	181.6
29-Jan	193.6	227.2	227.7	247.6	276.3	250.7	245.0	182.8
30-Jan	193.6	228.0	228.5	247.9	272.2	249.0	245.2	185.6
31-Jan	192.0	227.2	227.7	247.5	262.6	247.0	244.8	186.2
Average	**191.3**	**227.7**	**228.0**	**248.0**	**270.6**	**244.8**	**244.9**	**184.2**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 5

	Depth from Surface							
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jan	206.9	206.5	206.6	207.0	209.7	231.4	246.1	196.4
2-Jan	207.2	206.8	206.9	207.3	210.6	231.4	246.3	196.6
3-Jan	206.9	206.5	206.6	206.9	209.2	230.7	246.0	196.5
4-Jan	207.0	206.5	206.6	207.0	208.9	230.4	246.0	196.5
5-Jan	207.3	206.7	206.9	207.2	209.5	230.5	246.2	196.6
6-Jan	206.4	205.9	206.0	206.4	209.1	229.4	246.1	196.6
7-Jan	206.6	206.2	206.3	206.7	209.7	229.4	246.0	196.5
8-Jan	207.4	206.9	207.0	207.4	210.5	229.8	246.2	196.7
9-Jan	206.0	205.6	205.7	206.1	208.5	228.7	246.1	196.6
10-Jan	206.1	205.7	205.8	206.2	209.4	228.7	245.9	196.5
11-Jan	206.8	206.4	206.5	206.8	209.5	229.2	246.1	196.6
12-Jan	206.3	205.9	206.0	206.4	210.1	228.8	246.1	196.6
13-Jan	206.2	205.8	205.9	206.3	210.4	228.5	246.0	196.5
14-Jan	206.8	206.3	206.5	206.9	211.3	228.9	246.0	196.6
15-Jan	206.7	206.3	206.5	206.9	210.9	228.8	245.9	196.6
16-Jan	206.6	206.2	206.3	206.7	210.3	228.6	245.8	196.6
17-Jan	207.1	206.8	206.7	207.0	212.5	228.7	245.7	196.5
18-Jan	206.9	207.1	206.5	206.9	213.5	228.5	245.7	196.6
19-Jan	206.6	207.0	206.3	206.6	211.6	228.1	245.6	196.7
20-Jan	207.1	206.8	206.8	207.1	210.6	227.2	245.4	196.6
21-Jan	207.7	207.2	207.3	207.7	212.3	227.1	245.4	196.7
22-Jan	207.8	209.9	207.4	207.7	212.0	227.0	245.5	196.8
23-Jan	207.5	209.1	207.2	207.6	212.2	226.9	245.5	196.8
24-Jan	207.6	208.3	207.3	207.7	211.6	226.8	245.7	197.1
25-Jan	207.3	209.1	207.1	207.4	211.4	226.3	245.6	197.2
26-Jan	207.4	207.1	207.1	207.5	211.4	225.7	245.5	197.2
27-Jan	207.0	206.7	206.7	207.1	211.1	223.8	245.0	197.0
28-Jan	206.4	206.0	206.2	206.5	209.9	222.8	244.6	196.9
29-Jan	207.0	206.5	206.6	207.0	210.4	222.7	244.5	196.8
30-Jan	206.9	206.6	206.6	206.9	210.6	220.6	244.1	196.9
31-Jan	206.8	206.4	206.5	206.9	211.0	218.7	243.5	196.8
Average	**206.9**	**206.8**	**206.6**	**207.0**	**210.6**	**227.5**	**245.6**	**196.7**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 6

	Depth from Surface				
Date	25 ft	50 ft	75 ft	100 ft	125 ft
1-Jan	163.7	227.8	227.8	227.4	231.6
2-Jan	163.9	228.0	228.1	227.8	231.7
3-Jan	163.7	227.8	227.9	227.6	231.6
4-Jan	163.5	227.8	227.8	227.4	231.8
5-Jan	163.7	228.0	228.0	227.5	232.7
6-Jan	163.4	227.9	227.9	226.6	234.0
7-Jan	162.6	227.7	227.7	227.0	232.1
8-Jan	162.3	221.9	228.2	228.8	251.4
9-Jan	165.9	225.2	227.9	226.2	244.1
10-Jan	176.7	226.6	227.6	225.8	237.4
11-Jan	191.8	227.3	227.9	225.7	238.4
12-Jan	203.0	227.2	227.7	224.9	240.2
13-Jan	205.8	227.2	227.5	222.0	252.7
14-Jan	206.2	225.8	227.5	223.6	251.2
15-Jan	206.2	225.9	227.3	224.3	246.8
16-Jan	205.9	225.9	226.9	223.8	250.0
17-Jan	206.4	226.0	226.6	223.9	250.4
18-Jan	206.2	226.5	226.8	223.9	248.4
19-Jan	206.0	226.7	226.1	223.2	250.9
20-Jan	206.4	226.7	226.4	223.6	247.9
21-Jan	207.1	226.9	226.6	224.7	248.3
22-Jan	207.3	225.6	226.3	223.5	260.3
23-Jan	207.0	225.2	225.9	222.0	262.5
24-Jan	207.1	226.7	226.3	224.2	252.8
25-Jan	206.9	226.1	225.8	224.6	254.0
26-Jan	207.1	225.9	224.1	221.0	263.6
27-Jan	206.6	226.1	225.1	221.6	257.8
28-Jan	206.1	225.2	225.8	223.2	253.3
29-Jan	206.7	225.3	225.6	223.8	253.4
30-Jan	206.4	225.7	226.0	224.1	249.4
31-Jan	206.1	225.9	226.4	225.4	241.1
Average	**192.5**	**226.4**	**226.9**	**224.8**	**246.2**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 7

	Depth from Surface							
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jan	205.8	204.1	205.2	245.7	190.5	193.0	207.4	191.2
2-Jan	205.6	209.8	205.1	241.1	190.3	192.7	202.8	190.1
3-Jan	204.8	215.1	204.5	236.9	188.3	191.7	203.4	189.3
4-Jan	202.6	197.9	204.1	259.8	190.0	191.6	205.0	188.3
5-Jan	200.9	195.6	203.8	246.9	242.8	191.2	205.3	189.0
6-Jan	198.7	195.9	203.6	248.6	213.0	191.6	205.2	187.2
7-Jan	194.7	216.7	204.0	232.7	186.8	191.8	205.3	182.5
8-Jan	192.2	220.8	204.2	228.4	193.4	189.6	203.6	186.0
9-Jan	191.2	222.6	200.7	229.4	191.3	186.2	199.2	185.2
10-Jan	188.3	213.5	199.6	229.0	191.3	188.8	201.7	186.4
11-Jan	186.4	196.9	197.8	234.6	196.6	189.8	206.3	181.6
12-Jan	187.8	202.4	196.3	210.8	215.4	192.2	209.1	178.7
13-Jan	187.3	200.5	193.2	207.8	217.9	191.9	210.9	181.9
14-Jan	188.8	204.1	195.4	203.6	211.1	191.5	212.0	178.3
15-Jan	188.8	221.7	196.1	202.3	209.9	190.1	212.4	176.8
16-Jan	188.6	220.4	196.5	205.5	210.4	190.1	212.6	179.8
17-Jan	188.1	221.9	195.9	207.8	211.1	191.4	213.3	178.9
18-Jan	188.1	221.8	195.3	207.3	208.2	190.7	213.9	177.3
19-Jan	186.2	222.5	195.5	206.0	211.0	191.1	214.3	179.1
20-Jan	185.6	221.4	194.0	209.2	214.9	189.6	214.9	180.2
21-Jan	185.7	220.9	197.2	207.7	209.0	193.6	217.2	183.6
22-Jan	186.4	220.7	197.5	206.2	207.1	194.2	218.1	187.1
23-Jan	186.3	220.9	195.0	207.0	207.2	192.8	219.2	187.9
24-Jan	185.7	222.1	191.3	212.7	215.1	189.9	219.6	184.1
25-Jan	185.4	219.0	196.2	211.2	213.4	191.0	220.3	187.8
26-Jan	185.1	217.4	199.1	209.7	207.5	192.3	221.0	190.6
27-Jan	185.4	215.9	199.7	208.9	208.2	191.6	221.8	190.2
28-Jan	185.4	215.4	199.3	209.2	209.7	192.8	221.6	190.7
29-Jan	184.9	215.2	200.1	209.6	206.1	197.4	221.7	191.6
30-Jan	185.0	214.7	200.8	209.4	203.0	199.3	222.4	191.8
31-Jan	184.0	214.6	201.1	207.7	201.5	199.9	222.4	192.4
Average	**190.3**	**213.6**	**199.0**	**219.1**	**205.5**	**192.0**	**212.4**	**185.3**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 8

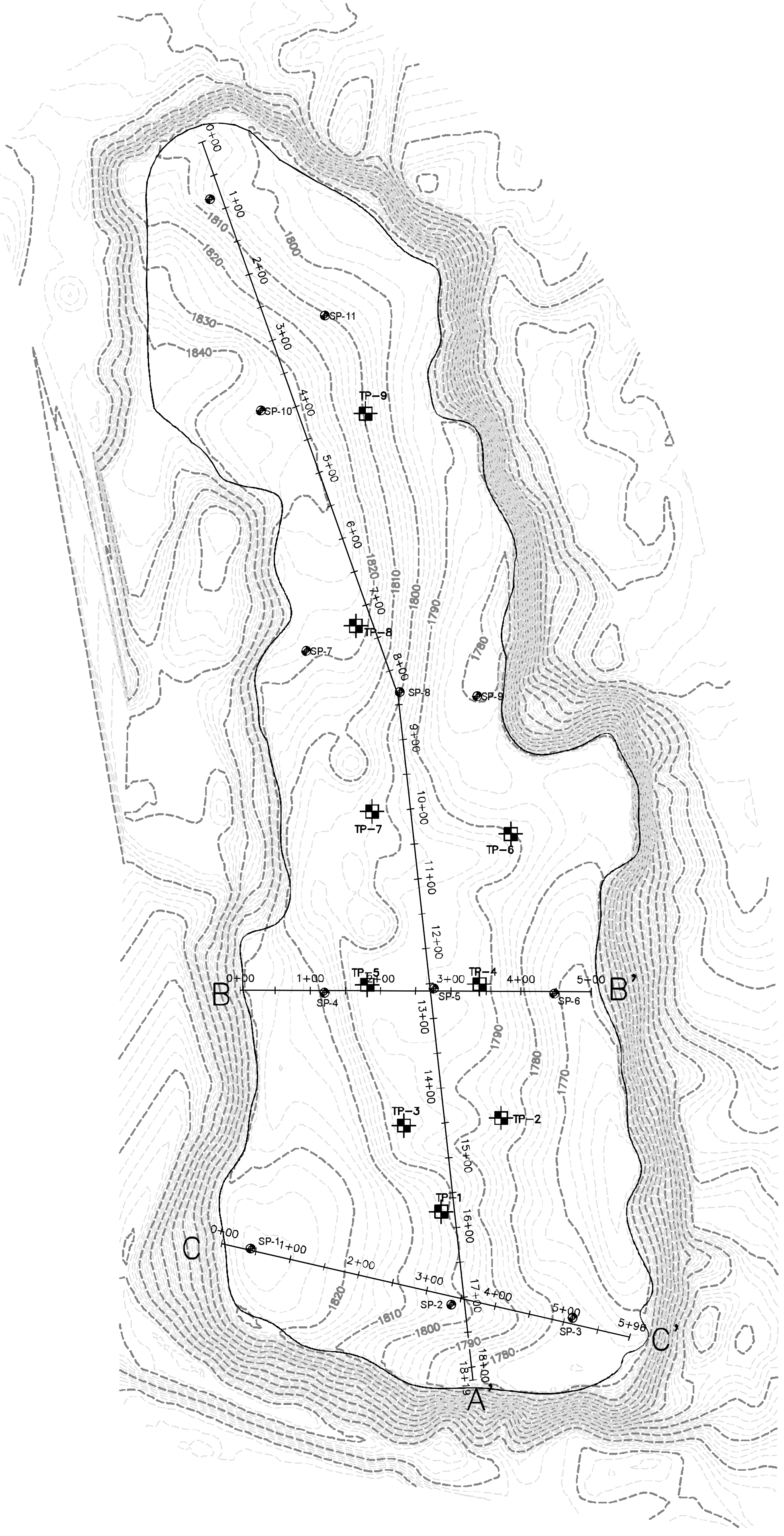
	Depth from Surface							
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jan	189.2	192.7	193.0	195.2	196.7	191.8	187.4	178.0
2-Jan	189.8	193.0	193.3	195.6	197.1	192.0	187.6	178.3
3-Jan	190.1	192.9	193.1	195.4	196.9	192.0	187.5	178.2
4-Jan	190.1	192.8	193.1	195.4	196.9	191.9	187.4	178.1
5-Jan	190.3	193.1	193.4	195.7	197.3	192.1	187.8	178.4
6-Jan	189.9	192.6	192.9	195.3	196.5	192.0	187.4	178.1
7-Jan	189.9	192.6	192.9	195.2	196.6	192.0	187.4	178.1
8-Jan	190.3	193.2	193.5	195.8	197.3	192.2	187.8	178.4
9-Jan	189.7	192.8	193.1	195.4	196.7	192.1	187.5	178.2
10-Jan	188.9	192.9	193.2	195.6	197.1	191.7	187.3	177.9
11-Jan	189.3	193.5	193.8	196.3	197.9	192.0	187.7	178.2
12-Jan	188.2	193.4	193.6	196.1	197.6	191.7	187.4	177.7
13-Jan	185.9	193.3	193.6	196.2	197.8	191.7	187.4	177.7
14-Jan	186.0	193.6	193.9	196.4	198.1	191.8	187.4	177.6
15-Jan	185.7	193.5	193.8	196.4	198.0	191.5	187.1	177.2
16-Jan	185.6	193.5	193.7	196.4	198.0	191.6	187.2	177.3
17-Jan	185.9	193.6	193.9	196.6	198.3	191.8	187.4	177.4
18-Jan	184.4	193.6	193.9	196.6	198.2	191.8	187.2	177.2
19-Jan	185.2	193.5	193.8	196.4	198.0	191.7	187.1	177.2
20-Jan	185.5	193.6	193.9	196.6	198.2	191.7	187.1	177.2
21-Jan	184.2	193.9	194.2	197.1	198.7	191.9	187.4	177.3
22-Jan	181.0	194.2	194.5	197.4	199.0	192.2	187.6	177.5
23-Jan	177.9	194.1	194.4	197.1	198.7	191.8	187.2	177.0
24-Jan	178.8	194.4	194.7	197.4	199.0	192.2	187.5	177.4
25-Jan	178.4	194.3	194.5	197.2	198.8	192.1	187.4	177.3
26-Jan	179.0	194.3	194.6	197.3	198.8	192.2	187.5	177.4
27-Jan	180.1	194.1	194.3	197.0	198.5	191.9	187.2	177.2
28-Jan	183.1	193.7	194.0	196.6	198.1	191.7	187.0	176.9
29-Jan	181.6	193.9	194.2	196.9	198.4	191.9	187.2	177.1
30-Jan	179.5	194.0	194.3	197.0	198.5	192.0	187.3	177.2
31-Jan	180.4	193.8	194.1	196.7	198.2	191.7	186.9	176.8
Average	**185.3**	**193.5**	**193.8**	**196.3**	**197.9**	**191.9**	**187.4**	**177.6**

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 9

	Depth from Surface							
Date	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jan	119.8	152.7	152.7	151.6	146.3	131.1	116.9	106.2
2-Jan	119.8	152.8	152.8	151.6	146.4	131.1	116.9	106.2
3-Jan	119.5	152.5	152.5	151.6	146.2	131.0	116.8	106.1
4-Jan	119.4	152.5	152.4	151.5	146.3	131.0	116.8	106.1
5-Jan	119.7	152.7	152.6	151.6	146.3	131.0	116.8	106.2
6-Jan	118.6	152.5	152.5	151.9	146.7	131.3	117.1	106.5
7-Jan	118.4	152.2	152.1	151.7	146.9	131.1	117.0	106.4
8-Jan	119.0	152.6	152.6	151.8	147.0	131.2	117.0	106.4
9-Jan	116.8	152.0	151.9	152.0	147.2	131.4	117.3	106.7
10-Jan	115.6	150.9	150.7	151.6	147.0	131.1	116.9	106.1
11-Jan	117.1	151.7	151.6	151.7	147.0	131.2	116.9	106.0
12-Jan	117.1	151.8	151.8	151.9	147.1	131.3	117.1	106.1
13-Jan	116.3	151.3	151.2	151.6	147.0	131.1	116.9	105.8
14-Jan	117.2	151.7	151.6	151.6	147.0	131.2	116.9	105.7
15-Jan	117.3	151.7	151.6	151.6	146.8	131.1	116.8	105.6
16-Jan	116.8	151.3	151.2	151.4	146.8	130.9	116.7	105.4
17-Jan	116.6	151.2	151.1	151.2	146.5	130.8	116.5	105.2
18-Jan	116.7	151.4	151.3	151.4	146.7	130.9	116.7	105.4
19-Jan	116.6	151.2	151.1	151.5	146.8	131.0	116.8	105.6
20-Jan	116.5	151.0	151.0	151.2	146.4	130.7	116.5	105.3
21-Jan	116.7	151.3	151.3	151.3	146.6	130.9	116.6	105.4
22-Jan	116.8	151.6	151.5	151.6	146.9	131.2	116.9	105.7
23-Jan	116.6	151.6	151.6	151.8	147.1	131.4	117.1	105.9
24-Jan	116.1	151.7	151.6	152.3	147.7	131.9	117.6	106.4
25-Jan	115.1	151.4	151.1	152.4	147.8	132.0	117.6	106.3
26-Jan	114.5	150.9	150.7	152.4	148.0	132.1	117.7	106.3
27-Jan	114.4	150.5	150.4	152.0	147.6	131.7	117.3	105.8
28-Jan	113.0	149.7	149.5	151.6	147.4	131.4	117.0	105.5
29-Jan	113.1	149.8	149.6	151.6	147.3	131.4	117.0	105.5
30-Jan	113.4	149.7	149.6	151.6	147.4	131.4	117.0	105.5
31-Jan	113.2	149.3	149.3	151.5	147.4	131.4	117.0	105.5
Average	**116.7**	**151.5**	**151.4**	**151.7**	**147.0**	**131.2**	**117.0**	**105.9**

Appendix E

Monthly Topography Analysis

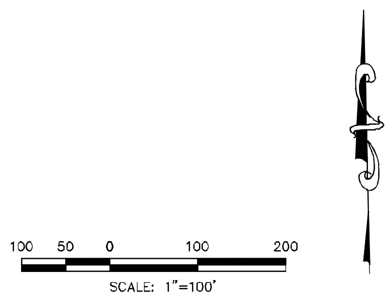


LEGEND

—	MAJOR CONTOURS (EVERY 10')
—	MINOR CONTOURS (EVERY 2')
—	APPROXIMATE SIDEWALL LOCATION
● SP-9	SETTLEMENT PLATE
TP-3 ⊞	TEMPERATURE MONITORING PROBE

NOTES:

1. GRADES SHOWN AS CONTOUR LINES ONLY WITHIN THE PERMIT 588 BOUNDARY REPRESENT THE TOPOGRAPHY CAPTURED ON JANUARY 10, 2023 BY SCS ENGINEERS.
2. ANY DETERMINATION OF TOPOGRAPHY OR CONTOURS, OR ANY DEPICTION OF PHYSICAL IMPROVEMENTS, PROPERTY LINES, OR BOUNDARIES IS FOR GENERAL INFORMATION ONLY AND SHALL NOT BE USED FOR DESIGN, MODIFICATION, OR CONSTRUCTION OF IMPROVEMENTS TO REAL PROPERTY OR FLOOD PLAIN DETERMINATION.
3. THE HORIZONTAL DATUM IS STATE PLANE VIRGINIA SOUTH ZONE NAD-83 (2011).
4. THE VERTICAL DATUM IS BASED UPON NAVD-88.



NO.	REVISION	DATE
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SHEET TITLE
JANUARY 2023
LANDFILL TOPOGRAPHY

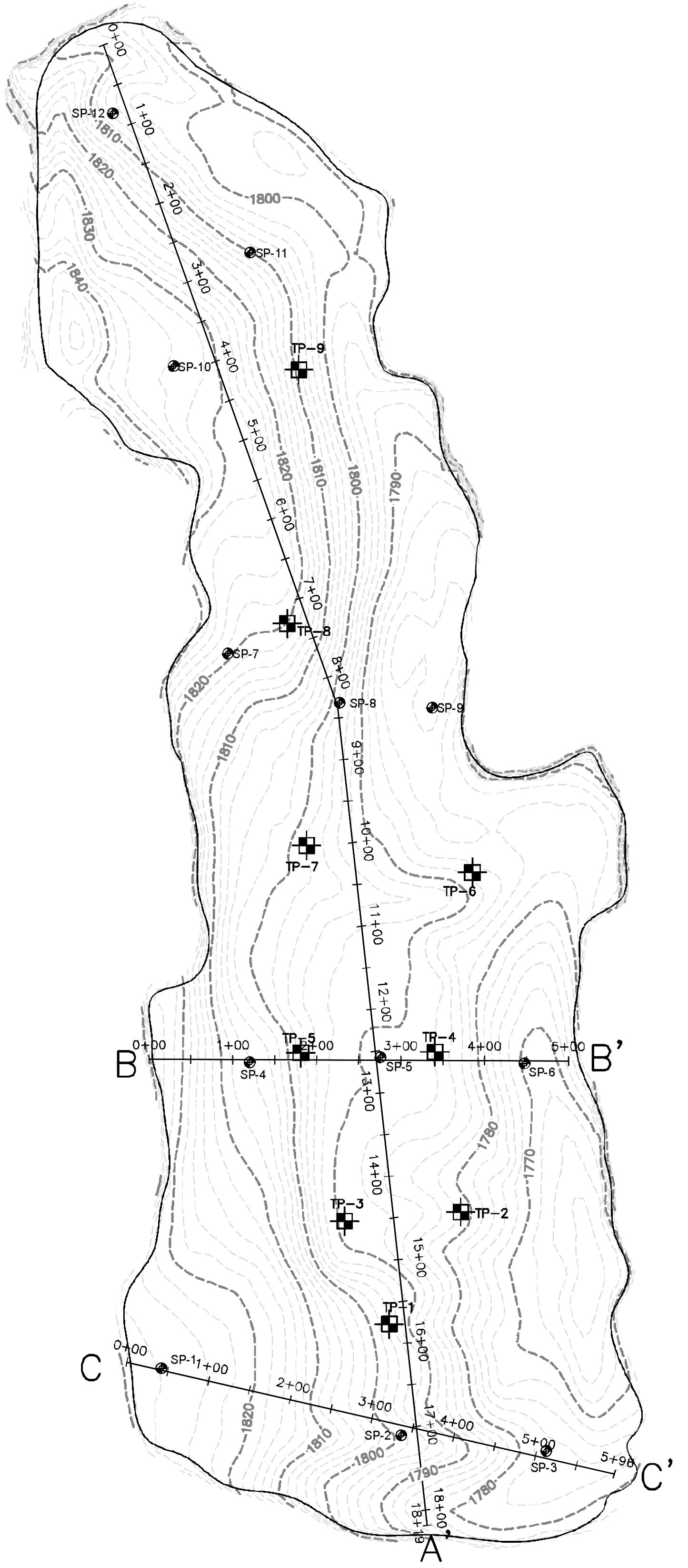
PROJECT TITLE
MONTHLY TOPOGRAPHY ANALYSIS
SOLID WASTE PERMIT #588

CLIENT
CITY OF BRISTOL INTEGRATED
SOLID WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS
15521 MIDLOTHIAN TURNPIKE, MIDLOTHIAN, VA 23113
PH. (804) 378-7440 FAX. (804) 378-7433

PROJ. NO. 02218208.05	DWN. BY: HGW	CHK. BY: CJW	APP. BY: CJW
DSN. BY:			

CADD FILE: SURF COMP
DATE: 2/26/2024
SCALE:
DRAWING NO.
of 8

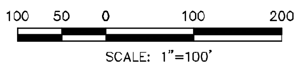


LEGEND

—	MAJOR CONTOURS (EVERY 10')
—	MINOR CONTOURS (EVERY 2')
—	APPROXIMATE SIDEWALL LOCATION
● SP-9	SETTLEMENT PLATE
TP-3 ⊞	TEMPERATURE MONITORING PROBE

NOTES:

1. GRADES SHOWN AS CONTOUR LINES ONLY WITHIN THE PERMIT 588 BOUNDARY REPRESENT THE TOPOGRAPHY CAPTURED ON OCTOBER 12, 2023 BY SCS ENGINEERS.
2. ANY DETERMINATION OF TOPOGRAPHY OR CONTOURS, OR ANY DEPICTION OF PHYSICAL IMPROVEMENTS, PROPERTY LINES, OR BOUNDARIES IS FOR GENERAL INFORMATION ONLY AND SHALL NOT BE USED FOR DESIGN, MODIFICATION, OR CONSTRUCTION OF IMPROVEMENTS TO REAL PROPERTY OR FLOOD PLAIN DETERMINATION.
3. THE HORIZONTAL DATUM IS STATE PLANE VIRGINIA SOUTH ZONE NAD-83 (2011).
4. THE VERTICAL DATUM IS BASED UPON NAVD-88.



NO.	REVISION	DATE
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SHEET TITLE
OCTOBER 2023
LANDFILL TOPOGRAPHY

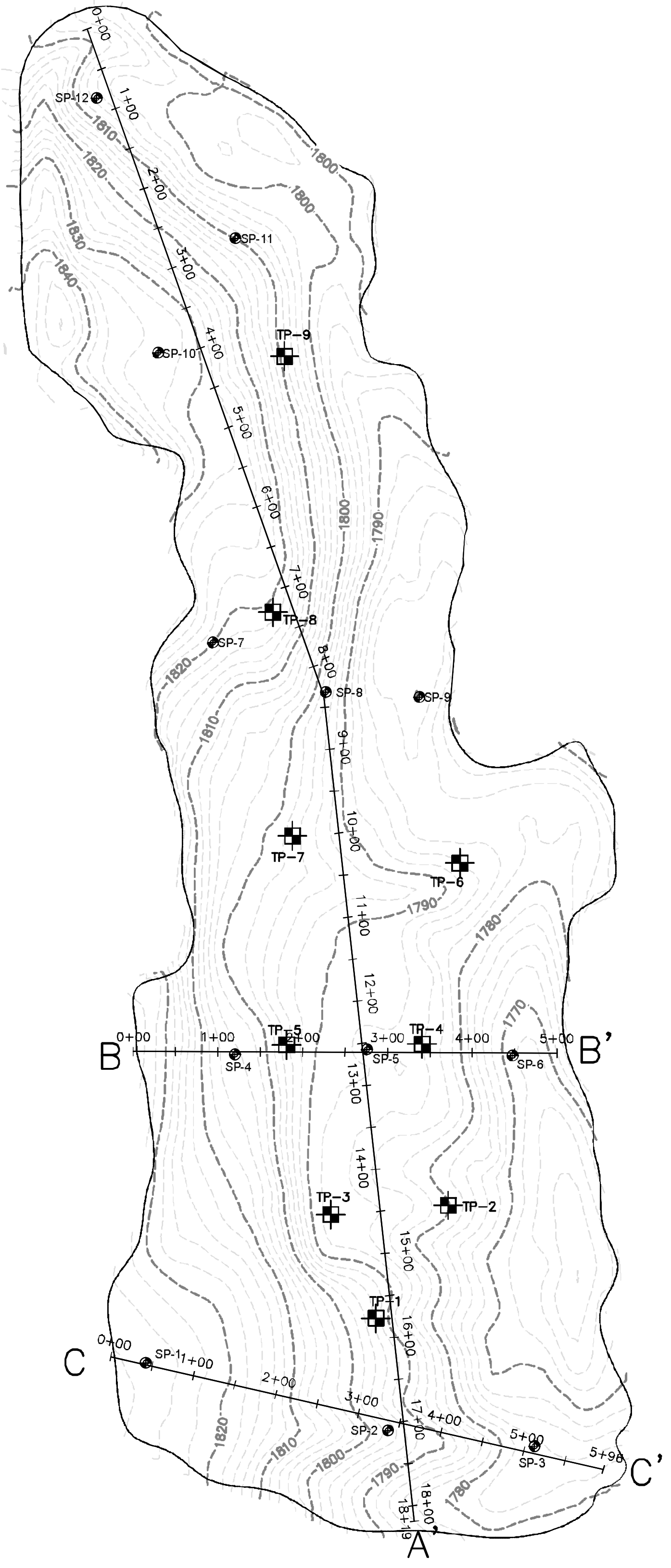
PROJECT TITLE
MONTHLY TOPOGRAPHY ANALYSIS
SOLID WASTE PERMIT #588

CLIENT
CITY OF BRISTOL INTEGRATED
SOLID WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

PROJ. NO. 02218208.05	DWN. BY: HGW
DSN. BY:	CHK. BY: CJW
	APP. BY: CJW

SCS ENGINEERS

CADD FILE: SURF COMP
DATE: 2024
SCALE:
DRAWING NO.
of 8



LEGEND

— MAJOR CONTOURS (EVERY 10')

— MINOR CONTOURS (EVERY 2')

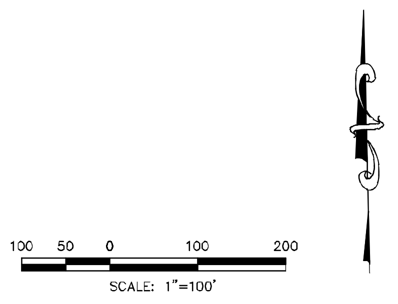
— APPROXIMATE SIDEWALL LOCATION

● SP-9 SETTLEMENT PLATE

TP-3 ▣ TEMPERATURE MONITORING PROBE

NOTES:

1. GRADES SHOWN AS CONTOUR LINES ONLY WITHIN THE PERMIT 588 BOUNDARY REPRESENT THE TOPOGRAPHY CAPTURED ON DECEMBER 20, 2023 BY SCS ENGINEERS.
2. ANY DETERMINATION OF TOPOGRAPHY OR CONTOURS, OR ANY DEPICTION OF PHYSICAL IMPROVEMENTS, PROPERTY LINES, OR BOUNDARIES IS FOR GENERAL INFORMATION ONLY AND SHALL NOT BE USED FOR DESIGN, MODIFICATION, OR CONSTRUCTION OF IMPROVEMENTS TO REAL PROPERTY OR FLOOD PLAIN DETERMINATION.
3. THE HORIZONTAL DATUM IS STATE PLANE VIRGINIA SOUTH ZONE NAD-83 (2011).
4. THE VERTICAL DATUM IS BASED UPON NAVD-88.



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SHEET TITLE

PROJECT TITLE

CLIENT

SCS ENGINEERS

PROJ. NO. 02218208.05
DWN. BY: HGW
CHK. BY: CJW
DSN. BY: CJW
APP. BY: CJW

CADD FILE: SURF COMP
DATE: 2/26/2024
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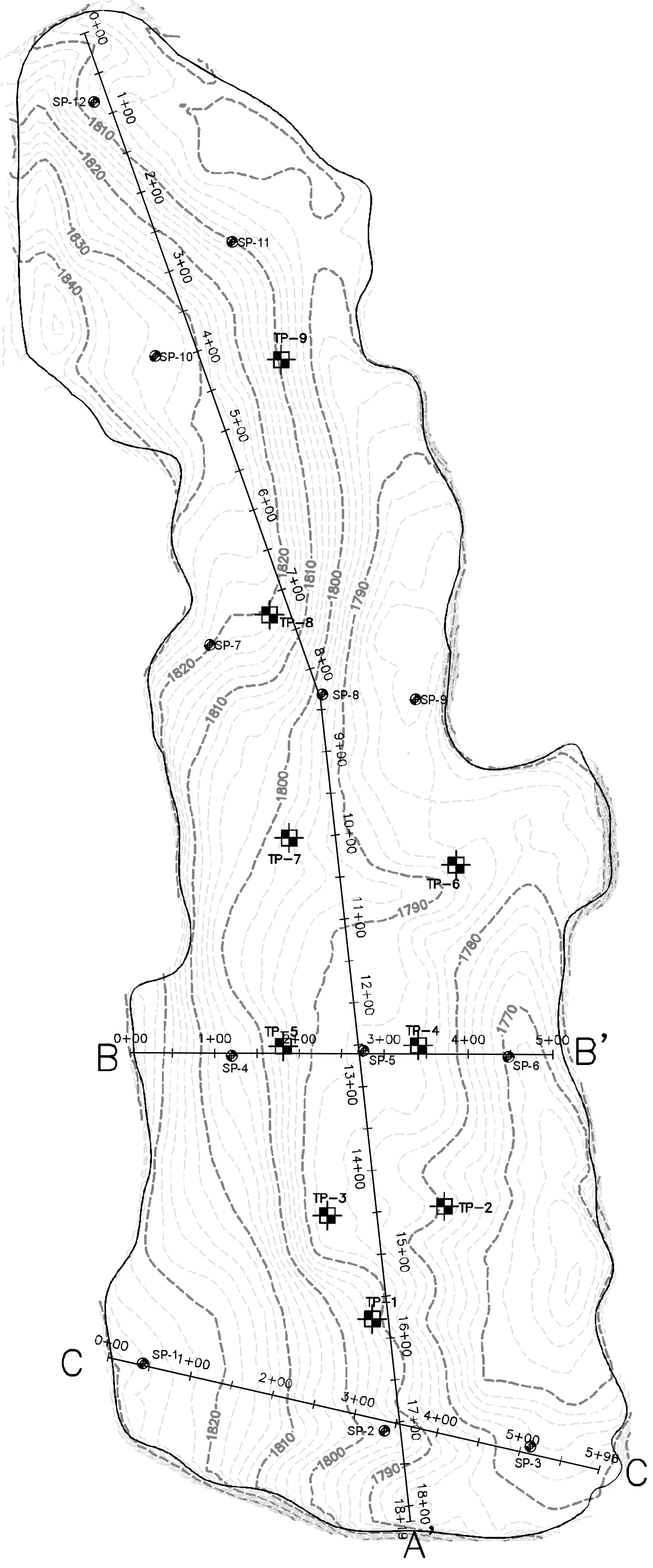

LEGEND

—	MAJOR CONTOURS (EVERY 10')
—	MINOR CONTOURS (EVERY 2')
—	APPROXIMATE SIDEWALL LOCATION
● SP-9	SETTLEMENT PLATE
TP-3 ⊞	TEMPERATURE MONITORING PROBE

NOTES:

1. GRADES SHOWN AS CONTOUR LINES ONLY WITHIN THE PERMIT 588 BOUNDARY REPRESENT THE TOPOGRAPHY CAPTURED ON JANUARY 23, 2024 BY SCS ENGINEERS.
2. ANY DETERMINATION OF TOPOGRAPHY OR CONTOURS, OR ANY DEPICTION OF PHYSICAL IMPROVEMENTS, PROPERTY LINES, OR BOUNDARIES IS FOR GENERAL INFORMATION ONLY AND SHALL NOT BE USED FOR DESIGN, MODIFICATION, OR CONSTRUCTION OF IMPROVEMENTS TO REAL PROPERTY OR FLOOD PLAIN DETERMINATION.
3. THE HORIZONTAL DATUM IS STATE PLANE VIRGINIA SOUTH ZONE NAD–83 (2011).
4. THE VERTICAL DATUM IS BASED UPON NAVD–88.

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S OL DWASTE PERMIT # 588
MONTHLY TOPOGRAPHY ANALYSIS
SHEET TITLE
JANUARY 2024
LANDFILL TOPOGRAPHY

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PROJ. NO. 02218208.05	DWN. BY: HGW
DSN. BY:	CHK. BY: CJW
APP. BY: CJW	CJW

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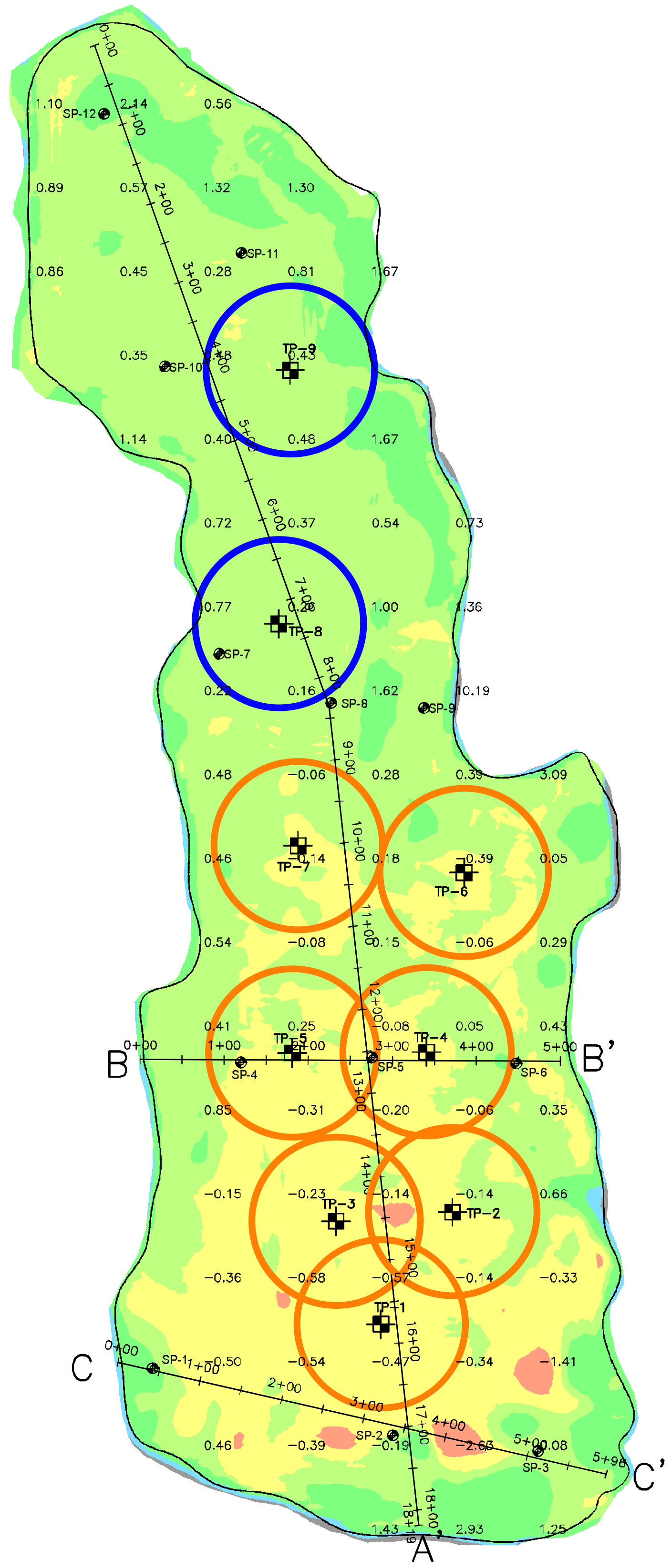

LEGEND

MAJOR CONTOURS (EVERY 10')
MINOR CONTOURS (EVERY 2')
APPROXIMATE WASTE BOUNDARY
● SP-9 SETTLEMENT PLATE
-0.39 SPOT ELEVATION ON 100' GRID
TP-8 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH LESS THAN 200 °F
TP-1 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH BETWEEN 200 °F AND 250 °F
TP-2 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH BETWEEN 250 °F AND 300 °F

Volume

Base Surface	TOPO – DECEMBER 20, 2023	
Comparison Surface	TOPO – JANUARY 23, 2024	
Cut Volume	2,800	Cu. Yd.
Fill Volume	14,000	Cu. Yd.
Net Fill	11,200	Cu. Yd.

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-8.000	-5.000	🟥
2	-5.000	-1.000	🟧
3	-1.000	0.000	🟨
4	0.000	1.000	🟩
5	1.000	5.000	🟩
6	5.000	10.000	🟦

NOTES:

1. THE ELEVATION CHANGES ARE CALCULATED BETWEEN THE AERIAL TOPOGRAPHY DATA CAPTURED ON DECEMBER 20, 2023 AND JANUARY 23, 2024 BY SCS ENGINEERS. POSITIVE VALUES (+) INDICATE AREAS OF FILL AND NEGATIVE VALUES (–) INDICATE AREAS OF CUT (SETTLEMENT). VALUES ARE ROUNDED TO THE NEAREST FOOT
2. ANY DETERMINATION OF TOPOGRAPHY OR CONTOURS, OR ANY DEPICTION OF PHYSICAL IMPROVEMENTS, PROPERTY LINES, OR BOUNDARIES IS FOR GENERAL INFORMATION ONLY AND SHALL NOT BE USED FOR DESIGN, MODIFICATION, OR CONSTRUCTION OF IMPROVEMENTS TO REAL PROPERTY OR FOR FLOOD PLAIN DETERMINATION.
3. THE HORIZONTAL DATUM IS STATE PLANE VIRGINIA SOUTH ZONE NAD–83 (2011)
4. THE VERTICAL DATUM IS BASED UPON NAVD–88.

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SCALE: 1"=100'

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SHEET TITLE
JANUARY VOLUME CHANGE
DECEMBER 2023 TO JANUARY 2024

PROJECT TITLE
MONTHLY TOPOGRAPHY ANALYSIS
SOLID WASTE PERMIT # 588

CLIENT
CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

PROJ. NO. 02218208.05	DWN. BY: HGW	CHK. BY: CJW
DSN. BY:	APP. BY: CJW	

SCS ENGINEERS
PH. (804) 378-7440 FAX. (804) 378-7433

CADD FILE: SURF COMP
DATE: 2/16/2024
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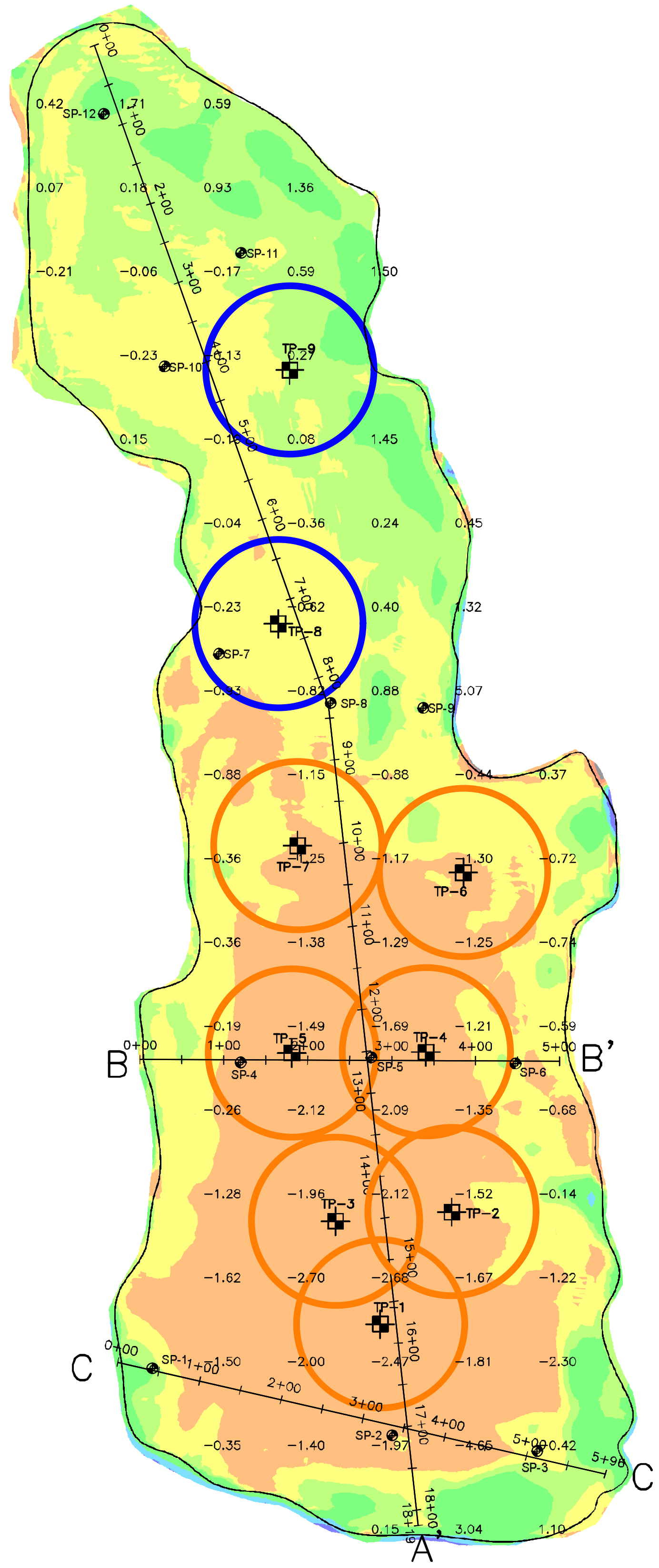

LEGEND

MAJOR CONTOURS (EVERY 10')

MINOR CONTOURS (EVERY 2')

APPROXIMATE WASTE BOUNDARY

SP-9 SETTLEMENT PLATE

-0.39 SPOT ELEVATION ON 100' GRID

TP-8 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH LESS THAN 200 °F

TP-1 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH BETWEEN 200 °F AND 250 °F

TP-2 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH BETWEEN 250 °F AND 300 °F

Volume
Base Surface TOPO – OCTOBER 12, 2023
Comparison Surface TOPO – JANUARY 23, 2024

Cut Volume	23,400	Cu. Yd.
Fill Volume	6,200	Cu. Yd.
Net Cut	17,200	Cu. Yd.

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-10.000	-5.000	🟥
2	-5.000	-1.000	🟧
3	-1.000	0.000	🟨
4	0.000	1.000	🟩
5	1.000	5.000	🟩
6	5.000	10.000	🟦

NOTES:

1. THE ELEVATION CHANGES ARE CALCULATED BETWEEN THE AERIAL TOPOGRAPHY DATA CAPTURED ON OCTOBER 12, 2023 AND JANUARY 23, 2024 BY SCS ENGINEERS. POSITIVE VALUES (+) INDICATE AREAS OF FILL AND NEGATIVE VALUES (–) INDICATE AREAS OF CUT (SETTLEMENT). VALUES ARE ROUNDED TO THE NEAREST FOOT.
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3. THE HORIZONTAL DATUM IS STATE PLANE VIRGINIA SOUTH ZONE NAD–83 (2011).
4. THE VERTICAL DATUM IS BASED UPON NAVD–88.

100 50 0 100 200
SCALE: 1"=100'

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SHEET TITLE

PROJECT TITLE

CLIENT

PROJ. NO. 02218208.05
DSN. BY:
DWN. BY: HGW
CHK. BY: CJW
APP. BY: CJW

CADD FILE: SURF COMP
DATE: 2/6/2024
SCALE:
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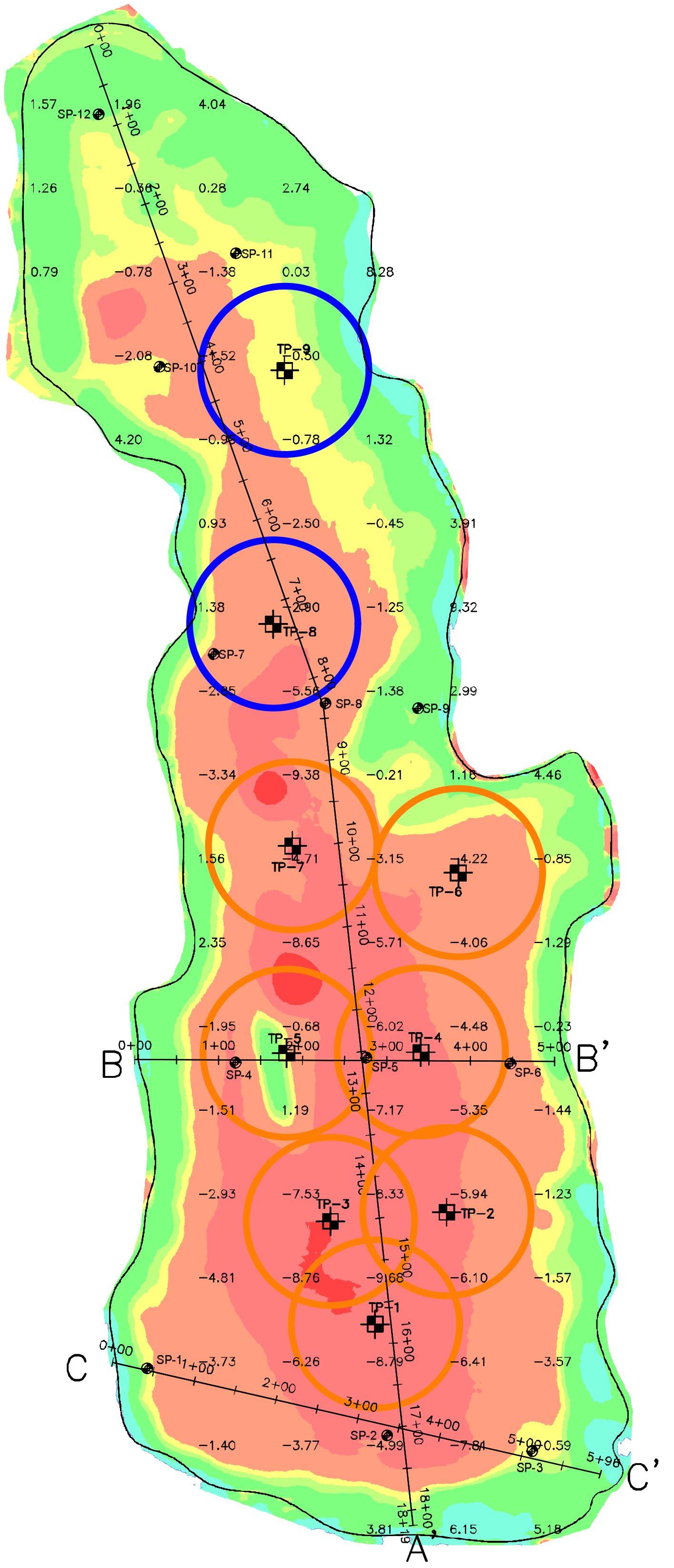

LEGEND

— MAJOR CONTOURS (EVERY 10')

— MINOR CONTOURS (EVERY 2')

— APPROXIMATE WASTE BOUNDARY

● SP-9 SETTLEMENT PLATE

-0.39 SPOT ELEVATION ON 100' GRID

○ TP-8 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH LESS THAN 200 °F

○ TP-1 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH BETWEEN 200 °F AND 250 °F

○ TP-2 TEMPERATURE MONITORING PROBE WITH AVERAGE TEMPERATURES AT DEPTH BETWEEN 250 °F AND 300 °F

Volume

Base Surface	TOPO – JANUARY 10, 2023		
Comparison Surface	TOPO – JANUARY 23, 2024		
Cut Volume	75,200	Cu. Yd.	
Fill Volume	21,800	Cu. Yd.	
Net Cut	53,400	Cu. Yd.	

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-16.000	-10.000	🟥
2	-10.000	-5.000	🟥
3	-5.000	-1.000	🟧
4	-1.000	0.000	🟨
5	0.000	1.000	🟩
6	1.000	5.000	🟩
7	5.000	10.000	🟦

NOTES:

1. THE ELEVATION CHANGES ARE CALCULATED BETWEEN THE AERIAL TOPOGRAPHY DATA CAPTURED ON JANUARY 10, 2023 AND JANUARY 20, 2023 BY SCS ENGINEERS. POSITIVE VALUES (+) INDICATE AREAS OF FILL AND NEGATIVE VALUES (–) INDICATE AREAS OF CUT (SETTLEMENT). VALUES ARE ROUNDED TO THE NEAREST FOOT.
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4. THE VERTICAL DATUM(S) IS BASED UPON NAVD–88.

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SCALE: 1"=100'

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SHEET TITLE
JANUARY 2023 TO JANUARY 2024 VOLUME CHANGE

PROJECT TITLE
MONTHLY TOPOGRAPHY ANALYSIS
SOLID WASTE PERMIT # 588

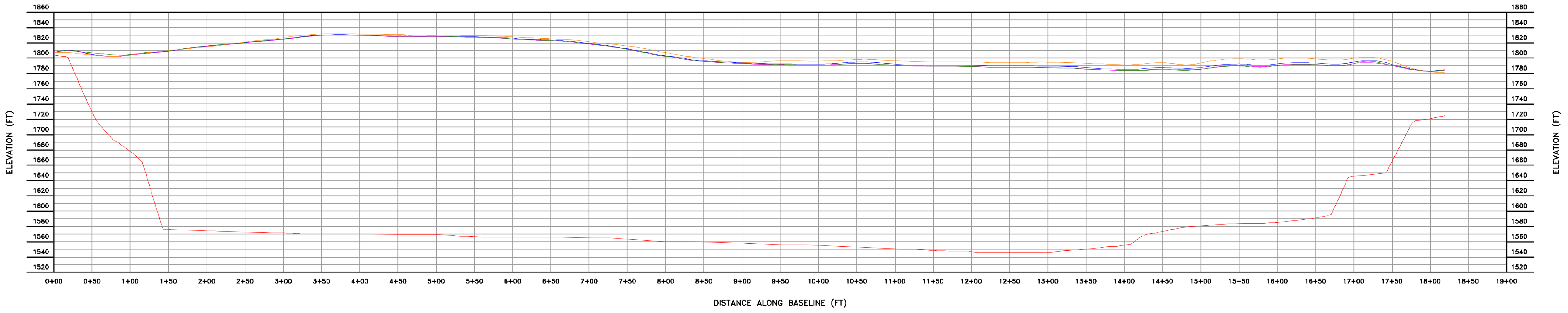
CLIENT
CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY

SCS ENGINEERS

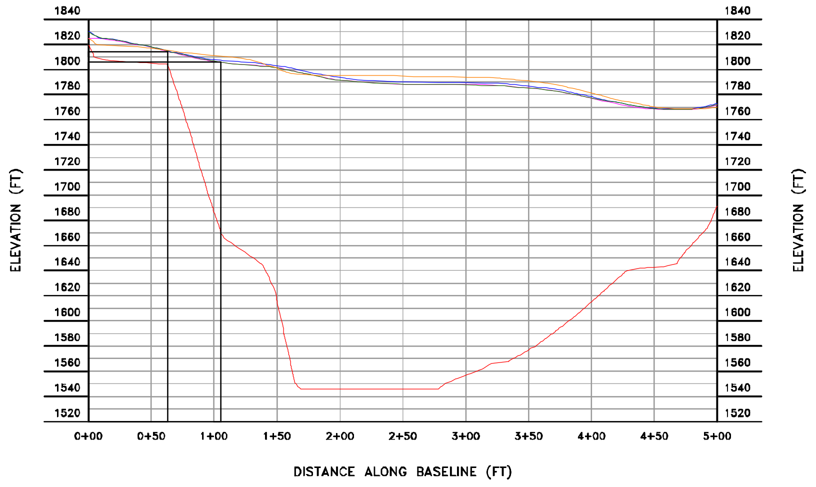
PROJ. NO. 02218208.05
DSN. BY:
DWN. BY: HGW
CHK. BY: CJW
APP. BY: CJW

CADD FILE: SURF COMP
DATE: 2/16/2024
SCALE:
DRAWING NO.
of 8

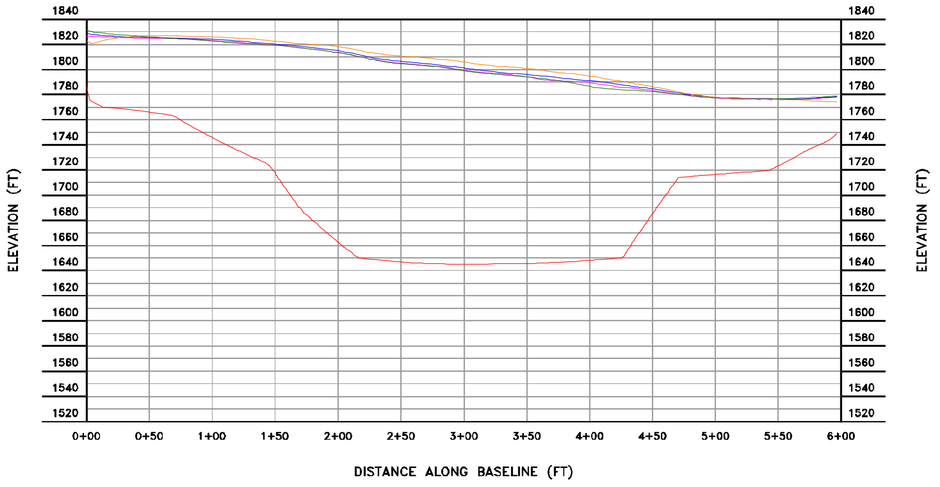
LONGITUDINAL PROFILE A ALIGN



LONGITUDINAL PROFILE B ALIGN



LONGITUDINAL PROFILE C ALIGN



LEGEND

- BOTTOM LINER ELEVATION
- JANUARY 2023 TOPO
- OCTOBER 2023 TOPO
- DECEMBER 2023 TOPO
- JANUARY 2024 TOPO

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SHEET TITLE
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PROJECT TITLE
MONTHLY TOPOGRAPHY ANALYSIS
SOLD WASTE PERMIT # 588

CLIENT
C ITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY

PROJ. NO. 02218208.05
DSN. BY:
DWN. BY: HGW
CHK. BY: CJW
APP. BY: CJW

CADD FILE: SURF COMP
DATE: 2/6/2024
SCALE:
DRAWING: of 8

Appendix F

Field Logs

Lab Report

Historical LFG-EW Leachate Monitoring Results Summary

Appendix F

Field Logs

Lab Reports

Historical LFG-EW Leachate Monitoring Results Summary

Time-Series Plots

City of Bristol SWP 588 Landfill
Dual Phase LFG-EW Liquid Level Measurement Log

Date	1/8/2024 - 1/11/2024
Personnel	**W. Fabrie, L. Howard, L. Tucker**

Location ID	Date	Measured Well Casing Depth (ft)	Pump Installed	Pump Depth (ft)	Prior Cycle Count (12/28/23)	Cycle Count	Prior Depth to Liquid (ft)	Depth to Liquid (ft)	Casing Stickup (ft)	Liquid Column Thickness (ft)	Sample Collected	Comments
EW-33B	1/10/2024	185.00	Y	---	17	17	75.17	140.05	4.00	44.95		No sample port
EW-36A	1/11/2024	180.00	Y	---	137975	335039	Dry	74.78	5.00	105.22		
EW-49	---	96.15	Y	90	777893	777893	65.78	---	---	---		Pump disconnected
EW-50	1/10/2024	77.70	Y	83	1387088	1395359	43.1	61.55	4.50	16.15		
EW-51	1/10/2024	92.80	Y	95	---	148468	43.5	33.15	3.46	59.65	Y	
EW-52	1/10/2024	98.70	Y	93	421655	448412	45.82	44.03	3.33	54.67		
EW-53	1/8/2024	100.70	Y	---	2435234	2495763	52.04	52.13	5.08	48.57		Air off
EW-54	1/8/2024	82.70	Y	75	597301	602341	38.45	36.37	5.33	46.33		
EW-55	1/8/2024	90.40	Y	90	713760	713760	44.85	42.68	6.33	47.72		Pump disconnected
EW-56	1/8/2024	58.50	N	58	---	---	44.04	Dry	4.38	---		Dry
EW-57	1/8/2024	107.40	Y	71	44644	44644	39.78	45.65	4.88	61.75		Pump disconnected
EW-58	1/11/2024	84.50	Y	82	---	---	32.48	27.88	4.00	56.62		
EW-59	1/8/2024	73.40	Y	64	2501483	2490489	38.95	40.86	4.67	32.54	Y	
EW-60	1/10/2024	81.80	Y	70	617039	617257	35.12	38.22	3.88	43.58		
EW-61	1/10/2024	87.80	Y	66	22389	24275	56.82	66.8	2.63	21.00		
EW-62	1/10/2024	110.60	Y	80	202363	202631	96.11	84.6	3.88	26.00		
EW-63	1/10/2024	62.10	N	64	---	---	64.82	69.8	4.96	-7.70		Pump disconnected
EW-64	1/10/2024	109.00	Y	113	177605	177605	83.54	81.57	4.46	27.43		
EW-65	1/10/2024	88.40	N	50	4817	4817	61.25	58.12	4.67	30.28		
EW-67	1/8/2024	107.75	Y	62.5	865688	865688	41.16	42.2	5.29	65.55		No sample port, discharge line disconnected, heavy black sludge
EW-68	1/10/2024	73.57	Y	68	2265867	2280685	4.24	40.31	1.42	33.26		
EW-69	1/10/2024	98.00	N	---	9	10	94.41	93.02	4.79	4.98		
EW-70	---	71.00	Y	---	---	---	---	---	---	---		Surrounded by water see photo
EW-71	1/10/2024	185.80	N	---	---	---	165.58	163.35	5.00	22.45		
EW-72	1/10/2024	141.21	Y	---	---	---	149.63	147.04	4.29	-5.83		DRY?
EW-73	1/11/2024	116.00	Y	---	---	---	102.84	107.37	3.92	8.63		

City of Bristol SWP 588 Landfill
Dual Phase LFG-EW Liquid Level Measurement Log

Date	1/8/2024 - 1/11/2024
Personnel	**W. Fabrie, L. Howard, L. Tucker**

Location ID	Date	Measured Well Casing Depth (ft)	Pump Installed	Pump Depth (ft)	Prior Cycle Count (12/28/23)	Cycle Count	Prior Depth to Liquid (ft)	Depth to Liquid (ft)	Casing Stickup (ft)	Liquid Column Thickness (ft)	Sample Collected	Comments
EW-74	1/10/2024	184.15	Y	---	25	25	169.38	162.3	5.71	21.85		
EW-75	1/10/2024	124.58	Y	---	11	11	110.8	66.98	4.96	57.60		Lost PVC in well
EW-76	1/10/2024	127.00	Y	---	23	23	35.52	---	4.21	---		Lost PVC in well
EW-77	1/10/2024	185.22	N	---	---	---	142.41	139.86	5.33	45.36		
EW-78	1/10/2024	57.00	Y	---	85201	91764	48.43	47.13	3.83	9.87		
EW-79	1/11/2024	185.64	N	---	---	---	156.25	154.3	5.42	31.34		
EW-80	1/11/2024	149.00	N	---	---	---	137.78	136.31	4.38	12.69		
EW-81	1/11/2024	151.56	Y	---	304902	329326	Dry	105.49	5.50	0.00		
EW-82	---	163.26	Y	---	98268	---	Dry	---	---	0.00		Standing water, unable to measure
EW-83	1/11/2024	167.04	Y	---	---	428888	110.19	109.57	4.33	57.47		
EW-84	1/11/2024	130.56	N	---	---	---	74.84	72.61	4.71	57.95		
EW-85	1/10/2024	91.00	Y	---	124123	161385	55.58	57.01	4.25	33.99		
EW-86	1/10/2024	153.00	N	---	---	---	79.64	76.32	4.25	76.68		
EW-87	1/10/2024	149.57	Y	---	940779	953643	54.96	55.64	3.92	93.93		
EW-88	1/10/2024	100.00	Y	---	407370	413409	49.51	44.61	3.75	55.39		
EW-89	1/10/2024	84.57	Y	---	511625	563451	41.55	41.42	3.33	43.15		No sample port
EW-90	1/11/2024	114.00	Y	---	170679	170679	93.08	91.86	2.58	22.14		Air disconnected
EW-91	1/11/2024	137.70	Y	---	265766	265809	51.72	42.39	5.46	95.31		
EW-92	1/11/2024	112.99	Y	---	389507	391973	46.93	47.29	6.71	65.70		Air off, pump disconnected
EW-93	1/10/2024	111.00	N	---	302222	---	30.25	29.95	3.75	81.05		
EW-94	1/11/2024	50.00	Y	---	520385	520385	26.34	24.87	4.21	25.13		
EW-95	1/11/2024	68.00	N	---	---	---	25.23	57.44	2.71	10.56		
EW-96	1/8/2024	164.35	Y	---	571413	---	---	59.5	7.38	---		Too tall, unable to measure
EW-97	1/8/2024	67.95	N	---	---	---	92.17	90.67	6.46	-22.72		
EW-98	1/8/2024	51.00	Y	---	1739764	1859826	26.57	43.68	3.92	7.32	Y	
EW-99	1/8/2024	65.00	N	---	---	---	60.4	60.7	3.96	4.30		
EW-100	1/8/2024	108.50	Y	---	470158	470465	76.51	74.95	3.88	33.55		

City of Bristol SWP 588 Landfill
Dual Phase LFG-EW Sample Collection Log

Location ID	**Sample Date**	**Sample Time**	**Temperature (°C)**	**pH (s.u.)**	**Specific Conductance (mS/cm)**	**Dissolved Oxygen (mg/L)**	**ORP (mV)**	**Turbidity (NTU)**	**Observations**
EW-51	1/11/2024	9:30	71.8	5.67	34.83	0.05	-118.9	>1000	---
EW-59	1/8/2024	15:45	64.2	5.99	34.7	0.81	-63.8	>1000	---
EW-98	1/8/2024	15:30	60.0	6.53	25.3	2.75	-70.1	>1000	---

Sampler: L. Howard, W. Fabrie, L. Tucker

Log Checked By: J. Robb

Samples Shipped By: Courier/ Fedex

Laboratory: Enthalpy Analytical

TNI Accredited
VELAP ID 460021

ENTHALPY ANALYTICAL

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 24A0466

Client Name: SCS Engineers-Winchester
296 Victory Road
Winchester, VA 22602

Submitted To: Jennifer Robb

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Date Received: January 10, 2024 8:00
Date Issued: February 6, 2024 16:49
Project Number: 02218208.15 Task 2
Purchase Order:

Enclosed are the results of analyses for samples received by the laboratory on 01/10/2024 08:00. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Technical Director

End Notes:
The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Enthalpy Analytical.

Enthalpy Analytical
1941 Reymet Road
Richmond, VA 23237
(804)-358-8295 - Telephone
(804)-358-8297 - Fax

Analysis Detects Report

Date Issued: 2/6/2024 4:49:57PM

Client Name: SCS Engineers-Winchester
Client Site ID: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Laboratory Sample ID: **24A0466-01** **Client Sample ID:** **EW-59**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Arsenic	01	SW6020B	230		2.5	5.0	5	ug/L
Barium	01	SW6020B	1920		5.00	25.0	5	ug/L
Chromium	01	SW6020B	193		2.00	5.00	5	ug/L
Copper	01	SW6020B	19.0		1.50	5.00	5	ug/L
Lead	01	SW6020B	8.1		5.0	5.0	5	ug/L
Nickel	01	SW6020B	49.11		5.000	5.000	5	ug/L
Zinc	01	SW6020B	97.4		12.5	25.0	5	ug/L
2-Butanone (MEK)	01	SW8260D	10800		150	500	50	ug/L
Acetone	01RE1	SW8260D	22800		3500	5000	500	ug/L
Benzene	01	SW8260D	662		20.0	50.0	50	ug/L
Ethylbenzene	01	SW8260D	28.0	J	20.0	50.0	50	ug/L
Tetrahydrofuran	01	SW8260D	1040		500	500	50	ug/L
Toluene	01	SW8260D	60.0		25.0	50.0	50	ug/L
Ammonia as N	01	EPA350.1 R2.0	2400		146	200	2000	mg/L
BOD	01	SM5210B-2016	17100		0.2	2.0	1	mg/L
COD	01	SM5220D-2011	59800		5000	5000	500	mg/L
Cyanide	01	SW9012B	0.24		0.05	0.05	5	mg/L
Nitrate+Nitrite as N	01	SM4500-NO3F-2016	0.80		0.50	0.50	5	mg/L
TKN as N	01	EPA351.2 R2.0	3020		100	250	500	mg/L
Total Recoverable Phenolics	01	SW9065	39.2		3.00	5.00	100	mg/L

Analysis Detects Report

Date Issued: 2/6/2024 4:49:57PM

Client Name: SCS Engineers-Winchester
Client Site ID: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Laboratory Sample ID: **24A0466-02** **Client Sample ID:** **EW-98**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Arsenic	02	SW6020B	180		2.5	5.0	5	ug/L
Barium	02	SW6020B	1910		5.00	25.0	5	ug/L
Chromium	02	SW6020B	128		2.00	5.00	5	ug/L
Nickel	02	SW6020B	32.60		5.000	5.000	5	ug/L
Zinc	02	SW6020B	26.1		12.5	25.0	5	ug/L
2-Butanone (MEK)	02RE1	SW8260D	28900		1500	5000	500	ug/L
Acetone	02RE1	SW8260D	47300		3500	5000	500	ug/L
Benzene	02	SW8260D	2900		20.0	50.0	50	ug/L
Ethylbenzene	02	SW8260D	248		20.0	50.0	50	ug/L
Tetrahydrofuran	02	SW8260D	10900		500	500	50	ug/L
Toluene	02	SW8260D	310		25.0	50.0	50	ug/L
Xylenes, Total	02	SW8260D	534		50.0	150	50	ug/L
Ammonia as N	02	EPA350.1 R2.0	1610		146	200	2000	mg/L
BOD	02	SM5210B-2016	14000		0.2	2.0	1	mg/L
COD	02	SM5220D-2011	38200		5000	5000	500	mg/L
Cyanide	02	SW9012B	0.14	CI	0.05	0.05	5	mg/L
TKN as N	02	EPA351.2 R2.0	1810		100	250	500	mg/L
Total Recoverable Phenolics	02	SW9065	22.7		1.50	2.50	50	mg/L

Note that this report is not the "Certificate of Analysis". This report only lists the target analytes that displayed concentrations that exceeded the detection limit specified for that analyte. For a complete listing of all analytes requested and the results of the analysis see the " Certificate of Analysis".

Enthalpy Analytical
1941 Reymet Road
Richmond, Virginia 23237
(804)-358-8295 - Telephone
(804)-358-8297 - Fax

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW-59	24A0466-01	Ground Water	01/08/2024 15:45	01/10/2024 08:00
EW-98	24A0466-02	Ground Water	01/08/2024 15:30	01/10/2024 08:00
Trip Blank	24A0466-03	Ground Water	07/10/2023 15:00	01/10/2024 08:00

As requested by Jennifer Robb on February 6, 2024, a revised report has been issued to correct reported VOCs.

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: EW-59

Laboratory Sample ID: 24A0466-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Metals (Total) by EPA 6000/7000 Series Methods												
Silver	01	7440-22-4	SW6020B	01/11/2024 12:15	01/12/2024 14:26	BLOD		0.300	5.00	5	ug/L	ACM
Arsenic	01	7440-38-2	SW6020B	01/11/2024 12:15	01/12/2024 14:26	230		2.5	5.0	5	ug/L	ACM
Barium	01	7440-39-3	SW6020B	01/11/2024 12:15	01/12/2024 14:26	1920		5.00	25.0	5	ug/L	ACM
Cadmium	01	7440-43-9	SW6020B	01/11/2024 12:15	01/12/2024 14:26	BLOD		0.500	5.00	5	ug/L	ACM
Chromium	01	7440-47-3	SW6020B	01/11/2024 12:15	01/12/2024 14:26	193		2.00	5.00	5	ug/L	ACM
Copper	01	7440-50-8	SW6020B	01/11/2024 12:15	01/12/2024 14:26	19.0		1.50	5.00	5	ug/L	ACM
Mercury	01	7439-97-6	SW6020B	01/11/2024 12:15	01/12/2024 14:26	BLOD		1.00	1.00	5	ug/L	ACM
Nickel	01	7440-02-0	SW6020B	01/11/2024 12:15	01/12/2024 14:26	49.11		5.000	5.000	5	ug/L	ACM
Lead	01	7439-92-1	SW6020B	01/11/2024 12:15	01/12/2024 14:26	8.1		5.0	5.0	5	ug/L	ACM
Selenium	01	7782-49-2	SW6020B	01/11/2024 12:15	01/12/2024 14:26	BLOD		4.25	5.00	5	ug/L	ACM
Zinc	01	7440-66-6	SW6020B	01/11/2024 12:15	01/12/2024 14:26	97.4		12.5	25.0	5	ug/L	ACM
Volatile Organic Compounds by GCMS												
2-Butanone (MEK)	01	78-93-3	SW8260D	01/11/2024 15:03	01/11/2024 15:03	10800		150	500	50	ug/L	JWR
Acetone	01RE1	67-64-1	SW8260D	01/12/2024 18:21	01/12/2024 18:21	22800		3500	5000	500	ug/L	RJB
Benzene	01	71-43-2	SW8260D	01/11/2024 15:03	01/11/2024 15:03	662		20.0	50.0	50	ug/L	JWR
Ethylbenzene	01	100-41-4	SW8260D	01/11/2024 15:03	01/11/2024 15:03	28.0	J	20.0	50.0	50	ug/L	JWR
Toluene	01	108-88-3	SW8260D	01/11/2024 15:03	01/11/2024 15:03	60.0		25.0	50.0	50	ug/L	JWR
Xylenes, Total	01	1330-20-7	SW8260D	01/11/2024 15:03	01/11/2024 15:03	BLOD		50.0	150	50	ug/L	JWR
Tetrahydrofuran	01	109-99-9	SW8260D	01/11/2024 15:03	01/11/2024 15:03	1040		500	500	50	ug/L	JWR
Surr: 1,2-Dichloroethane-d4 (Surr)	*01*	*88.7 %*	*70-120*	*01/11/2024 15:03*	*01/11/2024 15:03*							
Surr: 4-Bromofluorobenzene (Surr)	*01*	*96.3 %*	*75-120*	*01/11/2024 15:03*	*01/11/2024 15:03*							
Surr: Dibromofluoromethane (Surr)	*01*	*91.7 %*	*70-130*	*01/11/2024 15:03*	*01/11/2024 15:03*							
Surr: Toluene-d8 (Surr)	*01*	*95.8 %*	*70-130*	*01/11/2024 15:03*	*01/11/2024 15:03*							
Surr: 1,2-Dichloroethane-d4 (Surr)	*01RE1*	*90.2 %*	*70-120*	*01/12/2024 18:21*	*01/12/2024 18:21*							
Surr: 4-Bromofluorobenzene (Surr)	*01RE1*	*96.6 %*	*75-120*	*01/12/2024 18:21*	*01/12/2024 18:21*							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **EW-59**

Laboratory Sample ID: **24A0466-01**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: Dibromofluoromethane (Surr)	*01RE1*	*90.6 %*	*70-130*	*01/12/2024 18:21*	*01/12/2024 18:21*							
Surr: Toluene-d8 (Surr)	*01RE1*	*96.1 %*	*70-130*	*01/12/2024 18:21*	*01/12/2024 18:21*							
Semivolatile Organic Compounds by GCMS												
Anthracene	01	120-12-7	SW8270E	01/11/2024 08:45	01/16/2024 19:29	BLOD		1000	2000	50	ug/L	BMS
Surr: 2,4,6-Tribromophenol (Surr)	*01*	*%*	*5-136*	*01/11/2024 08:45*	*01/16/2024 19:29*							*DS*
Surr: 2-Fluorobiphenyl (Surr)	*01*	*38.0 %*	*9-117*	*01/11/2024 08:45*	*01/16/2024 19:29*							
Surr: 2-Fluorophenol (Surr)	*01*	*107 %*	*5-60*	*01/11/2024 08:45*	*01/16/2024 19:29*							*DS*
Surr: Nitrobenzene-d5 (Surr)	*01*	*170 %*	*5-151*	*01/11/2024 08:45*	*01/16/2024 19:29*							*DS*
Surr: Phenol-d5 (Surr)	*01*	*15.0 %*	*5-60*	*01/11/2024 08:45*	*01/16/2024 19:29*							
Surr: p-Terphenyl-d14 (Surr)	*01*	*%*	*5-141*	*01/11/2024 08:45*	*01/16/2024 19:29*							*DS*

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Client Sample ID: **EW-59**
Laboratory Sample ID: **24A0466-01**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Ammonia as N	01	7664-41-7	EPA350.1 R2.0	01/16/2024 13:06	01/16/2024 13:06	2400		146	200	2000	mg/L	MGC
BOD	01	E1640606	SM5210B-2016	01/10/2024 11:43	01/10/2024 11:43	17100		0.2	2.0	1	mg/L	SPH
Cyanide	01	57-12-5	SW9012B	01/11/2024 14:12	01/11/2024 14:12	0.24		0.05	0.05	5	mg/L	LAM
COD	01	NA	SM5220D-2011	01/23/2024 16:31	01/23/2024 16:31	59800		5000	5000	500	mg/L	TEG
Nitrate as N	01	14797-55-8	Calc.	01/15/2024 13:14	01/15/2024 13:14	BLOD		1.50	5.50	100	mg/L	KJM
Nitrate+Nitrite as N	01	E701177	SM4500-NO3F-2016	01/15/2024 13:14	01/15/2024 13:14	0.80		0.50	0.50	5	mg/L	MGC
Nitrite as N	01	14797-65-0	SM4500-NO2B-2011	01/10/2024 11:00	01/10/2024 14:00	BLOD		1.00	5.00	100	mg/L	KJM
Total Recoverable Phenolics	01	NA	SW9065	01/12/2024 11:47	01/12/2024 11:47	39.2		3.00	5.00	100	mg/L	LAM
TKN as N	01	E17148461	EPA351.2 R2.0	01/17/2024 16:03	01/17/2024 16:03	3020		100	250	500	mg/L	SPH

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **EW-98**

Laboratory Sample ID: **24A0466-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Metals (Total) by EPA 6000/7000 Series Methods												
Silver	02	7440-22-4	SW6020B	01/11/2024 12:15	01/12/2024 14:29	BLOD		0.300	5.00	5	ug/L	ACM
Arsenic	02	7440-38-2	SW6020B	01/11/2024 12:15	01/12/2024 14:29	180		2.5	5.0	5	ug/L	ACM
Barium	02	7440-39-3	SW6020B	01/11/2024 12:15	01/12/2024 14:29	1910		5.00	25.0	5	ug/L	ACM
Cadmium	02	7440-43-9	SW6020B	01/11/2024 12:15	01/12/2024 14:29	BLOD		0.500	5.00	5	ug/L	ACM
Chromium	02	7440-47-3	SW6020B	01/11/2024 12:15	01/12/2024 14:29	128		2.00	5.00	5	ug/L	ACM
Copper	02	7440-50-8	SW6020B	01/11/2024 12:15	01/12/2024 14:29	BLOD		1.50	5.00	5	ug/L	ACM
Mercury	02	7439-97-6	SW6020B	01/11/2024 12:15	01/12/2024 14:29	BLOD		1.00	1.00	5	ug/L	ACM
Nickel	02	7440-02-0	SW6020B	01/11/2024 12:15	01/12/2024 14:29	32.60		5.000	5.000	5	ug/L	ACM
Lead	02	7439-92-1	SW6020B	01/11/2024 12:15	01/12/2024 14:29	BLOD		5.0	5.0	5	ug/L	ACM
Selenium	02	7782-49-2	SW6020B	01/11/2024 12:15	01/12/2024 14:29	BLOD		4.25	5.00	5	ug/L	ACM
Zinc	02	7440-66-6	SW6020B	01/11/2024 12:15	01/12/2024 14:29	26.1		12.5	25.0	5	ug/L	ACM
Volatile Organic Compounds by GCMS												
2-Butanone (MEK)	02RE1	78-93-3	SW8260D	01/12/2024 18:44	01/12/2024 18:44	28900		1500	5000	500	ug/L	RJB
Acetone	02RE1	67-64-1	SW8260D	01/12/2024 18:44	01/12/2024 18:44	47300		3500	5000	500	ug/L	RJB
Benzene	02	71-43-2	SW8260D	01/11/2024 15:27	01/11/2024 15:27	2900		20.0	50.0	50	ug/L	JWR
Ethylbenzene	02	100-41-4	SW8260D	01/11/2024 15:27	01/11/2024 15:27	248		20.0	50.0	50	ug/L	JWR
Toluene	02	108-88-3	SW8260D	01/11/2024 15:27	01/11/2024 15:27	310		25.0	50.0	50	ug/L	JWR
Xylenes, Total	02	1330-20-7	SW8260D	01/11/2024 15:27	01/11/2024 15:27	534		50.0	150	50	ug/L	JWR
Tetrahydrofuran	02	109-99-9	SW8260D	01/11/2024 15:27	01/11/2024 15:27	10900		500	500	50	ug/L	JWR
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*90.2 %*	*70-120*	*01/11/2024 15:27*	*01/11/2024 15:27*							
Surr: 4-Bromofluorobenzene (Surr)	*02*	*94.9 %*	*75-120*	*01/11/2024 15:27*	*01/11/2024 15:27*							
Surr: Dibromofluoromethane (Surr)	*02*	*94.3 %*	*70-130*	*01/11/2024 15:27*	*01/11/2024 15:27*							
Surr: Toluene-d8 (Surr)	*02*	*98.2 %*	*70-130*	*01/11/2024 15:27*	*01/11/2024 15:27*							
Surr: 1,2-Dichloroethane-d4 (Surr)	*02RE1*	*88.4 %*	*70-120*	*01/12/2024 18:44*	*01/12/2024 18:44*							
Surr: 4-Bromofluorobenzene (Surr)	*02RE1*	*96.9 %*	*75-120*	*01/12/2024 18:44*	*01/12/2024 18:44*							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **EW-98**

Laboratory Sample ID: **24A0466-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: Dibromofluoromethane (Surr)	*02RE1*	*89.4 %*	*70-130*	*01/12/2024 18:44*	*01/12/2024 18:44*							
Surr: Toluene-d8 (Surr)	*02RE1*	*96.2 %*	*70-130*	*01/12/2024 18:44*	*01/12/2024 18:44*							
Semivolatile Organic Compounds by GCMS												
Anthracene	02	120-12-7	SW8270E	01/11/2024 08:45	01/16/2024 19:59	BLOD		250	500	50	ug/L	BMS
Surr: 2,4,6-Tribromophenol (Surr)	*02*	*%*	*5-136*	*01/11/2024 08:45*	*01/16/2024 19:59*							*DS*
Surr: 2-Fluorobiphenyl (Surr)	*02*	*20.5 %*	*9-117*	*01/11/2024 08:45*	*01/16/2024 19:59*							
Surr: 2-Fluorophenol (Surr)	*02*	*35.2 %*	*5-60*	*01/11/2024 08:45*	*01/16/2024 19:59*							
Surr: Nitrobenzene-d5 (Surr)	*02*	*85.0 %*	*5-151*	*01/11/2024 08:45*	*01/16/2024 19:59*							
Surr: Phenol-d5 (Surr)	*02*	*7.50 %*	*5-60*	*01/11/2024 08:45*	*01/16/2024 19:59*							
Surr: p-Terphenyl-d14 (Surr)	*02*	*%*	*5-141*	*01/11/2024 08:45*	*01/16/2024 19:59*							*DS*

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **EW-98**

Laboratory Sample ID: **24A0466-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Ammonia as N	02	7664-41-7	EPA350.1 R2.0	01/16/2024 13:06	01/16/2024 13:06	1610		146	200	2000	mg/L	MGC
BOD	02	E1640606	SM5210B-2016	01/10/2024 11:43	01/10/2024 11:43	14000		0.2	2.0	1	mg/L	SPH
Cyanide	02	57-12-5	SW9012B	01/16/2024 12:06	01/16/2024 12:06	0.14	CI	0.05	0.05	5	mg/L	AAL
COD	02	NA	SM5220D-2011	01/23/2024 16:31	01/23/2024 16:31	38200		5000	5000	500	mg/L	TEG
Nitrate as N	02	14797-55-8	Calc.	01/15/2024 13:14	01/15/2024 13:14	BLOD		1.50	5.50	100	mg/L	KJM
Nitrate+Nitrite as N	02	E701177	SM4500-NO3F-2016	01/15/2024 13:14	01/15/2024 13:14	BLOD		0.50	0.50	5	mg/L	MGC
Nitrite as N	02	14797-65-0	SM4500-NO2B-2011	01/10/2024 11:00	01/10/2024 14:00	BLOD		1.00	5.00	100	mg/L	KJM
Total Recoverable Phenolics	02	NA	SW9065	01/12/2024 11:47	01/12/2024 11:47	22.7		1.50	2.50	50	mg/L	LAM
TKN as N	02	E17148461	EPA351.2 R2.0	01/17/2024 16:03	01/17/2024 16:03	1810		100	250	500	mg/L	SPH

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **Trip Blank**

Laboratory Sample ID: **24A0466-03**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
2-Butanone (MEK)	03	78-93-3	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		3.00	10.0	1	ug/L	JWR
Acetone	03	67-64-1	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		7.00	10.0	1	ug/L	JWR
Benzene	03	71-43-2	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		0.40	1.00	1	ug/L	JWR
Ethylbenzene	03	100-41-4	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		0.40	1.00	1	ug/L	JWR
Toluene	03	108-88-3	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		0.50	1.00	1	ug/L	JWR
Xylenes, Total	03	1330-20-7	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		1.00	3.00	1	ug/L	JWR
Tetrahydrofuran	03	109-99-9	SW8260D	01/11/2024 11:57	01/11/2024 11:57	BLOD		10.0	10.0	1	ug/L	JWR
Surr: 1,2-Dichloroethane-d4 (Surr)	*03*	*90.2 %*	*70-120*	*01/11/2024 11:57*	*01/11/2024 11:57*							
Surr: 4-Bromofluorobenzene (Surr)	*03*	*96.1 %*	*75-120*	*01/11/2024 11:57*	*01/11/2024 11:57*							
Surr: Dibromofluoromethane (Surr)	*03*	*95.2 %*	*70-130*	*01/11/2024 11:57*	*01/11/2024 11:57*							
Surr: Toluene-d8 (Surr)	*03*	*98.8 %*	*70-130*	*01/11/2024 11:57*	*01/11/2024 11:57*							

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0366 - EPA200.8 R5.4										
Blank (BHA0366-BLK1)				Prepared: 01/11/2024 Analyzed: 01/12/2024						
Mercury	ND	0.200	ug/L							
Arsenic	ND	1.0	ug/L							
Barium	ND	5.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	1.00	ug/L							
Copper	ND	1.00	ug/L							
Lead	ND	1.0	ug/L							
Nickel	ND	1.000	ug/L							
Selenium	ND	1.00	ug/L							
Silver	ND	1.00	ug/L							
Zinc	ND	5.00	ug/L							
LCS (BHA0366-BS1)				Prepared: 01/11/2024 Analyzed: 01/12/2024						
Mercury	0.964	0.200	ug/L	1.00		96.4	80-120			
Arsenic	50	1.0	ug/L	50.0		99.7	80-120			
Barium	48.9	5.00	ug/L	50.0		97.8	80-120			
Cadmium	51.0	1.00	ug/L	50.0		102	80-120			
Chromium	49.9	1.00	ug/L	50.0		99.7	80-120			
Copper	51.0	1.00	ug/L	50.0		102	80-120			
Lead	50	1.0	ug/L	50.0		99.0	80-120			
Nickel	50.33	1.000	ug/L	50.0		101	80-120			
Selenium	50.2	1.00	ug/L	50.0		100	80-120			
Silver	10.2	1.00	ug/L	10.0		102	80-120			
Zinc	51.0	5.00	ug/L	50.0		102	80-120			
Matrix Spike (BHA0366-MS1)		**Source: 24A0545-03**		Prepared: 01/11/2024 Analyzed: 01/12/2024						

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0366 - EPA200.8 R5.4										
Matrix Spike (BHA0366-MS1)		**Source: 24A0545-03**		Prepared: 01/11/2024 Analyzed: 01/12/2024						
Mercury	1.24	0.200	ug/L	1.00	0.253	99.0	70-130			
Arsenic	52	1.0	ug/L	50.0	3.2	98.2	75-125			
Barium	95.5	5.00	ug/L	50.0	40.9	109	75-125			
Cadmium	41.8	1.00	ug/L	50.0	0.330	83.0	75-125			
Chromium	96.1	1.00	ug/L	50.0	54.4	83.4	75-125			
Copper	73.6	1.00	ug/L	50.0	29.8	87.8	75-125			
Lead	50	1.0	ug/L	50.0	1.7	97.5	75-125			
Nickel	64.84	1.000	ug/L	50.0	22.01	85.7	75-125			
Selenium	38.5	1.00	ug/L	50.0	BLOD	77.0	75-125			
Silver	9.03	1.00	ug/L	10.0	BLOD	90.3	75-125			
Zinc	85.7	5.00	ug/L	50.0	51.5	68.3	75-125			M
Matrix Spike Dup (BHA0366-MSD1)		**Source: 24A0545-03**		Prepared: 01/11/2024 Analyzed: 01/12/2024						
Mercury	1.22	0.200	ug/L	1.00	0.253	96.9	70-130	1.74	20	
Arsenic	53	1.0	ug/L	50.0	3.2	101	75-125	2.20	20	
Barium	98.2	5.00	ug/L	50.0	40.9	115	75-125	2.83	20	
Cadmium	42.3	1.00	ug/L	50.0	0.330	84.0	75-125	1.22	20	
Chromium	94.5	1.00	ug/L	50.0	54.4	80.2	75-125	1.68	20	
Copper	76.0	1.00	ug/L	50.0	29.8	92.4	75-125	3.11	20	
Lead	51	1.0	ug/L	50.0	1.7	98.7	75-125	1.18	20	
Nickel	66.24	1.000	ug/L	50.0	22.01	88.4	75-125	2.13	20	
Selenium	38.1	1.00	ug/L	50.0	BLOD	76.3	75-125	0.934	20	
Silver	9.19	1.00	ug/L	10.0	BLOD	91.9	75-125	1.82	20	
Zinc	86.5	5.00	ug/L	50.0	51.5	70.1	75-125	1.02	20	M

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:49:57PM
Client Site I.D.:	24-01 LFG-EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Blank (BHA0377-BLK1)				Prepared & Analyzed: 01/11/2024						
1,1,1-Trichloroethane	ND	1.00	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,2-Trichloroethane	ND	1.00	ug/L							
1,1-Dichloroethane	ND	1.00	ug/L							
1,1-Dichloroethylene	ND	1.00	ug/L							
1,1-Dichloropropene	ND	1.00	ug/L							
1,2,3-Trichlorobenzene	ND	1.00	ug/L							
1,2,3-Trichloropropane	ND	1.00	ug/L							
1,2,4-Trichlorobenzene	ND	1.00	ug/L							
1,2,4-Trimethylbenzene	ND	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.00	ug/L							
1,2-Dibromoethane (EDB)	ND	1.00	ug/L							
1,2-Dichlorobenzene	ND	0.50	ug/L							
1,2-Dichloroethane	ND	1.00	ug/L							
1,2-Dichloropropane	ND	0.50	ug/L							
1,3,5-Trimethylbenzene	ND	1.00	ug/L							
1,3-Dichlorobenzene	ND	1.00	ug/L							
1,3-Dichloropropane	ND	1.00	ug/L							
1,4-Dichlorobenzene	ND	1.00	ug/L							
1,4-Dioxane	ND	80.0	ug/L							
2,2-Dichloropropane	ND	1.00	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
2-Chloroethyl vinyl ether	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.00	ug/L							
2-Hexanone (MBK)	ND	5.00	ug/L							

Certificate of Analysis

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Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0377 - SW5030B-MS

Blank (BHA0377-BLK1) Prepared & Analyzed: 01/11/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
4-Chlorotoluene	ND	1.00	ug/L							
4-Isopropyltoluene	ND	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	5.00	ug/L							
Acetone	ND	10.0	ug/L							
Acetonitrile	ND	10.0	ug/L							
Acrolein	ND	10.0	ug/L							
Acrylonitrile	ND	5.00	ug/L							
Allyl chloride	ND	1.00	ug/L							
Benzene	ND	1.00	ug/L							
Bromobenzene	ND	1.00	ug/L							
Bromochloromethane	ND	1.00	ug/L							
Bromodichloromethane	ND	0.50	ug/L							
Bromoform	ND	1.00	ug/L							
Bromomethane	ND	1.00	ug/L							
Carbon disulfide	ND	10.0	ug/L							
Carbon tetrachloride	ND	1.00	ug/L							
Chlorobenzene	ND	1.00	ug/L							
Chloroethane	ND	1.00	ug/L							
Chloroform	ND	0.50	ug/L							
Chloromethane	ND	1.00	ug/L							
Chloroprene	ND	5.00	ug/L							
cis-1,2-Dichloroethylene	ND	1.00	ug/L							
cis-1,3-Dichloropropene	ND	1.00	ug/L							
Cyclohexane	ND	1.00	ug/L							
Dibromochloromethane	ND	0.50	ug/L							

Certificate of Analysis

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Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Blank (BHA0377-BLK1)				Prepared & Analyzed: 01/11/2024						
Dibromomethane	ND	1.00	ug/L							
Dichlorodifluoromethane	ND	1.00	ug/L							
Di-isopropyl ether (DIPE)	ND	5.00	ug/L							
Ethanol	ND	80.0	ug/L							
Ethyl methacrylate	ND	5.00	ug/L							
Ethylbenzene	ND	1.00	ug/L							
Ethyl-t-butyl ether (ETBE)	ND	25.0	ug/L							
Hexachlorobutadiene	ND	0.80	ug/L							
Iodomethane	ND	10.0	ug/L							
Isopropylbenzene	ND	1.00	ug/L							
m+p-Xylenes	ND	2.00	ug/L							
Methacrylonitrile	ND	1.50	ug/L							
Methyl acetate	ND	4.00	ug/L							
Methyl cyclohexane	ND	1.00	ug/L							
Methyl methacrylate	ND	2.00	ug/L							
Methylene chloride	ND	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	ND	1.00	ug/L							
Naphthalene	ND	1.00	ug/L							
n-Butylbenzene	ND	1.00	ug/L							
n-Propylbenzene	ND	1.00	ug/L							
o-Xylene	ND	1.00	ug/L							
Pentachloroethane	ND	10.0	ug/L							
Propionitrile	ND	40.0	ug/L							
sec-Butylbenzene	ND	1.00	ug/L							
Styrene	ND	1.00	ug/L							

Certificate of Analysis

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Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Blank (BHA0377-BLK1)				Prepared & Analyzed: 01/11/2024						
TAEE	ND	5.00	ug/L							
TAME	ND	5.00	ug/L							
TBA	ND	100	ug/L							
tert-Butylbenzene	ND	1.00	ug/L							
Tetrachloroethylene (PCE)	ND	1.00	ug/L							
Toluene	ND	1.00	ug/L							
trans-1,2-Dichloroethylene	ND	1.00	ug/L							
trans-1,3-Dichloropropene	ND	1.00	ug/L							
trans-1,4-Dichloro-2-butene	ND	4.00	ug/L							
Trichloroethylene	ND	1.00	ug/L							
Trichlorofluoromethane	ND	1.00	ug/L							
Vinyl acetate	ND	10.0	ug/L							
Vinyl chloride	ND	0.50	ug/L							
Xylenes, Total	ND	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	*47.4*		ug/L	*50.0*		*94.8*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.6*		ug/L	*50.0*		*97.3*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*49.1*		ug/L	*50.0*		*98.2*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.7*		ug/L	*50.0*		*97.4*	*70-130*			
LCS (BHA0377-BS1)				Prepared & Analyzed: 01/11/2024						
1,1,1,2-Tetrachloroethane	48.5	0.4	ug/L	50.0		97.0	80-130			
1,1,1-Trichloroethane	54.4	1	ug/L	50.0		109	65-130			
1,1,2,2-Tetrachloroethane	45.8	0.4	ug/L	50.0		91.7	65-130			
1,1,2-Trichloroethane	50.8	1	ug/L	50.0		102	75-125			
1,1-Dichloroethane	52.6	1	ug/L	50.0		105	70-135			

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
LCS (BHA0377-BS1)				Prepared & Analyzed: 01/11/2024						
1,1-Dichloroethylene	59.1	1	ug/L	50.0		118	70-130			
1,1-Dichloropropene	58.0	1	ug/L	50.0		116	75-135			
1,2,3-Trichlorobenzene	47.2	1	ug/L	50.0		94.4	55-140			
1,2,3-Trichloropropane	44.3	1	ug/L	50.0		88.6	75-125			
1,2,4-Trichlorobenzene	47.7	1	ug/L	50.0		95.5	65-135			
1,2,4-Trimethylbenzene	44.4	1	ug/L	50.0		88.8	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	39.2	1	ug/L	50.0		78.4	50-130			
1,2-Dibromoethane (EDB)	46.9	1	ug/L	50.0		93.8	80-120			
1,2-Dichlorobenzene	47.0	0.5	ug/L	50.0		94.0	70-120			
1,2-Dichloroethane	44.1	1	ug/L	50.0		88.1	70-130			
1,2-Dichloropropane	48.2	0.5	ug/L	50.0		96.4	75-125			
1,3,5-Trimethylbenzene	43.9	1	ug/L	50.0		87.8	75-125			
1,3-Dichlorobenzene	47.2	1	ug/L	50.0		94.3	75-125			
1,3-Dichloropropane	47.4	1	ug/L	50.0		94.9	75-125			
1,4-Dichlorobenzene	45.9	1	ug/L	50.0		91.8	75-125			
2,2-Dichloropropane	55.3	1	ug/L	50.0		111	70-135			
2-Butanone (MEK)	46.7	10	ug/L	50.0		93.4	30-150			
2-Chlorotoluene	48.9	1	ug/L	50.0		97.8	75-125			
2-Hexanone (MBK)	39.9	5	ug/L	50.0		79.8	55-130			
4-Chlorotoluene	47.4	1	ug/L	50.0		94.8	75-130			
4-Isopropyltoluene	48.6	1	ug/L	50.0		97.1	75-130			
4-Methyl-2-pentanone (MIBK)	42.6	5	ug/L	50.0		85.1	60-135			
Acetone	45.9	10	ug/L	50.0		91.8	40-140			
Benzene	50.0	1	ug/L	50.0		100	80-120			
Bromobenzene	51.9	1	ug/L	50.0		104	75-125			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
LCS (BHA0377-BS1)				Prepared & Analyzed: 01/11/2024						
Bromochloromethane	52.6	1	ug/L	50.0		105	65-130			
Bromodichloromethane	49.3	0.5	ug/L	50.0		98.7	75-120			
Bromoform	48.4	1	ug/L	50.0		96.9	70-130			
Bromomethane	44.5	1	ug/L	50.0		89.0	30-145			
Carbon disulfide	47.7	10	ug/L	50.0		95.3	35-160			
Carbon tetrachloride	57.1	1	ug/L	50.0		114	65-140			
Chlorobenzene	50.3	1	ug/L	50.0		101	80-120			
Chloroethane	48.4	1	ug/L	50.0		96.8	60-135			
Chloroform	49.6	0.5	ug/L	50.0		99.3	65-135			
Chloromethane	41.1	1	ug/L	50.0		82.2	40-125			
cis-1,2-Dichloroethylene	53.8	1	ug/L	50.0		108	70-125			
cis-1,3-Dichloropropene	49.7	1	ug/L	50.0		99.4	70-130			
Dibromochloromethane	52.5	0.5	ug/L	50.0		105	60-135			
Dibromomethane	49.1	1	ug/L	50.0		98.3	75-125			
Dichlorodifluoromethane	41.1	1	ug/L	50.0		82.1	30-155			
Ethylbenzene	50.3	1	ug/L	50.0		101	75-125			
Hexachlorobutadiene	53.9	0.8	ug/L	50.0		108	50-140			
Isopropylbenzene	47.4	1	ug/L	50.0		94.7	75-125			
m+p-Xylenes	104	2	ug/L	100		104	75-130			
Methylene chloride	53.3	4	ug/L	50.0		107	55-140			
Methyl-t-butyl ether (MTBE)	46.7	1	ug/L	50.0		93.3	65-125			
Naphthalene	46.0	1	ug/L	50.0		92.1	55-140			
n-Butylbenzene	45.5	1	ug/L	50.0		91.0	70-135			
n-Propylbenzene	48.4	1	ug/L	50.0		96.7	70-130			
o-Xylene	50.1	1	ug/L	50.0		100	80-120			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
LCS (BHA0377-BS1)				Prepared & Analyzed: 01/11/2024						
sec-Butylbenzene	50.2	1	ug/L	50.0		100	70-125			
Styrene	47.6	1	ug/L	50.0		95.3	65-135			
tert-Butylbenzene	46.4	1	ug/L	50.0		92.9	70-130			
Tetrachloroethylene (PCE)	60.1	1	ug/L	50.0		120	45-150			
Toluene	53.6	1	ug/L	50.0		107	75-120			
trans-1,2-Dichloroethylene	57.0	1	ug/L	50.0		114	60-140			
trans-1,3-Dichloropropene	50.3	1	ug/L	50.0		101	55-140			
Trichloroethylene	54.2	1	ug/L	50.0		108	70-125			
Trichlorofluoromethane	58.0	1	ug/L	50.0		116	60-145			
Vinyl chloride	49.4	0.5	ug/L	50.0		98.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*49.6*		ug/L	*50.0*		*99.3*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.6*		ug/L	*50.0*		*97.3*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*52.2*		ug/L	*50.0*		*104*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.4*		ug/L	*50.0*		*96.7*	*70-130*			
Duplicate (BHA0377-DUP1)	**Source: 24A0475-01**			Prepared & Analyzed: 01/11/2024						
1,1,1,2-Tetrachloroethane	ND	8.00	ug/L		BLOD			NA	30	
1,1,1-Trichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1,2,2-Tetrachloroethane	ND	8.00	ug/L		BLOD			NA	30	
1,1,2-Trichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
1,2,3-Trichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2,3-Trichloropropane	ND	20.0	ug/L		BLOD			NA	30	

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0377 - SW5030B-MS

Duplicate (BHA0377-DUP1) **Source: 24A0475-01** Prepared & Analyzed: 01/11/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2,4-Trimethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dibromo-3-chloropropane (DBCP)	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dibromoethane (EDB)	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dichlorobenzene	ND	10.0	ug/L		BLOD			NA	30	
1,2-Dichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dichloropropane	ND	10.0	ug/L		BLOD			NA	30	
1,3,5-Trimethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
1,3-Dichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,3-Dichloropropane	ND	20.0	ug/L		BLOD			NA	30	
1,4-Dichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,4-Dioxane	ND	1600	ug/L		BLOD			NA	30	
2,2-Dichloropropane	ND	20.0	ug/L		BLOD			NA	30	
2-Butanone (MEK)	ND	200	ug/L		BLOD			NA	30	
2-Chloroethyl vinyl ether	ND	200	ug/L		BLOD			NA	30	
2-Chlorotoluene	ND	20.0	ug/L		BLOD			NA	30	
2-Hexanone (MBK)	ND	100	ug/L		BLOD			NA	30	
4-Chlorotoluene	ND	20.0	ug/L		BLOD			NA	30	
4-Isopropyltoluene	ND	20.0	ug/L		BLOD			NA	30	
4-Methyl-2-pentanone (MIBK)	ND	100	ug/L		BLOD			NA	30	
Acetone	ND	200	ug/L		BLOD			NA	30	
Acetonitrile	ND	200	ug/L		BLOD			NA	30	
Acrolein	ND	200	ug/L		BLOD			NA	30	
Acrylonitrile	ND	100	ug/L		BLOD			NA	30	
Allyl chloride	ND	20.0	ug/L		BLOD			NA	30	

Certificate of Analysis

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Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Duplicate (BHA0377-DUP1)	**Source: 24A0475-01**		Prepared & Analyzed: 01/11/2024							
Benzene	ND	20.0	ug/L		BLOD			NA	30	
Bromobenzene	ND	20.0	ug/L		BLOD			NA	30	
Bromochloromethane	ND	20.0	ug/L		BLOD			NA	30	
Bromodichloromethane	ND	10.0	ug/L		BLOD			NA	30	
Bromoform	ND	20.0	ug/L		BLOD			NA	30	
Bromomethane	ND	20.0	ug/L		BLOD			NA	30	
Carbon disulfide	ND	200	ug/L		BLOD			NA	30	
Carbon tetrachloride	ND	20.0	ug/L		BLOD			NA	30	
Chlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
Chloroethane	ND	20.0	ug/L		BLOD			NA	30	
Chloroform	ND	10.0	ug/L		BLOD			NA	30	
Chloromethane	ND	20.0	ug/L		BLOD			NA	30	
Chloroprene	ND	100	ug/L		BLOD			NA	30	
cis-1,2-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
cis-1,3-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
Cyclohexane	ND	20.0	ug/L		BLOD			NA	30	
Dibromochloromethane	ND	10.0	ug/L		BLOD			NA	30	
Dibromomethane	ND	20.0	ug/L		BLOD			NA	30	
Dichlorodifluoromethane	ND	20.0	ug/L		BLOD			NA	30	
Di-isopropyl ether (DIPE)	ND	100	ug/L		BLOD			NA	30	
Ethanol	ND	1600	ug/L		BLOD			NA	30	
Ethyl methacrylate	ND	100	ug/L		BLOD			NA	30	
Ethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Ethyl-t-butyl ether (ETBE)	ND	500	ug/L		BLOD			NA	30	
Hexachlorobutadiene	ND	16.0	ug/L		BLOD			NA	30	

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0377 - SW5030B-MS

Duplicate (BHA0377-DUP1) **Source: 24A0475-01** Prepared & Analyzed: 01/11/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Iodomethane	ND	200	ug/L		BLOD			NA	30	
Isopropylbenzene	ND	20.0	ug/L		BLOD			NA	30	
m+p-Xylenes	ND	40.0	ug/L		BLOD			NA	30	
Methacrylonitrile	ND	30.0	ug/L		BLOD			NA	30	
Methyl acetate	ND	80.0	ug/L		BLOD			NA	30	
Methyl cyclohexane	ND	20.0	ug/L		BLOD			NA	30	
Methyl methacrylate	ND	40.0	ug/L		BLOD			NA	30	
Methylene chloride	ND	80.0	ug/L		BLOD			NA	30	
Methyl-t-butyl ether (MTBE)	ND	20.0	ug/L		BLOD			NA	30	
Naphthalene	ND	20.0	ug/L		BLOD			NA	30	
n-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
n-Propylbenzene	ND	20.0	ug/L		BLOD			NA	30	
o-Xylene	ND	20.0	ug/L		BLOD			NA	30	
Pentachloroethane	ND	200	ug/L		BLOD			NA	30	
Propionitrile	ND	800	ug/L		BLOD			NA	30	
sec-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Styrene	ND	20.0	ug/L		BLOD			NA	30	
TAEE	ND	100	ug/L		BLOD			NA	30	
TAME	ND	100	ug/L		BLOD			NA	30	
TBA	ND	2000	ug/L		BLOD			NA	30	
tert-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Tetrachloroethylene (PCE)	ND	20.0	ug/L		BLOD			NA	30	
Toluene	ND	20.0	ug/L		BLOD			NA	30	
trans-1,2-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
trans-1,3-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Duplicate (BHA0377-DUP1)	**Source: 24A0475-01**		Prepared & Analyzed: 01/11/2024							
trans-1,4-Dichloro-2-butene	ND	80.0	ug/L		BLOD			NA	30	
Trichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
Trichlorofluoromethane	ND	20.0	ug/L		BLOD			NA	30	
Vinyl acetate	ND	200	ug/L		BLOD			NA	30	
Vinyl chloride	ND	10.0	ug/L		BLOD			NA	30	
Xylenes, Total	ND	60.0	ug/L		BLOD			NA	30	
Tetrahydrofuran	ND	200	ug/L		BLOD			NA	30	
Diethyl ether	ND	100	ug/L		BLOD			NA	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	*45.8*		ug/L	*50.0*		*91.6*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.4*		ug/L	*50.0*		*96.7*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*48.0*		ug/L	*50.0*		*96.1*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.0*		ug/L	*50.0*		*95.9*	*70-130*			
Matrix Spike (BHA0377-MS1)	**Source: 24A0475-01**		Prepared & Analyzed: 01/11/2024							
1,1,1,2-Tetrachloroethane	48.7	0.4	ug/L	50.0	BLOD	97.4	80-130			
1,1,1-Trichloroethane	51.6	1	ug/L	50.0	BLOD	103	65-130			
1,1,2,2-Tetrachloroethane	47.4	0.4	ug/L	50.0	BLOD	94.8	65-130			
1,1,2-Trichloroethane	51.7	1	ug/L	50.0	BLOD	103	75-125			
1,1-Dichloroethane	51.1	1	ug/L	50.0	BLOD	102	70-135			
1,1-Dichloroethylene	57.3	1	ug/L	50.0	BLOD	115	50-145			
1,1-Dichloropropene	55.2	1	ug/L	50.0	BLOD	110	75-135			
1,2,3-Trichlorobenzene	48.7	1	ug/L	50.0	BLOD	97.4	55-140			
1,2,3-Trichloropropane	45.3	1	ug/L	50.0	BLOD	90.7	75-125			
1,2,4-Trichlorobenzene	48.4	1	ug/L	50.0	BLOD	96.8	65-135			
1,2,4-Trimethylbenzene	43.9	1	ug/L	50.0	BLOD	87.9	75-130			

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Matrix Spike (BHA0377-MS1)	**Source: 24A0475-01**		Prepared & Analyzed: 01/11/2024							
1,2-Dibromo-3-chloropropane (DBCP)	41.2	1	ug/L	50.0	BLOD	82.4	50-130			
1,2-Dibromoethane (EDB)	48.7	1	ug/L	50.0	BLOD	97.4	80-120			
1,2-Dichlorobenzene	46.7	0.5	ug/L	50.0	BLOD	93.4	70-120			
1,2-Dichloroethane	42.8	1	ug/L	50.0	BLOD	85.7	70-130			
1,2-Dichloropropane	48.7	0.5	ug/L	50.0	BLOD	97.5	75-125			
1,3,5-Trimethylbenzene	43.4	1	ug/L	50.0	BLOD	86.8	75-124			
1,3-Dichlorobenzene	47.4	1	ug/L	50.0	BLOD	94.8	75-125			
1,3-Dichloropropane	48.0	1	ug/L	50.0	BLOD	96.0	75-125			
1,4-Dichlorobenzene	45.9	1	ug/L	50.0	BLOD	91.8	75-125			
2,2-Dichloropropane	53.4	1	ug/L	50.0	BLOD	107	70-135			
2-Butanone (MEK)	46.1	10	ug/L	50.0	BLOD	92.2	30-150			
2-Chlorotoluene	48.1	1	ug/L	50.0	BLOD	96.3	75-125			
2-Hexanone (MBK)	44.5	5	ug/L	50.0	BLOD	88.9	55-130			
4-Chlorotoluene	45.8	1	ug/L	50.0	BLOD	91.6	75-130			
4-Isopropyltoluene	46.9	1	ug/L	50.0	BLOD	93.8	75-130			
4-Methyl-2-pentanone (MIBK)	47.7	5	ug/L	50.0	BLOD	95.4	60-135			
Acetone	49.2	10	ug/L	50.0	BLOD	98.5	40-140			
Benzene	49.3	1	ug/L	50.0	BLOD	98.6	80-120			
Bromobenzene	51.5	1	ug/L	50.0	BLOD	103	75-125			
Bromochloromethane	51.8	1	ug/L	50.0	BLOD	104	65-130			
Bromodichloromethane	48.9	0.5	ug/L	50.0	BLOD	97.8	75-136			
Bromoform	49.6	1	ug/L	50.0	BLOD	99.2	70-130			
Bromomethane	45.6	1	ug/L	50.0	BLOD	91.3	30-145			
Carbon disulfide	58.1	10	ug/L	50.0	BLOD	116	35-160			
Carbon tetrachloride	55.6	1	ug/L	50.0	BLOD	111	65-140			

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0377 - SW5030B-MS

Matrix Spike (BHA0377-MS1) **Source: 24A0475-01** Prepared & Analyzed: 01/11/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Chlorobenzene	50.2	1	ug/L	50.0	BLOD	100	80-120			
Chloroethane	46.7	1	ug/L	50.0	BLOD	93.4	60-135			
Chloroform	47.9	0.5	ug/L	50.0	BLOD	95.9	65-135			
Chloromethane	39.8	1	ug/L	50.0	BLOD	79.5	40-125			
cis-1,2-Dichloroethylene	52.9	1	ug/L	50.0	BLOD	106	70-125			
cis-1,3-Dichloropropene	49.4	1	ug/L	50.0	BLOD	98.9	47-136			
Dibromochloromethane	52.2	0.5	ug/L	50.0	BLOD	104	60-135			
Dibromomethane	49.2	1	ug/L	50.0	BLOD	98.4	75-125			
Dichlorodifluoromethane	40.7	1	ug/L	50.0	BLOD	81.5	30-155			
Ethylbenzene	48.0	1	ug/L	50.0	BLOD	96.0	75-125			
Hexachlorobutadiene	53.8	0.8	ug/L	50.0	BLOD	108	50-140			
Isopropylbenzene	45.7	1	ug/L	50.0	BLOD	91.5	75-125			
m+p-Xylenes	100	2	ug/L	100	BLOD	100	75-130			
Methylene chloride	51.4	4	ug/L	50.0	BLOD	103	55-140			
Methyl-t-butyl ether (MTBE)	45.6	1	ug/L	50.0	BLOD	91.1	65-125			
Naphthalene	49.1	1	ug/L	50.0	BLOD	98.2	55-140			
n-Butylbenzene	45.0	1	ug/L	50.0	BLOD	89.9	70-135			
n-Propylbenzene	47.6	1	ug/L	50.0	BLOD	95.2	70-130			
o-Xylene	49.9	1	ug/L	50.0	BLOD	99.8	80-120			
sec-Butylbenzene	49.5	1	ug/L	50.0	BLOD	99.0	70-125			
Styrene	47.1	1	ug/L	50.0	BLOD	94.3	65-135			
tert-Butylbenzene	47.4	1	ug/L	50.0	BLOD	94.7	70-130			
Tetrachloroethylene (PCE)	58.9	1	ug/L	50.0	BLOD	118	51-231			
Toluene	54.0	1	ug/L	50.0	BLOD	108	75-120			
trans-1,2-Dichloroethylene	54.8	1	ug/L	50.0	BLOD	110	60-140			

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0377 - SW5030B-MS										
Matrix Spike (BHA0377-MS1)	**Source: 24A0475-01**			Prepared & Analyzed: 01/11/2024						
trans-1,3-Dichloropropene	51.0	1	ug/L	50.0	BLOD	102	55-140			
Trichloroethylene	54.3	1	ug/L	50.0	BLOD	109	70-125			
Trichlorofluoromethane	57.2	1	ug/L	50.0	BLOD	114	60-145			
Vinyl chloride	46.6	0.5	ug/L	50.0	BLOD	93.1	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*46.3*		ug/L	*50.0*		*92.6*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*47.3*		ug/L	*50.0*		*94.6*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*50.0*		ug/L	*50.0*		*100*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.3*		ug/L	*50.0*		*96.6*	*70-130*			
Batch BHA0433 - SW5030B-MS										
Blank (BHA0433-BLK1)				Prepared & Analyzed: 01/12/2024						
1,1,1,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,1-Trichloroethane	ND	1.00	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,2-Trichloroethane	ND	1.00	ug/L							
1,1-Dichloroethane	ND	1.00	ug/L							
1,1-Dichloroethylene	ND	1.00	ug/L							
1,1-Dichloropropene	ND	1.00	ug/L							
1,2,3-Trichlorobenzene	ND	1.00	ug/L							
1,2,3-Trichloropropane	ND	1.00	ug/L							
1,2,4-Trichlorobenzene	ND	1.00	ug/L							
1,2,4-Trimethylbenzene	ND	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.00	ug/L							
1,2-Dibromoethane (EDB)	ND	1.00	ug/L							
1,2-Dichlorobenzene	ND	0.50	ug/L							

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Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Blank (BHA0433-BLK1)				Prepared & Analyzed: 01/12/2024						
1,2-Dichloroethane	ND	1.00	ug/L							
1,2-Dichloropropane	ND	0.50	ug/L							
1,3,5-Trimethylbenzene	ND	1.00	ug/L							
1,3-Dichlorobenzene	ND	1.00	ug/L							
1,3-Dichloropropane	ND	1.00	ug/L							
1,4-Dichlorobenzene	ND	1.00	ug/L							
2,2-Dichloropropane	ND	1.00	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.00	ug/L							
2-Hexanone (MBK)	ND	5.00	ug/L							
4-Chlorotoluene	ND	1.00	ug/L							
4-Isopropyltoluene	ND	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	5.00	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.00	ug/L							
Bromobenzene	ND	1.00	ug/L							
Bromochloromethane	ND	1.00	ug/L							
Bromodichloromethane	ND	0.50	ug/L							
Bromoform	ND	1.00	ug/L							
Bromomethane	ND	1.00	ug/L							
Carbon disulfide	ND	10.0	ug/L							
Carbon tetrachloride	ND	1.00	ug/L							
Chlorobenzene	ND	1.00	ug/L							
Chloroethane	ND	1.00	ug/L							
Chloroform	ND	0.50	ug/L							

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Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Blank (BHA0433-BLK1)				Prepared & Analyzed: 01/12/2024						
Chloromethane	ND	1.00	ug/L							
cis-1,2-Dichloroethylene	ND	1.00	ug/L							
cis-1,3-Dichloropropene	ND	1.00	ug/L							
Dibromochloromethane	ND	0.50	ug/L							
Dibromomethane	ND	1.00	ug/L							
Dichlorodifluoromethane	ND	1.00	ug/L							
Di-isopropyl ether (DIPE)	ND	5.00	ug/L							
Ethylbenzene	ND	1.00	ug/L							
Hexachlorobutadiene	ND	0.80	ug/L							
Iodomethane	ND	10.0	ug/L							
Isopropylbenzene	ND	1.00	ug/L							
m+p-Xylenes	ND	2.00	ug/L							
Methylene chloride	ND	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	ND	1.00	ug/L							
Naphthalene	ND	1.00	ug/L							
n-Butylbenzene	ND	1.00	ug/L							
n-Propylbenzene	ND	1.00	ug/L							
o-Xylene	ND	1.00	ug/L							
sec-Butylbenzene	ND	1.00	ug/L							
Styrene	ND	1.00	ug/L							
tert-Butylbenzene	ND	1.00	ug/L							
Tetrachloroethylene (PCE)	ND	1.00	ug/L							
Toluene	ND	1.00	ug/L							
trans-1,2-Dichloroethylene	ND	1.00	ug/L							
trans-1,3-Dichloropropene	ND	1.00	ug/L							

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Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Blank (BHA0433-BLK1)				Prepared & Analyzed: 01/12/2024						
Trichloroethylene	ND	1.00	ug/L							
Trichlorofluoromethane	ND	1.00	ug/L							
Vinyl acetate	ND	10.0	ug/L							
Vinyl chloride	ND	0.50	ug/L							
Xylenes, Total	ND	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	*43.6*		ug/L	*50.0*		*87.1*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.0*		ug/L	*50.0*		*95.9*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*45.1*		ug/L	*50.0*		*90.3*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.2*		ug/L	*50.0*		*96.3*	*70-130*			
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
1,1,1,2-Tetrachloroethane	46.6	0.4	ug/L	50.0		93.3	80-130			
1,1,1-Trichloroethane	51.0	1	ug/L	50.0		102	65-130			
1,1,2,2-Tetrachloroethane	44.2	0.4	ug/L	50.0		88.4	65-130			
1,1,2-Trichloroethane	49.2	1	ug/L	50.0		98.4	75-125			
1,1-Dichloroethane	49.6	1	ug/L	50.0		99.3	70-135			
1,1-Dichloroethylene	54.2	1	ug/L	50.0		108	70-130			
1,1-Dichloropropene	53.9	1	ug/L	50.0		108	75-135			
1,2,3-Trichlorobenzene	46.6	1	ug/L	50.0		93.1	55-140			
1,2,3-Trichloropropane	42.7	1	ug/L	50.0		85.3	75-125			
1,2,4-Trichlorobenzene	47.9	1	ug/L	50.0		95.8	65-135			
1,2,4-Trimethylbenzene	43.8	1	ug/L	50.0		87.6	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	38.2	1	ug/L	50.0		76.4	50-130			
1,2-Dibromoethane (EDB)	45.5	1	ug/L	50.0		91.0	80-120			
1,2-Dichlorobenzene	46.3	0.5	ug/L	50.0		92.6	70-120			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
1,2-Dichloroethane	42.3	1	ug/L	50.0		84.6	70-130			
1,2-Dichloropropane	46.8	0.5	ug/L	50.0		93.7	75-125			
1,3,5-Trimethylbenzene	42.8	1	ug/L	50.0		85.6	75-125			
1,3-Dichlorobenzene	45.8	1	ug/L	50.0		91.7	75-125			
1,3-Dichloropropane	45.4	1	ug/L	50.0		90.9	75-125			
1,4-Dichlorobenzene	44.6	1	ug/L	50.0		89.1	75-125			
2,2-Dichloropropane	52.4	1	ug/L	50.0		105	70-135			
2-Butanone (MEK)	50.0	10	ug/L	50.0		100	30-150			
2-Chlorotoluene	47.4	1	ug/L	50.0		94.8	75-125			
2-Hexanone (MBK)	40.4	5	ug/L	50.0		80.8	55-130			
4-Chlorotoluene	45.8	1	ug/L	50.0		91.5	75-130			
4-Isopropyltoluene	46.6	1	ug/L	50.0		93.1	75-130			
4-Methyl-2-pentanone (MIBK)	42.8	5	ug/L	50.0		85.7	60-135			
Acetone	42.2	10	ug/L	50.0		84.3	40-140			
Benzene	47.6	1	ug/L	50.0		95.3	80-120			
Bromobenzene	50.1	1	ug/L	50.0		100	75-125			
Bromochloromethane	50.9	1	ug/L	50.0		102	65-130			
Bromodichloromethane	47.4	0.5	ug/L	50.0		94.7	75-120			
Bromoform	46.6	1	ug/L	50.0		93.2	70-130			
Bromomethane	41.0	1	ug/L	50.0		82.0	30-145			
Carbon disulfide	46.7	10	ug/L	50.0		93.3	35-160			
Carbon tetrachloride	55.1	1	ug/L	50.0		110	65-140			
Chlorobenzene	48.4	1	ug/L	50.0		96.8	80-120			
Chloroethane	46.8	1	ug/L	50.0		93.5	60-135			
Chloroform	47.5	0.5	ug/L	50.0		95.0	65-135			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
Chloromethane	37.6	1	ug/L	50.0		75.2	40-125			
cis-1,2-Dichloroethylene	52.2	1	ug/L	50.0		104	70-125			
cis-1,3-Dichloropropene	47.1	1	ug/L	50.0		94.3	70-130			
Dibromochloromethane	49.8	0.5	ug/L	50.0		99.6	60-135			
Dibromomethane	47.1	1	ug/L	50.0		94.2	75-125			
Dichlorodifluoromethane	38.9	1	ug/L	50.0		77.7	30-155			
Ethylbenzene	47.6	1	ug/L	50.0		95.2	75-125			
Hexachlorobutadiene	52.1	0.8	ug/L	50.0		104	50-140			
Isopropylbenzene	45.5	1	ug/L	50.0		91.0	75-125			
m+p-Xylenes	99.4	2	ug/L	100		99.4	75-130			
Methylene chloride	49.5	4	ug/L	50.0		99.0	55-140			
Methyl-t-butyl ether (MTBE)	43.4	1	ug/L	50.0		86.7	65-125			
Naphthalene	44.4	1	ug/L	50.0		88.8	55-140			
n-Butylbenzene	44.8	1	ug/L	50.0		89.7	70-135			
n-Propylbenzene	47.8	1	ug/L	50.0		95.6	70-130			
o-Xylene	48.4	1	ug/L	50.0		96.9	80-120			
sec-Butylbenzene	48.8	1	ug/L	50.0		97.7	70-125			
Styrene	45.7	1	ug/L	50.0		91.4	65-135			
tert-Butylbenzene	47.0	1	ug/L	50.0		94.0	70-130			
Tetrachloroethylene (PCE)	55.4	1	ug/L	50.0		111	45-150			
Toluene	51.1	1	ug/L	50.0		102	75-120			
trans-1,2-Dichloroethylene	53.9	1	ug/L	50.0		108	60-140			
trans-1,3-Dichloropropene	48.9	1	ug/L	50.0		97.7	55-140			
Trichloroethylene	51.8	1	ug/L	50.0		104	70-125			
Trichlorofluoromethane	53.8	1	ug/L	50.0		108	60-145			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
Vinyl chloride	45.4	0.5	ug/L	50.0		90.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*45.9*		ug/L	*50.0*		*91.7*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*47.4*		ug/L	*50.0*		*94.9*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*48.5*		ug/L	*50.0*		*97.1*	*70-130*			
Surr: Toluene-d8 (Surr)	*47.6*		ug/L	*50.0*		*95.2*	*70-130*			
Duplicate (BHA0433-DUP1)	**Source: 24A0505-01**			Prepared & Analyzed: 01/12/2024						
1,1,1,2-Tetrachloroethane	ND	8.00	ug/L		BLOD			NA	30	
1,1,1-Trichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1,2,2-Tetrachloroethane	ND	8.00	ug/L		BLOD			NA	30	
1,1,2-Trichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
1,2,3-Trichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2,3-Trichloropropane	ND	20.0	ug/L		BLOD			NA	30	
1,2,4-Trichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2,4-Trimethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dibromo-3-chloropropane (DBCP)	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dibromoethane (EDB)	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dichlorobenzene	ND	10.0	ug/L		BLOD			NA	30	
1,2-Dichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dichloropropane	ND	10.0	ug/L		BLOD			NA	30	
1,3,5-Trimethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
1,3-Dichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0433 - SW5030B-MS

Duplicate (BHA0433-DUP1) **Source: 24A0505-01** Prepared & Analyzed: 01/12/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,3-Dichloropropane	ND	20.0	ug/L		BLOD			NA	30	
1,4-Dichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
2,2-Dichloropropane	ND	20.0	ug/L		BLOD			NA	30	
2-Butanone (MEK)	305	200	ug/L		345			12.2	30	
2-Chlorotoluene	ND	20.0	ug/L		BLOD			NA	30	
2-Hexanone (MBK)	ND	100	ug/L		BLOD			NA	30	
4-Chlorotoluene	ND	20.0	ug/L		BLOD			NA	30	
4-Isopropyltoluene	ND	20.0	ug/L		BLOD			NA	30	
4-Methyl-2-pentanone (MIBK)	66.4	100	ug/L		71.6			NA	30	
Acetone	ND	200	ug/L		BLOD			NA	30	
Benzene	ND	20.0	ug/L		BLOD			NA	30	
Bromobenzene	ND	20.0	ug/L		BLOD			NA	30	
Bromochloromethane	ND	20.0	ug/L		BLOD			NA	30	
Bromodichloromethane	ND	10.0	ug/L		BLOD			NA	30	
Bromoform	ND	20.0	ug/L		BLOD			NA	30	
Bromomethane	ND	20.0	ug/L		BLOD			NA	30	
Carbon disulfide	ND	200	ug/L		BLOD			NA	30	
Carbon tetrachloride	ND	20.0	ug/L		BLOD			NA	30	
Chlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
Chloroethane	ND	20.0	ug/L		BLOD			NA	30	
Chloroform	ND	10.0	ug/L		BLOD			NA	30	
Chloromethane	ND	20.0	ug/L		BLOD			NA	30	
cis-1,2-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
cis-1,3-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
Dibromochloromethane	ND	10.0	ug/L		BLOD			NA	30	

Certificate of Analysis

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Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0433 - SW5030B-MS

Duplicate (BHA0433-DUP1) **Source: 24A0505-01** Prepared & Analyzed: 01/12/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Dibromomethane	ND	20.0	ug/L		BLOD			NA	30	
Dichlorodifluoromethane	ND	20.0	ug/L		BLOD			NA	30	
Di-isopropyl ether (DIPE)	ND	100	ug/L		BLOD			NA	30	
Ethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Hexachlorobutadiene	ND	16.0	ug/L		BLOD			NA	30	
Iodomethane	ND	200	ug/L		BLOD			NA	30	
Isopropylbenzene	ND	20.0	ug/L		BLOD			NA	30	
m+p-Xylenes	ND	40.0	ug/L		BLOD			NA	30	
Methylene chloride	ND	80.0	ug/L		BLOD			NA	30	
Methyl-t-butyl ether (MTBE)	ND	20.0	ug/L		BLOD			NA	30	
Naphthalene	ND	20.0	ug/L		BLOD			NA	30	
n-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
n-Propylbenzene	ND	20.0	ug/L		BLOD			NA	30	
o-Xylene	ND	20.0	ug/L		BLOD			NA	30	
sec-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Styrene	ND	20.0	ug/L		BLOD			NA	30	
tert-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Tetrachloroethylene (PCE)	ND	20.0	ug/L		BLOD			NA	30	
Toluene	64.4	20.0	ug/L		62.8			2.52	30	
trans-1,2-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
trans-1,3-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
Trichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
Trichlorofluoromethane	ND	20.0	ug/L		BLOD			NA	30	
Vinyl acetate	ND	200	ug/L		BLOD			NA	30	
Vinyl chloride	ND	10.0	ug/L		BLOD			NA	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Duplicate (BHA0433-DUP1)	**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024							
Xylenes, Total	ND	60.0	ug/L		BLOD			NA	30	
Tetrahydrofuran	ND	200	ug/L		BLOD			NA	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	*43.3*		ug/L	*50.0*		*86.6*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.0*		ug/L	*50.0*		*96.0*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*42.2*		ug/L	*50.0*		*84.5*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.8*		ug/L	*50.0*		*97.6*	*70-130*			
Matrix Spike (BHA0433-MS1)	**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024							
1,1,1,2-Tetrachloroethane	46.1	0.4	ug/L	50.0	BLOD	92.3	80-130			
1,1,1-Trichloroethane	46.3	1	ug/L	50.0	BLOD	92.6	65-130			
1,1,2,2-Tetrachloroethane	44.8	0.4	ug/L	50.0	BLOD	89.6	65-130			
1,1,2-Trichloroethane	49.4	1	ug/L	50.0	BLOD	98.9	75-125			
1,1-Dichloroethane	42.8	1	ug/L	50.0	BLOD	85.7	70-135			
1,1-Dichloroethylene	48.7	1	ug/L	50.0	BLOD	97.4	50-145			
1,1-Dichloropropene	50.0	1	ug/L	50.0	BLOD	100	75-135			
1,2,3-Trichlorobenzene	48.9	1	ug/L	50.0	BLOD	97.8	55-140			
1,2,3-Trichloropropane	42.9	1	ug/L	50.0	BLOD	85.9	75-125			
1,2,4-Trichlorobenzene	48.7	1	ug/L	50.0	BLOD	97.3	65-135			
1,2,4-Trimethylbenzene	43.3	1	ug/L	50.0	BLOD	86.6	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	38.1	1	ug/L	50.0	BLOD	76.2	50-130			
1,2-Dibromoethane (EDB)	46.0	1	ug/L	50.0	BLOD	92.1	80-120			
1,2-Dichlorobenzene	45.7	0.5	ug/L	50.0	BLOD	91.5	70-120			
1,2-Dichloroethane	38.7	1	ug/L	50.0	BLOD	77.4	70-130			
1,2-Dichloropropane	46.8	0.5	ug/L	50.0	BLOD	93.6	75-125			
1,3,5-Trimethylbenzene	42.6	1	ug/L	50.0	BLOD	85.1	75-124			

Certificate of Analysis

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Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0433 - SW5030B-MS

Matrix Spike (BHA0433-MS1) **Source: 24A0505-01** Prepared & Analyzed: 01/12/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,3-Dichlorobenzene	45.5	1	ug/L	50.0	BLOD	91.1	75-125			
1,3-Dichloropropane	46.2	1	ug/L	50.0	BLOD	92.4	75-125			
1,4-Dichlorobenzene	44.9	1	ug/L	50.0	BLOD	89.8	75-125			
2,2-Dichloropropane	46.9	1	ug/L	50.0	BLOD	93.8	70-135			
2-Butanone (MEK)	57.2	10	ug/L	50.0	17.2	79.9	30-150			
2-Chlorotoluene	46.4	1	ug/L	50.0	BLOD	92.7	75-125			
2-Hexanone (MBK)	42.2	5	ug/L	50.0	BLOD	84.5	55-130			
4-Chlorotoluene	44.9	1	ug/L	50.0	BLOD	89.8	75-130			
4-Isopropyltoluene	47.4	1	ug/L	50.0	BLOD	94.9	75-130			
4-Methyl-2-pentanone (MIBK)	48.0	5	ug/L	50.0	3.58	88.8	60-135			
Acetone	42.3	10	ug/L	50.0	BLOD	84.7	40-140			
Benzene	48.5	1	ug/L	50.0	BLOD	97.1	80-120			
Bromobenzene	50.3	1	ug/L	50.0	BLOD	101	75-125			
Bromochloromethane	44.6	1	ug/L	50.0	BLOD	89.1	65-130			
Bromodichloromethane	47.2	0.5	ug/L	50.0	BLOD	94.4	75-136			
Bromoform	46.0	1	ug/L	50.0	BLOD	92.0	70-130			
Bromomethane	40.2	1	ug/L	50.0	BLOD	80.3	30-145			
Carbon disulfide	42.4	10	ug/L	50.0	BLOD	84.8	35-160			
Carbon tetrachloride	55.0	1	ug/L	50.0	BLOD	110	65-140			
Chlorobenzene	47.8	1	ug/L	50.0	BLOD	95.5	80-120			
Chloroethane	41.3	1	ug/L	50.0	BLOD	82.6	60-135			
Chloroform	42.9	0.5	ug/L	50.0	BLOD	85.9	65-135			
Chloromethane	34.5	1	ug/L	50.0	BLOD	69.0	40-125			
cis-1,2-Dichloroethylene	43.8	1	ug/L	50.0	BLOD	87.6	70-125			
cis-1,3-Dichloropropene	47.2	1	ug/L	50.0	BLOD	94.4	47-136			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

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Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Matrix Spike (BHA0433-MS1)		**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024						
Dibromochloromethane	50.5	0.5	ug/L	50.0	BLOD	101	60-135			
Dibromomethane	47.6	1	ug/L	50.0	BLOD	95.1	75-125			
Dichlorodifluoromethane	36.1	1	ug/L	50.0	BLOD	72.2	30-155			
Ethylbenzene	47.8	1	ug/L	50.0	BLOD	95.5	75-125			
Hexachlorobutadiene	52.0	0.8	ug/L	50.0	BLOD	104	50-140			
Isopropylbenzene	45.7	1	ug/L	50.0	BLOD	91.4	75-125			
m+p-Xylenes	97.6	2	ug/L	100	BLOD	97.1	75-130			
Methylene chloride	43.6	4	ug/L	50.0	BLOD	86.3	55-140			
Methyl-t-butyl ether (MTBE)	37.4	1	ug/L	50.0	BLOD	74.8	65-125			
Naphthalene	47.6	1	ug/L	50.0	BLOD	95.3	55-140			
n-Butylbenzene	44.8	1	ug/L	50.0	BLOD	89.6	70-135			
n-Propylbenzene	47.6	1	ug/L	50.0	BLOD	95.2	70-130			
o-Xylene	48.9	1	ug/L	50.0	BLOD	97.7	80-120			
sec-Butylbenzene	48.6	1	ug/L	50.0	BLOD	97.2	70-125			
Styrene	45.9	1	ug/L	50.0	BLOD	91.8	65-135			
tert-Butylbenzene	47.2	1	ug/L	50.0	BLOD	94.4	70-130			
Tetrachloroethylene (PCE)	57.1	1	ug/L	50.0	BLOD	114	51-231			
Toluene	56.0	1	ug/L	50.0	3.14	106	75-120			
trans-1,2-Dichloroethylene	45.3	1	ug/L	50.0	BLOD	90.5	60-140			
trans-1,3-Dichloropropene	48.5	1	ug/L	50.0	BLOD	97.0	55-140			
Trichloroethylene	52.2	1	ug/L	50.0	BLOD	104	70-125			
Trichlorofluoromethane	49.7	1	ug/L	50.0	BLOD	99.3	60-145			
Vinyl chloride	41.4	0.5	ug/L	50.0	BLOD	82.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*44.1*		ug/L	*50.0*		*88.2*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.9*		ug/L	*50.0*		*97.7*	*75-120*			

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Matrix Spike (BHA0433-MS1)	**Source: 24A0505-01**			Prepared & Analyzed: 01/12/2024						
Surr: Dibromofluoromethane (Surr)	*45.1*		ug/L	*50.0*		*90.2*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.0*		ug/L	*50.0*		*96.1*	*70-130*			

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:49:57PM
Client Site I.D.:	24-01 LFG-EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0355 - SW3510C/EPA600-MS										
Blank (BHA0355-BLK1)				Prepared & Analyzed: 01/11/2024						
Anthracene	ND	10.0	ug/L							
Surr: 2,4,6-Tribromophenol (Surr)	*73.8*		ug/L	*200*		*36.9*	*5-136*			
Surr: 2-Fluorobiphenyl (Surr)	*31.6*		ug/L	*100*		*31.6*	*9-117*			
Surr: 2-Fluorophenol (Surr)	*19.3*		ug/L	*200*		*9.66*	*5-60*			
Surr: Nitrobenzene-d5 (Surr)	*38.2*		ug/L	*100*		*38.2*	*5-151*			
Surr: Phenol-d5 (Surr)	*26.9*		ug/L	*200*		*13.5*	*5-60*			
Surr: p-Terphenyl-d14 (Surr)	*34.8*		ug/L	*100*		*34.8*	*5-141*			
LCS (BHA0355-BS1)				Prepared & Analyzed: 01/11/2024						
1,2,4-Trichlorobenzene	24.9	10.0	ug/L	50.0		49.8	57-130			L
1,2-Dichlorobenzene	28.6	10.0	ug/L	50.0		57.2	22-115			
1,3-Dichlorobenzene	26.2	10.0	ug/L	50.0		52.4	22-112			
1,4-Dichlorobenzene	30.4	10.0	ug/L	50.0		60.8	13-112			
2,4,6-Trichlorophenol	32.1	10.0	ug/L	50.0		64.2	52-129			
2,4-Dichlorophenol	28.4	10.0	ug/L	50.0		56.9	53-122			
2,4-Dimethylphenol	29.7	5.00	ug/L	50.0		59.4	42-120			
2,4-Dinitrophenol	33.3	50.0	ug/L	50.0		66.5	48-127			
2,4-Dinitrotoluene	33.1	10.0	ug/L	50.0		66.2	10-173			
2,6-Dinitrotoluene	29.0	10.0	ug/L	50.0		58.0	68-137			L
2-Chloronaphthalene	30.7	10.0	ug/L	50.0		61.4	65-120			L
2-Chlorophenol	29.3	10.0	ug/L	50.0		58.7	36-120			
2-Nitrophenol	27.3	10.0	ug/L	50.0		54.6	45-167			
3,3'-Dichlorobenzidine	26.9	10.0	ug/L	50.0		53.8	10-213			
4,6-Dinitro-2-methylphenol	29.6	50.0	ug/L	50.0		59.2	53-130			
4-Bromophenyl phenyl ether	27.7	10.0	ug/L	50.0		55.3	65-120			L

Certificate of Analysis

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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0355 - SW3510C/EPA600-MS

LCS (BHA0355-BS1) Prepared & Analyzed: 01/11/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
4-Chlorophenyl phenyl ether	27.5	10.0	ug/L	50.0		55.0	38-145			
4-Nitrophenol	10.9	50.0	ug/L	50.0		21.8	13-129			
Acenaphthene	33.4	10.0	ug/L	50.0		66.8	60-132			
Acenaphthylene	36.0	10.0	ug/L	50.0		72.0	54-126			
Acetophenone	32.8	20.0	ug/L	50.0		65.7	0-200			
Anthracene	29.0	10.0	ug/L	50.0		58.0	43-120			
Benzo (a) anthracene	33.3	10.0	ug/L	50.0		66.5	42-133			
Benzo (a) pyrene	35.8	10.0	ug/L	50.0		71.5	32-148			
Benzo (b) fluoranthene	38.6	10.0	ug/L	50.0		77.3	42-140			
Benzo (g,h,i) perylene	30.2	10.0	ug/L	50.0		60.3	10-195			
Benzo (k) fluoranthene	34.8	10.0	ug/L	50.0		69.5	25-146			
bis (2-Chloroethoxy) methane	28.0	10.0	ug/L	50.0		55.9	49-165			
bis (2-Chloroethyl) ether	28.0	10.0	ug/L	50.0		56.0	43-126			
2,2'-Oxybis (1-chloropropane)	29.7	10.0	ug/L	50.0		59.5	63-139			L
bis (2-Ethylhexyl) phthalate	31.2	10.0	ug/L	50.0		62.4	29-137			
Butyl benzyl phthalate	29.4	10.0	ug/L	50.0		58.9	10-140			
Chrysene	34.1	10.0	ug/L	50.0		68.2	44-140			
Dibenz (a,h) anthracene	35.1	10.0	ug/L	50.0		70.1	10-200			
Diethyl phthalate	34.9	10.0	ug/L	50.0		69.7	10-120			
Dimethyl phthalate	29.2	10.0	ug/L	50.0		58.4	10-120			
Di-n-butyl phthalate	44.9	10.0	ug/L	50.0		89.8	10-120			
Di-n-octyl phthalate	41.6	10.0	ug/L	50.0		83.3	19-132			
Fluoranthene	39.8	10.0	ug/L	50.0		79.6	43-121			
Fluorene	34.5	10.0	ug/L	50.0		68.9	70-120			L
Hexachlorobenzene	23.6	1.00	ug/L	50.0		47.1	10-142			

Certificate of Analysis

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Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0355 - SW3510C/EPA600-MS										
LCS (BHA0355-BS1)				Prepared & Analyzed: 01/11/2024						
Hexachlorobutadiene	27.8	10.0	ug/L	50.0		55.5	38-120			
Hexachlorocyclopentadiene	17.5	10.0	ug/L	50.0		35.1	10-76			
Hexachloroethane	33.2	10.0	ug/L	50.0		66.5	55-120			
Indeno (1,2,3-cd) pyrene	32.5	10.0	ug/L	50.0		64.9	10-151			
Isophorone	21.4	10.0	ug/L	50.0		42.9	47-180			L
Naphthalene	32.7	5.00	ug/L	50.0		65.3	36-120			
Nitrobenzene	36.8	10.0	ug/L	50.0		73.6	54-158			
n-Nitrosodimethylamine	10.4	10.0	ug/L	50.0		20.8	10-85			
n-Nitrosodi-n-propylamine	34.3	10.0	ug/L	50.0		68.6	14-198			
n-Nitrosodiphenylamine	26.6	10.0	ug/L	50.0		53.1	12-97			
p-Chloro-m-cresol	30.5	10.0	ug/L	50.0		61.0	10-142			
Pentachlorophenol	22.9	20.0	ug/L	50.0		45.7	38-152			
Phenanthrene	34.5	10.0	ug/L	50.0		69.0	65-120			
Phenol	11.6	10.0	ug/L	50.5		23.0	17-120			
Pyrene	28.6	10.0	ug/L	50.0		57.3	70-120			L
Pyridine	11.1	10.0	ug/L	50.0		22.2	10-103			
Surr: 2,4,6-Tribromophenol (Surr)	*69.7*		ug/L	*200*		*34.8*	*5-136*			
Surr: 2-Fluorobiphenyl (Surr)	*30.4*		ug/L	*100*		*30.4*	*9-117*			
Surr: 2-Fluorophenol (Surr)	*20.2*		ug/L	*200*		*10.1*	*5-60*			
Surr: Nitrobenzene-d5 (Surr)	*35.4*		ug/L	*100*		*35.4*	*5-151*			
Surr: Phenol-d5 (Surr)	*25.6*		ug/L	*200*		*12.8*	*5-60*			
Surr: p-Terphenyl-d14 (Surr)	*27.3*		ug/L	*100*		*27.3*	*5-141*			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0320 - No Prep Wet Chem										
Blank (BHA0320-BLK1)				Prepared & Analyzed: 01/10/2024						
BOD	ND	2.0	mg/L							
LCS (BHA0320-BS1)				Prepared & Analyzed: 01/10/2024						
BOD	208	2	mg/L	198		105	84.6-115.4			
Duplicate (BHA0320-DUP1)		**Source: 24A0404-05**		Prepared & Analyzed: 01/10/2024						
BOD	ND	2.0	mg/L		BLOD			NA	20	
Batch BHA0336 - No Prep Wet Chem										
Blank (BHA0336-BLK1)				Prepared & Analyzed: 01/10/2024						
Nitrite as N	ND	0.05	mg/L							
LCS (BHA0336-BS1)				Prepared & Analyzed: 01/10/2024						
Nitrite as N	0.10	0.05	mg/L	0.100		104	80-120			
Matrix Spike (BHA0336-MS1)		**Source: 24A0481-01**		Prepared & Analyzed: 01/10/2024						
Nitrite as N	0.40	0.10	mg/L	0.200	0.25	77.0	80-120			M
Matrix Spike Dup (BHA0336-MSD1)		**Source: 24A0481-01**		Prepared & Analyzed: 01/10/2024						
Nitrite as N	0.40	0.10	mg/L	0.200	0.25	75.0	80-120	1.00	20	M
Batch BHA0386 - No Prep Wet Chem										
Blank (BHA0386-BLK1)				Prepared & Analyzed: 01/11/2024						
Cyanide	ND	0.01	mg/L							

Certificate of Analysis

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Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
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Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0386 - No Prep Wet Chem										
LCS (BHA0386-BS1)				Prepared & Analyzed: 01/11/2024						
Cyanide	0.25	0.01	mg/L	0.250		98.8	80-120			
Matrix Spike (BHA0386-MS1)		**Source: 24A0526-01**		Prepared & Analyzed: 01/11/2024						
Cyanide	0.27	0.01	mg/L	0.250	BLOD	106	80-120			
Matrix Spike Dup (BHA0386-MSD1)		**Source: 24A0526-01**		Prepared & Analyzed: 01/11/2024						
Cyanide	0.27	0.01	mg/L	0.250	BLOD	107	80-120	1.38	20	
Batch BHA0458 - No Prep Wet Chem										
Blank (BHA0458-BLK1)				Prepared & Analyzed: 01/12/2024						
Total Recoverable Phenolics	ND	0.050	mg/L							
LCS (BHA0458-BS1)				Prepared & Analyzed: 01/12/2024						
Total Recoverable Phenolics	0.41	0.050	mg/L	0.505		81.2	80-120			
Matrix Spike (BHA0458-MS1)		**Source: 24A0471-03**		Prepared & Analyzed: 01/12/2024						
Total Recoverable Phenolics	0.45	0.050	mg/L	0.500	BLOD	90.8	70-130			
Matrix Spike Dup (BHA0458-MSD1)		**Source: 24A0471-03**		Prepared & Analyzed: 01/12/2024						
Total Recoverable Phenolics	0.46	0.050	mg/L	0.500	BLOD	92.4	70-130	1.75	20	
Batch BHA0484 - No Prep Wet Chem										
Blank (BHA0484-BLK1)				Prepared & Analyzed: 01/15/2024						
Nitrate+Nitrite as N	ND	0.10	mg/L							

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Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0484 - No Prep Wet Chem										
LCS (BHA0484-BS1)				Prepared & Analyzed: 01/15/2024						
Nitrate+Nitrite as N	1.02	0.1	mg/L	1.00		102	90-110			
Matrix Spike (BHA0484-MS1)		**Source: 24A0679-01**		Prepared & Analyzed: 01/15/2024						
Nitrate+Nitrite as N	1.34	0.1	mg/L	1.00	0.30	103	90-120			
Matrix Spike Dup (BHA0484-MSD1)		**Source: 24A0679-01**		Prepared & Analyzed: 01/15/2024						
Nitrate+Nitrite as N	1.34	0.1	mg/L	1.00	0.30	104	90-120	0.597	20	
Batch BHA0526 - No Prep Wet Chem										
Blank (BHA0526-BLK1)				Prepared & Analyzed: 01/16/2024						
Cyanide	ND	0.01	mg/L							
LCS (BHA0526-BS1)				Prepared & Analyzed: 01/16/2024						
Cyanide	0.22	0.01	mg/L	0.250		89.3	80-120			
Matrix Spike (BHA0526-MS1)		**Source: 24A0630-01**		Prepared & Analyzed: 01/16/2024						
Cyanide	0.25	0.01	mg/L	0.250	BLOD	99.9	80-120			CI
Matrix Spike Dup (BHA0526-MSD1)		**Source: 24A0630-01**		Prepared & Analyzed: 01/16/2024						
Cyanide	0.26	0.01	mg/L	0.250	BLOD	104	80-120	3.77	20	CI
Batch BHA0533 - No Prep Wet Chem										
Blank (BHA0533-BLK1)				Prepared & Analyzed: 01/16/2024						
Ammonia as N	ND	0.10	mg/L							

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Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0533 - No Prep Wet Chem										
LCS (BHA0533-BS1)				Prepared & Analyzed: 01/16/2024						
Ammonia as N	1.02	0.1	mg/L	1.00		102	90-110			
Matrix Spike (BHA0533-MS1)		**Source: 24A0716-01**		Prepared & Analyzed: 01/16/2024						
Ammonia as N	1.01	0.1	mg/L	1.00	BLOD	98.9	89.3-131			
Matrix Spike (BHA0533-MS2)		**Source: 24A0547-03**		Prepared & Analyzed: 01/16/2024						
Ammonia as N	1.04	0.1	mg/L	1.00	BLOD	101	89.3-131			
Matrix Spike Dup (BHA0533-MSD1)		**Source: 24A0716-01**		Prepared & Analyzed: 01/16/2024						
Ammonia as N	1.01	0.1	mg/L	1.00	BLOD	99.3	89.3-131	0.396	20	
Matrix Spike Dup (BHA0533-MSD2)		**Source: 24A0547-03**		Prepared & Analyzed: 01/16/2024						
Ammonia as N	1.03	0.1	mg/L	1.00	BLOD	100	89.3-131	0.965	20	
Batch BHA0585 - No Prep Wet Chem										
Blank (BHA0585-BLK1)				Prepared & Analyzed: 01/17/2024						
TKN as N	ND	0.50	mg/L							
LCS (BHA0585-BS1)				Prepared & Analyzed: 01/17/2024						
TKN as N	5.20	0.50	mg/L	5.00		104	90-110			
Matrix Spike (BHA0585-MS1)		**Source: 24A0817-01**		Prepared & Analyzed: 01/17/2024						
TKN as N	4.61	0.50	mg/L	5.00	BLOD	92.1	90-110			
Matrix Spike (BHA0585-MS2)		**Source: 24A0476-01**		Prepared & Analyzed: 01/17/2024						
TKN as N	5.20	0.50	mg/L	5.00	0.33	97.3	90-110			

Enthalpy Analytical
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Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0585 - No Prep Wet Chem										
Matrix Spike Dup (BHA0585-MSD1)	**Source: 24A0817-01**			Prepared & Analyzed: 01/17/2024						
TKN as N	5.27	0.50	mg/L	5.00	BLOD	105	90-110	13.4	20	
Matrix Spike Dup (BHA0585-MSD2)	**Source: 24A0476-01**			Prepared & Analyzed: 01/17/2024						
TKN as N	5.39	0.50	mg/L	5.00	0.33	101	90-110	3.66	20	
Batch BHA0769 - No Prep Wet Chem										
Blank (BHA0769-BLK1)				Prepared & Analyzed: 01/23/2024						
COD	ND	10.0	mg/L							
LCS (BHA0769-BS1)				Prepared & Analyzed: 01/23/2024						
COD	52.5	10.0	mg/L	50.0		105	88-119			
Matrix Spike (BHA0769-MS1)	**Source: 24A0941-01**			Prepared & Analyzed: 01/23/2024						
COD	57.9	10.0	mg/L	50.0	BLOD	116	72.4-130			
Matrix Spike Dup (BHA0769-MSD1)	**Source: 24A0941-01**			Prepared & Analyzed: 01/23/2024						
COD	58.3	10.0	mg/L	50.0	BLOD	117	72.4-130	0.585	20	

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Client Name: SCS Engineers-Winchester

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Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

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Analytical Summary

24A0466-01	Subcontract
24A0466-02	Subcontract

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			**Preparation Method:**	**EPA200.8 R5.4**	
24A0466-01	50.0 mL / 50.0 mL	SW6020B	BHA0366	SHA0392	AA40219
24A0466-02	50.0 mL / 50.0 mL	SW6020B	BHA0366	SHA0392	AA40219

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
24A0466-01	300 mL / 300 mL	SM5210B-2016	BHA0320	SHA0416	
24A0466-02	300 mL / 300 mL	SM5210B-2016	BHA0320	SHA0416	
24A0466-01	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
24A0466-02	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
24A0466-01	6.00 mL / 6.00 mL	SW9012B	BHA0386	SHA0346	AA40210
24A0466-01	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228
24A0466-02	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228
24A0466-01	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
24A0466-02	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
24A0466-02RE1	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
24A0466-02	6.00 mL / 6.00 mL	SW9012B	BHA0526	SHA0473	AA40231
24A0466-01	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
24A0466-02	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
24A0466-01	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
24A0466-02	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
24A0466-01	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274
24A0466-02	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274

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(804)-358-8297 - Fax

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS			**Preparation Method:**	**SW3510C/EPA600-MS**	
24A0466-01	500 mL / 2.00 mL	SW8270E	BHA0355	SHA0508	AK30271
24A0466-02	500 mL / 0.500 mL	SW8270E	BHA0355	SHA0508	AK30271

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			**Preparation Method:**	**SW5030B-MS**	
24A0466-01	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
24A0466-02	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
24A0466-03	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
24A0466-01RE1	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
24A0466-02RE1	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

QC Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			**Preparation Method:**	**EPA200.8 R5.4**	
BHA0366-BLK1	50.0 mL / 50.0 mL	SW6020B	BHA0366	SHA0392	AA40219
BHA0366-BS1	50.0 mL / 50.0 mL	SW6020B	BHA0366	SHA0392	AA40219
BHA0366-MS1	50.0 mL / 50.0 mL	SW6020B	BHA0366	SHA0392	AA40219
BHA0366-MSD1	50.0 mL / 50.0 mL	SW6020B	BHA0366	SHA0392	AA40219

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
BHA0320-BLK1	300 mL / 300 mL	SM5210B-2016	BHA0320	SHA0416	
BHA0320-BS1	300 mL / 300 mL	SM5210B-2016	BHA0320	SHA0416	
BHA0320-DUP1	300 mL / 300 mL	SM5210B-2016	BHA0320	SHA0416	
BHA0336-BLK1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
BHA0336-BS1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
BHA0336-MRL1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
BHA0336-MS1	12.5 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
BHA0336-MSD1	12.5 mL / 25.0 mL	SM4500-NO2B-2011	BHA0336	SHA0300	AJ30297
BHA0386-BLK1	6.00 mL / 6.00 mL	SW9012B	BHA0386	SHA0346	AA40210
BHA0386-BS1	6.00 mL / 6.00 mL	SW9012B	BHA0386	SHA0346	AA40210
BHA0386-MRL1	6.00 mL / 6.00 mL	SW9012B	BHA0386	SHA0346	AA40210
BHA0386-MS1	6.00 mL / 6.00 mL	SW9012B	BHA0386	SHA0346	AA40210
BHA0386-MSD1	6.00 mL / 6.00 mL	SW9012B	BHA0386	SHA0346	AA40210
BHA0458-BLK1	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228
BHA0458-BS1	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228
BHA0458-MRL1	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
BHA0458-MS1	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228
BHA0458-MSD1	5.00 mL / 10.0 mL	SW9065	BHA0458	SHA0461	AA40228
BHA0484-BLK1	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
BHA0484-BS1	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
BHA0484-MS1	25.0 mL / 25.0 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
BHA0484-MSD1	25.0 mL / 25.0 mL	SM4500-NO3F-2016	BHA0484	SHA0426	AA40225
BHA0526-BLK1	6.00 mL / 6.00 mL	SW9012B	BHA0526	SHA0473	AA40231
BHA0526-BS1	6.00 mL / 6.00 mL	SW9012B	BHA0526	SHA0473	AA40231
BHA0526-MRL1	6.00 mL / 6.00 mL	SW9012B	BHA0526	SHA0473	AA40231
BHA0526-MS1	6.00 mL / 6.00 mL	SW9012B	BHA0526	SHA0473	AA40231
BHA0526-MSD1	6.00 mL / 6.00 mL	SW9012B	BHA0526	SHA0473	AA40231
BHA0533-BLK1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0533-BS1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0533-MRL1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0533-MS1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0533-MS2	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0533-MSD1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0533-MSD2	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0533	SHA0476	AA40233
BHA0585-BLK1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0585-BS1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0585-MRL1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0585-MS1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0585-MS2	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0585-MSD1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0585-MSD2	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0585	SHA0545	AA40244
BHA0769-BLK1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274
BHA0769-BS1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274
BHA0769-MRL1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274
BHA0769-MS1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:49:57PM
Client Site I.D.: 24-01 LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
BHA0769-MSD1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0769	SHA0700	AL30274

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS			**Preparation Method:**	**SW3510C/EPA600-MS**	
BHA0355-BLK1	1000 mL / 1.00 mL	SW8270E	BHA0355	SHA0337	AK30271
BHA0355-BLK2		SW8270E	BHA0355	SHA0343	AL30202
BHA0355-BLK3		SW8270E	BHA0355	SHA0443	AK30275
BHA0355-BS1	1000 mL / 1.00 mL	SW8270E	BHA0355	SHA0337	AK30271

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			**Preparation Method:**	**SW5030B-MS**	
BHA0377-BLK1	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
BHA0377-BS1	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
BHA0377-DUP1	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
BHA0377-MS1	5.00 mL / 5.00 mL	SW8260D	BHA0377	SHA0352	AJ30373
BHA0433-BLK1	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-BLK2	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-BS1	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-BS2	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-DUP1	0.250 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-MS1	0.250 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:49:57PM
Client Site I.D.:	24-01 LFG-EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Certified Analyses included in this Report

Analyte	Certifications
EPA350.1 R2.0 in Non-Potable Water	
Ammonia as N	VELAP,NCDEQ,PADEP,WVDEP
EPA351.2 R2.0 in Non-Potable Water	
TKN as N	VELAP,NCDEQ,WVDEP
SM4500-NO2B-2011 in Non-Potable Water	
Nitrite as N	VELAP,WVDEP,NCDEQ
SM4500-NO3F-2016 in Non-Potable Water	
Nitrate+Nitrite as N	VELAP,WVDEP
SM5210B-2016 in Non-Potable Water	
BOD	VELAP,NCDEQ,WVDEP
SM5220D-2011 in Non-Potable Water	
COD	VELAP,NCDEQ,PADEP,WVDEP
SW6020B in Non-Potable Water	
Mercury	VELAP
Arsenic	VELAP,WVDEP
Barium	VELAP,WVDEP
Cadmium	VELAP,WVDEP
Chromium	VELAP,WVDEP
Copper	VELAP,WVDEP
Lead	VELAP,WVDEP
Nickel	VELAP,WVDEP
Selenium	VELAP,WVDEP
Silver	VELAP,WVDEP
Zinc	VELAP,WVDEP
SW8260D in Non-Potable Water	

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Certified Analyses included in this Report

Analyte	Certifications
2-Butanone (MEK)	VELAP,NCDEQ,PADEP,WVDEP
Acetone	VELAP,NCDEQ,PADEP,WVDEP
Benzene	VELAP,NCDEQ,PADEP,WVDEP
Ethylbenzene	VELAP,NCDEQ,PADEP,WVDEP
Toluene	VELAP,NCDEQ,PADEP,WVDEP
Xylenes, Total	VELAP,NCDEQ,PADEP,WVDEP
Tetrahydrofuran	VELAP,PADEP
SW8270E in Non-Potable Water	
Anthracene	NCDEQ,WVDEP,VELAP,PADEP
SW9012B in Non-Potable Water	
Cyanide	VELAP,WVDEP
SW9065 in Non-Potable Water	
Total Recoverable Phenolics	VELAP,WVDEP

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Code	Description	Laboratory ID	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2024
NCDEQ	North Carolina DEQ	495	12/31/2024
NCDOH	North Carolina Department of Health	51714	07/31/2024
NYDOH	New York DOH Drinking Water	12069	04/01/2024
PADEP	NELAP-Pennsylvania Certificate #009	68-03503	10/31/2024
SCDHEC	South Carolina Dept of Health and Environmental Control Certificate 93016001	93016	06/14/2024
TXCEQ	Texas Comm on Environmental Quality #T104704576-23-1	T104704576	05/31/2024
VELAP	NELAP-Virginia Certificate #12617	460021	06/14/2024
WVDEP	West Virginia DEP	350	11/30/2024

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:49:57PM
Client Site I.D.:	24-01 LFG-EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Qualifiers and Definitions

CI	Residual Chlorine or other oxidizing agent was detected in the container used to analyze this sample.
DS	Surrogate concentration reflects a dilution factor.
J	The reported result is an estimated value.
L	LCS recovery is outside of established acceptance limits
M	Matrix spike recovery is outside established acceptance limits
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
LOD	Limit of Detection
BLOD	Below Limit of Detection
LOQ	Limit of Quantitation
DF	Dilution Factor
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

ENTHALPY ANALYTICAL

1941 REYMET ROAD
RICHMOND, VIRGINIA 23237
(804) 358-8295 PHONE
(804)358-8297 FAX

CHAIN OF CUSTODY

PAGE 1 OF 1

COMPANY NAME: SCS Engineers
CONTACT: Jennifer Robb
ADDRESS: 296 Victory Road
Winchester, VA 22602
PHONE #: 703-471-6150
EMAIL: jrobb@scsengineers.com

INVOICE TO: SAME
INVOICE CONTACT:
INVOICE ADDRESS:
INVOICE PHONE #:

PROJECT NAME/Quote #: City of Bristol Landfill #588
SITE NAME: 24-01 LFG-EW Monthly Monitoring
PROJECT NUMBER: 02218208.15 Task 2
P.O. #:
Pretreatment Program:

Is sample for compliance reporting? [✓ YES] NO
Regulatory State: V A
Is sample from a chlorinated supply? YES [✓ NO]
PWS I.D. #:

SAMPLER NAME (PRINT): Logan Howard
SAMPLER SIGNATURE:
Turn Around Time: 10 Day(s)

Matrix Codes: WW=Waste Water/Storm Water GW=Ground Water DW=Drinking Water S=Soil/Solids OR=Organic A=Air WP=Wipe OT=Other__________

COMMENTS

Preservative Codes: N=Nitric Acid C=Hydrochloric Acid S=Sulfuric Acid H=Sodium Hydroxide A=Ascorbic Acid Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol

Note VOC 8260 no HCl

ANALYSIS / (PRESERVATIVE)

CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	Ammonia - EPA 350.1	BOD - SM22 5210B-2021	COD - SM22 5220D-2011	Cyanide - SW9012	Nitrate SM22 450-NO3F-2011 (report seperatly from Nitrite)	Nitrite SM22 450-NO3F-2011	SVOC (Anthracene) 8270	Total Metals (As, Ba, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn) 6020	TKN - EPA 351.2 R2.0	Mercury - 6020	Total Recoverable Phenolics - 9065	V. Fatty Acids ~~(See List)~~ 8015	VOCs ~~(See List)~~ 8260	PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)
1) EW-59	X					010824	1545		GW	13	—	—	—	—	—	—	—	—	—	—	—	—	—	
2) EW-98	X					010824	1530		GW	12	—	—	—	—	—	—	—	—	—	—	—	—	—	
3)									GW															
4)									GW															
5)									GW															
6)									GW															
7)									GW															
8)									GW															
9)									GW															
10) Trip Blank	X					071023	1500		DI	2													X	mw 1/10/24

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
	010924 / 1310	LCW	
LCW			1/10/24 0800

QC Data Package
Level III ☐
Level IV ☐

LAB USE ONLY Therm ID: 271
COOLER TEMP ~~2.7~~ °C 1.6°C
Custody Seals used and intact? ([✓ Y] N)
Received on ice? ([✓ Y] N)

SCS-W 24A0466
24-01 LFG EW
Recd: 01/10/2024 Due: 01/24/2024

v130325002

Sample Preservation Log
Form #: F1301
Rev # 15.0
Effective: July 13, 2023
Page 1 of 1

ENTHALPY
ANALYTICAL

Sample Preservation Log

Order ID 24A0466

Date Performed: 1-10-24

Analyst Performing Check: RCJ

Sample ID	Container ID	Metals			Cyanide			Sulfide			Ammonia			TKN			Phos, Tot			NO3+NO2			DRO			Pesticide (8081/608/508) PCB DW only			SVOC (525/8270/625)			CrVI * **		Pest/PCB (508) / SVOC(525)			COD			Phenolics		
		pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	Received Res. Cl		final + or -	Received Res. Cl		final + or -	Received pH	Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH
		< 2	Other		> 12	Other		> 9	Other		< 2	Other		< 2	Other		< 2	Other		< 2	Other		< 2	Other		+	-		+	-				< 2	Other			Other			Other	
01	A		5	<2																																						
01	B											4	<2		4	<2						4	<2																	4	<2			
01	D					8	>12																																			
01	F																																								4	<2
01	G																													-												
02	A		5	<2																																						
02	B											4	<2		4	<2						4	<2																	4	<2			
02	D					8	>12																																			
02	F																																								4	<2
02	G																													-												

NaOH ID: 2H00468

H2SO4 ID: 3K02567

HCL ID:

HNO3 ID: 3L03050

Na2S2O3 ID:

Na2SO3 ID:

CrVI preserved date/time:

Analyst Initials:

pH must be adjusted between 9.3 - 9.7

Ammonia Buffer Sol'n ID:

5N NaOH ID:

Metals were received with pH =4 HNO3 as added at 1100 on 10th of January 2024, by RCJ in the Log-In room to bring pH= <2.

a only certifies DISS CrVI and not T CrVI as an approved analyte under 40CFR136 for waste water.

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:49:57PM

Client Site I.D.: 24-01 LFG-EW Monthly Monitoring

Submitted To: Jennifer Robb

Laboratory Order ID: 24A0466

Sample Conditions Checklist

Samples Received at:	**1.60°C**
How were samples received?	Logistics Courier
Were Custody Seals used? If so, were they received intact?	Yes
Are the custody papers filled out completely and correctly?	Yes
Do all bottle labels agree with custody papers?	Yes
Is the temperature blank or representative sample within acceptable limits or received on ice, and recently taken?	Yes
Are all samples within holding time for requested laboratory tests?	Yes
Is a sufficient amount of sample provided to perform the tests included?	Yes
Are all samples in appropriate containers for the analyses requested?	Yes
Were volatile organic containers received?	Yes
Are all volatile organic and TOX containers free of headspace?	Yes
Is a trip blank provided for each VOC sample set? VOC sample sets include EPA8011, EPA504, EPA8260, EPA624, EPA8015 GRO, EPA8021, EPA524, and RSK-175.	Yes
Are all samples received appropriately preserved? Note that metals containers do not require field preservation but lab preservation may delay analysis. In addition, field parameters are always received outside holding time and will be marked accordingly.	No

*For samples -01: EW-59 and -02: EW-98
- H_2SO_4-preserved containers were received with a pH greater than 2, and H_2SO_4 was added to bring the pH to less than 2.
- NaOH-preserved containers were received with a pH less than 12, and NaOH was

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:49:57PM
Client Site I.D.:	24-01 LFG-EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

added to bring the pH to greater than 12.
Jennifer Robb notified via email. MRS 01/10/24 1447

Pace Analytical Services, LLC
7979 Innovation Park Drive
Baton Rouge, LA 70820
(225) 769-4900

January 21, 2024

Virginia Thrasher
Enthalpy
1941 Reymet Road
Richmond, VA 23237

RE: Project: 24A0466
Pace Project No.: 20303668

Dear Virginia Thrasher:

Enclosed are the analytical results for sample(s) received by the laboratory on January 11, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Baton Rouge

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh

Ruth Welsh
ruth.welsh@pacelabs.com
(225) 769-4900
Project Manager

Enclosures

cc: Andrew Bruner, Enthalpy
Daniel Elliott, Enthalpy
Meghan Meyer, Enthalpy

CERTIFICATIONS

Project:	24A0466
Pace Project No.:	20303668

Pace Analytical Services Baton Rouge

7979 Innovation Park Drive Ste A, Baton Rouge, LA 70820-7402
Louisiana Dept of Enviromental Quality (NELAC/LELAP): 01979
Florida Dept of Health (NELAC/FELAP): E87854
DoD ELAP (A2LA) #: 6429.01
Alabama DEM #: 41900
Alaska DEC-DW #: LA00024
Alaska DEC CS-LAP #: 21-001
Arkansas DEQ #: 88-0655
California ELAP #: 3063
Georgia DPD #: C050
Hawaii DOH State Laboratories Division
Illinois EPA #: 200048
Kansas DoHE #: E-10354
Kentucky DEP UST Branch #: 123054
Louisiana DOH #: LA036
Minnesota DOH #: 2233799
Mississippi State Dept of Health
Montana Department of Environmental Quality
Nebraska DHHS #: NE-OS-35.21
Nevada DCNR DEP #: LA00024
New York DOH #: 12149
North Carolina DEQ - WW & GW #: 618
North Dakota DEQ #: R195
Ohio EPA #: 87782
Oklahoma Dept of Environmental Quality #: 9403
Oregon ELAP #: 4168
Pennsylvania Dept of Environmental Protection #: 68-05973
South Carolina DHEC #: 73006001
Texas CEQ #: T104704178-23-15
Utah DOH #: LA00024
Virginia DCLS #: 6460215
Washington Dept of Ecology #: C929
Wisconsin DNR #: 399139510

SAMPLE SUMMARY

Project:	24A0466
Pace Project No.:	20303668

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20303668001	**24A0466-01:EW-59**	Water	01/08/24 15:45	01/11/24 09:55
20303668002	**24A0466-02: EW-98**	Water	01/08/24 15:30	01/11/24 09:55

SAMPLE ANALYTE COUNT

Project: 24A0466
Pace Project No.: 20303668

Lab ID	Sample ID	Method	Analysts	Analytes Reported
20303668001	**24A0466-01:EW-59**	Pace ENV-SOP-BTRO-0042	LHM	10
20303668002	**24A0466-02: EW-98**	Pace ENV-SOP-BTRO-0042	LHM	10

PASI-BR = Pace Analytical Services - Baton Rouge

PROJECT NARRATIVE

Project:	24A0466
Pace Project No.:	20303668

Method: **Pace ENV-SOP-BTRO-0042**
Description: BR AM23G Low Level VFA
Client: BR-Enthalpy
Date: January 21, 2024

General Information:
2 samples were analyzed for Pace ENV-SOP-BTRO-0042 by Pace Analytical Services Baton Rouge. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 315700

D4: Sample was diluted due to the presence of high levels of target analytes.

- 24A0466-01:EW-59 (Lab ID: 20303668001)
  - Lactic Acid
- 24A0466-02: EW-98 (Lab ID: 20303668002)
  - Lactic Acid

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- 24A0466-01:EW-59 (Lab ID: 20303668001)
  - Hexanoic Acid
  - i-Hexanoic Acid
  - i-Pentanoic Acid

PROJECT NARRATIVE

Project:	24A0466
Pace Project No.:	20303668

Method: **Pace ENV-SOP-BTRO-0042**
Description: BR AM23G Low Level VFA
Client: BR-Enthalpy
Date: January 21, 2024

Analyte Comments:

QC Batch: 315700

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- 24A0466-01:EW-59 (Lab ID: 20303668001)
  - Pentanoic Acid
- 24A0466-02: EW-98 (Lab ID: 20303668002)
  - Hexanoic Acid
  - i-Hexanoic Acid
  - i-Pentanoic Acid
  - Pentanoic Acid
- BLANK (Lab ID: 1511083)
  - Hexanoic Acid
  - i-Hexanoic Acid
  - i-Pentanoic Acid
  - Pentanoic Acid
- LCS (Lab ID: 1511084)
  - Hexanoic Acid
  - i-Hexanoic Acid
  - i-Pentanoic Acid
  - Pentanoic Acid

This data package has been reviewed for quality and completeness and is approved for release.

ANALYTICAL RESULTS

Project: 24A0466
Pace Project No.: 20303668

Sample: 24A0466-01:EW-59 **Lab ID: 20303668001** Collected: 01/08/24 15:45 Received: 01/11/24 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
BR AM23G Low Level VFA	Analytical Method: Pace ENV-SOP-BTRO-0042 Pace Analytical Services - Baton Rouge							
Pentanoic Acid	ND	mg/L	250	500		01/15/24 16:38	109-52-4	N2
Acetic Acid	**5290**	mg/L	500	1000		01/16/24 13:14	64-19-7	
Butyric Acid	**1230**	mg/L	250	500		01/15/24 16:38	107-92-6	
Formic acid	**880**	mg/L	250	500		01/15/24 16:38	64-18-6	
Hexanoic Acid	ND	mg/L	250	500		01/15/24 16:38	142-62-1	N2
i-Hexanoic Acid	ND	mg/L	250	500		01/15/24 16:38	646-07-1	N2
Lactic Acid	**979**	mg/L	250	500		01/15/24 16:38	50-21-5	D4
i-Pentanoic Acid	ND	mg/L	250	500		01/15/24 16:38	503-74-2	N2
Propionic Acid	**1970**	mg/L	250	500		01/15/24 16:38	79-09-4	
Pyruvic Acid	ND	mg/L	250	500		01/15/24 16:38	127-17-3	

Sample: 24A0466-02: EW-98 **Lab ID: 20303668002** Collected: 01/08/24 15:30 Received: 01/11/24 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
BR AM23G Low Level VFA	Analytical Method: Pace ENV-SOP-BTRO-0042 Pace Analytical Services - Baton Rouge							
Pentanoic Acid	ND	mg/L	250	500		01/15/24 17:03	109-52-4	N2
Acetic Acid	**3080**	mg/L	250	500		01/15/24 17:03	64-19-7	
Butyric Acid	**594**	mg/L	250	500		01/15/24 17:03	107-92-6	
Formic acid	**486**	mg/L	250	500		01/15/24 17:03	64-18-6	
Hexanoic Acid	ND	mg/L	250	500		01/15/24 17:03	142-62-1	N2
i-Hexanoic Acid	ND	mg/L	250	500		01/15/24 17:03	646-07-1	N2
Lactic Acid	**256**	mg/L	250	500		01/15/24 17:03	50-21-5	D4
i-Pentanoic Acid	ND	mg/L	250	500		01/15/24 17:03	503-74-2	N2
Propionic Acid	**1030**	mg/L	250	500		01/15/24 17:03	79-09-4	
Pyruvic Acid	ND	mg/L	250	500		01/15/24 17:03	127-17-3	

QUALITY CONTROL DATA

Project: 24A0466
Pace Project No.: 20303668

QC Batch: 315700
QC Batch Method: Pace ENV-SOP-BTRO-0042
Analysis Method: Pace ENV-SOP-BTRO-0042
Analysis Description: BR AM23G Low Level VFA
Laboratory: Pace Analytical Services - Baton Rouge
Associated Lab Samples: 20303668001, 20303668002

METHOD BLANK: 1511083
Matrix: Water
Associated Lab Samples: 20303668001, 20303668002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetic Acid	mg/L	ND	0.50	01/15/24 15:24	
Butyric Acid	mg/L	ND	0.50	01/15/24 15:24	
Formic acid	mg/L	ND	0.50	01/15/24 15:24	
Hexanoic Acid	mg/L	ND	0.50	01/15/24 15:24	N2
i-Hexanoic Acid	mg/L	ND	0.50	01/15/24 15:24	N2
i-Pentanoic Acid	mg/L	ND	0.50	01/15/24 15:24	N2
Lactic Acid	mg/L	ND	0.50	01/15/24 15:24	
Pentanoic Acid	mg/L	ND	0.50	01/15/24 15:24	N2
Propionic Acid	mg/L	ND	0.50	01/15/24 15:24	
Pyruvic Acid	mg/L	ND	0.50	01/15/24 15:24	

LABORATORY CONTROL SAMPLE: 1511084

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetic Acid	mg/L	2	2.0	98	70-130	
Butyric Acid	mg/L	2	1.7	87	70-130	
Formic acid	mg/L	2	1.9	95	70-130	
Hexanoic Acid	mg/L	2	1.1	54	39-114	N2
i-Hexanoic Acid	mg/L	2	1.4	69	39-114	N2
i-Pentanoic Acid	mg/L	2	1.7	83	59-121	N2
Lactic Acid	mg/L	2	2.1	105	70-130	
Pentanoic Acid	mg/L	2	1.4	70	59-121	N2
Propionic Acid	mg/L	2	1.8	92	70-130	
Pyruvic Acid	mg/L	2	1.8	91	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALITY CONTROL DATA

Project: 24A0466
Pace Project No.: 20303668

QC Batch: 315767
QC Batch Method: Pace ENV-SOP-BTRO-0042
Analysis Method: Pace ENV-SOP-BTRO-0042
Analysis Description: BR AM23G Low Level VFA
Laboratory: Pace Analytical Services - Baton Rouge
Associated Lab Samples: 20303668001

METHOD BLANK: 1511321 Matrix: Water
Associated Lab Samples: 20303668001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetic Acid	mg/L	ND	0.50	01/16/24 12:00	

LABORATORY CONTROL SAMPLE: 1511322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetic Acid	mg/L	2	2.0	98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1511361 1511362

Parameter	Units	92708208004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetic Acid	mg/L	6.9	20	20	26.8	27.0	100	100	70-130	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project:	24A0466
Pace Project No.:	20303668

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

ANALYTE QUALIFIERS

D4	Sample was diluted due to the presence of high levels of target analytes.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 24A0466
Pace Project No.: 20303668

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20303668001	**24A0466-01:EW-59**	Pace ENV-SOP-BTRO-0042	315700		
20303668001	**24A0466-01:EW-59**	Pace ENV-SOP-BTRO-0042	315767		
20303668002	**24A0466-02: EW-98**	Pace ENV-SOP-BTRO-0042	315700		

ENTHALPY ANALYTICAL

Pace - Gulf Coast
7979 Innovation Park Dr
Baton Rouge, LA 70820

1941
RICHMOND,
(804) 3
(8

WO# : 20303668

20303668

CHAIN OF CUSTODY

COMPANY NAME: Enthalpy	INVOICE TO: Enthalpy	PROJECT NAME/Quote #: 24A0466
CONTACT: Dan Elliott	INVOICE CONTACT:	SITE NAME: 24A0466
ADDRESS: 1941 Reymet Rd Richmond VA 23237	INVOICE ADDRESS: 1941 Reymet Rd Richmond VA 23237	PROJECT NUMBER: 24A0466
PHONE #: (804) 358-8295	INVOICE PHONE #: (804) 358-8295	P.O. #: PO-058435
FAX #:	EMAIL:	Pretreatment Program:
Is sample for compliance reporting? YES NO	Is sample from a chlorinated supply? YES NO	PWS I.D. #:
SAMPLER NAME (PRINT):	SAMPLER SIGNATURE:	**Turn Around Time:** 10

Matrix Codes: WW=Waste Water/Storm Water GW=Ground Water DW=Drinking Water S=Soil/Solids OR=Organic A=Air WP=Wipe OT=Other____________

CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	ANALYSIS / (PRESERVATIVE)								COMMENTS **Preservative Codes:** N=Nitric Acid C=Hydrochloric Acid S=Sulfuric Acid H=Sodium Hydroxide A=Ascorbic Acid Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol
											Volatile Fatty Acid Low Level								PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)
1) 24A0466-01: EW-59	x					01/08/24	1545		GW	3	X								1
2) 24A0466-02: EW-98	X					01/08/24	1530		GW	2	X								2
3)																			
4)																			
5)																			
6)																			
7)																			
8)																			
9)																			
10)																			

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
	1/10/24 1611	FedEx Express	1/10/24 1611
Fed Ex	1/11/24 955		1/11/24 955

QC Data Package
Level I ☐
Level II ☐
Level III ☐
Level IV ☐

LAB USE ONLY

COOLER TEMP ________ **°C**

Pace

Sample Condition Upon Reciept Workorder

WO#: 20303668
PM: RW **Due Date: 01/25/24**
CLIENT: BR-Enthalpy

7979 Innovation Park Dr. Baton Rouge, LA 70806
Cooler Inspected by/date: BRP / 1/11/23

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: ____________

☑ Yes	☐ No		Were custody seals present on the cooler?	
☑ Yes	☐ No	☐ NA	If custody seals were present, were they intact and unbroken?	

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: IE43 IR Gun Correction Factor: 0 °C

Cooler #1 Cooler Temp °C: 3.7 (Actual/True)
Cooler #2 Cooler Temp °C: ____________ (Actual/True)
Cooler #3 Cooler Temp °C: ____________ (Actual/True)
Cooler #4 Cooler Temp °C: ____________ (Actual/True)

Samples on ice ☑ Yes ☐ No

pH Strip Lot #

Method of coolant: ☑ Wet ☐ Ice Packs ☐ Dry Ice ☐ None

Tracking #: 7747 5716 0615

☐ Yes	☑ No	☐ NA	Is a temperature blank present?	
☑ Yes	☐ No	☐ NA	Was a chain of custody (COC) recieved?	
☐ Yes	☑ No	☐ NA	Was the line and profile number listed on the COC?	
☑ Yes	☐ No	☐ NA	Were all coolers received at or below 6.0°C? If no, notify Project Manager notified via email.	
☑ Yes	☐ No		Were proper custody procedures (relinquished/received) followed?	
☑ Yes	☐ No	☐ NA	Is the sampler name and signature on the COC?	
☑ Yes	☐ No		Were sample IDs listed on the COC and all sample containers?	
☑ Yes	☐ No		Was collection date & time listed on the COC and all sample containers?	
☑ Yes	☐ No		Did all container label information (ID, date, time) agree with the COC?	
☑ Yes	☐ No		Were tests to be performed listed on the COC?	
☑ Yes	☐ No		Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?	
☑ Yes	☐ No		Was adequate sample volume available?	
☑ Yes	☐ No		Were all samples received within ½ the holding time or 48 hours, whichever comes first?	
☑ Yes	☐ No		Were all samples containers accounted for? (No missing / excess)	
☑ Yes	☐ No	☒ NA BRP	Were VOA, 8015C (GRO/VPH), and RSK-175 samples free of bubbles > "pea size" (1/4" or 6mm in diameter) in any of the VOA vials?	
☐ Yes	☐ No	☑ NA	Trip blank present?	
☐ Yes	☐ No	☑ NA	Filtered volume received for dissolved tests? *If no, list affected sample(s) in comments below.*	
☐ Yes	☐ No	☑ NA	Were all metals/nutrient samples received at a pH of < 2?	If No, was preservative added? ☐ Yes ☐ No If added, record lots. Dispenser/pipette lot #: ____________
☐ Yes	☐ No	☑ NA	Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?	HNO_3__________ H_2SO_4 __________ NaOH__________ Date: ____________ Time:__________

Comments:

TNI Accredited
VELAP ID 460021

ENTHALPY
ANALYTICAL

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 24A0675

Client Name: SCS Engineers-Winchester
296 Victory Road
Winchester, VA 22602

Submitted To: Jennifer Robb

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Date Received: January 12, 2024 9:40
Date Issued: February 6, 2024 16:48
Project Number: 02218208.15 Task 2
Purchase Order:

Enclosed are the results of analyses for samples received by the laboratory on 01/12/2024 09:40. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Technical Director

End Notes:
The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Enthalpy Analytical.

Analysis Detects Report

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site ID: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Laboratory Sample ID: 24A0675-01

Client Sample ID: EW-51

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Arsenic	01	SW6020B	470		2.5	5.0	5	ug/L
Barium	01RE1	SW6020B	3270	E	10.0	50.0	10	ug/L
Chromium	01	SW6020B	170		2.00	5.00	5	ug/L
Nickel	01	SW6020B	63.08		5.000	5.000	5	ug/L
Zinc	01	SW6020B	117		12.5	25.0	5	ug/L
2-Butanone (MEK)	01RE1	SW8260D	34700		1500	5000	500	ug/L
Acetone	01RE1	SW8260D	96600		3500	5000	500	ug/L
Benzene	01	SW8260D	1410		20.0	50.0	50	ug/L
Ethylbenzene	01	SW8260D	99.0		20.0	50.0	50	ug/L
Tetrahydrofuran	01	SW8260D	5160		500	500	50	ug/L
Toluene	01	SW8260D	95.5		25.0	50.0	50	ug/L
Xylenes, Total	01	SW8260D	142	J	50.0	150	50	ug/L
Ammonia as N	01	EPA350.1 R2.0	2160		146	200	2000	mg/L
BOD	01	SM5210B-2016	26000		0.2	2.0	1	mg/L
COD	01	SM5220D-2011	48600		5000	5000	500	mg/L
Cyanide	01	SW9012B	0.14	CI	0.05	0.05	5	mg/L
Nitrate as N	01	Calc.	2.01		1.50	5.50	100	mg/L
Nitrate+Nitrite as N	01	SM4500-NO3F-2016	3.71		0.50	0.50	5	mg/L
Nitrite as N	01	SM4500-NO2B-2011	1.70	J	1.00	5.00	100	mg/L
TKN as N	01	EPA351.2 R2.0	2450		100	250	500	mg/L
Total Recoverable Phenolics	01	SW9065	38.0		1.50	2.50	50	mg/L

Note that this report is not the "Certificate of Analysis". This report only lists the target analytes that displayed concentrations that exceeded the detection limit specified for that analyte. For a complete listing of all analytes requested and the results of the analysis see the " Certificate of Analysis".

ENTHALPY ANALYTICAL

Enthalpy Analytical
1941 Reymet Road
Richmond, Virginia 23237
(804)-358-8295 - Telephone
(804)-358-8297 - Fax

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW-51	24A0675-01	Ground Water	01/11/2024 09:30	01/12/2024 09:40
Trip Blank	24A0675-02	Ground Water	08/09/2023 16:15	01/12/2024 09:40

Analysis for Volatile Fatty Acids was subcontracted to Pace. The subcontracted results are attached at the end of this Certificate of Analysis.

As requested by Jennifer Robb on February 6, 2024, a revised report has been issued to correct reported VOCs.

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: EW-51

Laboratory Sample ID: 24A0675-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Metals (Total) by EPA 6000/7000 Series Methods												
Silver	01	7440-22-4	SW6020B	01/15/2024 09:30	01/16/2024 15:11	BLOD		0.300	5.00	5	ug/L	AB
Arsenic	01	7440-38-2	SW6020B	01/15/2024 09:30	01/16/2024 15:11	470		2.5	5.0	5	ug/L	AB
Barium	01RE1	7440-39-3	SW6020B	01/15/2024 09:30	01/16/2024 14:07	3270	E	10.0	50.0	10	ug/L	AB
Cadmium	01	7440-43-9	SW6020B	01/15/2024 09:30	01/16/2024 15:11	BLOD		0.500	5.00	5	ug/L	AB
Chromium	01	7440-47-3	SW6020B	01/15/2024 09:30	01/16/2024 15:11	170		2.00	5.00	5	ug/L	AB
Copper	01	7440-50-8	SW6020B	01/15/2024 09:30	01/16/2024 15:11	BLOD		1.50	5.00	5	ug/L	AB
Mercury	01	7439-97-6	SW6020B	01/15/2024 09:30	01/16/2024 15:11	BLOD		1.00	1.00	5	ug/L	AB
Nickel	01	7440-02-0	SW6020B	01/15/2024 09:30	01/16/2024 15:11	63.08		5.000	5.000	5	ug/L	AB
Lead	01	7439-92-1	SW6020B	01/15/2024 09:30	01/16/2024 15:11	BLOD		5.0	5.0	5	ug/L	AB
Selenium	01	7782-49-2	SW6020B	01/15/2024 09:30	01/16/2024 15:11	BLOD		4.25	5.00	5	ug/L	AB
Zinc	01	7440-66-6	SW6020B	01/15/2024 09:30	01/16/2024 15:11	117		12.5	25.0	5	ug/L	AB
Volatile Organic Compounds by GCMS												
2-Butanone (MEK)	01RE1	78-93-3	SW8260D	01/16/2024 17:58	01/16/2024 17:58	34700		1500	5000	500	ug/L	TLH
Acetone	01RE1	67-64-1	SW8260D	01/16/2024 17:58	01/16/2024 17:58	96600		3500	5000	500	ug/L	TLH
Benzene	01	71-43-2	SW8260D	01/12/2024 17:34	01/12/2024 17:34	1410		20.0	50.0	50	ug/L	RJB
Ethylbenzene	01	100-41-4	SW8260D	01/12/2024 17:34	01/12/2024 17:34	99.0		20.0	50.0	50	ug/L	RJB
Toluene	01	108-88-3	SW8260D	01/12/2024 17:34	01/12/2024 17:34	95.5		25.0	50.0	50	ug/L	RJB
Xylenes, Total	01	1330-20-7	SW8260D	01/12/2024 17:34	01/12/2024 17:34	142	J	50.0	150	50	ug/L	RJB
Tetrahydrofuran	01	109-99-9	SW8260D	01/12/2024 17:34	01/12/2024 17:34	5160		500	500	50	ug/L	RJB
Surr: 1,2-Dichloroethane-d4 (Surr)	*01*	*81.2 %*	*70-120*	*01/12/2024 17:34*	*01/12/2024 17:34*							
Surr: 4-Bromofluorobenzene (Surr)	*01*	*97.6 %*	*75-120*	*01/12/2024 17:34*	*01/12/2024 17:34*							
Surr: Dibromofluoromethane (Surr)	*01*	*87.3 %*	*70-130*	*01/12/2024 17:34*	*01/12/2024 17:34*							
Surr: Toluene-d8 (Surr)	*01*	*95.3 %*	*70-130*	*01/12/2024 17:34*	*01/12/2024 17:34*							
Surr: 1,2-Dichloroethane-d4 (Surr)	*01RE1*	*116 %*	*70-120*	*01/16/2024 17:58*	*01/16/2024 17:58*							
Surr: 4-Bromofluorobenzene (Surr)	*01RE1*	*99.9 %*	*75-120*	*01/16/2024 17:58*	*01/16/2024 17:58*							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **EW-51**

Laboratory Sample ID: **24A0675-01**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: Dibromofluoromethane (Surr)	*01RE1*	*112 %*	*70-130*	*01/16/2024 17:58*	*01/16/2024 17:58*							
Surr: Toluene-d8 (Surr)	*01RE1*	*108 %*	*70-130*	*01/16/2024 17:58*	*01/16/2024 17:58*							
Semivolatile Organic Compounds by GCMS												
Anthracene	01	120-12-7	SW8270E	01/15/2024 08:30	01/16/2024 16:02	BLOD		100	200	10	ug/L	BMS
Surr: 2,4,6-Tribromophenol (Surr)	*01*	*%*	*5-136*	*01/15/2024 08:30*	*01/16/2024 16:02*							*DS*
Surr: 2-Fluorobiphenyl (Surr)	*01*	*%*	*9-117*	*01/15/2024 08:30*	*01/16/2024 16:02*							*DS*
Surr: 2-Fluorophenol (Surr)	*01*	*35.2 %*	*5-60*	*01/15/2024 08:30*	*01/16/2024 16:02*							
Surr: Nitrobenzene-d5 (Surr)	*01*	*%*	*5-151*	*01/15/2024 08:30*	*01/16/2024 16:02*							*DS*
Surr: Phenol-d5 (Surr)	*01*	*0.200 %*	*5-60*	*01/15/2024 08:30*	*01/16/2024 16:02*							*DS*
Surr: p-Terphenyl-d14 (Surr)	*01*	*31.4 %*	*5-141*	*01/15/2024 08:30*	*01/16/2024 16:02*							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **EW-51**

Laboratory Sample ID: **24A0675-01**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Wet Chemistry Analysis												
Ammonia as N	01	7664-41-7	EPA350.1 R2.0	01/22/2024 12:38	01/22/2024 12:38	2160		146	200	2000	mg/L	MGC
BOD	01	E1640606	SM5210B-2016	01/12/2024 09:00	01/12/2024 09:00	26000		0.2	2.0	1	mg/L	TEG
Cyanide	01	57-12-5	SW9012B	01/19/2024 12:29	01/19/2024 12:29	0.14	CI	0.05	0.05	5	mg/L	MGC
COD	01	NA	SM5220D-2011	01/25/2024 16:23	01/25/2024 16:23	48600		5000	5000	500	mg/L	MGC
Nitrate as N	01	14797-55-8	Calc.	01/17/2024 13:03	01/17/2024 13:03	2.01		1.50	5.50	100	mg/L	AJM
Nitrate+Nitrite as N	01	E701177	SM4500-NO3F-2016	01/17/2024 13:03	01/17/2024 13:03	3.71		0.50	0.50	5	mg/L	MGC
Nitrite as N	01	14797-65-0	SM4500-NO2B-2011	01/12/2024 11:30	01/12/2024 11:30	1.70	J	1.00	5.00	100	mg/L	AJM
Total Recoverable Phenolics	01	NA	SW9065	01/22/2024 12:54	01/22/2024 12:54	38.0		1.50	2.50	50	mg/L	AAL
TKN as N	01	E17148461	EPA351.2 R2.0	01/23/2024 16:02	01/23/2024 16:02	2450		100	250	500	mg/L	AJM

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Client Sample ID: **Trip Blank**

Laboratory Sample ID: **24A0675-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
2-Butanone (MEK)	02	78-93-3	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		3.00	10.0	1	ug/L	RJB
Acetone	02	67-64-1	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		7.00	10.0	1	ug/L	RJB
Benzene	02	71-43-2	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		0.40	1.00	1	ug/L	RJB
Ethylbenzene	02	100-41-4	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		0.40	1.00	1	ug/L	RJB
Toluene	02	108-88-3	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		0.50	1.00	1	ug/L	RJB
Xylenes, Total	02	1330-20-7	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		1.00	3.00	1	ug/L	RJB
Tetrahydrofuran	02	109-99-9	SW8260D	01/12/2024 16:01	01/12/2024 16:01	BLOD		10.0	10.0	1	ug/L	RJB
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*83.2 %*	*70-120*	*01/12/2024 16:01*	*01/12/2024 16:01*							
Surr: 4-Bromofluorobenzene (Surr)	*02*	*95.0 %*	*75-120*	*01/12/2024 16:01*	*01/12/2024 16:01*							
Surr: Dibromofluoromethane (Surr)	*02*	*86.8 %*	*70-130*	*01/12/2024 16:01*	*01/12/2024 16:01*							
Surr: Toluene-d8 (Surr)	*02*	*94.4 %*	*70-130*	*01/12/2024 16:01*	*01/12/2024 16:01*							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0466 - EPA200.8 R5.4										
Blank (BHA0466-BLK1)				Prepared: 01/15/2024 Analyzed: 01/16/2024						
Mercury	ND	0.200	ug/L							
Arsenic	ND	1.0	ug/L							
Barium	ND	5.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	1.00	ug/L							
Copper	ND	1.00	ug/L							
Lead	ND	1.0	ug/L							
Nickel	ND	1.000	ug/L							
Selenium	ND	1.00	ug/L							
Silver	ND	1.00	ug/L							
Zinc	ND	5.00	ug/L							
LCS (BHA0466-BS1)				Prepared: 01/15/2024 Analyzed: 01/16/2024						
Mercury	0.999	0.200	ug/L	1.00		99.9	80-120			
Arsenic	48	1.0	ug/L	50.0		96.4	80-120			
Barium	49.8	5.00	ug/L	50.0		99.6	80-120			
Cadmium	49.9	1.00	ug/L	50.0		99.7	80-120			
Chromium	48.9	1.00	ug/L	50.0		97.9	80-120			
Copper	49.2	1.00	ug/L	50.0		98.4	80-120			
Lead	51	1.0	ug/L	50.0		102	80-120			
Nickel	48.81	1.000	ug/L	50.0		97.6	80-120			
Selenium	47.1	1.00	ug/L	50.0		94.3	80-120			
Silver	10.1	1.00	ug/L	10.0		101	80-120			
Zinc	48.8	5.00	ug/L	50.0		97.7	80-120			
Matrix Spike (BHA0466-MS1)	**Source: 24A0675-01**			Prepared: 01/15/2024 Analyzed: 01/16/2024						

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:48:43PM
Client Site I.D.:	24-01 LFG EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0466 - EPA200.8 R5.4										
Matrix Spike (BHA0466-MS1)	**Source: 24A0675-01**			Prepared: 01/15/2024 Analyzed: 01/16/2024						
Mercury	1.02	1.00	ug/L	1.00	BLOD	102	70-130			
Arsenic	490	5.0	ug/L	50.0	470	42.4	75-125			M2
Cadmium	42.4	5.00	ug/L	50.0	BLOD	84.8	75-125			
Chromium	198	5.00	ug/L	50.0	170	56.5	75-125			M2
Copper	44.7	5.00	ug/L	50.0	BLOD	89.3	75-125			
Lead	49	5.0	ug/L	50.0	BLOD	97.8	75-125			
Nickel	103.7	5.000	ug/L	50.0	63.08	81.2	75-125			
Selenium	38.5	5.00	ug/L	50.0	BLOD	77.0	75-125			
Silver	8.78	5.00	ug/L	10.0	BLOD	87.8	75-125			
Zinc	149	25.0	ug/L	50.0	117	63.9	75-125			M2
Matrix Spike (BHA0466-MS2)	**Source: 24A0675-01RE1**			Prepared: 01/15/2024 Analyzed: 01/16/2024						
Barium	3310	50.0	ug/L	100	3270	37.3	75-125			M2, E
Matrix Spike Dup (BHA0466-MSD1)	**Source: 24A0675-01**			Prepared: 01/15/2024 Analyzed: 01/16/2024						
Mercury	1.05	1.00	ug/L	1.00	BLOD	105	70-130	2.67	20	
Arsenic	500	5.0	ug/L	50.0	470	56.6	75-125	1.43	20	M2
Cadmium	43.6	5.00	ug/L	50.0	BLOD	87.1	75-125	2.69	20	
Chromium	191	5.00	ug/L	50.0	170	42.0	75-125	3.75	20	M2
Copper	45.1	5.00	ug/L	50.0	BLOD	90.1	75-125	0.870	20	
Lead	49	5.0	ug/L	50.0	BLOD	98.2	75-125	0.446	20	
Nickel	103.8	5.000	ug/L	50.0	63.08	81.5	75-125	0.133	20	
Selenium	39.7	5.00	ug/L	50.0	BLOD	79.5	75-125	3.17	20	
Silver	9.01	5.00	ug/L	10.0	BLOD	90.1	75-125	2.65	20	
Zinc	150	25.0	ug/L	50.0	117	65.3	75-125	0.462	20	M2
Matrix Spike Dup (BHA0466-MSD2)	**Source: 24A0675-01RE1**			Prepared: 01/15/2024 Analyzed: 01/16/2024						

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0466 - EPA200.8 R5.4										
Matrix Spike Dup (BHA0466-MSD2)	**Source: 24A0675-01RE1**	Prepared: 01/15/2024 Analyzed: 01/16/2024								
Barium	3360	50.0	ug/L	100	3270	90.4	75-125	1.59	20	E

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0433 - SW5030B-MS

Blank (BHA0433-BLK1) Prepared & Analyzed: 01/12/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,1-Trichloroethane	ND	1.00	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,2-Trichloroethane	ND	1.00	ug/L							
1,1-Dichloroethane	ND	1.00	ug/L							
1,1-Dichloroethylene	ND	1.00	ug/L							
1,1-Dichloropropene	ND	1.00	ug/L							
1,2,3-Trichlorobenzene	ND	1.00	ug/L							
1,2,3-Trichloropropane	ND	1.00	ug/L							
1,2,4-Trichlorobenzene	ND	1.00	ug/L							
1,2,4-Trimethylbenzene	ND	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.00	ug/L							
1,2-Dibromoethane (EDB)	ND	1.00	ug/L							
1,2-Dichlorobenzene	ND	0.50	ug/L							
1,2-Dichloroethane	ND	1.00	ug/L							
1,2-Dichloropropane	ND	0.50	ug/L							
1,3,5-Trimethylbenzene	ND	1.00	ug/L							
1,3-Dichlorobenzene	ND	1.00	ug/L							
1,3-Dichloropropane	ND	1.00	ug/L							
1,4-Dichlorobenzene	ND	1.00	ug/L							
2,2-Dichloropropane	ND	1.00	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.00	ug/L							
2-Hexanone (MBK)	ND	5.00	ug/L							
4-Chlorotoluene	ND	1.00	ug/L							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Blank (BHA0433-BLK1)				Prepared & Analyzed: 01/12/2024						
4-Isopropyltoluene	ND	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	5.00	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.00	ug/L							
Bromobenzene	ND	1.00	ug/L							
Bromochloromethane	ND	1.00	ug/L							
Bromodichloromethane	ND	0.50	ug/L							
Bromoform	ND	1.00	ug/L							
Bromomethane	ND	1.00	ug/L							
Carbon disulfide	ND	10.0	ug/L							
Carbon tetrachloride	ND	1.00	ug/L							
Chlorobenzene	ND	1.00	ug/L							
Chloroethane	ND	1.00	ug/L							
Chloroform	ND	0.50	ug/L							
Chloromethane	ND	1.00	ug/L							
cis-1,2-Dichloroethylene	ND	1.00	ug/L							
cis-1,3-Dichloropropene	ND	1.00	ug/L							
Dibromochloromethane	ND	0.50	ug/L							
Dibromomethane	ND	1.00	ug/L							
Dichlorodifluoromethane	ND	1.00	ug/L							
Di-isopropyl ether (DIPE)	ND	5.00	ug/L							
Ethylbenzene	ND	1.00	ug/L							
Hexachlorobutadiene	ND	0.80	ug/L							
Iodomethane	ND	10.0	ug/L							
Isopropylbenzene	ND	1.00	ug/L							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Blank (BHA0433-BLK1)				Prepared & Analyzed: 01/12/2024						
m+p-Xylenes	ND	2.00	ug/L							
Methylene chloride	ND	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	ND	1.00	ug/L							
Naphthalene	ND	1.00	ug/L							
n-Butylbenzene	ND	1.00	ug/L							
n-Propylbenzene	ND	1.00	ug/L							
o-Xylene	ND	1.00	ug/L							
sec-Butylbenzene	ND	1.00	ug/L							
Styrene	ND	1.00	ug/L							
tert-Butylbenzene	ND	1.00	ug/L							
Tetrachloroethylene (PCE)	ND	1.00	ug/L							
Toluene	ND	1.00	ug/L							
trans-1,2-Dichloroethylene	ND	1.00	ug/L							
trans-1,3-Dichloropropene	ND	1.00	ug/L							
Trichloroethylene	ND	1.00	ug/L							
Trichlorofluoromethane	ND	1.00	ug/L							
Vinyl acetate	ND	10.0	ug/L							
Vinyl chloride	ND	0.50	ug/L							
Xylenes, Total	ND	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	*43.6*		ug/L	*50.0*		*87.1*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.0*		ug/L	*50.0*		*95.9*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*45.1*		ug/L	*50.0*		*90.3*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.2*		ug/L	*50.0*		*96.3*	*70-130*			
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:48:43PM
Client Site I.D.: 24-01 LFG EW Monthly Monitoring
Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
1,1,1,2-Tetrachloroethane	46.6	0.4	ug/L	50.0		93.3	80-130			
1,1,1-Trichloroethane	51.0	1	ug/L	50.0		102	65-130			
1,1,2,2-Tetrachloroethane	44.2	0.4	ug/L	50.0		88.4	65-130			
1,1,2-Trichloroethane	49.2	1	ug/L	50.0		98.4	75-125			
1,1-Dichloroethane	49.6	1	ug/L	50.0		99.3	70-135			
1,1-Dichloroethylene	54.2	1	ug/L	50.0		108	70-130			
1,1-Dichloropropene	53.9	1	ug/L	50.0		108	75-135			
1,2,3-Trichlorobenzene	46.6	1	ug/L	50.0		93.1	55-140			
1,2,3-Trichloropropane	42.7	1	ug/L	50.0		85.3	75-125			
1,2,4-Trichlorobenzene	47.9	1	ug/L	50.0		95.8	65-135			
1,2,4-Trimethylbenzene	43.8	1	ug/L	50.0		87.6	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	38.2	1	ug/L	50.0		76.4	50-130			
1,2-Dibromoethane (EDB)	45.5	1	ug/L	50.0		91.0	80-120			
1,2-Dichlorobenzene	46.3	0.5	ug/L	50.0		92.6	70-120			
1,2-Dichloroethane	42.3	1	ug/L	50.0		84.6	70-130			
1,2-Dichloropropane	46.8	0.5	ug/L	50.0		93.7	75-125			
1,3,5-Trimethylbenzene	42.8	1	ug/L	50.0		85.6	75-125			
1,3-Dichlorobenzene	45.8	1	ug/L	50.0		91.7	75-125			
1,3-Dichloropropane	45.4	1	ug/L	50.0		90.9	75-125			
1,4-Dichlorobenzene	44.6	1	ug/L	50.0		89.1	75-125			
2,2-Dichloropropane	52.4	1	ug/L	50.0		105	70-135			
2-Butanone (MEK)	50.0	10	ug/L	50.0		100	30-150			
2-Chlorotoluene	47.4	1	ug/L	50.0		94.8	75-125			
2-Hexanone (MBK)	40.4	5	ug/L	50.0		80.8	55-130			
4-Chlorotoluene	45.8	1	ug/L	50.0		91.5	75-130			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
4-Isopropyltoluene	46.6	1	ug/L	50.0		93.1	75-130			
4-Methyl-2-pentanone (MIBK)	42.8	5	ug/L	50.0		85.7	60-135			
Acetone	42.2	10	ug/L	50.0		84.3	40-140			
Benzene	47.6	1	ug/L	50.0		95.3	80-120			
Bromobenzene	50.1	1	ug/L	50.0		100	75-125			
Bromochloromethane	50.9	1	ug/L	50.0		102	65-130			
Bromodichloromethane	47.4	0.5	ug/L	50.0		94.7	75-120			
Bromoform	46.6	1	ug/L	50.0		93.2	70-130			
Bromomethane	41.0	1	ug/L	50.0		82.0	30-145			
Carbon disulfide	46.7	10	ug/L	50.0		93.3	35-160			
Carbon tetrachloride	55.1	1	ug/L	50.0		110	65-140			
Chlorobenzene	48.4	1	ug/L	50.0		96.8	80-120			
Chloroethane	46.8	1	ug/L	50.0		93.5	60-135			
Chloroform	47.5	0.5	ug/L	50.0		95.0	65-135			
Chloromethane	37.6	1	ug/L	50.0		75.2	40-125			
cis-1,2-Dichloroethylene	52.2	1	ug/L	50.0		104	70-125			
cis-1,3-Dichloropropene	47.1	1	ug/L	50.0		94.3	70-130			
Dibromochloromethane	49.8	0.5	ug/L	50.0		99.6	60-135			
Dibromomethane	47.1	1	ug/L	50.0		94.2	75-125			
Dichlorodifluoromethane	38.9	1	ug/L	50.0		77.7	30-155			
Ethylbenzene	47.6	1	ug/L	50.0		95.2	75-125			
Hexachlorobutadiene	52.1	0.8	ug/L	50.0		104	50-140			
Isopropylbenzene	45.5	1	ug/L	50.0		91.0	75-125			
m+p-Xylenes	99.4	2	ug/L	100		99.4	75-130			
Methylene chloride	49.5	4	ug/L	50.0		99.0	55-140			

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:48:43PM
Client Site I.D.: 24-01 LFG EW Monthly Monitoring
Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
LCS (BHA0433-BS1)				Prepared & Analyzed: 01/12/2024						
Methyl-t-butyl ether (MTBE)	43.4	1	ug/L	50.0		86.7	65-125			
Naphthalene	44.4	1	ug/L	50.0		88.8	55-140			
n-Butylbenzene	44.8	1	ug/L	50.0		89.7	70-135			
n-Propylbenzene	47.8	1	ug/L	50.0		95.6	70-130			
o-Xylene	48.4	1	ug/L	50.0		96.9	80-120			
sec-Butylbenzene	48.8	1	ug/L	50.0		97.7	70-125			
Styrene	45.7	1	ug/L	50.0		91.4	65-135			
tert-Butylbenzene	47.0	1	ug/L	50.0		94.0	70-130			
Tetrachloroethylene (PCE)	55.4	1	ug/L	50.0		111	45-150			
Toluene	51.1	1	ug/L	50.0		102	75-120			
trans-1,2-Dichloroethylene	53.9	1	ug/L	50.0		108	60-140			
trans-1,3-Dichloropropene	48.9	1	ug/L	50.0		97.7	55-140			
Trichloroethylene	51.8	1	ug/L	50.0		104	70-125			
Trichlorofluoromethane	53.8	1	ug/L	50.0		108	60-145			
Vinyl chloride	45.4	0.5	ug/L	50.0		90.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*45.9*		ug/L	*50.0*		*91.7*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*47.4*		ug/L	*50.0*		*94.9*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*48.5*		ug/L	*50.0*		*97.1*	*70-130*			
Surr: Toluene-d8 (Surr)	*47.6*		ug/L	*50.0*		*95.2*	*70-130*			
Duplicate (BHA0433-DUP1)	**Source: 24A0505-01**			Prepared & Analyzed: 01/12/2024						
1,1,1,2-Tetrachloroethane	ND	8.00	ug/L		BLOD			NA	30	
1,1,1-Trichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1,2,2-Tetrachloroethane	ND	8.00	ug/L		BLOD			NA	30	
1,1,2-Trichloroethane	ND	20.0	ug/L		BLOD			NA	30	

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:48:43PM
Client Site I.D.: 24-01 LFG EW Monthly Monitoring
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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Duplicate (BHA0433-DUP1)		**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024						
1,1-Dichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
1,1-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
1,2,3-Trichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2,3-Trichloropropane	ND	20.0	ug/L		BLOD			NA	30	
1,2,4-Trichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2,4-Trimethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dibromo-3-chloropropane (DBCP)	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dibromoethane (EDB)	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dichlorobenzene	ND	10.0	ug/L		BLOD			NA	30	
1,2-Dichloroethane	ND	20.0	ug/L		BLOD			NA	30	
1,2-Dichloropropane	ND	10.0	ug/L		BLOD			NA	30	
1,3,5-Trimethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
1,3-Dichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
1,3-Dichloropropane	ND	20.0	ug/L		BLOD			NA	30	
1,4-Dichlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
2,2-Dichloropropane	ND	20.0	ug/L		BLOD			NA	30	
2-Butanone (MEK)	305	200	ug/L		345			12.2	30	
2-Chlorotoluene	ND	20.0	ug/L		BLOD			NA	30	
2-Hexanone (MBK)	ND	100	ug/L		BLOD			NA	30	
4-Chlorotoluene	ND	20.0	ug/L		BLOD			NA	30	
4-Isopropyltoluene	ND	20.0	ug/L		BLOD			NA	30	
4-Methyl-2-pentanone (MIBK)	66.4	100	ug/L		71.6			NA	30	
Acetone	ND	200	ug/L		BLOD			NA	30	
Benzene	ND	20.0	ug/L		BLOD			NA	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0433 - SW5030B-MS

Duplicate (BHA0433-DUP1) **Source: 24A0505-01** Prepared & Analyzed: 01/12/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Bromobenzene	ND	20.0	ug/L		BLOD			NA	30	
Bromochloromethane	ND	20.0	ug/L		BLOD			NA	30	
Bromodichloromethane	ND	10.0	ug/L		BLOD			NA	30	
Bromoform	ND	20.0	ug/L		BLOD			NA	30	
Bromomethane	ND	20.0	ug/L		BLOD			NA	30	
Carbon disulfide	ND	200	ug/L		BLOD			NA	30	
Carbon tetrachloride	ND	20.0	ug/L		BLOD			NA	30	
Chlorobenzene	ND	20.0	ug/L		BLOD			NA	30	
Chloroethane	ND	20.0	ug/L		BLOD			NA	30	
Chloroform	ND	10.0	ug/L		BLOD			NA	30	
Chloromethane	ND	20.0	ug/L		BLOD			NA	30	
cis-1,2-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
cis-1,3-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
Dibromochloromethane	ND	10.0	ug/L		BLOD			NA	30	
Dibromomethane	ND	20.0	ug/L		BLOD			NA	30	
Dichlorodifluoromethane	ND	20.0	ug/L		BLOD			NA	30	
Di-isopropyl ether (DIPE)	ND	100	ug/L		BLOD			NA	30	
Ethylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Hexachlorobutadiene	ND	16.0	ug/L		BLOD			NA	30	
Iodomethane	ND	200	ug/L		BLOD			NA	30	
Isopropylbenzene	ND	20.0	ug/L		BLOD			NA	30	
m+p-Xylenes	ND	40.0	ug/L		BLOD			NA	30	
Methylene chloride	ND	80.0	ug/L		BLOD			NA	30	
Methyl-t-butyl ether (MTBE)	ND	20.0	ug/L		BLOD			NA	30	
Naphthalene	ND	20.0	ug/L		BLOD			NA	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Duplicate (BHA0433-DUP1)		**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024						
n-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
n-Propylbenzene	ND	20.0	ug/L		BLOD			NA	30	
o-Xylene	ND	20.0	ug/L		BLOD			NA	30	
sec-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Styrene	ND	20.0	ug/L		BLOD			NA	30	
tert-Butylbenzene	ND	20.0	ug/L		BLOD			NA	30	
Tetrachloroethylene (PCE)	ND	20.0	ug/L		BLOD			NA	30	
Toluene	64.4	20.0	ug/L		62.8			2.52	30	
trans-1,2-Dichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
trans-1,3-Dichloropropene	ND	20.0	ug/L		BLOD			NA	30	
Trichloroethylene	ND	20.0	ug/L		BLOD			NA	30	
Trichlorofluoromethane	ND	20.0	ug/L		BLOD			NA	30	
Vinyl acetate	ND	200	ug/L		BLOD			NA	30	
Vinyl chloride	ND	10.0	ug/L		BLOD			NA	30	
Xylenes, Total	ND	60.0	ug/L		BLOD			NA	30	
Tetrahydrofuran	ND	200	ug/L		BLOD			NA	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	*43.3*		ug/L	*50.0*		*86.6*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.0*		ug/L	*50.0*		*96.0*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*42.2*		ug/L	*50.0*		*84.5*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.8*		ug/L	*50.0*		*97.6*	*70-130*			
Matrix Spike (BHA0433-MS1)		**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024						
1,1,1,2-Tetrachloroethane	46.1	0.4	ug/L	50.0	BLOD	92.3	80-130			
1,1,1-Trichloroethane	46.3	1	ug/L	50.0	BLOD	92.6	65-130			
1,1,2,2-Tetrachloroethane	44.8	0.4	ug/L	50.0	BLOD	89.6	65-130			

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Enthalpy Analytical

Batch BHA0433 - SW5030B-MS

Matrix Spike (BHA0433-MS1) **Source: 24A0505-01** Prepared & Analyzed: 01/12/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,1,2-Trichloroethane	49.4	1	ug/L	50.0	BLOD	98.9	75-125			
1,1-Dichloroethane	42.8	1	ug/L	50.0	BLOD	85.7	70-135			
1,1-Dichloroethylene	48.7	1	ug/L	50.0	BLOD	97.4	50-145			
1,1-Dichloropropene	50.0	1	ug/L	50.0	BLOD	100	75-135			
1,2,3-Trichlorobenzene	48.9	1	ug/L	50.0	BLOD	97.8	55-140			
1,2,3-Trichloropropane	42.9	1	ug/L	50.0	BLOD	85.9	75-125			
1,2,4-Trichlorobenzene	48.7	1	ug/L	50.0	BLOD	97.3	65-135			
1,2,4-Trimethylbenzene	43.3	1	ug/L	50.0	BLOD	86.6	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	38.1	1	ug/L	50.0	BLOD	76.2	50-130			
1,2-Dibromoethane (EDB)	46.0	1	ug/L	50.0	BLOD	92.1	80-120			
1,2-Dichlorobenzene	45.7	0.5	ug/L	50.0	BLOD	91.5	70-120			
1,2-Dichloroethane	38.7	1	ug/L	50.0	BLOD	77.4	70-130			
1,2-Dichloropropane	46.8	0.5	ug/L	50.0	BLOD	93.6	75-125			
1,3,5-Trimethylbenzene	42.6	1	ug/L	50.0	BLOD	85.1	75-124			
1,3-Dichlorobenzene	45.5	1	ug/L	50.0	BLOD	91.1	75-125			
1,3-Dichloropropane	46.2	1	ug/L	50.0	BLOD	92.4	75-125			
1,4-Dichlorobenzene	44.9	1	ug/L	50.0	BLOD	89.8	75-125			
2,2-Dichloropropane	46.9	1	ug/L	50.0	BLOD	93.8	70-135			
2-Butanone (MEK)	57.2	10	ug/L	50.0	17.2	79.9	30-150			
2-Chlorotoluene	46.4	1	ug/L	50.0	BLOD	92.7	75-125			
2-Hexanone (MBK)	42.2	5	ug/L	50.0	BLOD	84.5	55-130			
4-Chlorotoluene	44.9	1	ug/L	50.0	BLOD	89.8	75-130			
4-Isopropyltoluene	47.4	1	ug/L	50.0	BLOD	94.9	75-130			
4-Methyl-2-pentanone (MIBK)	48.0	5	ug/L	50.0	3.58	88.8	60-135			
Acetone	42.3	10	ug/L	50.0	BLOD	84.7	40-140			

Certificate of Analysis

Client Name: SCS Engineers-Winchester
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Client Site I.D.: 24-01 LFG EW Monthly Monitoring
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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Matrix Spike (BHA0433-MS1)		**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024						
Benzene	48.5	1	ug/L	50.0	BLOD	97.1	80-120			
Bromobenzene	50.3	1	ug/L	50.0	BLOD	101	75-125			
Bromochloromethane	44.6	1	ug/L	50.0	BLOD	89.1	65-130			
Bromodichloromethane	47.2	0.5	ug/L	50.0	BLOD	94.4	75-136			
Bromoform	46.0	1	ug/L	50.0	BLOD	92.0	70-130			
Bromomethane	40.2	1	ug/L	50.0	BLOD	80.3	30-145			
Carbon disulfide	42.4	10	ug/L	50.0	BLOD	84.8	35-160			
Carbon tetrachloride	55.0	1	ug/L	50.0	BLOD	110	65-140			
Chlorobenzene	47.8	1	ug/L	50.0	BLOD	95.5	80-120			
Chloroethane	41.3	1	ug/L	50.0	BLOD	82.6	60-135			
Chloroform	42.9	0.5	ug/L	50.0	BLOD	85.9	65-135			
Chloromethane	34.5	1	ug/L	50.0	BLOD	69.0	40-125			
cis-1,2-Dichloroethylene	43.8	1	ug/L	50.0	BLOD	87.6	70-125			
cis-1,3-Dichloropropene	47.2	1	ug/L	50.0	BLOD	94.4	47-136			
Dibromochloromethane	50.5	0.5	ug/L	50.0	BLOD	101	60-135			
Dibromomethane	47.6	1	ug/L	50.0	BLOD	95.1	75-125			
Dichlorodifluoromethane	36.1	1	ug/L	50.0	BLOD	72.2	30-155			
Ethylbenzene	47.8	1	ug/L	50.0	BLOD	95.5	75-125			
Hexachlorobutadiene	52.0	0.8	ug/L	50.0	BLOD	104	50-140			
Isopropylbenzene	45.7	1	ug/L	50.0	BLOD	91.4	75-125			
m+p-Xylenes	97.6	2	ug/L	100	BLOD	97.1	75-130			
Methylene chloride	43.6	4	ug/L	50.0	BLOD	86.3	55-140			
Methyl-t-butyl ether (MTBE)	37.4	1	ug/L	50.0	BLOD	74.8	65-125			
Naphthalene	47.6	1	ug/L	50.0	BLOD	95.3	55-140			
n-Butylbenzene	44.8	1	ug/L	50.0	BLOD	89.6	70-135			

Certificate of Analysis

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring
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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0433 - SW5030B-MS										
Matrix Spike (BHA0433-MS1)		**Source: 24A0505-01**		Prepared & Analyzed: 01/12/2024						
n-Propylbenzene	47.6	1	ug/L	50.0	BLOD	95.2	70-130			
o-Xylene	48.9	1	ug/L	50.0	BLOD	97.7	80-120			
sec-Butylbenzene	48.6	1	ug/L	50.0	BLOD	97.2	70-125			
Styrene	45.9	1	ug/L	50.0	BLOD	91.8	65-135			
tert-Butylbenzene	47.2	1	ug/L	50.0	BLOD	94.4	70-130			
Tetrachloroethylene (PCE)	57.1	1	ug/L	50.0	BLOD	114	51-231			
Toluene	56.0	1	ug/L	50.0	3.14	106	75-120			
trans-1,2-Dichloroethylene	45.3	1	ug/L	50.0	BLOD	90.5	60-140			
trans-1,3-Dichloropropene	48.5	1	ug/L	50.0	BLOD	97.0	55-140			
Trichloroethylene	52.2	1	ug/L	50.0	BLOD	104	70-125			
Trichlorofluoromethane	49.7	1	ug/L	50.0	BLOD	99.3	60-145			
Vinyl chloride	41.4	0.5	ug/L	50.0	BLOD	82.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*44.1*		ug/L	*50.0*		*88.2*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.9*		ug/L	*50.0*		*97.7*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*45.1*		ug/L	*50.0*		*90.2*	*70-130*			
Surr: Toluene-d8 (Surr)	*48.0*		ug/L	*50.0*		*96.1*	*70-130*			
Batch BHA0523 - SW5030B-MS										
Blank (BHA0523-BLK1)				Prepared & Analyzed: 01/16/2024						
1,1,1,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,1-Trichloroethane	ND	1.00	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.40	ug/L							
1,1,2-Trichloroethane	ND	1.00	ug/L							
1,1-Dichloroethane	ND	1.00	ug/L							
1,1-Dichloroethylene	ND	1.00	ug/L							

Certificate of Analysis

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
Blank (BHA0523-BLK1)				Prepared & Analyzed: 01/16/2024						
1,1-Dichloropropene	ND	1.00	ug/L							
1,2,3-Trichlorobenzene	ND	1.00	ug/L							
1,2,3-Trichloropropane	ND	1.00	ug/L							
1,2,4-Trichlorobenzene	ND	1.00	ug/L							
1,2,4-Trimethylbenzene	ND	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.00	ug/L							
1,2-Dibromoethane (EDB)	ND	1.00	ug/L							
1,2-Dichlorobenzene	ND	0.50	ug/L							
1,2-Dichloroethane	ND	1.00	ug/L							
1,2-Dichloropropane	ND	0.50	ug/L							
1,3,5-Trimethylbenzene	ND	1.00	ug/L							
1,3-Dichlorobenzene	ND	1.00	ug/L							
1,3-Dichloropropane	ND	1.00	ug/L							
1,4-Dichlorobenzene	ND	1.00	ug/L							
2,2-Dichloropropane	ND	1.00	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.00	ug/L							
2-Hexanone (MBK)	ND	5.00	ug/L							
4-Chlorotoluene	ND	1.00	ug/L							
4-Isopropyltoluene	ND	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	5.00	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.00	ug/L							
Bromobenzene	ND	1.00	ug/L							
Bromochloromethane	ND	1.00	ug/L							

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
Blank (BHA0523-BLK1)				Prepared & Analyzed: 01/16/2024						
Bromodichloromethane	ND	0.50	ug/L							
Bromoform	ND	1.00	ug/L							
Bromomethane	ND	1.00	ug/L							
Carbon disulfide	ND	10.0	ug/L							
Carbon tetrachloride	ND	1.00	ug/L							
Chlorobenzene	ND	1.00	ug/L							
Chloroethane	ND	1.00	ug/L							
Chloroform	ND	0.50	ug/L							
Chloromethane	ND	1.00	ug/L							
cis-1,2-Dichloroethylene	ND	1.00	ug/L							
cis-1,3-Dichloropropene	ND	1.00	ug/L							
Dibromochloromethane	ND	0.50	ug/L							
Dibromomethane	ND	1.00	ug/L							
Dichlorodifluoromethane	ND	1.00	ug/L							
Di-isopropyl ether (DIPE)	ND	5.00	ug/L							
Ethylbenzene	ND	1.00	ug/L							
Hexachlorobutadiene	ND	0.80	ug/L							
Iodomethane	ND	10.0	ug/L							
Isopropylbenzene	ND	1.00	ug/L							
m+p-Xylenes	ND	2.00	ug/L							
Methylene chloride	ND	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	ND	1.00	ug/L							
Naphthalene	ND	1.00	ug/L							
n-Butylbenzene	ND	1.00	ug/L							
n-Propylbenzene	ND	1.00	ug/L							

Certificate of Analysis

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Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
Blank (BHA0523-BLK1)				Prepared & Analyzed: 01/16/2024						
o-Xylene	ND	1.00	ug/L							
sec-Butylbenzene	ND	1.00	ug/L							
Styrene	ND	1.00	ug/L							
tert-Butylbenzene	ND	1.00	ug/L							
Tetrachloroethylene (PCE)	ND	1.00	ug/L							
Toluene	ND	1.00	ug/L							
trans-1,2-Dichloroethylene	ND	1.00	ug/L							
trans-1,3-Dichloropropene	ND	1.00	ug/L							
Trichloroethylene	ND	1.00	ug/L							
Trichlorofluoromethane	ND	1.00	ug/L							
Vinyl acetate	ND	10.0	ug/L							
Vinyl chloride	ND	0.50	ug/L							
Xylenes, Total	ND	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	*54.6*		ug/L	*50.0*		*109*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*49.2*		ug/L	*50.0*		*98.5*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*55.5*		ug/L	*50.0*		*111*	*70-130*			
Surr: Toluene-d8 (Surr)	*50.9*		ug/L	*50.0*		*102*	*70-130*			
LCS (BHA0523-BS1)				Prepared & Analyzed: 01/16/2024						
1,1,1,2-Tetrachloroethane	57.0	0.4	ug/L	50.0		114	80-130			
1,1,1-Trichloroethane	58.9	1	ug/L	50.0		118	65-130			
1,1,2,2-Tetrachloroethane	54.2	0.4	ug/L	50.0		108	65-130			
1,1,2-Trichloroethane	55.0	1	ug/L	50.0		110	75-125			
1,1-Dichloroethane	55.8	1	ug/L	50.0		112	70-135			
1,1-Dichloroethylene	56.8	1	ug/L	50.0		114	70-130			

Certificate of Analysis

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
LCS (BHA0523-BS1)				Prepared & Analyzed: 01/16/2024						
1,1-Dichloropropene	56.6	1	ug/L	50.0		113	75-135			
1,2,3-Trichlorobenzene	61.9	1	ug/L	50.0		124	55-140			
1,2,3-Trichloropropane	53.1	1	ug/L	50.0		106	75-125			
1,2,4-Trichlorobenzene	63.4	1	ug/L	50.0		127	65-135			
1,2,4-Trimethylbenzene	62.2	1	ug/L	50.0		124	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	52.1	1	ug/L	50.0		104	50-130			
1,2-Dibromoethane (EDB)	56.8	1	ug/L	50.0		114	80-120			
1,2-Dichlorobenzene	60.4	0.5	ug/L	50.0		121	70-120			L
1,2-Dichloroethane	48.6	1	ug/L	50.0		97.3	70-130			
1,2-Dichloropropane	52.8	0.5	ug/L	50.0		106	75-125			
1,3,5-Trimethylbenzene	62.6	1	ug/L	50.0		125	75-125			L
1,3-Dichlorobenzene	61.6	1	ug/L	50.0		123	75-125			
1,3-Dichloropropane	52.6	1	ug/L	50.0		105	75-125			
1,4-Dichlorobenzene	59.1	1	ug/L	50.0		118	75-125			
2,2-Dichloropropane	61.6	1	ug/L	50.0		123	70-135			
2-Butanone (MEK)	48.4	10	ug/L	50.0		96.7	30-150			
2-Chlorotoluene	60.6	1	ug/L	50.0		121	75-125			
2-Hexanone (MBK)	45.6	5	ug/L	50.0		91.2	55-130			
4-Chlorotoluene	59.1	1	ug/L	50.0		118	75-130			
4-Isopropyltoluene	67.1	1	ug/L	50.0		134	75-130			L
4-Methyl-2-pentanone (MIBK)	44.2	5	ug/L	50.0		88.5	60-135			
Acetone	49.2	10	ug/L	50.0		98.5	40-140			
Benzene	52.8	1	ug/L	50.0		106	80-120			
Bromobenzene	55.5	1	ug/L	50.0		111	75-125			
Bromochloromethane	53.3	1	ug/L	50.0		107	65-130			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
LCS (BHA0523-BS1)				Prepared & Analyzed: 01/16/2024						
Bromodichloromethane	55.3	0.5	ug/L	50.0		111	75-120			
Bromoform	60.3	1	ug/L	50.0		121	70-130			
Bromomethane	34.9	1	ug/L	50.0		69.8	30-145			
Carbon disulfide	54.4	10	ug/L	50.0		109	35-160			
Carbon tetrachloride	56.4	1	ug/L	50.0		113	65-140			
Chlorobenzene	57.5	1	ug/L	50.0		115	80-120			
Chloroethane	49.2	1	ug/L	50.0		98.5	60-135			
Chloroform	53.3	0.5	ug/L	50.0		107	65-135			
Chloromethane	40.8	1	ug/L	50.0		81.5	40-125			
cis-1,2-Dichloroethylene	55.9	1	ug/L	50.0		112	70-125			
cis-1,3-Dichloropropene	54.5	1	ug/L	50.0		109	70-130			
Dibromochloromethane	57.2	0.5	ug/L	50.0		114	60-135			
Dibromomethane	53.4	1	ug/L	50.0		107	75-125			
Dichlorodifluoromethane	38.3	1	ug/L	50.0		76.6	30-155			
Ethylbenzene	57.8	1	ug/L	50.0		116	75-125			
Hexachlorobutadiene	72.8	0.8	ug/L	50.0		146	50-140			L
Isopropylbenzene	55.3	1	ug/L	50.0		111	75-125			
m+p-Xylenes	113	2	ug/L	100		113	75-130			
Methylene chloride	49.3	4	ug/L	50.0		98.7	55-140			
Methyl-t-butyl ether (MTBE)	55.7	1	ug/L	50.0		111	65-125			
Naphthalene	58.6	1	ug/L	50.0		117	55-140			
n-Butylbenzene	68.4	1	ug/L	50.0		137	70-135			L
n-Propylbenzene	63.2	1	ug/L	50.0		126	70-130			
o-Xylene	57.4	1	ug/L	50.0		115	80-120			
sec-Butylbenzene	68.2	1	ug/L	50.0		136	70-125			L

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
LCS (BHA0523-BS1)				Prepared & Analyzed: 01/16/2024						
Styrene	56.1	1	ug/L	50.0		112	65-135			
tert-Butylbenzene	63.9	1	ug/L	50.0		128	70-130			
Tetrachloroethylene (PCE)	60.7	1	ug/L	50.0		121	45-150			
Toluene	53.7	1	ug/L	50.0		107	75-120			
trans-1,2-Dichloroethylene	57.8	1	ug/L	50.0		116	60-140			
trans-1,3-Dichloropropene	57.0	1	ug/L	50.0		114	55-140			
Trichloroethylene	54.8	1	ug/L	50.0		110	70-125			
Trichlorofluoromethane	56.5	1	ug/L	50.0		113	60-145			
Vinyl chloride	46.0	0.5	ug/L	50.0		92.1	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*52.3*		ug/L	*50.0*		*105*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.5*		ug/L	*50.0*		*96.9*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*53.6*		ug/L	*50.0*		*107*	*70-130*			
Surr: Toluene-d8 (Surr)	*49.9*		ug/L	*50.0*		*99.8*	*70-130*			
Duplicate (BHA0523-DUP1)	**Source: 24A0853-02**			Prepared & Analyzed: 01/16/2024						
1,1,1,2-Tetrachloroethane	ND	0.40	ug/L		BLOD			NA	30	
1,1,1-Trichloroethane	ND	1.00	ug/L		BLOD			NA	30	
1,1,2,2-Tetrachloroethane	ND	0.40	ug/L		BLOD			NA	30	
1,1,2-Trichloroethane	ND	1.00	ug/L		BLOD			NA	30	
1,1-Dichloroethane	ND	1.00	ug/L		BLOD			NA	30	
1,1-Dichloroethylene	ND	1.00	ug/L		BLOD			NA	30	
1,1-Dichloropropene	ND	1.00	ug/L		BLOD			NA	30	
1,2,3-Trichlorobenzene	ND	1.00	ug/L		BLOD			NA	30	
1,2,3-Trichloropropane	ND	1.00	ug/L		BLOD			NA	30	
1,2,4-Trichlorobenzene	ND	1.00	ug/L		BLOD			NA	30	

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0523 - SW5030B-MS

Duplicate (BHA0523-DUP1) **Source: 24A0853-02** Prepared & Analyzed: 01/16/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	ND	1.00	ug/L		BLOD			NA	30	
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.00	ug/L		BLOD			NA	30	
1,2-Dibromoethane (EDB)	ND	1.00	ug/L		BLOD			NA	30	
1,2-Dichlorobenzene	ND	0.50	ug/L		BLOD			NA	30	
1,2-Dichloroethane	ND	1.00	ug/L		BLOD			NA	30	
1,2-Dichloropropane	ND	0.50	ug/L		BLOD			NA	30	
1,3,5-Trimethylbenzene	ND	1.00	ug/L		BLOD			NA	30	
1,3-Dichlorobenzene	ND	1.00	ug/L		BLOD			NA	30	
1,3-Dichloropropane	ND	1.00	ug/L		BLOD			NA	30	
1,4-Dichlorobenzene	ND	1.00	ug/L		BLOD			NA	30	
2,2-Dichloropropane	ND	1.00	ug/L		BLOD			NA	30	
2-Butanone (MEK)	ND	10.0	ug/L		BLOD			NA	30	
2-Chlorotoluene	ND	1.00	ug/L		BLOD			NA	30	
2-Hexanone (MBK)	ND	5.00	ug/L		BLOD			NA	30	
4-Chlorotoluene	ND	1.00	ug/L		BLOD			NA	30	
4-Isopropyltoluene	ND	1.00	ug/L		BLOD			NA	30	
4-Methyl-2-pentanone (MIBK)	ND	5.00	ug/L		BLOD			NA	30	
Acetone	7.22	10.0	ug/L		8.43			NA	30	
Benzene	ND	1.00	ug/L		BLOD			NA	30	
Bromobenzene	ND	1.00	ug/L		BLOD			NA	30	
Bromochloromethane	ND	1.00	ug/L		BLOD			NA	30	
Bromodichloromethane	ND	0.50	ug/L		BLOD			NA	30	
Bromoform	ND	1.00	ug/L		BLOD			NA	30	
Bromomethane	ND	1.00	ug/L		BLOD			NA	30	
Carbon disulfide	ND	10.0	ug/L		BLOD			NA	30	

Certificate of Analysis

Client Name:	SCS Engineers-Winchester	Date Issued:	2/6/2024 4:48:43PM
Client Site I.D.:	24-01 LFG EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
Duplicate (BHA0523-DUP1)		**Source: 24A0853-02**		Prepared & Analyzed: 01/16/2024						
Carbon tetrachloride	ND	1.00	ug/L		BLOD			NA	30	
Chlorobenzene	ND	1.00	ug/L		BLOD			NA	30	
Chloroethane	ND	1.00	ug/L		BLOD			NA	30	
Chloroform	ND	0.50	ug/L		BLOD			NA	30	
Chloromethane	ND	1.00	ug/L		BLOD			NA	30	
cis-1,2-Dichloroethylene	ND	1.00	ug/L		BLOD			NA	30	
cis-1,3-Dichloropropene	ND	1.00	ug/L		BLOD			NA	30	
Dibromochloromethane	ND	0.50	ug/L		BLOD			NA	30	
Dibromomethane	ND	1.00	ug/L		BLOD			NA	30	
Dichlorodifluoromethane	ND	1.00	ug/L		BLOD			NA	30	
Di-isopropyl ether (DIPE)	ND	5.00	ug/L		BLOD			NA	30	
Ethylbenzene	ND	1.00	ug/L		BLOD			NA	30	
Hexachlorobutadiene	ND	0.80	ug/L		BLOD			NA	30	
Iodomethane	ND	10.0	ug/L		BLOD			NA	30	
Isopropylbenzene	ND	1.00	ug/L		BLOD			NA	30	
m+p-Xylenes	ND	2.00	ug/L		BLOD			NA	30	
Methylene chloride	ND	4.00	ug/L		BLOD			NA	30	
Methyl-t-butyl ether (MTBE)	ND	1.00	ug/L		BLOD			NA	30	
Naphthalene	ND	1.00	ug/L		BLOD			NA	30	
n-Butylbenzene	ND	1.00	ug/L		BLOD			NA	30	
n-Propylbenzene	ND	1.00	ug/L		BLOD			NA	30	
o-Xylene	ND	1.00	ug/L		BLOD			NA	30	
sec-Butylbenzene	ND	1.00	ug/L		BLOD			NA	30	
Styrene	ND	1.00	ug/L		BLOD			NA	30	
tert-Butylbenzene	ND	1.00	ug/L		BLOD			NA	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0523 - SW5030B-MS										
Duplicate (BHA0523-DUP1)	**Source: 24A0853-02**		Prepared & Analyzed: 01/16/2024							
Tetrachloroethylene (PCE)	ND	1.00	ug/L		BLOD			NA	30	
Toluene	ND	1.00	ug/L		BLOD			NA	30	
trans-1,2-Dichloroethylene	ND	1.00	ug/L		BLOD			NA	30	
trans-1,3-Dichloropropene	ND	1.00	ug/L		BLOD			NA	30	
Trichloroethylene	ND	1.00	ug/L		BLOD			NA	30	
Trichlorofluoromethane	ND	1.00	ug/L		BLOD			NA	30	
Vinyl acetate	ND	10.0	ug/L		BLOD			NA	30	
Vinyl chloride	ND	0.50	ug/L		BLOD			NA	30	
Xylenes, Total	ND	3.00	ug/L		BLOD			NA	30	
Tetrahydrofuran	ND	10.0	ug/L		BLOD			NA	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	*57.1*		ug/L	*50.0*		*114*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*49.1*		ug/L	*50.0*		*98.2*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*54.5*		ug/L	*50.0*		*109*	*70-130*			
Surr: Toluene-d8 (Surr)	*50.7*		ug/L	*50.0*		*101*	*70-130*			
Matrix Spike (BHA0523-MS1)	**Source: 24A0853-01**		Prepared & Analyzed: 01/16/2024							
1,1,1,2-Tetrachloroethane	57.1	0.4	ug/L	50.0	BLOD	114	80-130			
1,1,1-Trichloroethane	62.5	1	ug/L	50.0	BLOD	125	65-130			
1,1,2,2-Tetrachloroethane	58.1	0.4	ug/L	50.0	BLOD	116	65-130			
1,1,2-Trichloroethane	55.6	1	ug/L	50.0	BLOD	111	75-125			
1,1-Dichloroethane	56.5	1	ug/L	50.0	BLOD	113	70-135			
1,1-Dichloroethylene	60.5	1	ug/L	50.0	BLOD	121	50-145			
1,1-Dichloropropene	60.3	1	ug/L	50.0	BLOD	121	75-135			
1,2,3-Trichlorobenzene	60.3	1	ug/L	50.0	BLOD	121	55-140			
1,2,3-Trichloropropane	56.9	1	ug/L	50.0	BLOD	114	75-125			

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0523 - SW5030B-MS

Matrix Spike (BHA0523-MS1) **Source: 24A0853-01** Prepared & Analyzed: 01/16/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	60.6	1	ug/L	50.0	BLOD	121	65-135			
1,2,4-Trimethylbenzene	60.2	1	ug/L	50.0	BLOD	120	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	60.3	1	ug/L	50.0	BLOD	121	50-130			
1,2-Dibromoethane (EDB)	56.0	1	ug/L	50.0	BLOD	112	80-120			
1,2-Dichlorobenzene	58.8	0.5	ug/L	50.0	BLOD	118	70-120			
1,2-Dichloroethane	48.2	1	ug/L	50.0	BLOD	96.4	70-130			
1,2-Dichloropropane	53.3	0.5	ug/L	50.0	BLOD	107	75-125			
1,3,5-Trimethylbenzene	60.8	1	ug/L	50.0	BLOD	122	75-124			
1,3-Dichlorobenzene	60.0	1	ug/L	50.0	BLOD	120	75-125			
1,3-Dichloropropane	52.2	1	ug/L	50.0	BLOD	104	75-125			
1,4-Dichlorobenzene	57.7	1	ug/L	50.0	BLOD	115	75-125			
2,2-Dichloropropane	65.1	1	ug/L	50.0	BLOD	130	70-135			
2-Butanone (MEK)	58.2	10	ug/L	50.0	BLOD	112	30-150			
2-Chlorotoluene	58.9	1	ug/L	50.0	BLOD	118	75-125			
2-Hexanone (MBK)	53.4	5	ug/L	50.0	BLOD	107	55-130			
4-Chlorotoluene	58.6	1	ug/L	50.0	BLOD	117	75-130			
4-Isopropyltoluene	63.9	1	ug/L	50.0	BLOD	128	75-130			
4-Methyl-2-pentanone (MIBK)	51.2	5	ug/L	50.0	BLOD	102	60-135			
Acetone	64.2	10	ug/L	50.0	15.4	97.7	40-140			
Benzene	55.2	1	ug/L	50.0	BLOD	110	80-120			
Bromobenzene	56.5	1	ug/L	50.0	BLOD	113	75-125			
Bromochloromethane	54.3	1	ug/L	50.0	BLOD	109	65-130			
Bromodichloromethane	56.1	0.5	ug/L	50.0	BLOD	112	75-136			
Bromoform	61.6	1	ug/L	50.0	BLOD	123	70-130			
Bromomethane	41.8	1	ug/L	50.0	BLOD	83.5	30-145			

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0523 - SW5030B-MS

Matrix Spike (BHA0523-MS1) **Source: 24A0853-01** Prepared & Analyzed: 01/16/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Carbon disulfide	56.2	10	ug/L	50.0	BLOD	112	35-160			
Carbon tetrachloride	59.7	1	ug/L	50.0	BLOD	119	65-140			
Chlorobenzene	58.7	1	ug/L	50.0	BLOD	117	80-120			
Chloroethane	52.2	1	ug/L	50.0	BLOD	104	60-135			
Chloroform	53.7	0.5	ug/L	50.0	BLOD	107	65-135			
Chloromethane	43.0	1	ug/L	50.0	BLOD	86.0	40-125			
cis-1,2-Dichloroethylene	57.5	1	ug/L	50.0	BLOD	115	70-125			
cis-1,3-Dichloropropene	55.0	1	ug/L	50.0	BLOD	110	47-136			
Dibromochloromethane	56.7	0.5	ug/L	50.0	BLOD	113	60-135			
Dibromomethane	52.0	1	ug/L	50.0	BLOD	104	75-125			
Dichlorodifluoromethane	41.5	1	ug/L	50.0	BLOD	83.1	30-155			
Ethylbenzene	59.3	1	ug/L	50.0	BLOD	119	75-125			
Hexachlorobutadiene	66.3	0.8	ug/L	50.0	BLOD	133	50-140			
Isopropylbenzene	56.0	1	ug/L	50.0	BLOD	112	75-125			
m+p-Xylenes	116	2	ug/L	100	BLOD	116	75-130			
Methylene chloride	50.7	4	ug/L	50.0	BLOD	101	55-140			
Methyl-t-butyl ether (MTBE)	55.8	1	ug/L	50.0	BLOD	112	65-125			
Naphthalene	63.2	1	ug/L	50.0	BLOD	126	55-140			
n-Butylbenzene	65.3	1	ug/L	50.0	BLOD	131	70-135			
n-Propylbenzene	60.9	1	ug/L	50.0	BLOD	122	70-130			
o-Xylene	58.0	1	ug/L	50.0	BLOD	116	80-120			
sec-Butylbenzene	65.4	1	ug/L	50.0	BLOD	131	70-125			M
Styrene	56.9	1	ug/L	50.0	BLOD	114	65-135			
tert-Butylbenzene	62.2	1	ug/L	50.0	BLOD	124	70-130			
Tetrachloroethylene (PCE)	63.2	1	ug/L	50.0	BLOD	126	51-231			

Certificate of Analysis

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring
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Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Batch BHA0523 - SW5030B-MS

Matrix Spike (BHA0523-MS1) **Source: 24A0853-01** Prepared & Analyzed: 01/16/2024

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Toluene	55.7	1	ug/L	50.0	BLOD	111	75-120			
trans-1,2-Dichloroethylene	60.4	1	ug/L	50.0	BLOD	121	60-140			
trans-1,3-Dichloropropene	56.3	1	ug/L	50.0	BLOD	113	55-140			
Trichloroethylene	57.6	1	ug/L	50.0	BLOD	115	70-125			
Trichlorofluoromethane	61.8	1	ug/L	50.0	BLOD	124	60-145			
Vinyl chloride	49.6	0.5	ug/L	50.0	BLOD	99.2	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	*53.6*		ug/L	*50.0*		*107*	*70-120*			
Surr: 4-Bromofluorobenzene (Surr)	*48.0*		ug/L	*50.0*		*96.0*	*75-120*			
Surr: Dibromofluoromethane (Surr)	*55.0*		ug/L	*50.0*		*110*	*70-130*			
Surr: Toluene-d8 (Surr)	*50.5*		ug/L	*50.0*		*101*	*70-130*			

Certificate of Analysis

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Date Issued: 2/6/2024 4:48:43PM
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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0472 - SW3510C/EPA600-MS										
Blank (BHA0472-BLK1)				Prepared: 01/15/2024 Analyzed: 01/16/2024						
Anthracene	ND	10.0	ug/L							
Surr: 2,4,6-Tribromophenol (Surr)	*68.5*		ug/L	*200*		*34.3*	*5-136*			
Surr: 2-Fluorobiphenyl (Surr)	*31.1*		ug/L	*100*		*31.1*	*9-117*			
Surr: 2-Fluorophenol (Surr)	*45.8*		ug/L	*200*		*22.9*	*5-60*			
Surr: Nitrobenzene-d5 (Surr)	*37.8*		ug/L	*100*		*37.8*	*5-151*			
Surr: Phenol-d5 (Surr)	*26.5*		ug/L	*200*		*13.2*	*5-60*			
Surr: p-Terphenyl-d14 (Surr)	*33.7*		ug/L	*100*		*33.7*	*5-141*			
LCS (BHA0472-BS1)				Prepared: 01/15/2024 Analyzed: 01/16/2024						
1,2,4-Trichlorobenzene	32.5	10.0	ug/L	50.0		65.0	57-130			
1,2-Dichlorobenzene	33.3	10.0	ug/L	50.0		66.5	22-115			
1,3-Dichlorobenzene	30.6	10.0	ug/L	50.0		61.2	22-112			
1,4-Dichlorobenzene	35.9	10.0	ug/L	50.0		71.8	13-112			
2,4,6-Trichlorophenol	35.6	10.0	ug/L	50.0		71.2	52-129			
2,4-Dichlorophenol	35.1	10.0	ug/L	50.0		70.3	53-122			
2,4-Dimethylphenol	38.3	5.00	ug/L	50.0		76.7	42-120			
2,4-Dinitrophenol	35.2	50.0	ug/L	50.0		70.5	48-127			
2,4-Dinitrotoluene	37.4	10.0	ug/L	50.0		74.7	10-173			
2,6-Dinitrotoluene	33.4	10.0	ug/L	50.0		66.7	68-137			L
2-Chloronaphthalene	36.0	10.0	ug/L	50.0		71.9	65-120			
2-Chlorophenol	34.8	10.0	ug/L	50.0		69.5	36-120			
2-Nitrophenol	35.9	10.0	ug/L	50.0		71.7	45-167			
3,3'-Dichlorobenzidine	35.1	10.0	ug/L	50.0		70.2	10-213			
4,6-Dinitro-2-methylphenol	33.1	50.0	ug/L	50.0		66.2	53-130			
4-Bromophenyl phenyl ether	31.0	10.0	ug/L	50.0		62.1	65-120			L

Certificate of Analysis

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0472 - SW3510C/EPA600-MS										
LCS (BHA0472-BS1)				Prepared: 01/15/2024 Analyzed: 01/16/2024						
4-Chlorophenyl phenyl ether	31.2	10.0	ug/L	50.0		62.4	38-145			
4-Nitrophenol	8.90	50.0	ug/L	50.0		17.8	13-129			
Acenaphthene	38.5	10.0	ug/L	50.0		77.0	60-132			
Acenaphthylene	39.1	10.0	ug/L	50.0		78.3	54-126			
Acetophenone	39.2	20.0	ug/L	50.0		78.3	0-200			
Anthracene	34.3	10.0	ug/L	50.0		68.7	43-120			
Benzo (a) anthracene	38.5	10.0	ug/L	50.0		76.9	42-133			
Benzo (a) pyrene	41.2	10.0	ug/L	50.0		82.4	32-148			
Benzo (b) fluoranthene	43.5	10.0	ug/L	50.0		87.0	42-140			
Benzo (g,h,i) perylene	29.3	10.0	ug/L	50.0		58.7	10-195			
Benzo (k) fluoranthene	36.6	10.0	ug/L	50.0		73.1	25-146			
bis (2-Chloroethoxy) methane	35.6	10.0	ug/L	50.0		71.2	49-165			
bis (2-Chloroethyl) ether	33.6	10.0	ug/L	50.0		67.2	43-126			
2,2'-Oxybis (1-chloropropane)	34.9	10.0	ug/L	50.0		69.8	63-139			
bis (2-Ethylhexyl) phthalate	32.5	10.0	ug/L	50.0		65.1	29-137			
Butyl benzyl phthalate	36.5	10.0	ug/L	50.0		72.9	10-140			
Chrysene	33.1	10.0	ug/L	50.0		66.2	44-140			
Dibenz (a,h) anthracene	37.4	10.0	ug/L	50.0		74.9	10-200			
Diethyl phthalate	40.4	10.0	ug/L	50.0		80.9	10-120			
Dimethyl phthalate	32.9	10.0	ug/L	50.0		65.9	10-120			
Di-n-butyl phthalate	32.7	10.0	ug/L	50.0		65.4	10-120			
Di-n-octyl phthalate	41.3	10.0	ug/L	50.0		82.6	19-132			
Fluoranthene	33.0	10.0	ug/L	50.0		66.0	43-121			
Fluorene	39.8	10.0	ug/L	50.0		79.6	70-120			
Hexachlorobenzene	25.9	1.00	ug/L	50.0		51.8	10-142			

Certificate of Analysis

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Client Site I.D.: 24-01 LFG EW Monthly Monitoring

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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0472 - SW3510C/EPA600-MS										
LCS (BHA0472-BS1)				Prepared: 01/15/2024 Analyzed: 01/16/2024						
Hexachlorobutadiene	35.8	10.0	ug/L	50.0		71.6	38-120			
Hexachlorocyclopentadiene	22.9	10.0	ug/L	50.0		45.8	10-76			
Hexachloroethane	40.3	10.0	ug/L	50.0		80.6	55-120			
Indeno (1,2,3-cd) pyrene	35.3	10.0	ug/L	50.0		70.6	10-151			
Isophorone	27.3	10.0	ug/L	50.0		54.6	47-180			
Naphthalene	39.3	5.00	ug/L	50.0		78.6	36-120			
Nitrobenzene	44.0	10.0	ug/L	50.0		88.0	54-158			
n-Nitrosodimethylamine	24.0	10.0	ug/L	50.0		47.9	10-85			
n-Nitrosodi-n-propylamine	42.0	10.0	ug/L	50.0		84.1	14-198			
n-Nitrosodiphenylamine	30.6	10.0	ug/L	50.0		61.2	12-97			
p-Chloro-m-cresol	36.0	10.0	ug/L	50.0		71.9	10-142			
Pentachlorophenol	19.6	20.0	ug/L	50.0		39.2	38-152			
Phenanthrene	45.8	10.0	ug/L	50.0		91.7	65-120			
Phenol	16.4	10.0	ug/L	50.5		32.6	17-120			
Pyrene	28.4	10.0	ug/L	50.0		56.9	70-120			L
Pyridine	30.2	10.0	ug/L	50.0		60.4	10-103			
Surr: 2,4,6-Tribromophenol (Surr)	*73.3*		ug/L	*200*		*36.7*	*5-136*			
Surr: 2-Fluorobiphenyl (Surr)	*30.4*		ug/L	*100*		*30.4*	*9-117*			
Surr: 2-Fluorophenol (Surr)	*44.5*		ug/L	*200*		*22.2*	*5-60*			
Surr: Nitrobenzene-d5 (Surr)	*37.0*		ug/L	*100*		*37.0*	*5-151*			
Surr: Phenol-d5 (Surr)	*27.5*		ug/L	*200*		*13.7*	*5-60*			
Surr: p-Terphenyl-d14 (Surr)	*27.7*		ug/L	*100*		*27.7*	*5-141*			

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:48:43PM
Client Site I.D.: 24-01 LFG EW Monthly Monitoring
Submitted To: Jennifer Robb

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0412 - No Prep Wet Chem										
Blank (BHA0412-BLK1)				Prepared & Analyzed: 01/12/2024						
BOD	ND	2.0	mg/L							
LCS (BHA0412-BS1)				Prepared & Analyzed: 01/12/2024						
BOD	209	2	mg/L	198		106	84.6-115.4			
Duplicate (BHA0412-DUP1)		**Source: 24A0547-04**		Prepared & Analyzed: 01/12/2024						
BOD	2.1	2.0	mg/L		BLOD			NA	20	
Batch BHA0421 - No Prep Wet Chem										
Blank (BHA0421-BLK1)				Prepared & Analyzed: 01/12/2024						
Nitrite as N	ND	0.05	mg/L							
LCS (BHA0421-BS1)				Prepared & Analyzed: 01/12/2024						
Nitrite as N	0.11	0.05	mg/L	0.100		108	80-120			
Matrix Spike (BHA0421-MS1)		**Source: 24A0693-02**		Prepared & Analyzed: 01/12/2024						
Nitrite as N	0.16	0.05	mg/L	0.100	0.07	93.0	80-120			
Matrix Spike Dup (BHA0421-MSD1)		**Source: 24A0693-02**		Prepared & Analyzed: 01/12/2024						
Nitrite as N	0.16	0.05	mg/L	0.100	0.07	92.0	80-120	0.619	20	
Batch BHA0569 - No Prep Wet Chem										
Blank (BHA0569-BLK1)				Prepared & Analyzed: 01/17/2024						
Nitrate+Nitrite as N	ND	0.10	mg/L							

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Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0569 - No Prep Wet Chem										
LCS (BHA0569-BS1)				Prepared & Analyzed: 01/17/2024						
Nitrate+Nitrite as N	0.92	0.1	mg/L	1.00		92.5	90-110			
Matrix Spike (BHA0569-MS1)	**Source: 24A0693-02**			Prepared & Analyzed: 01/17/2024						
Nitrate+Nitrite as N	2.11	0.1	mg/L	1.00	1.19	92.2	90-120			
Matrix Spike Dup (BHA0569-MSD1)	**Source: 24A0693-02**			Prepared & Analyzed: 01/17/2024						
Nitrate+Nitrite as N	2.09	0.1	mg/L	1.00	1.19	90.1	90-120	1.00	20	
Batch BHA0656 - No Prep Wet Chem										
Blank (BHA0656-BLK1)				Prepared & Analyzed: 01/19/2024						
Cyanide	ND	0.01	mg/L							
LCS (BHA0656-BS1)				Prepared & Analyzed: 01/19/2024						
Cyanide	0.24	0.01	mg/L	0.250		97.6	80-120			
Matrix Spike (BHA0656-MS1)	**Source: 24A0955-01**			Prepared & Analyzed: 01/19/2024						
Cyanide	0.25	0.01	mg/L	0.250	BLOD	101	80-120			
Matrix Spike (BHA0656-MS2)	**Source: 24A1101-01**			Prepared & Analyzed: 01/19/2024						
Cyanide	0.26	0.01	mg/L	0.250	BLOD	104	80-120			
Matrix Spike Dup (BHA0656-MSD2)	**Source: 24A1101-01**			Prepared & Analyzed: 01/19/2024						
Cyanide	0.25	0.01	mg/L	0.250	BLOD	101	80-120	2.90	20	
Batch BHA0697 - No Prep Wet Chem										
Blank (BHA0697-BLK1)				Prepared & Analyzed: 01/22/2024						
Ammonia as N	ND	0.10	mg/L							

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Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0697 - No Prep Wet Chem										
LCS (BHA0697-BS1)				Prepared & Analyzed: 01/22/2024						
Ammonia as N	1.05	0.1	mg/L	1.00		105	90-110			
Matrix Spike (BHA0697-MS1)		**Source: 24A1106-04**		Prepared & Analyzed: 01/22/2024						
Ammonia as N	2.06	0.1	mg/L	1.00	1.01	105	89.3-131			
Matrix Spike (BHA0697-MS2)		**Source: 24A0923-01**		Prepared & Analyzed: 01/22/2024						
Ammonia as N	1.06	0.1	mg/L	1.00	BLOD	103	89.3-131			
Matrix Spike Dup (BHA0697-MSD1)		**Source: 24A1106-04**		Prepared & Analyzed: 01/22/2024						
Ammonia as N	2.06	0.1	mg/L	1.00	1.01	104	89.3-131	0.388	20	
Matrix Spike Dup (BHA0697-MSD2)		**Source: 24A0923-01**		Prepared & Analyzed: 01/22/2024						
Ammonia as N	1.06	0.1	mg/L	1.00	BLOD	104	89.3-131	0.659	20	
Batch BHA0698 - No Prep Wet Chem										
Blank (BHA0698-BLK1)				Prepared & Analyzed: 01/22/2024						
Total Recoverable Phenolics	ND	0.050	mg/L							
LCS (BHA0698-BS1)				Prepared & Analyzed: 01/22/2024						
Total Recoverable Phenolics	0.42	0.050	mg/L	0.505		82.4	80-120			
Matrix Spike (BHA0698-MS1)		**Source: 24A1018-01**		Prepared & Analyzed: 01/22/2024						
Total Recoverable Phenolics	0.40	0.050	mg/L	0.500	BLOD	79.6	70-130			
Matrix Spike Dup (BHA0698-MSD1)		**Source: 24A1018-01**		Prepared & Analyzed: 01/22/2024						
Total Recoverable Phenolics	0.37	0.050	mg/L	0.500	BLOD	74.8	70-130	6.22	20	

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0767 - No Prep Wet Chem										
Blank (BHA0767-BLK1)				Prepared & Analyzed: 01/23/2024						
TKN as N	ND	0.50	mg/L							
LCS (BHA0767-BS1)				Prepared & Analyzed: 01/23/2024						
TKN as N	5.20	0.50	mg/L	5.00		104	90-110			
Matrix Spike (BHA0767-MS1)		**Source: 24A0832-01**		Prepared & Analyzed: 01/23/2024						**M**
TKN as N	6.20	0.50	mg/L	5.00	0.58	113	90-110			
Matrix Spike (BHA0767-MS2)		**Source: 24A1306-01**		Prepared: 01/23/2024 Analyzed: 01/24/2024						
TKN as N	5.80	0.50	mg/L	5.00	0.59	104	90-110			
Matrix Spike Dup (BHA0767-MSD1)		**Source: 24A0832-01**		Prepared & Analyzed: 01/23/2024						
TKN as N	6.02	0.50	mg/L	5.00	0.58	109	90-110	2.93	20	
Matrix Spike Dup (BHA0767-MSD2)		**Source: 24A1306-01**		Prepared: 01/23/2024 Analyzed: 01/24/2024						
TKN as N	5.75	0.50	mg/L	5.00	0.59	103	90-110	0.884	20	
Batch BHA0851 - No Prep Wet Chem										
Blank (BHA0851-BLK1)				Prepared & Analyzed: 01/25/2024						
COD	ND	10.0	mg/L							
LCS (BHA0851-BS1)				Prepared & Analyzed: 01/25/2024						
COD	51.9	10.0	mg/L	50.0		104	88-119			
Matrix Spike (BHA0851-MS1)		**Source: 24A0680-01**		Prepared & Analyzed: 01/25/2024						
COD	60.0	10.0	mg/L	50.0	10.0	99.9	72.4-130			

Certificate of Analysis

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Client Site I.D.:	24-01 LFG EW Monthly Monitoring		
Submitted To:	Jennifer Robb		

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BHA0851 - No Prep Wet Chem										
Matrix Spike Dup (BHA0851-MSD1)		**Source: 24A0680-01**		Prepared & Analyzed: 01/25/2024						
COD	55.1	10.0	mg/L	50.0	10.0	90.1	72.4-130	8.46	20	

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Analytical Summary

24A0675-01 Subcontract

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			**Preparation Method:**	**EPA200.8 R5.4**	
24A0675-01	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230
24A0675-01RE1	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
24A0675-01	300 mL / 300 mL	SM5210B-2016	BHA0412	SHA0527	
24A0675-01	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0421	SHA0374	AJ30297
24A0675-01	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0569	SHA0512	AA40239
24A0675-01	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
24A0675-01	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
24A0675-01	5.00 mL / 10.0 mL	SW9065	BHA0698	SHA0641	AA40268
24A0675-01	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
24A0675-01	2.00 mL / 2.00 mL	SM5220D-2011	BHA0851	SHA0796	AA40295

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS			**Preparation Method:**	**SW3510C/EPA600-MS**	
24A0675-01	500 mL / 1.00 mL	SW8270E	BHA0472	SHA0508	AK30271

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			**Preparation Method:**	**SW5030B-MS**	
24A0675-01	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			**Preparation Method:**	**SW5030B-MS**	
24A0675-02	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
24A0675-01RE1	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:48:43PM
Client Site I.D.: 24-01 LFG EW Monthly Monitoring
Submitted To: Jennifer Robb

QC Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			**Preparation Method:**	**EPA200.8 R5.4**	
BHA0466-BLK1	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230
BHA0466-BS1	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230
BHA0466-MS1	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230
BHA0466-MS2		SW6020B	BHA0466	SHA0479	AA40230
BHA0466-MS2	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230
BHA0466-MSD1	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230
BHA0466-MSD2		SW6020B	BHA0466	SHA0479	AA40230
BHA0466-MSD2	50.0 mL / 50.0 mL	SW6020B	BHA0466	SHA0479	AA40230

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
BHA0412-BLK1	300 mL / 300 mL	SM5210B-2016	BHA0412	SHA0527	
BHA0412-BS1	300 mL / 300 mL	SM5210B-2016	BHA0412	SHA0527	
BHA0412-DUP1	300 mL / 300 mL	SM5210B-2016	BHA0412	SHA0527	
BHA0421-BLK1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0421	SHA0374	AJ30297
BHA0421-BS1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0421	SHA0374	AJ30297
BHA0421-MRL1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0421	SHA0374	AJ30297
BHA0421-MS1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0421	SHA0374	AJ30297
BHA0421-MSD1	25.0 mL / 25.0 mL	SM4500-NO2B-2011	BHA0421	SHA0374	AJ30297
BHA0569-BLK1	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0569	SHA0512	AA40239
BHA0569-BS1	5.00 mL / 5.00 mL	SM4500-NO3F-2016	BHA0569	SHA0512	AA40239
BHA0569-MS1	12.5 mL / 25.0 mL	SM4500-NO3F-2016	BHA0569	SHA0512	AA40239
BHA0569-MSD1	12.5 mL / 25.0 mL	SM4500-NO3F-2016	BHA0569	SHA0512	AA40239

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
BHA0656-BLK1	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
BHA0656-BS1	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
BHA0656-MRL1	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
BHA0656-MS1	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
BHA0656-MS2	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
BHA0656-MSD1		SW9012B	BHA0656	SHA0601	AA40256
BHA0656-MSD2	6.00 mL / 6.00 mL	SW9012B	BHA0656	SHA0601	AA40256
BHA0697-BLK1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
BHA0697-BS1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
BHA0697-MS1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
BHA0697-MS2	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
BHA0697-MSD1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
BHA0697-MSD2	6.00 mL / 6.00 mL	EPA350.1 R2.0	BHA0697	SHA0650	AA40270
BHA0698-BLK1	5.00 mL / 10.0 mL	SW9065	BHA0698	SHA0641	AA40268
BHA0698-BS1	5.00 mL / 10.0 mL	SW9065	BHA0698	SHA0641	AA40268
BHA0698-MRL1	5.00 mL / 10.0 mL	SW9065	BHA0698	SHA0641	AA40268
BHA0698-MS1	5.00 mL / 10.0 mL	SW9065	BHA0698	SHA0641	AA40268
BHA0698-MSD1	5.00 mL / 10.0 mL	SW9065	BHA0698	SHA0641	AA40268
BHA0767-BLK1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0767-BS1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0767-MRL1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0767-MS1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0767-MS2	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0767-MSD1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0767-MSD2	25.0 mL / 25.0 mL	EPA351.2 R2.0	BHA0767	SHA0739	AA40286
BHA0851-BLK1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0851	SHA0796	AA40295
BHA0851-BS1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0851	SHA0796	AA40295
BHA0851-MRL1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0851	SHA0796	AA40295
BHA0851-MS1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0851	SHA0796	AA40295

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis			**Preparation Method:**	**No Prep Wet Chem**	
BHA0851-MSD1	2.00 mL / 2.00 mL	SM5220D-2011	BHA0851	SHA0796	AA40295

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS			**Preparation Method:**	**SW3510C/EPA600-MS**	
BHA0472-BLK1	1000 mL / 1.00 mL	SW8270E	BHA0472	SHA0508	AK30271
BHA0472-BLK2		SW8270E	BHA0472	SHA0579	AL30202
BHA0472-BLK3		SW8270E	BHA0472	SHA0732	AA40272
BHA0472-BS1	1000 mL / 1.00 mL	SW8270E	BHA0472	SHA0508	AK30271

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			**Preparation Method:**	**SW5030B-MS**	
BHA0433-BLK1	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-BLK2	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-BS1	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-BS2	5.00 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-DUP1	0.250 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0433-MS1	0.250 mL / 5.00 mL	SW8260D	BHA0433	SHA0389	AJ30373
BHA0523-BLK1	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322
BHA0523-BLK2	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322
BHA0523-BS1	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322
BHA0523-BS2	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322
BHA0523-DUP1	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322
BHA0523-MS1	5.00 mL / 5.00 mL	SW8260D	BHA0523	SHA0483	AL30322

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Certified Analyses included in this Report

Analyte	Certifications
EPA350.1 R2.0 in Non-Potable Water	
Ammonia as N	VELAP,NCDEQ,PADEP,WVDEP
EPA351.2 R2.0 in Non-Potable Water	
TKN as N	VELAP,NCDEQ,WVDEP
SM4500-NO2B-2011 in Non-Potable Water	
Nitrite as N	VELAP,WVDEP,NCDEQ
SM4500-NO3F-2016 in Non-Potable Water	
Nitrate+Nitrite as N	VELAP,WVDEP
SM5210B-2016 in Non-Potable Water	
BOD	VELAP,NCDEQ,WVDEP
SM5220D-2011 in Non-Potable Water	
COD	VELAP,NCDEQ,PADEP,WVDEP
SW6020B in Non-Potable Water	
Mercury	VELAP
Arsenic	VELAP,WVDEP
Barium	VELAP,WVDEP
Cadmium	VELAP,WVDEP
Chromium	VELAP,WVDEP
Copper	VELAP,WVDEP
Lead	VELAP,WVDEP
Nickel	VELAP,WVDEP
Selenium	VELAP,WVDEP
Silver	VELAP,WVDEP
Zinc	VELAP,WVDEP
SW8260D in Non-Potable Water	

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Certified Analyses included in this Report

Analyte	Certifications
2-Butanone (MEK)	VELAP,NCDEQ,PADEP,WVDEP
Acetone	VELAP,NCDEQ,PADEP,WVDEP
Benzene	VELAP,NCDEQ,PADEP,WVDEP
Ethylbenzene	VELAP,NCDEQ,PADEP,WVDEP
Toluene	VELAP,NCDEQ,PADEP,WVDEP
Xylenes, Total	VELAP,NCDEQ,PADEP,WVDEP
Tetrahydrofuran	VELAP,PADEP
SW8270E in Non-Potable Water	
Anthracene	NCDEQ,WVDEP,VELAP,PADEP
SW9012B in Non-Potable Water	
Cyanide	VELAP,WVDEP
SW9065 in Non-Potable Water	
Total Recoverable Phenolics	VELAP,WVDEP

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Code	Description	Laboratory ID	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2024
NCDEQ	North Carolina DEQ	495	12/31/2024
NCDOH	North Carolina Department of Health	51714	07/31/2024
NYDOH	New York DOH Drinking Water	12069	04/01/2024
PADEP	NELAP-Pennsylvania Certificate #009	68-03503	10/31/2024
SCDHEC	South Carolina Dept of Health and Environmental Control Certificate 93016001	93016	06/14/2024
TXCEQ	Texas Comm on Environmental Quality #T104704576-23-1	T104704576	05/31/2024
VELAP	NELAP-Virginia Certificate #12617	460021	06/14/2024
WVDEP	West Virginia DEP	350	11/30/2024

Certificate of Analysis

Client Name: SCS Engineers-Winchester
Date Issued: 2/6/2024 4:48:43PM
Client Site I.D.: 24-01 LFG EW Monthly Monitoring
Submitted To: Jennifer Robb

Qualifiers and Definitions

CI	Residual Chlorine or other oxidizing agent was detected in the container used to analyze this sample.
DS	Surrogate concentration reflects a dilution factor.
E	Estimated concentration, outside calibration range
J	The reported result is an estimated value.
L	LCS recovery is outside of established acceptance limits
M	Matrix spike recovery is outside established acceptance limits
M2	Sample was diluted due to matrix interference.
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
LOD	Limit of Detection
BLOD	Below Limit of Detection
LOQ	Limit of Quantitation
DF	Dilution Factor
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

ENTHALPY ANALYTICAL

1941 REYMET ROAD
RICHMOND, VIRGINIA 23237
(804) 358-8295 PHONE
(804)358-8297 FAX

CHAIN OF CUSTODY

PAGE 1 OF 1

COMPANY NAME: SCS Engineers
INVOICE TO: SAME
PROJECT NAME/Quote #: City of Bristol Landfill #588
CONTACT: Jennifer Robb
INVOICE CONTACT:
SITE NAME: 24-01 LFG-EW Monthly Monitoring
ADDRESS: 296 Victory Road
Winchester, VA 22602
INVOICE ADDRESS:
PROJECT NUMBER: 02218208.15 Task 2
INVOICE PHONE #:
P.O. #:
PHONE #: 703-471-6150
EMAIL: jrobb@scsengineers.com
Pretreatment Program:
Is sample for compliance reporting? [✓ YES] NO
Regulatory State: VA
Is sample from a chlorinated supply? YES [✓ NO]
PWS I.D. #:
SAMPLER NAME (PRINT): Will Fabric
SAMPLER SIGNATURE: Wim Fabric
Turn Around Time: 10 Day(s)

Matrix Codes: WW=Waste Water/Storm Water GW=Ground Water DW=Drinking Water S=Soil/Solids OR=Organic A=Air WP=Wipe OT=Other______________

Preservative Codes: N=Nitric Acid C=Hydrochloric Acid S=Sulfuric Acid H=Sodium Hydroxide A=Ascorbic Acid Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol

Note VOC 8260 no HCl

											ANALYSIS / (PRESERVATIVE)														COMMENTS
CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	Ammonia - EPA 350.1	BOD - SM22 5210B-2021	COD - SM22 5220D-2011	Cyanide - SW9012	Nitrate SM22 450-NO3F-2011 (report seperatly from Nitrite)	Nitrite SM22 450-NO3F-2011	SVOC (Anthracene) 8270	Total Metals (As, Ba, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn) 6020	TKN - EPA 351.2 R2.0	Mercury - 6020 / VFA 8015	Total Recoverable Phenolics - 9065 / VOC 8260	~~V. Fatty Acids (See List) 8015~~	~~VOCs (See List) 8260~~		PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)
1) EW-51	X					11124	9:30		GW	13															
2)									GW																
3)									GW																
4)									GW																
5)									GW																
6)									GW																338
7)									GW																0.8°C
8)									GW																On ice
9)									GW																Sealed
10) Trip Blank	X					080923	1615		DI	2															VOC 8260

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
Wim Fabric	011124 / 1400	FedEx E	
FedexE		Kaitlyn Cerrie	1/12/24 0940

QC Data Package
Level III ☐
Level IV ☐

LAB USE ONLY Therm ID: ________ COOLER TEMP ______°C
Custody Seals used and intact? (Y / N) Received on ice? (Y / N)

SCS-W **24A0675**
24-01 LFG EW
Recd: 01/12/2024 Due: 01/26/2024

v130325002

ENTHALPY
ANALYTICAL

Sample Preservation Log

Order ID 24A0675

Date Performed: 1-12-24

Analyst Performing Check: RCJ

Sample ID	Container ID	Metals			Cyanide			Sulfide			Ammonia			TKN			Phos, Tot			NO3+NO2			DRO			Pesticide (8081/608/508) PCB DW only			SVOC (525/8270/625)			CrVI * **		Pest/PCB (508) / SVOC(525)			COD			Phenolics		
		pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH	Received Res. Cl		final + or -	Received Res. Cl		final + or -	Received pH	Final pH	pH as Received		Final pH	pH as Received		Final pH	pH as Received		Final pH
		< 2	Other		> 12	Other		> 9	Other		< 2	Other		< 2	Other		< 2	Other		< 2	Other		< 2	Other		+	-		+	-				< 2	Other		<2	Other		<2	Other	
01	A		7	<2																																						
01	C					8	>12																																			
01	D											7	<2		7	<2						7	<2																7	<2			
01	F																																								7	<2
01	G																													-												

NaOH ID: 2H60468

HNO3 ID: 3C03050

CrVI preserved date/time:

Analyst Initials:

pH must be adjusted between 9.3 - 9.7

H2SO4 ID: 3K02567

Na2S2O3 ID:

Ammonia Buffer Sol'n ID:

HCL ID:

Na2SO3 ID:

5N NaOH ID:

etals were received with pH = 7. HNO3
as added at 1105 on 12 Jan 2024 by RCJ
in the Log-In room to bring p= <2.

W.Va only certifies DISS CrVI and not T CrVI as an approved analyte under 40CFR136 for waste water.

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Certificate of Analysis

Client Name: SCS Engineers-Winchester

Date Issued: 2/6/2024 4:48:43PM

Client Site I.D.: 24-01 LFG EW Monthly Monitoring

Submitted To: Jennifer Robb

Laboratory Order ID: 24A0675

Sample Conditions Checklist

Samples Received at:	**0.80°C**
How were samples received?	FedEx Express
Were Custody Seals used? If so, were they received intact?	Yes
Are the custody papers filled out completely and correctly?	Yes
Do all bottle labels agree with custody papers?	Yes
Is the temperature blank or representative sample within acceptable limits or received on ice, and recently taken?	Yes
Are all samples within holding time for requested laboratory tests?	Yes
Is a sufficient amount of sample provided to perform the tests included?	Yes
Are all samples in appropriate containers for the analyses requested?	Yes
Were volatile organic containers received?	Yes
Are all volatile organic and TOX containers free of headspace?	Yes
Is a trip blank provided for each VOC sample set? VOC sample sets include EPA8011, EPA504, EPA8260, EPA624, EPA8015 GRO, EPA8021, EPA524, and RSK-175.	Yes
Are all samples received appropriately preserved? Note that metals containers do not require field preservation but lab preservation may delay analysis. In addition, field parameters are always received outside holding time and will be marked accordingly.	Yes

Pace Analytical Services, LLC
7979 Innovation Park Drive
Baton Rouge, LA 70820
(225) 769-4900

January 29, 2024

Virginia Thrasher
Enthalpy
1941 Reymet Road
Richmond, VA 23237

RE: Project: 24A0675
Pace Project No.: 20304472

Dear Virginia Thrasher:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Baton Rouge

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh

Ruth Welsh
ruth.welsh@pacelabs.com
(225) 769-4900
Project Manager

Enclosures

cc: Andrew Bruner, Enthalpy
Daniel Elliott, Enthalpy
Meghan Meyer, Enthalpy

CERTIFICATIONS

Project:	24A0675
Pace Project No.:	20304472

Pace Analytical Services Baton Rouge

7979 Innovation Park Drive Ste A, Baton Rouge, LA 70820-7402
Louisiana Dept of Enviromental Quality (NELAC/LELAP): 01979
Florida Dept of Health (NELAC/FELAP): E87854
DoD ELAP (A2LA) #: 6429.01
Alabama DEM #: 41900
Alaska DEC-DW #: LA00024
Alaska DEC CS-LAP #: 21-001
Arkansas DEQ #: 88-0655
California ELAP #: 3063
Georgia DPD #: C050
Hawaii DOH State Laboratories Division
Illinois EPA #: 200048
Kansas DoHE #: E-10354
Kentucky DEP UST Branch #: 123054
Louisiana DOH #: LA036
Minnesota DOH #: 2233799
Mississippi State Dept of Health
Montana Department of Environmental Quality
Nebraska DHHS #: NE-OS-35.21
Nevada DCNR DEP #: LA00024
New York DOH #: 12149
North Carolina DEQ - WW & GW #: 618
North Dakota DEQ #: R195
Ohio EPA #: 87782
Oklahoma Dept of Environmental Quality #: 9403
Oregon ELAP #: 4168
Pennsylvania Dept of Environmental Protection #: 68-05973
South Carolina DHEC #: 73006001
Texas CEQ #: T104704178-23-15
Utah DOH #: LA00024
Virginia DCLS #: 6460215
Washington Dept of Ecology #: C929
Wisconsin DNR #: 399139510

SAMPLE SUMMARY

Project: 24A0675
Pace Project No.: 20304472

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20304472001	**24A0675:EW-51**	Water	01/11/24 09:30	01/19/24 12:30

SAMPLE ANALYTE COUNT

Project: 24A0675
Pace Project No.: 20304472

Lab ID	Sample ID	Method	Analysts	Analytes Reported
20304472001	**24A0675:EW-51**	Pace ENV-SOP-BTRO-0042	LHM	10

PASI-BR = Pace Analytical Services - Baton Rouge

PROJECT NARRATIVE

Project: 24A0675
Pace Project No.: 20304472

Method: **Pace ENV-SOP-BTRO-0042**
Description: BR AM23G Low Level VFA
Client: BR-Enthalpy
Date: January 29, 2024

General Information:
1 sample was analyzed for Pace ENV-SOP-BTRO-0042 by Pace Analytical Services Baton Rouge. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 316640

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MS (Lab ID: 1517509)
  - Lactic Acid
- MSD (Lab ID: 1517508)
  - Lactic Acid

D4: Sample was diluted due to the presence of high levels of target analytes.

- 24A0675:EW-51 (Lab ID: 20304472001)
  - Lactic Acid

PROJECT NARRATIVE

Project:	24A0675
Pace Project No.:	20304472

Method: **Pace ENV-SOP-BTRO-0042**
Description: BR AM23G Low Level VFA
Client: BR-Enthalpy
Date: January 29, 2024

Analyte Comments:

QC Batch: 316640

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- 24A0675:EW-51 (Lab ID: 20304472001)
    - Hexanoic Acid
    - i-Hexanoic Acid
    - i-Pentanoic Acid
    - Pentanoic Acid
- BLANK (Lab ID: 1515816)
    - Hexanoic Acid
    - i-Hexanoic Acid
    - i-Pentanoic Acid
    - Pentanoic Acid
- LCS (Lab ID: 1515817)
    - Hexanoic Acid
    - i-Hexanoic Acid
    - i-Pentanoic Acid
    - Pentanoic Acid
- MS (Lab ID: 1517509)
    - Hexanoic Acid
    - i-Hexanoic Acid
    - i-Pentanoic Acid
    - Pentanoic Acid
- MSD (Lab ID: 1517508)
    - Hexanoic Acid
    - i-Hexanoic Acid
    - i-Pentanoic Acid
    - Pentanoic Acid

This data package has been reviewed for quality and completeness and is approved for release.

ANALYTICAL RESULTS

Project: 24A0675
Pace Project No.: 20304472

Sample: 24A0675:EW-51 **Lab ID: 20304472001** Collected: 01/11/24 09:30 Received: 01/19/24 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
BR AM23G Low Level VFA	Analytical Method: Pace ENV-SOP-BTRO-0042 Pace Analytical Services - Baton Rouge							
Pentanoic Acid	ND	mg/L	250	500		01/24/24 23:43	109-52-4	N2
Acetic Acid	**4410**	mg/L	250	500		01/24/24 23:43	64-19-7	
Butyric Acid	**813**	mg/L	250	500		01/24/24 23:43	107-92-6	
Formic acid	**1840**	mg/L	250	500		01/24/24 23:43	64-18-6	
Hexanoic Acid	ND	mg/L	250	500		01/24/24 23:43	142-62-1	N2
i-Hexanoic Acid	ND	mg/L	250	500		01/24/24 23:43	646-07-1	N2
Lactic Acid	**629**	mg/L	250	500		01/24/24 23:43	50-21-5	D4
i-Pentanoic Acid	**301**	mg/L	250	500		01/24/24 23:43	503-74-2	N2
Propionic Acid	**1680**	mg/L	250	500		01/24/24 23:43	79-09-4	
Pyruvic Acid	ND	mg/L	250	500		01/24/24 23:43	127-17-3	

QUALITY CONTROL DATA

Project: 24A0675
Pace Project No.: 20304472

QC Batch: 316640
QC Batch Method: Pace ENV-SOP-BTRO-0042
Analysis Method: Pace ENV-SOP-BTRO-0042
Analysis Description: BR AM23G Low Level VFA
Laboratory: Pace Analytical Services - Baton Rouge
Associated Lab Samples: 20304472001

METHOD BLANK: 1515816 Matrix: Water
Associated Lab Samples: 20304472001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetic Acid	mg/L	ND	0.50	01/24/24 16:44	
Butyric Acid	mg/L	ND	0.50	01/24/24 16:44	
Formic acid	mg/L	ND	0.50	01/24/24 16:44	
Hexanoic Acid	mg/L	ND	0.50	01/24/24 16:44	N2
i-Hexanoic Acid	mg/L	ND	0.50	01/24/24 16:44	N2
i-Pentanoic Acid	mg/L	ND	0.50	01/24/24 16:44	N2
Lactic Acid	mg/L	ND	0.50	01/24/24 16:44	
Pentanoic Acid	mg/L	ND	0.50	01/24/24 16:44	N2
Propionic Acid	mg/L	ND	0.50	01/24/24 16:44	
Pyruvic Acid	mg/L	ND	0.50	01/24/24 16:44	

LABORATORY CONTROL SAMPLE: 1515817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetic Acid	mg/L	2	2.1	107	70-130	
Butyric Acid	mg/L	2	2.0	98	70-130	
Formic acid	mg/L	2	2.0	101	70-130	
Hexanoic Acid	mg/L	2	0.96	48	39-114	N2
i-Hexanoic Acid	mg/L	2	1.3	64	39-114	N2
i-Pentanoic Acid	mg/L	2	2.0	101	59-121	N2
Lactic Acid	mg/L	2	2.3	115	70-130	
Pentanoic Acid	mg/L	2	1.5	75	59-121	N2
Propionic Acid	mg/L	2	2.1	103	70-130	
Pyruvic Acid	mg/L	2	2.0	99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1517509 1517508

Parameter	Units	20304688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetic Acid	mg/L	25.9	20	20	43.9	44.6	90	94	70-130	2	30	
Butyric Acid	mg/L	ND	20	20	18.6	19.2	90	93	70-130	3	30	
Formic acid	mg/L	ND	20	20	19.8	20.4	97	100	70-130	3	30	
Hexanoic Acid	mg/L	ND	20	20	9.6	8.0	47	39	39-114	18	30	N2
i-Hexanoic Acid	mg/L	ND	20	20	13.6	13.1	68	65	39-114	4	30	N2
i-Pentanoic Acid	mg/L	ND	20	20	17.3	17.6	85	86	59-121	2	30	N2
Lactic Acid	mg/L	6.3	20	20	22.2	23.4	79	85	70-130	5	30	D3
Pentanoic Acid	mg/L	ND	20	20	14.2	14.3	69	69	59-121	1	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALITY CONTROL DATA

Project: 24A0675
Pace Project No.: 20304472

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1517509 1517508

Parameter	Units	20304688001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Propionic Acid	mg/L	ND	20	20	23.5	24.3	96	100	70-130	3	30	
Pyruvic Acid	mg/L	ND	20	20	19.4	19.9	95	98	70-130	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

QUALIFIERS

Project: 24A0675
Pace Project No.: 20304472

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 24A0675
Pace Project No.: 20304472

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20304472001	**24A0675:EW-51**	Pace ENV-SOP-BTRO-0042	316640		

ENTHALPY ANALYTICAL

Pace - Gulf Coast
7979 Innovation Park Dr
Baton Rouge, LA 70820

1941 REY
RICHMOND, VIRG
(804) 358-8
(804)35

WO# : 20304472

20304472

CHAIN OF CUSTODY

COMPANY NAME: Enthalpy	INVOICE TO: Enthalpy	PROJECT NAME/Quote #: 24A0675
CONTACT: Dan Elliot	INVOICE CONTACT:	SITE NAME: 24A0675
ADDRESS: 1941 Reymet Rd Richmond VA 23237	INVOICE ADDRESS: 1941 Reymet Rd Richmond VA 23237	PROJECT NUMBER: 24A0675
PHONE #: (804) 358-8295	INVOICE PHONE #: (804) 358-8295	P.O. #: PO-058581
FAX #:	EMAIL:	Pretreatment Program:
Is sample for compliance reporting? YES NO	Is sample from a chlorinated supply? YES NO	PWS I.D. #:
SAMPLER NAME (PRINT):	SAMPLER SIGNATURE:	**Turn Around Time:** 10

Matrix Codes: WW=Waste Water/Storm Water GW=Ground Water DW=Drinking Water S=Soil/Solids OR=Organic A=Air WP=Wipe OT=Other____________

CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	ANALYSIS / (PRESERVATIVE) **Volatile Fatty Acid**								COMMENTS **Preservative Codes:** N=Nitric Acid C=Hydrochloric Acid S=Sulfuric Acid H=Sodium Hydroxide A=Ascorbic Acid Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)
1) 24A0675: EW-51	x					1/11/24	0930		WW	3	X								1
2)																			
3)																			
4)																			
5)																			
6)																			
7)																			
8)																			
9)																			
10)																			

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
	1/15/24 1600		
Fed Ex	1/19/23 1230	Dodie McCune	1-19-24 1230

QC Data Package
Level I ☐
Level II ☐
Level III ☐
Level IV ☐

LAB USE ONLY

COOLER TEMP ________°C

Pace

WO#:20304472

Sample Condition Upon Reciept (

Workorder

PM: RW Due Date: 02/02/24

CLIENT: BR-Enthalpy

7979 Innovation Park Dr. Baton Rouge, LA 70806

Cooler Inspected by/date: BRP / 1/19/24

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☒ FedEx ☐ Other: ______				
☒ Yes	☐ No		Were custody seals present on the cooler?	
☒ Yes	☐ No	☐ NA	If custody seals were present, were they intact and unbroken?	

Method: ☐ Temperature Blank ☒ Against Bottles IR Gun ID: E43 IR Gun Correction Factor: 0 °C

Cooler #1	Cooler Temp °C: 1.6	(Actual/True)	Samples on ice ☒ Yes ☐ No
Cooler #2	Cooler Temp °C: ______	(Actual/True)	pH Strip Lot #
Cooler #3	Cooler Temp °C: ______	(Actual/True)	Method of coolant:
Cooler #4	Cooler Temp °C: ______	(Actual/True)	☒ Wet ☐ Ice Packs ☐ Dry Ice ☐ None

Tracking #: 7748 1883 1771

☐ Yes	☒ No	☐ NA	Is a temperature blank present?	
☒ Yes	☐ No	☐ NA	Was a chain of custody (COC) recieved?	
~~☒~~ Yes	☒ No	☐ NA	Was the line and profile number listed on the COC?	
☒ Yes	☐ No	☐ NA	Were all coolers received at or below 6.0°C? If no, notify Project Manager notified via email.	
☒ Yes	☐ No		Were proper custody procedures (relinquished/received) followed?	
☐ Yes	☒ No	☐ NA	Is the sampler name and signature on the COC?	
☒ Yes	☐ No		Were sample IDs listed on the COC and all sample containers?	
☒ Yes	☐ No		Was collection date & time listed on the COC and all sample containers?	
☒ Yes	☐ No		Did all container label information (ID, date, time) agree with the COC?	
☒ Yes	☐ No		Were tests to be performed listed on the COC?	
☒ Yes	☐ No		Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?	
☒ Yes	☐ No		Was adequate sample volume available?	
☒ Yes	☐ No		Were all samples received within ½ the holding time or 48 hours, whichever comes first?	
☒ Yes	☐ No		Were all samples containers accounted for? (No missing / excess)	
☐ Yes	☐ No	☒ NA	Were VOA, 8015C (GRO/VPH), and RSK-175 samples free of bubbles > "pea size" (1/4" or 6mm in diameter) in any of the VOA vials?	
☐ Yes	☐ No	☒ NA	Trip blank present?	
☐ Yes	☐ No	☒ NA	Filtered volume received for dissolved tests? *If no, list affected sample(s) in comments below.*	
☐ Yes	☐ No	☒ NA	Were all metals/nutrient samples received at a pH of < 2?	If No, was preservative added? ☐ Yes ☐ No If added, record lots. Dispenser/pipette lot #: ______
☐ Yes	☐ No	☒ NA	Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?	HNO_3 ______ H_2SO_4 ______ NaOH ______ Date: ______ Time: ______

Comments:

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Ammonia as N (mg/L)	November-2022	---	---	---	---	---	---	---	---	**1560**	---	**1400**	---	---	**1380**	---	---	---	---	---	---	50	50
	December-2022	**1700**	---	**2280**	---	---	---	**2110**	---	**1410**	**1310**	---	---	---	---	**1150**	**1780**	---	---	---	---	100	100
	January-2023	**1520**	---	---	---	---	---	---	**936**	---	---	---	---	---	**1330**	---	---	---	---	---	---	50	50
		---	---	---	---	---	---	---	---	**2440**	---	---	---	---	---	---	---	---	---	---	---	100	100
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1490**	---	---	---	---	100	100
	March-2023	---	---	---	---	---	---	---	**667**	**1480**	---	---	---	---	---	---	---	---	---	---	---	73.1	100
	April-2023	---	---	---	---	---	---	---	**1410**	---	**1220**	---	---	---	---	---	---	---	---	---	---	73.1	100
	May-2023	**1390**	---	---	---	---	---	---	**1860**	**2380**	---	---	---	---	---	---	---	---	---	---	---	146	200
	June-2023	---	---	---	---	---	---	---	---	**2740**	---	**2370**	---	**2170**	---	---	---	---	---	---	---	146	200
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1180**	---	---	---	73.1	100
		1570	---	---	---	---	---	**2260**	---	---	---	---	---	---	---	---	---	---	---	**2350**	**310**	146	200
	August-2023	---	---	---	---	**1600**	---	**1890**	---	---	---	---	---	---	---	---	---	---	---	**2140**	**222**	146	200
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1720**	---	---	---	73.1	100
		---	---	**1250**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	146	200
	October-2023	---	---	---	---	---	**1980**	---	---	---	---	---	---	---	---	---	---	**1730**	**2890**	---	---	146	200
	November-2023	**1260**	---	**2490**	**1830**	---	**2070**	---	---	---	---	---	---	---	---	---	---	**1800**	**2590**	---	---	146	200
		---	---	---	---	---	---	---	---	---	---	---	**1170**	---	---	---	---	---	---	---	**2080**	183	250
		---	---	---	---	---	---	---	---	**2440**	---	---	---	---	---	---	---	---	---	---	---	366	500
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1540**	---	---	---	73.1	100
		---	---	**2900**	---	---	---	---	---	---	---	---	---	---	---	---	**2200**	---	---	---	---	146	200
	January-2024	---	**2160**	---	---	---	---	---	---	**2400**	---	---	---	---	---	---	---	---	---	---	**1610**	146	200
Biological Oxygen Demand (mg/L)	November-2022	---	---	---	---	---	---	---	---	**15700**	---	**5860**	---	---	**5140**	---	---	---	---	---	---	0.2	2
	December-2022	**6440**	---	**12500**	---	---	---	**11400**	---	**9240**	**3330**	---	---	---	---	**8360**	**6770**	---	---	---	---	0.2	2
	January-2023	**9920**	---	---	---	---	---	---	**999**	**28100**	---	---	---	---	**7060**	---	---	---	---	---	---	0.2	2
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**7230**	---	---	---	---	0.2	2
	March-2023	---	---	---	---	---	---	---	**1570**	**9190**	---	---	---	---	---	---	---	---	---	---	---	0.2	2
	April-2023	---	---	---	---	---	---	---	**8430**	---	**2860**	---	---	---	---	---	---	---	---	---	---	0.2	2
	May-2023	**7350**	---	---	---	---	---	---	**11900**	**35300**	---	---	---	---	---	---	---	---	---	---	---	0.2	2
	June-2023	---	---	---	---	---	---	---	---	**20000**	---	**27400**	---	**23100**	---	---	---	---	---	---	---	0.2	2
	July-2023	**6820**	---	---	---	---	---	**32900**	---	---	---	---	---	---	---	---	---	**330**	---	**31800**	**937**	0.2	2
	August-2023	---	---	---	---	**>33045**	---	**>33225**	---	---	---	---	---	---	---	---	---	---	---	**>32805**	**506**	0.2	2
	September-2023	---	---	**40185.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	**659**	---	---	---	0.2	2
	October-2023	---	---	---	---	---	**34600**	---	---	---	---	---	---	---	---	---	---	**690**	**37000**	---	---	0.2	2
	November-2023	**1910**	---	**30400**	**27500**	---	**32015**	---	---	**29600**	---	---	**3640**	---	---	---	---	**480**	**32135**	---	**21500**	0.2	2
	December-2023	---	---	**>44105**	---	---	---	---	---	---	---	---	---	---	---	---	**13700**	**681**	---	---	---	0.2	2
	January-2024	---	**26000**	---	---	---	---	---	---	**17100**	---	---	---	---	---	---	---	---	---	---	**14000**	0.2	2

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
Chemical Oxygen Demand (mg/L)	November-2022	---	---	---	---	---	---	---	---	---	---	**9790**	---	---	**10800**	---	---	---	---	---	---	1000	1000
		---	---	---	---	---	---	---	---	**23500**	---	---	---	---	---	---	---	---	---	---	---	2000	2000
	December-2022	**7440**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000	1000
		---	---	---	---	---	---	---	---	**13200**	**8000**	---	---	---	---	**20300**	**14100**	---	---	---	---	2000	2000
		---	---	---	---	---	---	**22400**	---	---	---	---	---	---	---	---	---	---	---	---	---	5000	5000
		---	---	**86800**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10000	10000
	January-2023	---	---	---	---	---	---	---	**3630**	---	---	---	---	---	---	---	---	---	---	---	---	500	500
		14900	---	---	---	---	---	---	---	---	---	---	---	---	**8430**	---	---	---	---	---	---	2000	2000
		---	---	---	---	---	---	---	---	**47600**	---	---	---	---	---	---	---	---	---	---	---	5000	5000
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**9210**	---	---	---	---	1000	1000
	March-2023	---	---	---	---	---	---	---	**1690**	---	---	---	---	---	---	---	---	---	---	---	---	500	500
		---	---	---	---	---	---	---	---	**10600**	---	---	---	---	---	---	---	---	---	---	---	2000	2000
	April-2023	---	---	---	---	---	---	---	---	---	**7370**	---	---	---	---	---	---	---	---	---	---	1000	1000
		---	---	---	---	---	---	---	**16800**	---	---	---	---	---	---	---	---	---	---	---	---	2000	2000
	May-2023	**7590**	---	---	---	---	---	---	**18700**	---	---	---	---	---	---	---	---	---	---	---	---	2000	2000
		---	---	---	---	---	---	---	---	**44700**	---	---	---	---	---	---	---	---	---	---	---	4000	4000
	June-2023	---	---	---	---	---	---	---	---	---	---	**44800**	---	---	---	---	---	---	---	---	---	5000	5000
		---	---	---	---	---	---	---	---	**41300**	---	---	---	**55000**	---	---	---	---	---	---	---	10000	10000
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2180**	500	500
		6480	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2460**	---	---	---	1000	1000
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**41000**	---	5000	5000
		---	---	---	---	---	---	**50100**	---	---	---	---	---	---	---	---	---	---	---	---	---	10000	10000
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1750**	500	500
		---	---	---	---	**59000**	---	**58600**	---	---	---	---	---	---	---	---	---	---	---	**60600**	---	5000	5000
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**6260**	---	---	---	1000	1000
		---	---	**87400**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10000	10000
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**5320**	---	---	---	500	500
		---	---	---	---	---	**51000**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5000	5000
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**63600**	---	---	10000	10000
	November-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4710**	---	---	---	1000	1000
		6200	---	---	---	---	---	---	---	---	---	---	**5620**	---	---	---	---	---	---	---	---	2000	2000
		---	---	---	**48100**	---	**57900**	---	---	**43700**	---	---	---	---	---	---	---	---	---	---	**37600**	5000	5000
		---	---	**77100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**63900**	---	---	10000	10000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4870**	---	---	---	1000	1000
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**19900**	---	---	---	---	5000	5000
		---	---	**94200**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10000	10000
	January-2024	---	**48600**	---	---	---	---	---	---	**59800**	---	---	---	---	---	---	---	---	---	---	**38200**	5000	5000

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Nitrate+Nitrite as N (mg/L)	November-2022	---	---	---	---	---	---	---	---	**2.91**	---	**0.16**	---	---	**0.33**	---	---	---	---	---	---	0.1	0.1
Nitrate as N (mg/L)	December-2022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	0.2	0.2
		---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	0.2	0.6
		ND	---	ND	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	1.1	5.1
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	1.5	5.5
	January-2023	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	0.35	1.35
		---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	1.1	1.1
		3.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.1	2.1
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	2.2	2.2
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	0.35	1.35
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	1.04	5.1
	April-2023	---	---	---	---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	0.6	2.6
	May-2023	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.1	5.1
		---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	1.2	5.2
	June-2023	---	---	---	---	---	---	---	---	ND	---	---	---	ND	---	---	---	---	---	---	---	1.1	5.1
		---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	1.2	5.2
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.355**	---	---	---	0.15	0.35
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.55	0.75
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	3
		---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	1.5	5.5
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.15	0.35
		---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	1.5	3.5
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.3	1.1
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.7	1.5
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.35	1.35
		---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	3
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	1.5	3.5
	November-2023	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.15	0.35
		---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	0.35	1.35
		---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.75	1.75
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.1	5.1
		---	---	---	ND	---	---	---	---	ND	---	---	---	---	---	---	---	---	ND	---	ND	1.5	5.5
	December-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	1.1	5.1
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	1.5	5.5
	January-2024	---	**2.01**	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	1.5	5.5

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Nitrite as N (mg/L)	December-2022	---	---	---	---	---	---	---	---	---	**0.12 J**	---	---	---	---	---	---	---	---	---	---	0.1	0.5
		ND	---	ND	---	---	---	ND	---	ND	---	---	---	---	---	ND	ND	---	---	---	---	1	5
	January-2023	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	0.25	1.25
		---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	1	1
		ND	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	2	2
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.48 J**	---	---	---	---	0.25	1.25
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	1	5
	April-2023	---	---	---	---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	0.5	2.5
	May-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	1	5
	June-2023	---	---	---	---	---	---	---	---	**2 J**	---	ND	---	ND	---	---	---	---	---	---	---	1	5
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	ND	0.05	0.25
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.5	2.5
		---	---	---	---	---	---	**1.2 J**	---	---	---	---	---	---	---	---	---	---	---	ND	---	1	5
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.05	0.25
		---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.5	2.5
	September-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.2	1
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.25	1.25
		---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	0.5	2.5
	November-2023	**0.06 J**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.05	0.25
		---	---	---	---	---	ND	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	0.25	1.25
		---	---	ND	ND	---	---	---	---	ND	---	---	---	---	---	---	---	---	ND	---	ND	1	5
	December-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	---	---	---	1	5
	January-2024	---	**1.7 J**	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	1	5
Total Kjeldahl Nitrogen (mg/L)	November-2022	---	---	---	---	---	---	---	---	---	---	**1290**	---	---	**1470**	---	---	---	---	---	---	20	50
		---	---	---	---	---	---	---	---	**2110**	---	---	---	---	---	---	---	---	---	---	---	50	125
	December-2022	**1510**	---	**3570**	---	---	---	**1790**	---	**1830**	**1490**	---	---	---	---	**1340**	**1940**	---	---	---	---	200	500
	January-2023	**1840**	---	---	---	---	---	---	**881**	---	---	---	---	---	**1410**	---	---	---	---	---	---	20	50
		---	---	---	---	---	---	---	---	**2970**	---	---	---	---	---	---	---	---	---	---	---	40	100
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1870**	---	---	---	---	16.8	50
	March-2023	---	---	---	---	---	---	---	**879**	**1920**	---	---	---	---	---	---	---	---	---	---	---	33.6	100
	April-2023	---	---	---	---	---	---	---	**1820**	---	**1510**	---	---	---	---	---	---	---	---	---	---	16.8	50
	May-2023	**1590**	---	---	---	---	---	---	**1950**	**2910**	---	---	---	---	---	---	---	---	---	---	---	40	100
	June-2023	---	---	---	---	---	---	---	---	**3080**	---	---	---	**2750**	---	---	---	---	---	---	---	100	250
		---	---	---	---	---	---	---	---	---	---	**2650**	---	---	---	---	---	---	---	---	---	200	500
	July-2023	**1670**	---	---	---	---	---	**2960**	---	---	---	---	---	---	---	---	---	**1670**	---	**2720**	**285**	40	100
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**279**	10	25
		---	---	---	---	**2240**	---	**2820**	---	---	---	---	---	---	---	---	---	---	---	**2850**	---	100	250
	September-2023	---	---	**3340**	---	---	---	---	---	---	---	---	---	---	---	---	---	**2680**	---	---	---	100	250
	October-2023	---	---	---	---	---	**1050**	---	---	---	---	---	---	---	---	---	---	---	**1320**	---	---	40	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4630**	---	---	---	100	250
	November-2023	---	---	---	---	---	**2240**	---	---	---	---	---	---	---	---	---	---	---	---	---	**2120**	80	200
		1440	---	**3290**	**2630**	---	---	---	---	**2530**	---	---	**1120**	---	---	---	---	**2270**	**3170**	---	---	100	250
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1880**	---	---	---	---	80	200
		---	---	**3130**	---	---	---	---	---	---	---	---	---	---	---	---	---	**1890**	---	---	---	100	250
	January-2024	---	**2450**	---	---	---	---	---	---	**3020**	---	---	---	---	---	---	---	---	---	---	**1810**	100	250

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
Total Recoverable Phenolics (mg/L)	November-2022	---	---	---	---	---	---	---	---	---	---	**5.68**	---	---	**3**	---	---	---	---	---	---	0.3	0.5
		---	---	---	---	---	---	---	---	**28.8**	---	---	---	---	---	---	---	---	---	---	---	0.75	1.25
	December-2022	---	---	---	---	---	---	---	---	---	**8.94**	---	---	---	---	---	---	---	---	---	---	0.3	0.5
		24.9	---	**54.6**	---	---	---	**28.3**	---	**32**	---	---	---	---	---	**20.2**	**36**	---	---	---	---	1.5	2.5
	January-2023	**27.2**	---	---	---	---	---	---	**1.3**	---	---	---	---	---	**20.2**	---	---	---	---	---	---	0.75	1.25
		---	---	---	---	---	---	---	---	**56.5**	---	---	---	---	---	---	---	---	---	---	---	1.5	2.5
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**22.4**	---	---	---	---	1.5	2.5
	March-2023	---	---	---	---	---	---	---	**0.4**	---	---	---	---	---	---	---	---	---	---	---	---	0.03	0.05
		---	---	---	---	---	---	---	---	**13.9**	---	---	---	---	---	---	---	---	---	---	---	0.3	0.5
	April-2023	---	---	---	---	---	---	---	**18.7**	---	**5.1**	---	---	---	---	---	---	---	---	---	---	0.3	0.5
	May-2023	**18.6**	---	---	---	---	---	---	**20**	**50**	---	---	---	---	---	---	---	---	---	---	---	1.5	2.5
	June-2023	---	---	---	---	---	---	---	---	**39.1**	---	**45.6**	---	**80.6**	---	---	---	---	---	---	---	1.5	2.5
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.7**	---	---	---	0.15	0.25
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.92**	0.3	0.5
		11.6	---	---	---	---	---	**47.9**	---	---	---	---	---	---	---	---	---	---	---	**37.3**	---	1.5	2.5
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.46**	0.15	0.25
		---	---	---	---	**28.6**	---	**31.4**	---	---	---	---	---	---	---	---	---	---	---	**40.4**	---	1.5	2.5
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4.58**	---	---	---	0.3	0.5
		---	---	**38.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	5
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4.13**	---	---	---	0.15	0.25
		---	---	---	---	---	**37**	---	---	---	---	---	---	---	---	---	---	---	**38.7**	---	---	0.6	1
	November-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.65**	---	---	---	0.15	0.25
		7.88	---	---	**36.4**	---	---	---	---	---	---	---	**4.76**	---	---	---	---	---	---	---	---	0.6	1
		---	---	**38.8**	---	---	**47.4**	---	---	---	---	---	---	---	---	---	---	---	**47.1**	---	---	0.75	1.25
		---	---	---	---	---	---	---	---	**46.9**	---	---	---	---	---	---	---	---	---	---	**29.1**	1.5	2.5
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.72**	---	---	---	0.06	0.1
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**23**	---	---	---	---	0.75	1.25
		---	---	**34.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.5	2.5
	January-2024	---	**38**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**22.7**	1.5	2.5
		---	---	---	---	---	---	---	---	**39.2**	---	---	---	---	---	---	---	---	---	---	---	3	5

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
SEMI-VOLATILE ORGANIC COMPOUND (ug/L)																							
Anthracene	November-2022	---	---	---	---	---	---	---	---	---	---	ND	---	---	ND	---	---	---	---	---	---	46.7	93.5
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	93.5	187
	December-2022	---	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	ND	---	---	---	---	9.35	9.35
		---	---	---	---	---	---	ND	---	---	---	---	---	---	---	ND	---	---	---	---	---	11.7	11.7
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	23.4	23.4
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	485	971
	January-2023	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	243	485
		---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	253	505
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	490	980
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	500	1000
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	187	374
	March-2023	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	51	102
		---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	117	234
	April-2023	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	37.4	74.8
		---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	38.8	77.7
	May-2023	ND	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	93.5	187
		---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	467	935
	June-2023	---	---	---	---	---	---	---	---	ND	---	---	---	ND	---	---	---	---	---	---	---	485	971
		---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	490	980
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	46.7	93.5
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	200
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	250	500
		---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	1000	2000
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	19.6	39.2
		---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	1000	2000
	September-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	40	80
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	40	80
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	50	100
		---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	500	1000
	November-2023	ND	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	20	40
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	50	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	100	200
		---	---	---	ND	---	ND	---	---	ND	---	---	---	---	---	---	---	---	ND	---	---	400	800
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000	2000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	50	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	100	200
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	200	400
	January-2024	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	200
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	250	500
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	1000	2000

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
TOTAL METALS (mg/L)																							
Arsenic	November-2022	---	---	---	---	---	---	---	---	**0.863**	---	**0.464**	---	---	**1.3**	---	---	---	---	---	---	0.02	0.04
	December-2022	**1.02**	---	**0.406**	---	---	---	**0.174**	---	**1.69**	**0.49**	---	---	---	---	**0.159**	**0.574**	---	---	---	---	0.02	0.04
	January-2023	**0.285**	---	---	---	---	---	---	**0.596**	**0.225**	---	---	---	---	**0.846**	---	---	---	---	---	---	0.01	0.02
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.29**	---	---	---	---	0.005	0.01
	March-2023	---	---	---	---	---	---	---	**1.07**	**1**	---	---	---	---	---	---	---	---	---	---	---	0.01	0.02
	April-2023	---	---	---	---	---	---	---	---	---	**0.11**	---	---	---	---	---	---	---	---	---	---	0.0005	0.001
		---	---	---	---	---	---	---	**0.36**	---	---	---	---	---	---	---	---	---	---	---	---	0.005	0.01
	May-2023	**0.26**	---	---	---	---	---	---	**0.3**	**0.27**	---	---	---	---	---	---	---	---	---	---	---	0.0025	0.005
	June-2023	---	---	---	---	---	---	---	---	**0.26**	---	**0.5**	---	**0.14**	---	---	---	---	---	---	---	0.0025	0.005
	July-2023	**0.23**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.24**	---	**0.19**	**0.06**	0.0005	0.001
		---	---	---	---	---	---	**0.7**	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0025	0.005
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.15**	0.0025	0.005
		---	---	---	---	**0.32**	---	**0.43**	---	---	---	---	---	---	---	---	---	---	---	**0.29**	---	0.005	0.01
	September-2023	---	---	**0.42**	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.25**	---	---	---	0.005	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.24**	**0.31**	---	---	0.0005	0.001
		---	---	---	---	---	**0.36**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.001	0.002
	November-2023	**0.23**	---	**0.33**	**0.53**	---	**0.43**	---	---	**0.35**	---	---	**0.78**	---	---	---	---	**0.34**	**0.27**	---	**0.2**	0.003	0.003
	December-2023	---	---	**0.4**	---	---	---	---	---	---	---	---	---	---	---	---	**0.26**	---	---	---	---	0.0025	0.005
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.24**	---	---	---	0.001	0.002
	January-2024	---	**0.47**	---	---	---	---	---	---	**0.23**	---	---	---	---	---	---	---	---	---	---	**0.18**	0.0025	0.005
Barium	November-2022	---	---	---	---	---	---	---	---	**0.871**	---	**0.485**	---	---	**0.36**	---	---	---	---	---	---	0.01	0.02
	December-2022	**0.566**	---	**0.803**	---	---	---	**0.978**	---	**0.438**	**0.214**	---	---	---	---	**0.856**	**0.793**	---	---	---	---	0.01	0.02
	January-2023	**0.643**	---	---	---	---	---	---	**0.683**	**1.92**	---	---	---	---	**0.554**	---	---	---	---	---	---	0.005	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.04**	---	---	---	---	0.01	0.05
	March-2023	---	---	---	---	---	---	---	**0.406**	**0.683**	---	---	---	---	---	---	---	---	---	---	---	0.005	0.01
	April-2023	---	---	---	---	---	---	---	**1.21**	---	**0.326**	---	---	---	---	---	---	---	---	---	---	0.01	0.05
	May-2023	**0.636**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.005	0.025
		---	---	---	---	---	---	---	**1.2**	**1.83**	---	---	---	---	---	---	---	---	---	---	---	0.01	0.05
	June-2023	---	---	---	---	---	---	---	---	**1.69**	---	---	---	**1.65**	---	---	---	---	---	---	---	0.005	0.025
		---	---	---	---	---	---	---	---	---	---	**3.01**	---	---	---	---	---	---	---	---	---	0.01	0.05
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.217**	0.001	0.005
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.558**	---	---	---	0.002	0.01
		0.542	---	---	---	---	---	**2.28**	---	---	---	---	---	---	---	---	---	---	---	**1.02**	---	0.005	0.025
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.218**	0.005	0.025
		---	---	---	---	**1.61**	---	**1.58**	---	---	---	---	---	---	---	---	---	---	---	**1.48**	---	0.01	0.05
	September-2023	---	---	**0.72**	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.649**	---	---	---	0.01	0.05
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.664**	---	---	---	0.002	0.01
		---	---	---	---	---	**2.56**	---	---	---	---	---	---	---	---	---	---	---	**1.93**	---	---	0.005	0.025
	November-2023	**0.572**	---	**0.81**	**2.28**	---	**2.51**	---	---	**1.96**	---	---	**0.418**	---	---	---	---	**0.67**	**2.06**	---	**2.84**	0.01	0.05
	December-2023	---	---	**0.68**	---	---	---	---	---	---	---	---	---	---	---	---	**1.36**	---	---	---	---	0.005	0.025
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.672**	---	---	---	0.002	0.01
	January-2024	---	---	---	---	---	---	---	---	**1.92**	---	---	---	---	---	---	---	---	---	---	**1.91**	0.005	0.025
		---	**3.27**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	0.05

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Cadmium	November-2022	---	---	---	---	---	---	---	---	ND	---	ND	---	---	ND	---	---	---	---	---	---	0.004	0.008
	December-2022	ND	---	**0.0104**	---	---	---	ND	---	ND	ND	---	---	---	---	ND	ND	---	---	---	---	0.004	0.008
	January-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	ND	---	---	---	---	---	---	0.002	0.004
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.000297 J**	---	---	---	---	0.0001	0.001
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.002	0.004
	April-2023	---	---	---	---	---	---	---	**0.000158 J**	---	**0.000333 J**	---	---	---	---	---	---	---	---	---	---	0.0001	0.001
	May-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.0005	0.005
	June-2023	---	---	---	---	---	---	---	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	0.0005	0.005
	July-2023	**0.000219 J**	---	---	---	---	---	**0.000156 J**	---	---	---	---	---	---	---	---	---	**0.000186 J**	---	ND	ND	0.0001	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.0005	0.005
		---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.001	0.01
	September-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.001	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.000171 J**	ND	---	---	0.0001	0.001
		---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0002	0.002
	November-2023	ND	---	ND	ND	---	ND	---	---	ND	---	---	ND	---	---	---	---	ND	ND	---	ND	0.001	0.003
	December-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	**0.000604 J**	---	---	---	---	0.0005	0.0015
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.0002	0.002
	January-2024	---	ND	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	0.0005	0.005
Chromium	November-2022	---	---	---	---	---	---	---	---	**0.208**	---	**0.112**	---	---	**0.354**	---	---	---	---	---	---	0.016	0.02
	December-2022	**0.503**	---	**1.08**	---	---	---	**1.76**	---	**0.274**	**0.319**	---	---	---	---	**0.499**	**0.822**	---	---	---	---	0.016	0.02
	January-2023	**0.31**	---	---	---	---	---	---	**0.488**	**0.178**	---	---	---	---	**0.155**	---	---	---	---	---	---	0.008	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.277**	---	---	---	---	0.004	0.01
	March-2023	---	---	---	---	---	---	---	**0.213**	**0.188**	---	---	---	---	---	---	---	---	---	---	---	0.008	0.01
	April-2023	---	---	---	---	---	---	---	---	---	**0.142**	---	---	---	---	---	---	---	---	---	---	0.0004	0.001
		---	---	---	---	---	---	---	**0.306**	---	---	---	---	---	---	---	---	---	---	---	---	0.004	0.01
	May-2023	**0.422**	---	---	---	---	---	---	**0.281**	**0.237**	---	---	---	---	---	---	---	---	---	---	---	0.002	0.005
	June-2023	---	---	---	---	---	---	---	---	**0.251**	---	**0.191**	---	**0.272**	---	---	---	---	---	---	---	0.002	0.005
	July-2023	**0.308**	---	---	---	---	---	**0.535**	---	---	---	---	---	---	---	---	---	**0.231**	---	**0.215**	**0.0265**	0.0004	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0276**	0.002	0.005
		---	---	---	---	**0.606**	---	**0.449**	---	---	---	---	---	---	---	---	---	---	---	**0.259**	---	0.004	0.01
	September-2023	---	---	**1.17**	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.234**	---	---	---	0.004	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.144**	**0.194**	---	---	0.0004	0.001
		---	---	---	---	---	**0.273**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0008	0.002
	November-2023	**0.391**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	0.003
		---	---	---	**0.51**	---	---	---	---	---	---	---	---	---	---	---	---	**0.251**	**0.403**	---	---	0.003	0.003
		---	---	**1.04**	---	---	**0.402**	---	---	**0.246**	---	---	**0.343**	---	---	---	---	---	---	---	**0.222**	0.004	0.01
	December-2023	---	---	**1.34**	---	---	---	---	---	---	---	---	---	---	---	---	**0.259**	---	---	---	---	0.002	0.005
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.219**	---	---	---	0.0008	0.002
	January-2024	---	**0.17**	---	---	---	---	---	---	**0.193**	---	---	---	---	---	---	---	---	---	---	**0.128**	0.002	0.005

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Copper	November-2022	---	---	---	---	---	---	---	---	ND	---	ND	---	---	ND	---	---	---	---	---	---	0.016	0.02
	December-2022	ND	---	ND	---	---	---	ND	---	ND	ND	---	---	---	---	ND	ND	---	---	---	---	0.016	0.02
	January-2023	ND	---	---	---	---	---	---	**0.0127**	**0.0256**	---	---	---	---	ND	---	---	---	---	---	---	0.008	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.00365**	---	---	---	---	0.0003	0.001
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.008	0.01
	April-2023	---	---	---	---	---	---	---	**0.00664**	---	**0.00767**	---	---	---	---	---	---	---	---	---	---	0.0003	0.001
	May-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.0015	0.005
	June-2023	---	---	---	---	---	---	---	---	**0.00154 J**	---	**0.00362 J**	---	**0.00269 J**	---	---	---	---	---	---	---	0.0015	0.005
	July-2023	**0.00124**	---	---	---	---	---	**0.00163**	---	---	---	---	---	---	---	---	---	**0.00811**	---	ND	**0.0027**	0.0003	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.0015	0.005
		---	---	---	---	**0.00343 J**	---	**0.0176**	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.003	0.01
	September-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.00407 J**	---	---	---	0.003	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.00361**	**0.000609 J**	---	---	0.0003	0.001
		---	---	---	---	---	**0.00806**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0006	0.002
	November-2023	**0.00607**	---	**0.00352**	**0.0212**	---	**0.00756**	---	---	ND	---	---	**0.00341**	---	---	---	---	**0.00387**	ND	---	ND	0.003	0.003
	December-2023	---	---	**0.00184**	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	0.0015	0.0015
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0034**	---	---	---	0.0006	0.002
	January-2024	---	ND	---	---	---	---	---	---	**0.019**	---	---	---	---	---	---	---	---	---	---	ND	0.0015	0.005
Lead	November-2022	---	---	---	---	---	---	---	---	ND	---	ND	---	---	**0.017 J**	---	---	---	---	---	---	0.012	0.02
	December-2022	ND	---	**0.0381**	---	---	---	ND	---	ND	ND	---	---	---	---	ND	ND	---	---	---	---	0.012	0.02
	January-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	ND	---	---	---	---	---	---	0.006	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.006**	---	---	---	---	0.001	0.001
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.006	0.01
	April-2023	---	---	---	---	---	---	---	**0.0022**	---	**0.0067**	---	---	---	---	---	---	---	---	---	---	0.001	0.001
	May-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.005	0.005
	June-2023	---	---	---	---	---	---	---	---	ND	---	ND	---	**0.0069**	---	---	---	---	---	---	---	0.005	0.005
	July-2023	**0.0014**	---	---	---	---	---	**0.019**	---	---	---	---	---	---	---	---	---	**0.0092**	---	ND	**0.0017**	0.001	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.005	0.005
		---	---	---	---	**0.014**	---	ND	---	---	---	---	---	---	---	---	---	---	---	**0.013**	---	0.01	0.01
	September-2023	---	---	**0.12**	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.01	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0036**	**0.0034**	---	---	0.001	0.001
		---	---	---	---	---	**0.0077**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.002	0.002
	November-2023	ND	---	**0.13**	**0.0046**	---	**0.014**	---	---	ND	---	---	ND	---	---	---	---	**0.0032**	**0.0043**	---	ND	0.003	0.003
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0043**	---	---	---	0.002	0.002
		---	---	**0.16**	---	---	---	---	---	---	---	---	---	---	---	---	**0.002**	---	---	---	---	0.0015	0.0015
	January-2024	---	ND	---	---	---	---	---	---	**0.0081**	---	---	---	---	---	---	---	---	---	---	ND	0.005	0.005

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
Mercury	November-2022	---	---	---	---	---	---	---	---	---	---	**0.00169**	---	---	**0.00053**	---	---	---	---	---	---	0.0004	0.0004
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	0.0008	0.0008
	December-2022	**0.00051**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0004	0.0004
		---	---	---	---	---	---	**0.00118**	---	ND	**0.00588**	---	---	---	---	**0.0048**	ND	---	---	---	---	0.0008	0.0008
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.004	0.004
	January-2023	ND	---	---	---	---	---	---	ND	---	---	---	---	---	ND	---	---	---	---	---	---	0.0004	0.0004
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	0.004	0.004
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	0.0004	0.0004
	March-2023	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	0.0002	0.0002
		---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	0.0004	0.0004
	April-2023	---	---	---	---	---	---	---	---	---	**0.00128**	---	---	---	---	---	---	---	---	---	---	0.0002	0.0002
		---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	0.0004	0.0004
	May-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.0002	0.0002
	June-2023	---	---	---	---	---	---	---	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	0.004	0.004
	July-2023	**0.000306**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	ND	0.0002	0.0002
		---	---	---	---	---	---	**0.0107**	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.001	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.001	0.001
		---	---	---	---	**0.00312**	---	**0.00397**	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.002	0.002
	September-2023	---	---	**0.00503**	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.002	0.002
	October-2023	---	---	---	---	---	**0.00165**	---	---	---	---	---	---	---	---	---	---	ND	**0.00055**	---	---	0.0004	0.0004
	November-2023	ND	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	0.0000002	0.0000002
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.0000004	0.0000004
		---	---	**0.00576**	**0.00606**	---	**0.00578**	---	---	ND	---	---	---	---	---	---	---	---	**0.00954**	---	ND	0.000004	0.000004
	December-2023	---	---	**0.00484**	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	0.001	0.001
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.0004	0.0004
	January-2024	---	ND	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	0.001	0.001
Nickel	November-2022	---	---	---	---	---	---	---	---	**0.0866**	---	**0.1344**	---	---	**0.173**	---	---	---	---	---	---	0.014	0.02
	December-2022	**0.1722**	---	**0.5025**	---	---	---	**0.2989**	---	**0.1299**	**0.287**	---	---	---	---	**0.1853**	**0.346**	---	---	---	---	0.014	0.02
	January-2023	**0.1074**	---	---	---	---	---	---	**0.1442**	**0.0407**	---	---	---	---	**0.0769**	---	---	---	---	---	---	0.007	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.1726**	---	---	---	---	0.001	0.001
	March-2023	---	---	---	---	---	---	---	**0.1254**	**0.1033**	---	---	---	---	---	---	---	---	---	---	---	0.007	0.01
	April-2023	---	---	---	---	---	---	---	**0.1143**	---	**0.1732**	---	---	---	---	---	---	---	---	---	---	0.001	0.001
	May-2023	**0.113**	---	---	---	---	---	---	**0.09726**	**0.05657**	---	---	---	---	---	---	---	---	---	---	---	0.005	0.005
	June-2023	---	---	---	---	---	---	---	---	**0.05978**	---	**0.05892**	---	**0.07161**	---	---	---	---	---	---	---	0.005	0.005
	July-2023	**0.09872**	---	---	---	---	---	**0.08332**	---	---	---	---	---	---	---	---	---	**0.1576**	---	**0.03074**	**0.01403**	0.001	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.02029**	0.005	0.005
		---	---	---	---	**0.1457**	---	**0.09673**	---	---	---	---	---	---	---	---	---	---	---	**0.0513**	---	0.01	0.01
	September-2023	---	---	**0.5152**	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.2387**	---	---	---	0.01	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.2019**	**0.09206**	---	---	0.001	0.001
		---	---	---	---	---	**0.104**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.002	0.002
	November-2023	**0.1178**	---	**0.4227**	**0.1242**	---	**0.07791**	---	---	**0.05944**	---	---	**0.1493**	---	---	---	---	**0.2492**	**0.1332**	---	**0.05277**	0.01	0.01
	December-2023	---	---	**0.6091**	---	---	---	---	---	---	---	---	---	---	---	---	**0.1447**	---	---	---	---	0.005	0.005
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.2127**	---	---	---	0.002	0.002
	January-2024	---	**0.06308**	---	---	---	---	---	---	**0.04911**	---	---	---	---	---	---	---	---	---	---	**0.0326**	0.005	0.005

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Selenium	November-2022	---	---	---	---	---	---	---	---	ND	---	ND	---	---	ND	---	---	---	---	---	---	0.08	0.1
	December-2022	ND	---	ND	---	---	---	ND	---	ND	ND	---	---	---	---	ND	ND	---	---	---	---	0.08	0.1
	January-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	ND	---	---	---	---	---	---	0.04	0.05
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.00199**	---	---	---	---	0.00085	0.001
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.04	0.05
	April-2023	---	---	---	---	---	---	---	**0.00189**	---	**0.00185**	---	---	---	---	---	---	---	---	---	---	0.00085	0.001
	May-2023	ND	---	---	---	---	---	---	ND	**0.00569**	---	---	---	---	---	---	---	---	---	---	---	0.00425	0.005
	June-2023	---	---	---	---	---	---	---	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	0.00425	0.005
	July-2023	**0.00101**	---	---	---	---	---	**0.00331**	---	---	---	---	---	---	---	---	---	**0.00116**	---	**0.00251**	ND	0.00085	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.00425	0.005
		---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.0085	0.01
	September-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.0085	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.00186**	**0.0044**	---	---	0.00085	0.001
		---	---	---	---	---	**0.00332**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0017	0.002
	November-2023	ND	---	**0.00425**	**0.00314**	---	**0.00315**	---	---	ND	---	---	ND	---	---	---	---	ND	**0.0032**	---	ND	0.003	0.003
	December-2023	---	---	**0.00785**	---	---	---	---	---	---	---	---	---	---	---	---	**0.00253**	---	---	---	---	0.0015	0.0015
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.00215**	---	---	---	0.0017	0.002
	January-2024	---	ND	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	0.00425	0.005
Silver	November-2022	---	---	---	---	---	---	---	---	ND	---	ND	---	---	ND	---	---	---	---	---	---	0.01	0.02
	December-2022	ND	---	**0.0187 J**	---	---	---	ND	---	ND	ND	---	---	---	---	ND	ND	---	---	---	---	0.01	0.02
	January-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	ND	---	---	---	---	---	---	0.005	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	0.00006	0.001
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.005	0.01
	April-2023	---	---	---	---	---	---	---	ND	---	**0.00011 J**	---	---	---	---	---	---	---	---	---	---	0.00006	0.001
	May-2023	ND	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	0.0003	0.005
	June-2023	---	---	---	---	---	---	---	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	0.0003	0.005
	July-2023	ND	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	ND	---	ND	ND	0.00006	0.001
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	0.0003	0.005
		---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	0.0006	0.01
	September-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.0006	0.01
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	---	---	0.00006	0.001
		---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.00012	0.002
	November-2023	ND	---	ND	ND	---	ND	---	---	ND	---	---	ND	---	---	---	---	ND	ND	---	ND	0.0006	0.01
	December-2023	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	0.00025	0.001
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	0.00012	0.002
	January-2024	---	ND	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	0.0003	0.005

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		**EW-50**	**EW-51**	**EW-52**	**EW-53**	**EW-54**	**EW-55**	**EW-57**	**EW-58**	**EW-59**	**EW-60**	**EW-61**	**EW-62**	**EW-64**	**EW-65**	**EW-67**	**EW-68**	**EW-78**	**EW-87**	**EW-94**	**EW-98**	**LOD**	**LOQ**
Parameter	**Monitoring Event**	**Concentration**																					
Zinc	November-2022	---	---	---	---	---	---	---	---	ND	---	**0.032**	---	---	**0.694**	---	---	---	---	---	---	0.02	0.02
	December-2022	**0.208**	---	**29.7**	---	---	---	**0.162**	---	**0.0686**	**0.75**	---	---	---	---	**0.364**	**0.286**	---	---	---	---	0.02	0.02
	January-2023	**0.133**	---	---	---	---	---	---	**0.15**	**0.074**	---	---	---	---	**0.0752**	---	---	---	---	---	---	0.01	0.01
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0851**	---	---	---	---	0.0025	0.005
	March-2023	---	---	---	---	---	---	---	**0.0689**	**0.0538**	---	---	---	---	---	---	---	---	---	---	---	0.01	0.01
	April-2023	---	---	---	---	---	---	---	**0.0539**	---	---	---	---	---	---	---	---	---	---	---	---	0.0025	0.005
		---	---	---	---	---	---	---	---	---	**0.414**	---	---	---	---	---	---	---	---	---	---	0.025	0.05
	May-2023	**0.079**	---	---	---	---	---	---	**0.0635**	**0.0519**	---	---	---	---	---	---	---	---	---	---	---	0.0125	0.025
	June-2023	---	---	---	---	---	---	---	---	**0.0538**	---	**0.0253**	---	**0.945**	---	---	---	---	---	---	---	0.0125	0.025
	July-2023	**0.0488**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0714**	---	**0.354**	**0.0782**	0.0025	0.005
		---	---	---	---	---	---	**2.03**	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0125	0.025
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.112**	0.0125	0.025
		---	---	---	---	---	---	**1.71**	---	---	---	---	---	---	---	---	---	---	---	**0.914**	---	0.025	0.05
		---	---	---	---	**5.92**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.05	0.1
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0788**	---	---	---	0.025	0.05
		---	---	**45**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.25	0.5
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0622**	---	---	---	0.0025	0.005
		---	---	---	---	---	**0.203**	---	---	---	---	---	---	---	---	---	---	---	**633**	---	---	0.005	0.01
	November-2023	**0.0471 J**	---	---	**0.0534**	---	**0.74**	---	---	**0.053**	---	---	**0.0618**	---	---	---	---	**0.0722**	**0.845**	---	**0.0313 J**	0.025	0.05
		---	---	**30.4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.25	0.5
	December-2023	---	---	**52.7**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.25	0.5
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.061**	---	---	---	0.005	0.01
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0462**	---	---	---	---	0.025	0.025
	January-2024	---	**0.117**	---	---	---	---	---	---	**0.0974**	---	---	---	---	---	---	---	---	---	---	**0.0261**	0.0125	0.025
VOLATILE FATTY ACIDS (ug/L)																							
Acetic Acid	November-2022	---	---	---	---	---	---	---	---	---	---	**1600**	---	---	---	---	---	---	---	---	---	25	100
		---	---	---	---	---	---	---	---	**3500**	---	---	---	---	**150 J**	---	---	---	---	---	---	62	250
	December-2022	**1800**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	62	250
	January-2023	ND	---	---	---	---	---	---	ND	**4400**	---	---	---	---	ND	---	---	---	---	---	---	---	500
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	500
	March-2023	---	---	---	---	---	---	---	ND	**640**	---	---	---	---	---	---	---	---	---	---	---	---	500
	April-2023	---	---	---	---	---	---	---	**1200**	---	**520**	---	---	---	---	---	---	---	---	---	---	370	500
	May-2023	**990**	---	---	---	---	---	---	**1800**	**3000**	---	---	---	---	---	---	---	---	---	---	---	370	500
	June-2023	---	---	---	---	---	---	---	---	**5900**	---	**4100**	---	**5000**	---	---	---	---	---	---	---	750	1000
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	150	200
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	370	500
		---	---	---	---	---	---	**6100**	---	---	---	---	---	---	---	---	---	---	---	**750**	---	750	1000
	August-2023	---	---	---	---	**3300**	---	**5300**	---	---	---	---	---	---	---	---	---	---	---	**4200**	ND	---	500
	September-2023	---	---	**7400**	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	370	500
	October-2023	---	---	---	---	---	**3200**	---	---	---	---	---	---	---	---	---	---	**720**	**4100**	---	---	370	500
	November-2023	ND	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	ND	---	---	**4160**	250	500
		---	---	---	**4950**	---	**6650**	---	---	**5350**	---	---	---	---	---	---	---	---	**7300**	---	---	500	1000
		---	---	**9900**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000	2000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**660**	---	---	---	---	---	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	250
		---	---	**11200**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000
	January-2024	---	**4410**	---	---	---	---	---	---	**5290**	---	---	---	---	---	---	---	---	---	---	**3080**	---	250

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
Butyric Acid	November-2022	---	---	---	---	---	---	---	---	---	---	**430**	---	---	---	---	---	---	---	---	---	12	100
		---	---	---	---	---	---	---	---	**830**	---	---	---	---	ND	---	---	---	---	---	---	29	250
	December-2022	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	29	250
	January-2023	ND	---	---	---	---	---	---	ND	**1800**	---	---	---	---	ND	---	---	---	---	---	---	---	500
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	500
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	500
	April-2023	---	---	---	---	---	---	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	330	500
	May-2023	ND	---	---	---	---	---	---	ND	**1200**	---	---	---	---	---	---	---	---	---	---	---	330	500
	June-2023	---	---	---	---	---	---	---	---	**2500**	---	**1500**	---	**2900**	---	---	---	---	---	---	---	650	1000
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	130	200
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	330	500
		---	---	---	---	---	---	**2800**	---	---	---	---	---	---	---	---	---	---	---	**650**	---	650	1000
	August-2023	---	---	---	---	**1400**	---	**1700**	---	---	---	---	---	---	---	---	---	---	---	**1600**	ND	---	500
	September-2023	---	---	**3100**	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	330	500
	October-2023	---	---	---	---	---	**1200**	---	---	---	---	---	---	---	---	---	---	ND	**2000**	---	---	330	500
	November-2023	ND	---	---	**1670**	---	**1760**	---	---	**1370**	---	---	ND	---	---	---	---	ND	**2730**	---	**740**	250	500
		---	---	**3420**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	500	1000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**336**	---	---	---	---	---	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	250
		---	---	**3390**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000
	January-2024	---	**813**	---	---	---	---	---	---	**1230**	---	---	---	---	---	---	---	---	---	---	**594**	---	250
Lactic Acid	November-2022	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	11	100
		---	---	---	---	---	---	---	---	ND	---	---	---	---	ND	---	---	---	---	---	---	27	250
	December-2022	**90 J**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27	250
	November-2023	ND	---	---	**968**	---	**1800**	---	---	**969**	---	---	ND	---	---	---	---	ND	**1170**	---	**324**	250	500
		---	---	**6030**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	500	1000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	250
		---	---	**9050**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000
	January-2024	---	**629**	---	---	---	---	---	---	**979**	---	---	---	---	---	---	---	---	---	---	**256**	---	250
Propionic Acid	November-2022	---	---	---	---	---	---	---	---	---	---	**620**	---	---	---	---	---	---	---	---	---	11	100
		---	---	---	---	---	---	---	---	**1600**	---	---	---	---	**73 J**	---	---	---	---	---	---	27	250
	December-2022	**640**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27	250
	January-2023	ND	---	---	---	---	---	---	ND	**2000**	---	---	---	---	ND	---	---	---	---	---	---	---	500
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	500
	March-2023	---	---	---	---	---	---	---	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	500
	April-2023	---	---	---	---	---	---	---	**600**	---	ND	---	---	---	---	---	---	---	---	---	---	340	500
	May-2023	**520**	---	---	---	---	---	---	**800**	**1400**	---	---	---	---	---	---	---	---	---	---	---	340	500
	June-2023	---	---	---	---	---	---	---	---	**2900**	---	**2000**	---	**2900**	---	---	---	---	---	---	---	680	1000
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	140	200
		ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	340	500
		---	---	---	---	---	---	**3100**	---	---	---	---	---	---	---	---	---	---	---	**680**	---	680	1000
	August-2023	---	---	---	---	**1200**	---	**2000**	---	---	---	---	---	---	---	---	---	---	---	**1900**	ND	---	500
	September-2023	---	---	**1800**	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	340	500
	October-2023	---	---	---	---	---	**1300**	---	---	---	---	---	---	---	---	---	---	ND	**2000**	---	---	340	500
	November-2023	ND	---	---	**2170**	---	**2310**	---	---	**2080**	---	---	**387**	---	---	---	---	ND	**3350**	---	**1420**	250	500
		---	---	**2580**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	500	1000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**996**	---	---	---	---	---	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	250
		---	---	**2280**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000
	January-2024	---	**1680**	---	---	---	---	---	---	**1970**	---	---	---	---	---	---	---	---	---	---	**1030**	---	250

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Pyruvic Acid	November-2022	---	---	---	---	---	---	---	---	---	---	**46 J**	---	---	---	---	---	---	---	---	---	12	100
		---	---	---	---	---	---	---	---	**98 J**	---	---	---	---	ND	---	---	---	---	---	---	30	250
	December-2022	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30	250
	November-2023	ND	---	---	ND	---	ND	---	---	ND	---	---	ND	---	---	---	---	ND	ND	---	ND	250	500
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	500	1000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	---	100
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	250
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1000
	January-2024	---	ND	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	ND	---	250
VOLATILE ORGANIC COMPOUNDS (ug/L)																							
2-Butanone (MEK)	November-2022	---	---	---	---	---	---	---	---	**3510**	---	---	---	---	**1140**	---	---	---	---	---	---	30	100
		---	---	---	---	---	---	---	---	---	---	**15600**	---	---	---	---	---	---	---	---	---	300	1000
	December-2022	**3140**	---	---	---	---	---	---	---	---	**3390**	---	---	---	---	---	---	---	---	---	---	30	100
		---	---	**26800**	---	---	---	**27700**	---	**5670**	---	---	---	---	---	**21700**	**7150**	---	---	---	---	300	1000
	January-2023	**3480**	---	---	---	---	---	---	**632**	---	---	---	---	---	---	---	---	---	---	---	---	30	100
		---	---	---	---	---	---	---	---	**7840**	---	---	---	---	**5470**	---	---	---	---	---	---	300	1000
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**14400**	---	---	---	---	600	2000
	March-2023	---	---	---	---	---	---	---	**257**	**2770**	---	---	---	---	---	---	---	---	---	---	---	30	100
	April-2023	---	---	---	---	---	---	---	**3420**	---	**5530**	---	---	---	---	---	---	---	---	---	---	750	2500
	May-2023	**5360**	---	---	---	---	---	---	**5970**	---	---	---	---	---	---	---	---	---	---	---	---	150	500
		---	---	---	---	---	---	---	---	**13600**	---	---	---	---	---	---	---	---	---	---	---	750	2500
	June-2023	---	---	---	---	---	---	---	---	**13800**	---	---	---	---	---	---	---	---	---	---	---	750	2500
		---	---	---	---	---	---	---	---	---	---	**20100**	---	**22600**	---	---	---	---	---	---	---	1500	5000
	July-2023	**5860**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	60	200
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**13500**	750	2500
		---	---	---	---	---	---	**38400**	---	---	---	---	---	---	---	---	---	---	---	**31600**	---	3000	10000
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**5950**	60	200
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**7350**	---	150	500
		---	---	---	---	---	---	**3000**	---	---	---	---	---	---	---	---	---	---	---	---	---	750	2500
		---	---	---	---	**25600**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1500	5000
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**439**	---	---	---	60	200
		---	---	**17500**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	750	2500
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**211**	---	---	---	15	50
		---	---	---	---	---	**17800**	---	---	---	---	---	---	---	---	---	---	---	**33400**	---	---	1500	5000
	November-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**78.8 J**	---	---	---	30	100
		---	---	---	---	---	**17700**	---	---	**10600**	---	---	---	---	---	---	---	---	---	---	---	150	500
		3990	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	300	1000
		---	---	**25700**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	750	2500
		---	---	---	**22300**	---	---	---	---	---	---	---	**17600**	---	---	---	---	---	**26700**	---	**31200**	1500	5000
	December-2023	---	---	**13700**	---	---	---	---	---	---	---	---	---	---	---	---	**7060**	ND	---	---	---	150	500
	January-2024	---	---	---	---	---	---	---	---	**10800**	---	---	---	---	---	---	---	---	---	---	---	150	500
		---	**34700**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**28900**	1500	5000

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
Acetone	November-2022	---	---	---	---	---	---	---	---	---	---	---	---	---	**4420**	---	---	---	---	---	---	70	100
		---	---	---	---	---	---	---	---	**16100**	---	**38300**	---	---	---	---	---	---	---	---	---	700	1000
	December-2022	---	---	---	---	---	---	---	---	**15600**	**5170**	---	---	---	---	---	**9800**	---	---	---	---	700	1000
		8500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1750	2500
		---	---	**53100**	---	---	---	**49900**	---	---	---	---	---	---	---	**45600**	---	---	---	---	---	3500	5000
	January-2023	---	---	---	---	---	---	---	**1530**	---	---	---	---	---	---	---	---	---	---	---	---	70	100
		---	---	---	---	---	---	---	---	**22200**	---	---	---	---	**14000**	---	---	---	---	---	---	700	1000
		8130	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1750	2500
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**23900**	---	---	---	---	1400	2000
	March-2023	---	---	---	---	---	---	---	**375**	---	---	---	---	---	---	---	---	---	---	---	---	70	100
		---	---	---	---	---	---	---	---	**6810**	---	---	---	---	---	---	---	---	---	---	---	700	1000
	April-2023	---	---	---	---	---	---	---	**8290**	---	**7560**	---	---	---	---	---	---	---	---	---	---	1750	2500
	May-2023	**10700**	---	---	---	---	---	---	**11700**	---	---	---	---	---	---	---	---	---	---	---	---	350	500
		---	---	---	---	---	---	---	---	**29600**	---	---	---	---	---	---	---	---	---	---	---	1750	2500
	June-2023	---	---	---	---	---	---	---	---	**29600**	---	---	---	---	---	---	---	---	---	---	---	1750	2500
		---	---	---	---	---	---	---	---	---	---	**61800**	---	**50800**	---	---	---	---	---	---	---	3500	5000
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1180**	---	---	---	140	200
		9780	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	700	1000
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**11600**	1750	2500
		---	---	---	---	---	---	**77200**	---	---	---	---	---	---	---	---	---	---	---	**69700**	---	7000	10000
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**20900**	700	1000
		---	---	---	---	---	---	**18700**	---	---	---	---	---	---	---	---	---	---	---	---	---	1750	2500
		---	---	---	---	**72500**	---	---	---	---	---	---	---	---	---	---	---	---	---	**87700**	---	3500	5000
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**188 J**	---	---	---	140	200
		---	---	**40100**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1750	2500
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**79**	---	---	---	35	50
		---	---	---	---	---	**66900**	---	---	---	---	---	---	---	---	---	---	---	**92900**	---	---	3500	5000
	November-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**104**	---	---	---	70	100
		5560	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	700	1000
		---	---	**64700**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1750	2500
		---	---	---	**43100**	---	**61100**	---	---	**36800**	---	---	**32800**	---	---	---	---	---	**53900**	---	**67800**	3500	5000
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	---	140	200
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	350	500
		---	---	**44300**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1750	2500
	January-2024	---	**96600**	---	---	---	---	---	---	**22800**	---	---	---	---	---	---	---	---	---	---	**47300**	3500	5000

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Benzene	November-2022	---	---	---	---	---	---	---	---	**7.4 J**	---	**2860**	---	---	**50.4**	---	---	---	---	---	---	4	10
	December-2022	**301**	---	**2960**	---	---	---	---	---	**6.3 J**	**622**	---	---	---	---	**1750**	**179**	---	---	---	---	4	10
		---	---	---	---	---	---	**6550**	---	---	---	---	---	---	---	---	---	---	---	---	---	40	100
	January-2023	**240**	---	---	---	---	---	---	**28.7**	**1620**	---	---	---	---	**167**	---	---	---	---	---	---	4	10
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1370**	---	---	---	---	4	10
	March-2023	---	---	---	---	---	---	---	**1540**	**727**	---	---	---	---	---	---	---	---	---	---	---	4	10
	April-2023	---	---	---	---	---	---	---	**3740**	---	**320**	---	---	---	---	---	---	---	---	---	---	4	10
	May-2023	**814**	---	---	---	---	---	---	**4890**	**3370**	---	---	---	---	---	---	---	---	---	---	---	20	50
	June-2023	---	---	---	---	---	---	---	---	**2630**	---	---	---	---	---	---	---	---	---	---	---	8	20
		---	---	---	---	---	---	---	---	---	---	**1400**	---	**1590**	---	---	---	---	---	---	---	20	50
	July-2023	**824**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**80.8**	---	---	---	8	20
		---	---	---	---	---	---	**4050**	---	---	---	---	---	---	---	---	---	---	---	**1420**	---	20	50
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**11800**	100	250
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**379**	8	20
		---	---	---	---	**2320**	---	**168**	---	---	---	---	---	---	---	---	---	---	---	ND	---	20	50
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**193**	---	---	---	8	20
		---	---	**468**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	250
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**399**	---	---	---	2	5
		---	---	---	---	---	**576**	---	---	---	---	---	---	---	---	---	---	---	**3100**	---	---	20	50
	November-2023	**80.8**	---	---	---	---	---	---	---	---	---	---	**31.3**	---	---	---	---	---	---	---	---	2	5
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**323**	---	---	---	4	10
		---	---	---	**1070**	---	**654**	---	---	**982**	---	---	---	---	---	---	---	---	**1960**	---	**1190**	20	50
		---	---	**870**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	250
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**932**	---	---	---	---	8	20
		---	---	**1330**	---	---	---	---	---	---	---	---	---	---	---	---	---	**463**	---	---	---	20	50
	January-2024	---	**1410**	---	---	---	---	---	---	**662**	---	---	---	---	---	---	---	---	---	---	**2900**	20	50
Ethylbenzene	December-2022	**67.3**	---	**172**	---	---	---	**287**	---	ND	**48.5**	---	---	---	---	**108**	**27.4**	---	---	---	---	4	10
	November-2022	---	---	---	---	---	---	---	---	ND	---	**194**	---	---	**16.2**	---	---	---	---	---	---	4	10
	January-2023	**65.1**	---	---	---	---	---	---	ND	**93.9**	---	---	---	---	**20.8**	---	---	---	---	---	---	4	10
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**151**	---	---	---	---	4	10
	March-2023	---	---	---	---	---	---	---	**131**	**71.5**	---	---	---	---	---	---	---	---	---	---	---	4	10
	April-2023	---	---	---	---	---	---	---	**186**	---	**43.4**	---	---	---	---	---	---	---	---	---	---	4	10
	May-2023	**124**	---	---	---	---	---	---	**276**	**144**	---	---	---	---	---	---	---	---	---	---	---	20	50
	June-2023	---	---	---	---	---	---	---	---	**104**	---	---	---	---	---	---	---	---	---	---	---	8	20
		---	---	---	---	---	---	---	---	---	---	**98**	---	**116**	---	---	---	---	---	---	---	20	50
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**666**	4	10
		128	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**82**	---	---	---	8	20
		---	---	---	---	---	---	**224**	---	---	---	---	---	---	---	---	---	---	---	**87.5**	---	20	50
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**16.8 J**	8	20
		---	---	---	---	**80**	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	20	50
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**22.8**	---	---	---	8	20
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	250
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**34.8**	---	---	---	2	5
		---	---	---	---	---	**42.5 J**	---	---	---	---	---	---	---	---	---	---	---	**247**	---	---	20	50
	November-2023	**26.3**	---	---	---	---	---	---	---	---	---	---	**45.4**	---	---	---	---	---	---	---	---	2	5
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**26.9**	---	---	---	4	10
		---	---	---	**62**	---	**54**	---	---	**76.5**	---	---	---	---	---	---	---	---	**224**	---	**60.5**	20	50
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	100	250
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**46**	---	---	---	---	8	20
		---	---	**69.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	**44 J**	---	---	---	20	50
	January-2024	---	**99**	---	---	---	---	---	---	**28 J**	---	---	---	---	---	---	---	---	---	---	**248**	20	50

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	Monitoring Event	Concentration																					
Tetrahydrofuran	November-2022	---	---	---	---	---	---	---	---	**309**	---	---	---	---	**176**	---	---	---	---	---	---	100	100
		---	---	---	---	---	---	---	---	---	---	**8530**	---	---	---	---	---	---	---	---	---	1000	1000
	December-2022	**151**	---	---	---	---	---	---	---	**170**	**1120**	---	---	---	---	---	**663**	---	---	---	---	100	100
		---	---	**5210**	---	---	---	**19800**	---	---	---	---	---	---	---	**6130**	---	---	---	---	---	1000	1000
	January-2023	**183**	---	---	---	---	---	---	**566**	**1810**	---	---	---	---	**352**	---	---	---	---	---	---	100	100
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3760**	---	---	---	---	2000	2000
	March-2023	---	---	---	---	---	---	---	**353**	**464**	---	---	---	---	---	---	---	---	---	---	---	100	100
	April-2023	---	---	---	---	---	---	---	**2410**	---	**4790**	---	---	---	---	---	---	---	---	---	---	100	100
	May-2023	ND	---	---	---	---	---	---	**2740**	**2380**	---	---	---	---	---	---	---	---	---	---	---	500	500
	June-2023	---	---	---	---	---	---	---	---	**2100**	---	---	---	---	---	---	---	---	---	---	---	200	200
		---	---	---	---	---	---	---	---	---	---	**7320**	---	**6670**	---	---	---	---	---	---	---	500	500
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2960**	100	100
		411	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**616**	---	---	---	200	200
		---	---	---	---	---	---	**8380**	---	---	---	---	---	---	---	---	---	---	---	**5310**	---	500	500
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2880**	200	200
		---	---	---	---	**7370**	---	**3210**	---	---	---	---	---	---	---	---	---	---	---	**1200**	---	500	500
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**343**	---	---	---	200	200
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2500	2500
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**606**	---	---	---	50	50
		---	---	---	---	---	**4870**	---	---	---	---	---	---	---	---	---	---	---	**9140**	---	---	500	500
	November-2023	**199**	---	---	---	---	---	---	---	---	---	---	**325**	---	---	---	---	---	---	---	---	50	50
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**358**	---	---	---	100	100
		---	---	---	**4780**	---	**3320**	---	---	**785**	---	---	---	---	---	---	---	---	**5370**	---	**4600**	500	500
		---	---	**4620**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2500	2500
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**4240**	---	---	---	---	200	200
		---	---	**2620**	---	---	---	---	---	---	---	---	---	---	---	---	---	**502**	---	---	---	500	500
	January-2024	---	**5160**	---	---	---	---	---	---	**1040**	---	---	---	---	---	---	---	---	---	---	**10900**	500	500
Toluene	November-2022	---	---	---	---	---	---	---	---	ND	---	**214**	---	---	**32.8**	---	---	---	---	---	---	5	10
	December-2022	**122**	---	**175**	---	---	---	**195**	---	ND	**113**	---	---	---	---	**113**	**48.3**	---	---	---	---	5	10
	January-2023	**122**	---	---	---	---	---	---	**8 J**	**139**	---	---	---	---	**35.3**	---	---	---	---	---	---	5	10
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**224**	---	---	---	---	5	10
	March-2023	---	---	---	---	---	---	---	**182**	**98.1**	---	---	---	---	---	---	---	---	---	---	---	5	10
	April-2023	---	---	---	---	---	---	---	**303**	---	**94.4**	---	---	---	---	---	---	---	---	---	---	5	10
	May-2023	**258**	---	---	---	---	---	---	**371**	**239**	---	---	---	---	---	---	---	---	---	---	---	25	50
	June-2023	---	---	---	---	---	---	---	---	**165**	---	---	---	---	---	---	---	---	---	---	---	10	20
		---	---	---	---	---	---	---	---	---	---	**67**	---	**212**	---	---	---	---	---	---	---	25	50
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**965**	5	10
		248	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**107**	---	---	---	10	20
		---	---	---	---	---	---	**218**	---	---	---	---	---	---	---	---	---	---	---	**118**	---	25	50
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**36.6**	10	20
		---	---	---	---	**105**	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	25	50
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**40.6**	---	---	---	10	20
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	125	250
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**59.2**	---	---	---	2.5	5
		---	---	---	---	---	**37 J**	---	---	---	---	---	---	---	---	---	---	---	**235**	---	---	25	50
	November-2023	**47.3**	---	---	---	---	---	---	---	---	---	---	**50.4**	---	---	---	---	---	---	---	---	2.5	5
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**48.7**	---	---	---	5	10
		---	---	---	**62.5**	---	**51.5**	---	---	**114**	---	---	---	---	---	---	---	---	**167**	---	**114**	25	50
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	125	250
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**73.2**	---	---	---	---	10	20
		---	---	**83.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	**74.5**	---	---	---	25	50
	January-2024	---	**95.5**	---	---	---	---	---	---	**60**	---	---	---	---	---	---	---	---	---	---	**310**	25	50

Historical LFG-EW Leachate Monitoring Results Summary

Well ID		EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	EW-64	EW-65	EW-67	EW-68	EW-78	EW-87	EW-94	EW-98	LOD	LOQ
Parameter	**Monitoring Event**	**Concentration**																					
Xylenes, Total	November-2022	---	---	---	---	---	---	---	---	ND	---	**185**	---	---	**37.8**	---	---	---	---	---	---	10	30
	December-2022	**161**	---	**222**	---	---	---	**186**	---	ND	**112**	---	---	---	---	**197**	**59.9**	---	---	---	---	10	30
	January-2023	**138**	---	---	---	---	---	---	ND	**134**	---	---	---	---	**38.1**	---	---	---	---	---	---	10	30
	February-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**240**	---	---	---	---	10	30
	March-2023	---	---	---	---	---	---	---	**240**	**111**	---	---	---	---	---	---	---	---	---	---	---	10	30
	April-2023	---	---	---	---	---	---	---	**329**	---	**97.4**	---	---	---	---	---	---	---	---	---	---	10	30
	May-2023	**274**	---	---	---	---	---	---	**441**	**230**	---	---	---	---	---	---	---	---	---	---	---	50	150
	June-2023	---	---	---	---	---	---	---	---	**177**	---	---	---	---	---	---	---	---	---	---	---	20	60
		---	---	---	---	---	---	---	---	---	---	**92 J**	---	**136 J**	---	---	---	---	---	---	---	50	150
	July-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1130**	10	30
		257	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**74.4**	---	---	---	20	60
		---	---	---	---	---	---	**230**	---	---	---	---	---	---	---	---	---	---	---	**174**	---	50	150
	August-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**48.4 J**	20	60
		---	---	---	---	**180**	---	ND	---	---	---	---	---	---	---	---	---	---	---	ND	---	50	150
	September-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	20	60
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	750
	October-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**30.6**	---	---	---	5	15
		---	---	---	---	---	**134 J**	---	---	---	---	---	---	---	---	---	---	---	**328**	---	---	50	150
	November-2023	**56**	---	---	---	---	---	---	---	---	---	---	**48**	---	---	---	---	---	---	---	---	5	15
		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**25.3 J**	---	---	---	10	30
		---	---	---	**116 J**	---	**104 J**	---	---	**132 J**	---	---	---	---	---	---	---	---	**306**	---	**138 J**	50	150
		---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	250	750
	December-2023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**167**	---	---	---	---	20	60
		---	---	**224**	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	---	---	---	50	150
	January-2024	---	**142 J**	---	---	---	---	---	---	ND	---	---	---	---	---	---	---	---	---	---	**534**	50	150

--- = not applicable/available

J = Parameter was detected at a concentration greater than the laboratory's LOD, but less than the laboratory's LOQ. Concentration is considered estimated.

LOD = laboratory's Limit of Detection

LOQ = laboratory's Limit of Quantitation

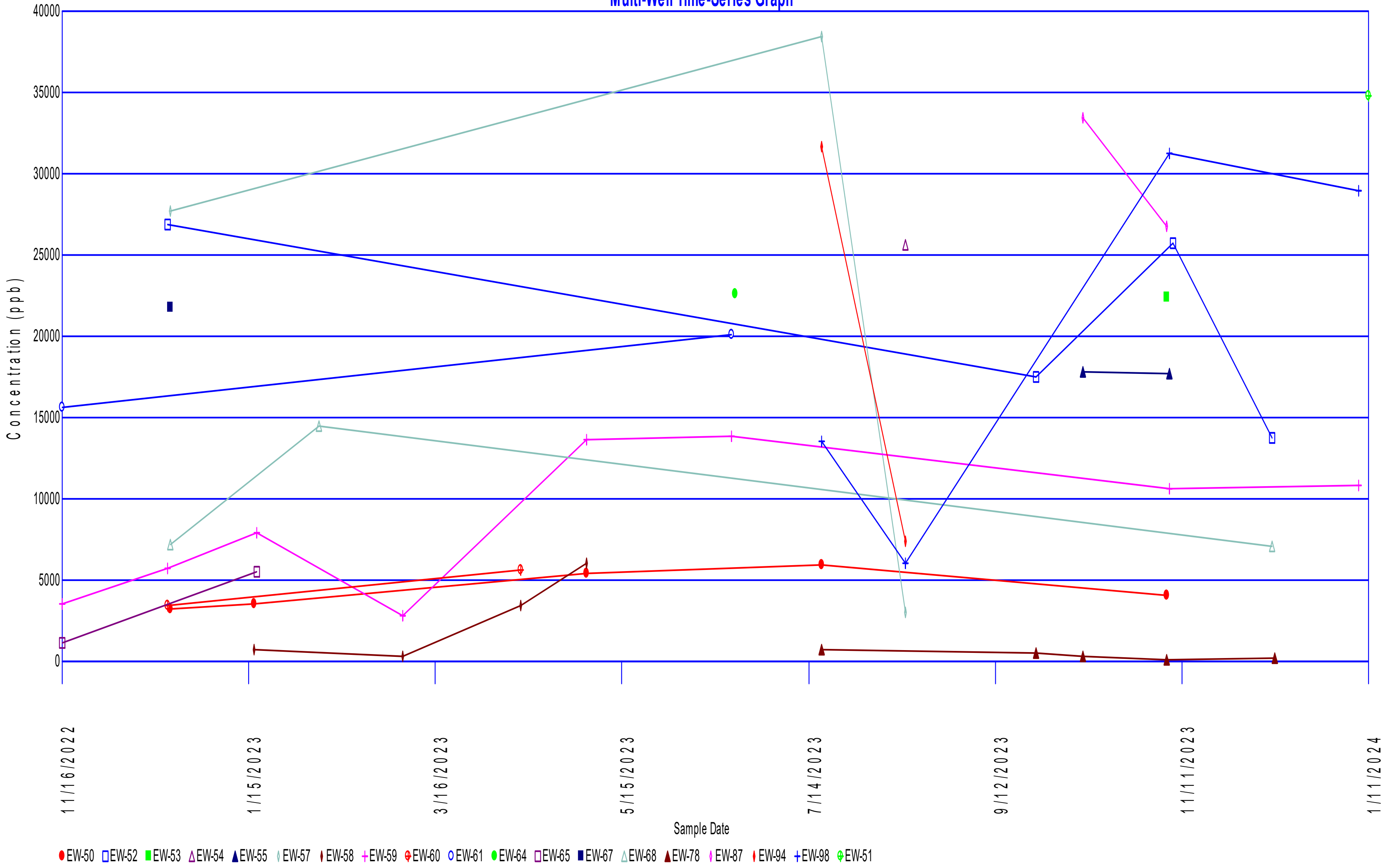
mg/L = milligrams per liter

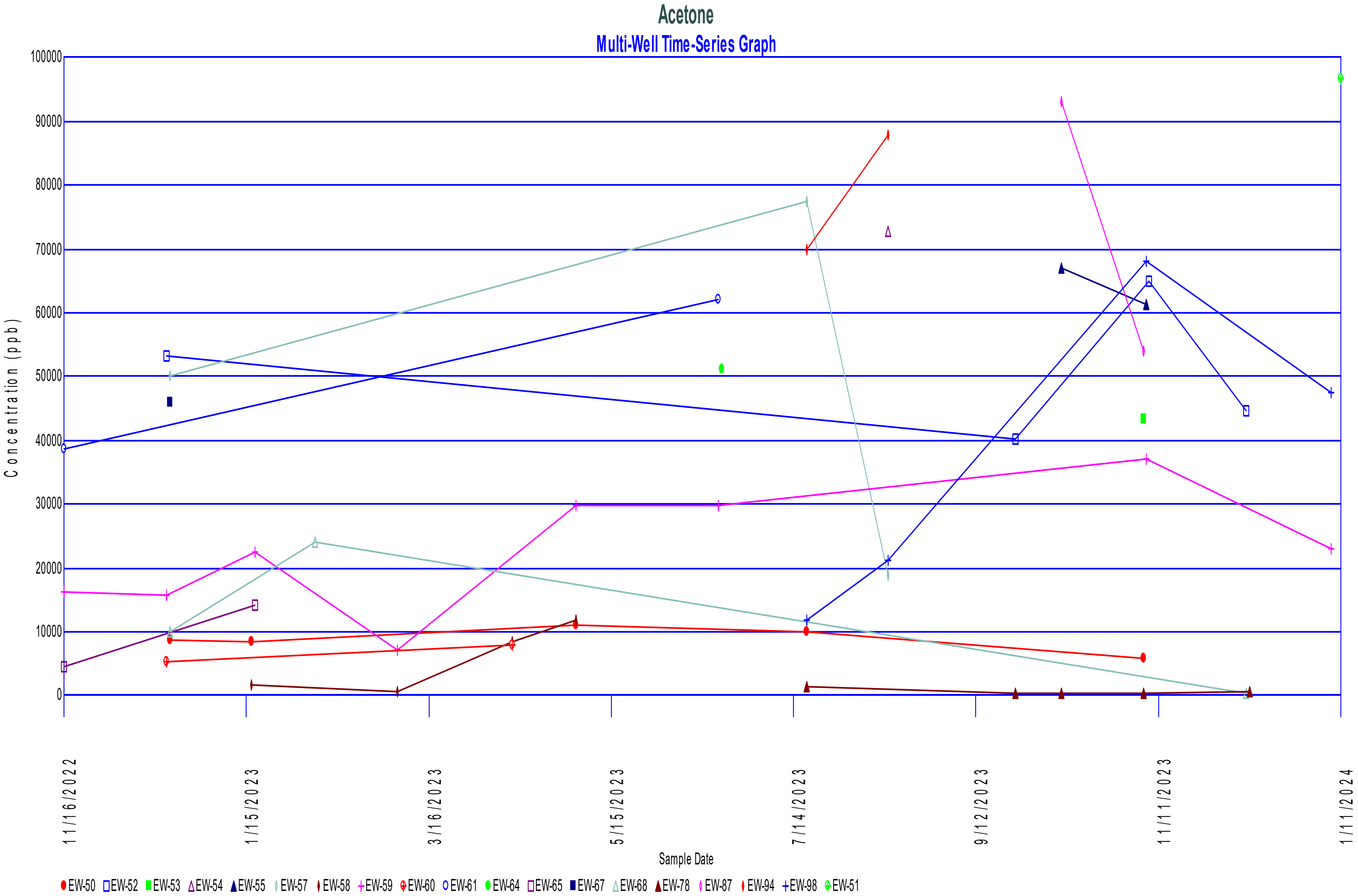
ND = Not Detected

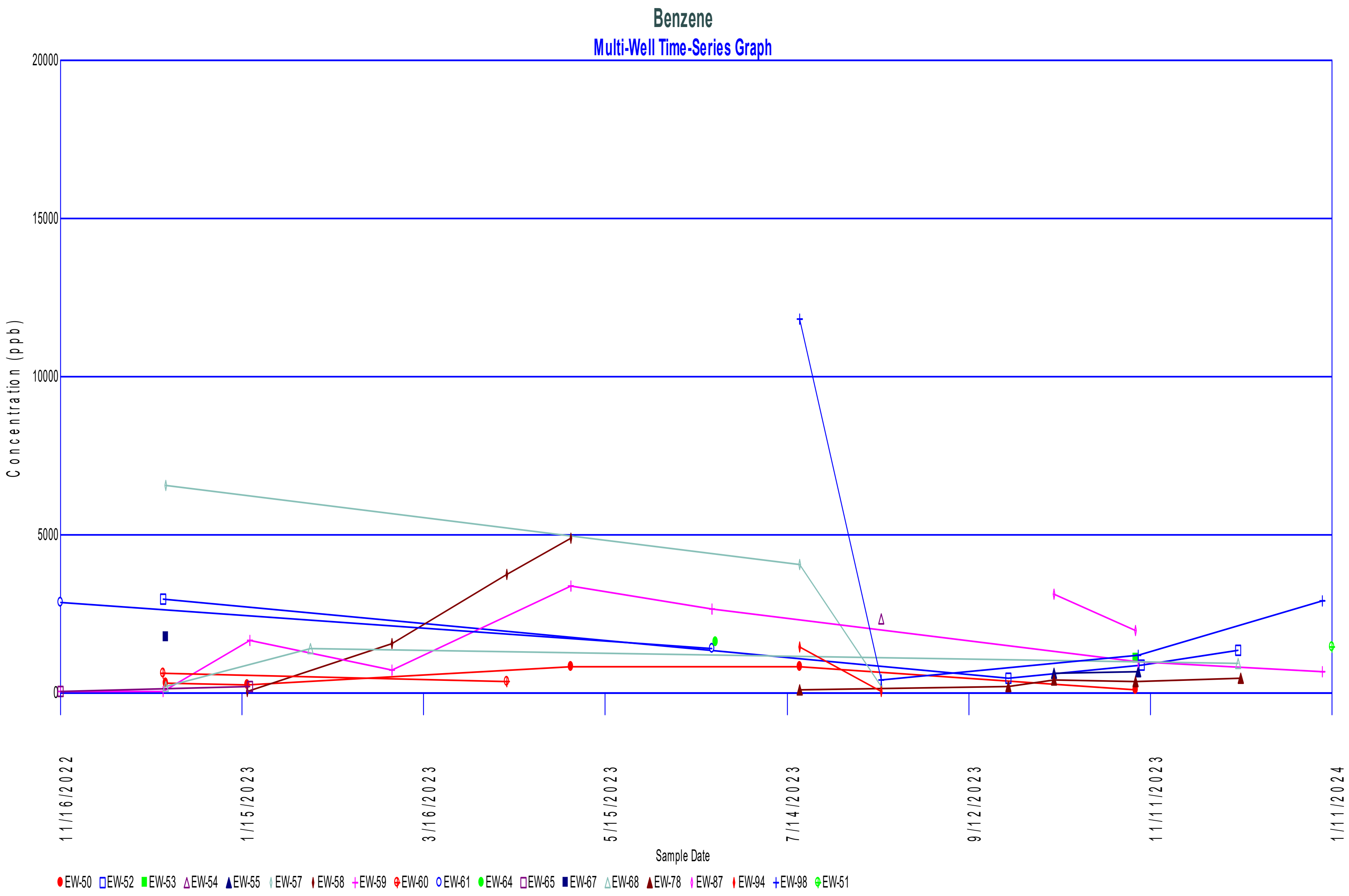
ug/L = micrograms per liter

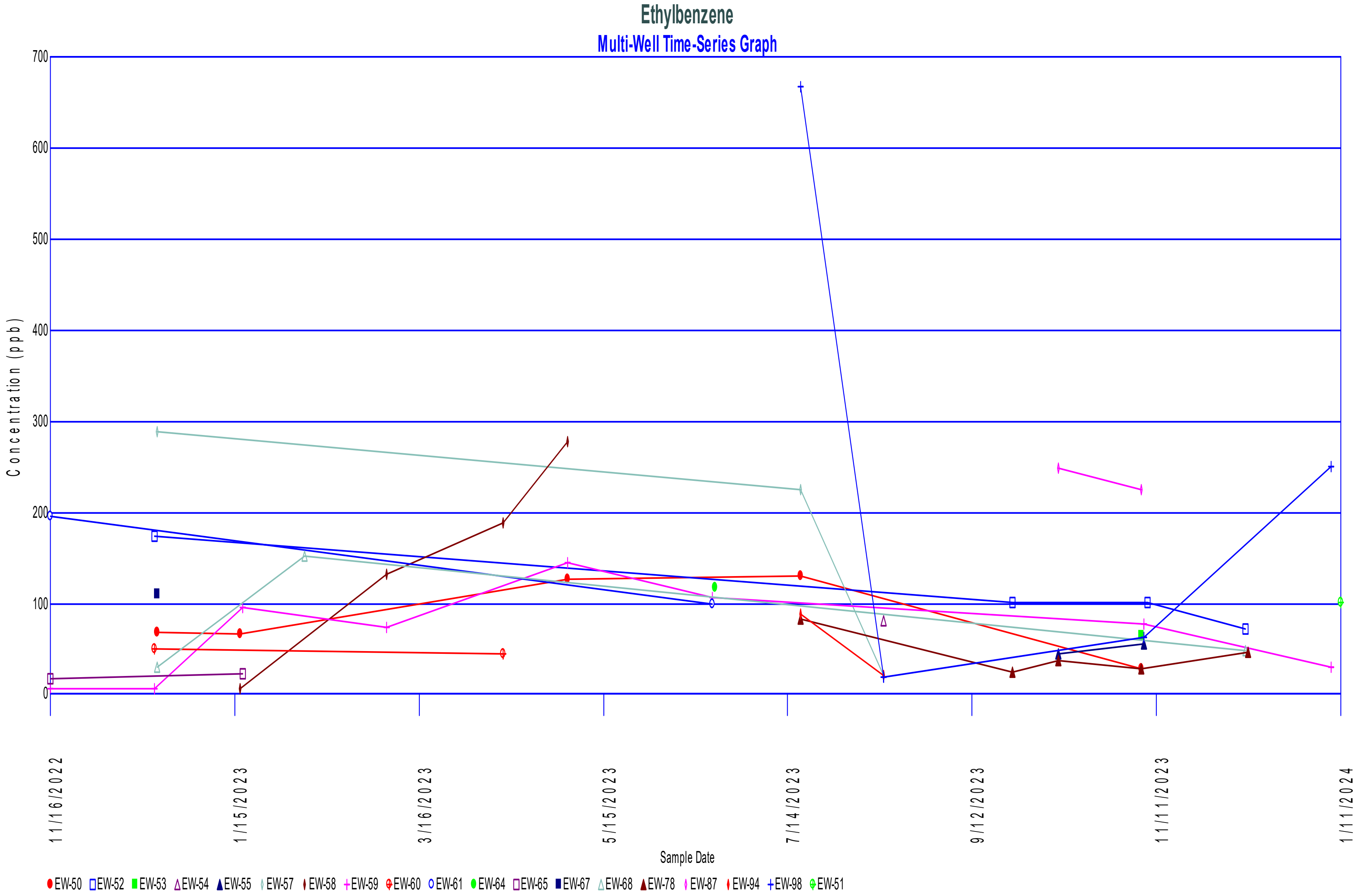
2-Butanone

Multi-Well Time-Series Graph



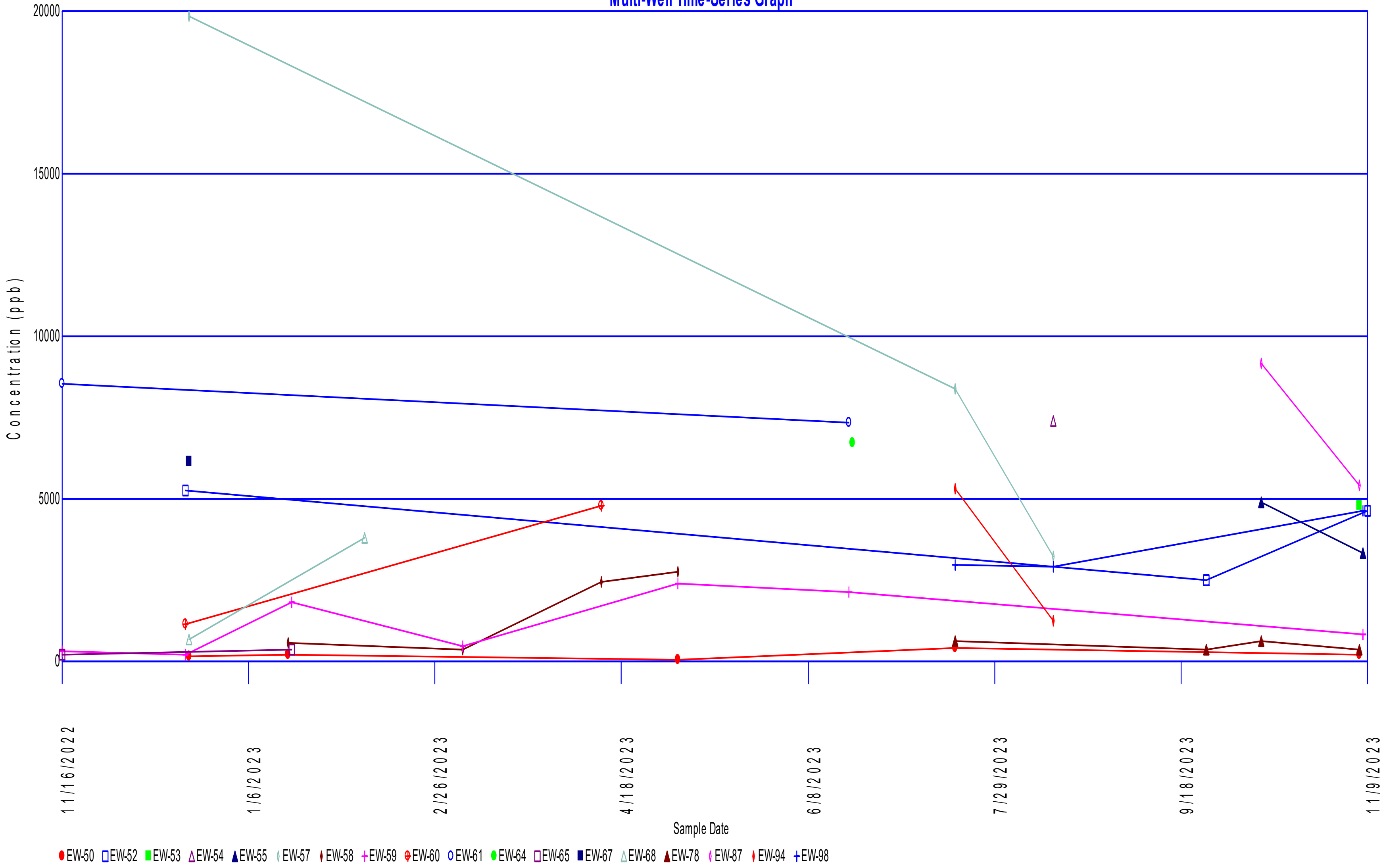

Acetone
Multi-Well Time-Series Graph
Concentration (ppb)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
11/16/2022
1/15/2023
3/16/2023
5/15/2023
7/14/2023
9/12/2023
11/11/2023
1/11/2024
Sample Date
EW-50
EW-52
EW-53
EW-54
EW-55
EW-57
EW-58
EW-59
EW-60
EW-61
EW-64
EW-65
EW-67
EW-68
EW-78
EW-87
EW-94
EW-98
EW-51

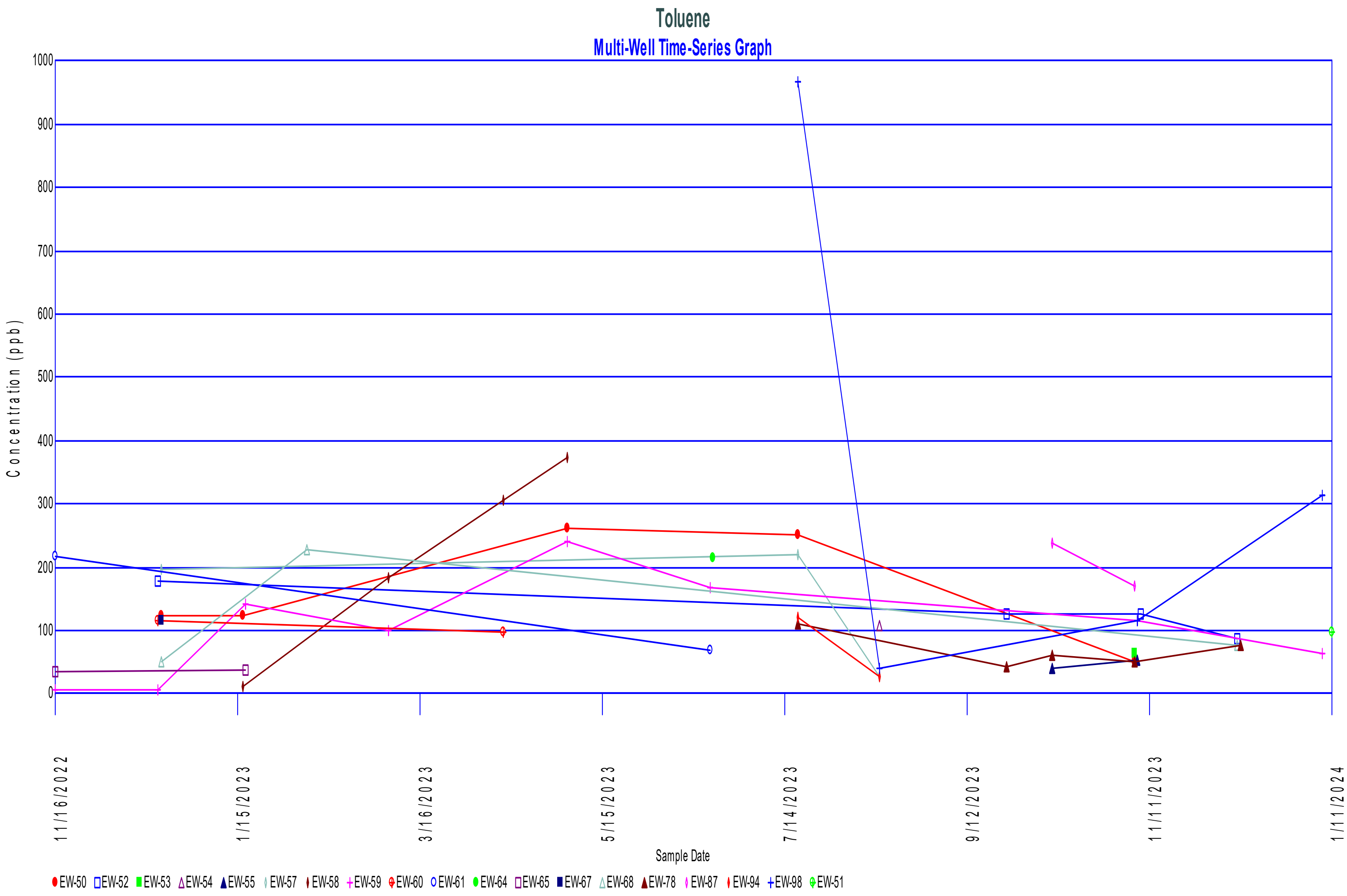

Benzene
Multi-Well Time-Series Graph
Concentration (ppb)
20000
15000
10000
5000
0
11/16/2022
1/15/2023
3/16/2023
5/15/2023
7/14/2023
9/12/2023
11/11/2023
1/11/2024
Sample Date
EW-50
EW-52
EW-53
EW-54
EW-55
EW-57
EW-58
EW-59
EW-60
EW-61
EW-64
EW-65
EW-67
EW-68
EW-78
EW-87
EW-94
EW-98
EW-51


Ethylbenzene
Multi-Well Time-Series Graph
Concentration (ppb)
700
600
500
400
300
200
100
0
11/16/2022
1/15/2023
3/16/2023
5/15/2023
7/14/2023
9/12/2023
11/11/2023
1/11/2024
Sample Date
● EW-50
□ EW-52
■ EW-53
△ EW-54
▲ EW-55
EW-57
EW-58
+ EW-59
EW-60
○ EW-61
● EW-64
□ EW-65
■ EW-67
△ EW-68
▲ EW-78
EW-87
EW-94
+ EW-98
EW-51

Tetrahydrofuran

Multi-Well Time-Series Graph




Toluene
Multi-Well Time-Series Graph
Concentration (ppb)
1000
900
800
700
600
500
400
300
200
100
0
11/16/2022
1/15/2023
3/16/2023
5/15/2023
7/14/2023
9/12/2023
11/11/2023
1/11/2024
Sample Date
EW-50
EW-52
EW-53
EW-54
EW-55
EW-57
EW-58
EW-59
EW-60
EW-61
EW-64
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EW-67
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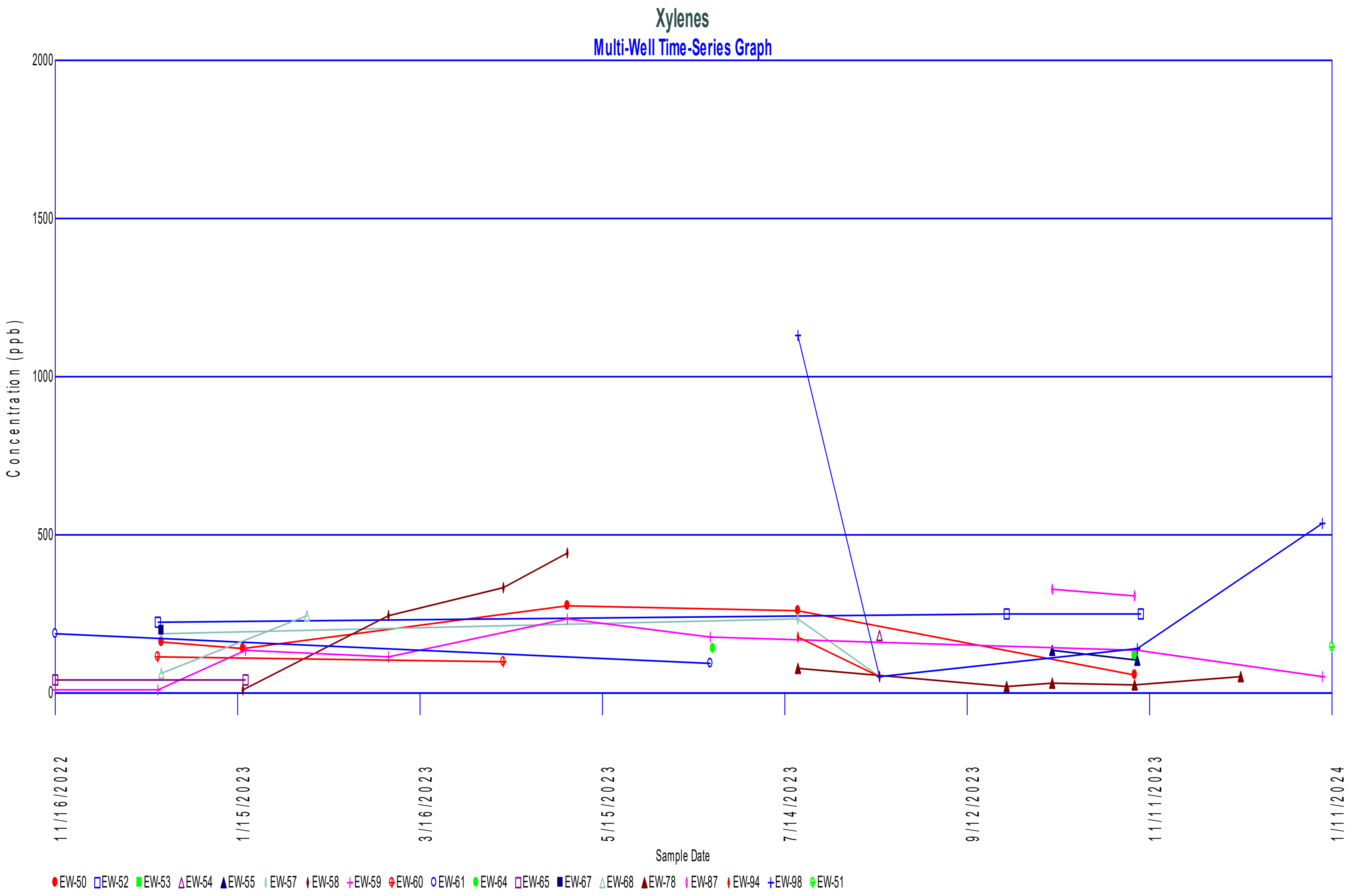
EW-78
EW-87
EW-94
EW-98
EW-51



Xylenes

Multi-Well Time-Series Graph