



July 2025 Monthly Compliance Report

Solid Waste Permit No. 588
Bristol Integrated Solid Waste Management Facility
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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 July 2025 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

SCS performed surface emissions monitoring on July 2, 2025; July 7, 2025; July 15, 2025; July 23, 2025; and July 31, 2025. These weekly surface emissions monitoring (SEM) events were performed in accordance with Item 1.i in Appendix A of the Consent Decree between the City and VDEQ. SCS also performs quarterly SEM at the landfill in accordance with regulatory requirements.

The details and results of the SEM are included in Appendix A. A summary of the outcomes is provided in Table 1.

Table 1. Summary of July Surface Emissions Monitoring

Description	July 2, 2025	July 7, 2025	July 15, 2025	July 23, 2025	July 31, 2025
Number of Points Sampled	168	168	166	166	165
Number of Points in Serpentine Route	100	100	100	100	100
Number of Points at Surface Cover Penetrations	68	68	66	66	65
Number of Exceedances	3	3	4	3	1
Number of Serpentine Exceedances	0	0	1	0	0
Number of Pipe Penetration Exceedances	3	3	3	3	1

In response to the SEM results, the City and the City's operations, monitoring, and maintenance contractor, SCS Field Services O&M (SCS-FS or SCS-FS) took the following actions:

- In response to pipe penetration exceedances at EW-54, EW-66, EW-67, and EW-95, SCS-FS installed a bentonite seal and a well-bore skirt at each of these locations. Monitoring of these wells during a follow-up event did not result in an exceedance.
- In response to a pipe penetration exceedance at EW-53, SCS-FS increased the vacuum at EW-53. Monitoring of this well during a follow-up event did not result in an exceedance.
- In response to a pipe penetration exceedance at EW-58, SCS-FS increased the vacuum at EW-58. Monitoring of this well during a follow-up event did not result in an exceedance.
- In response to a pipe penetration exceedance at EW-52, SCS-FS increased the vacuum at EW-52. Monitoring of this well during a follow-up event did not result in an exceedance.
- In response to a serpentine exceedance at Tag 35, SCS-FS increased the vacuum at nearby collector EW-95. Monitoring of this point during a follow-up event did not result in an exceedance.
- In response to a pipe penetration exceedance at TP-7, SCS-FS increased the vacuum at nearby collector EW-49. Monitoring of this point during a follow-up event did not result in an exceedance.
- A pipe penetration exceedance occurred on July 31, 2025 at EW-76. SCS-FS identified low available vacuum at this location. SCS-FS plans to conduct further field investigations on the low available vacuum during August 2025.

1.1.2 Monitoring of Leachate Collection Components

SCS Field Services (SCS-FS) visited the Bristol Landfill on July 7, 2025, and performed monitoring of the leachate, witness zone, northern cleanouts, and gradient control clean-outs at the southern end of the landfill. The results of that monitoring are included in Table 2.

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	7/7/2025 1:48:54 PM	2.6	2.3	19.4	75.7	65.2	65.3	-4.37	-3.62	-11.01
Southern Cleanouts Gradient East	LC02	7/7/2025 1:44:58 PM	40.8	56.7	0.0	2.6	67.2	68.1	-2.36	-2.35	-11.57
Southern Cleanouts Leachate Center	LC03	7/7/2025 1:39:14 PM	12.0	12.4	15.2	60.5	86.2	86.4	-11.49	-11.49	-11.67
Southern Cleanouts Witness East	LC04	7/7/2025 1:36:12 PM	2.0	1.2	19.4	77.5	83.8	84.5	-8.80	-8.86	-11.54
Southern Cleanouts Leachate West	LC05	7/7/2025 1:33:01 PM	30.1	40.6	2.5	26.9	69.4	69.3	-4.03	-3.92	-11.54
Southern Cleanouts Gradient Center West	LC06	7/7/2025 1:28:52 PM	15.9	9.1	14.6	60.4	85.5	85.5	-6.81	-6.94	-11.68

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 Leachate East	LC08	7/7/2025 1:10:05 PM	42.3	49.7	0.0	8.0	65.0	64.7	-2.61	-3.15	-12.68
Southern Cleanouts Gradient Center East	LC09	7/7/2025 1:12:41 PM	37.8	34.4	5.2	22.6	88.8	89.6	-11.39	-11.26	-11.38
Southern Cleanouts Leachate West	LC10	7/7/2025 1:25:14 PM	11.3	10.1	16.1	62.5	85.3	85.2	-11.49	-11.49	-11.48
Northern Cleanouts Leachate East	NC01	7/7/2025 12:24:42 PM	0.2	0.0	19.3	80.5	89.4	89.9	-4.69	-4.66	0.02
Northern Cleanouts Leachate Center	NC02	7/7/2025 12:26:38 PM	0.2	0.0	19.3	80.5	88.3	88.8	-4.52	-4.43	0.00
Northern Cleanouts Leachate West	NC03	7/7/2025 12:29:30 PM	0.1	0.0	19.5	80.4	84.5	84.2	-4.34	-4.21	0.00
Northern Cleanouts Witness East	NC04	7/7/2025 12:31:39 PM	0.5	1.4	17.0	81.1	88.4	88.4	-4.22	-4.14	0.00
Northern Cleanouts Witness Center	NC05	7/7/2025 12:33:51 PM	1.4	5.8	12.0	80.8	84.8	84.7	-4.02	-4.13	0.00
Northern Cleanouts Witness West	NC06	7/7/2025 12:36:07 PM	0.0	0.0	19.7	80.3	88.8	88.3	-4.05	-4.05	0.00
Northern Cleanouts Gradient East	NC07	7/7/2025 12:37:39 PM	2.7	5.3	10.2	81.9	91.4	90.9	-0.99	-1.00	0.00
Northern Cleanouts Gradient Center East	NC08	7/7/2025 12:39:25 PM	2.0	9.7	7.0	81.2	89.3	88.8	-1.16	-1.15	0.00
Northern Cleanouts Gradient Center West	NC09	7/7/2025 12:41:30 PM	5.8	12.6	4.1	77.4	91.5	91.5	-1.08	-1.03	0.00
Northern Cleanouts Gradient West	NC10	7/7/2025 12:43:35 PM	2.4	6.7	11.2	79.8	91.1	91.7	-1.35	-1.42	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:

- Adjustments to LFGCCS
- Maintenance of air lines and pressurized air infrastructure
- Maintenance of wellhead and other gas collection infrastructure
- Removal of liquids from landfill gas headers
- Replacement of a section of blocked forcemain
- Temporary relocation of header pipes to facilitate placement of additional soil.

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 wellhead gas temperatures via cellular connection to a database managed by SCS-RMC. Since the initial installation, some sensors have been relocated and additional sensors have been added to the network. There are currently 59 wellhead temperature sensors operating within the wellfield.

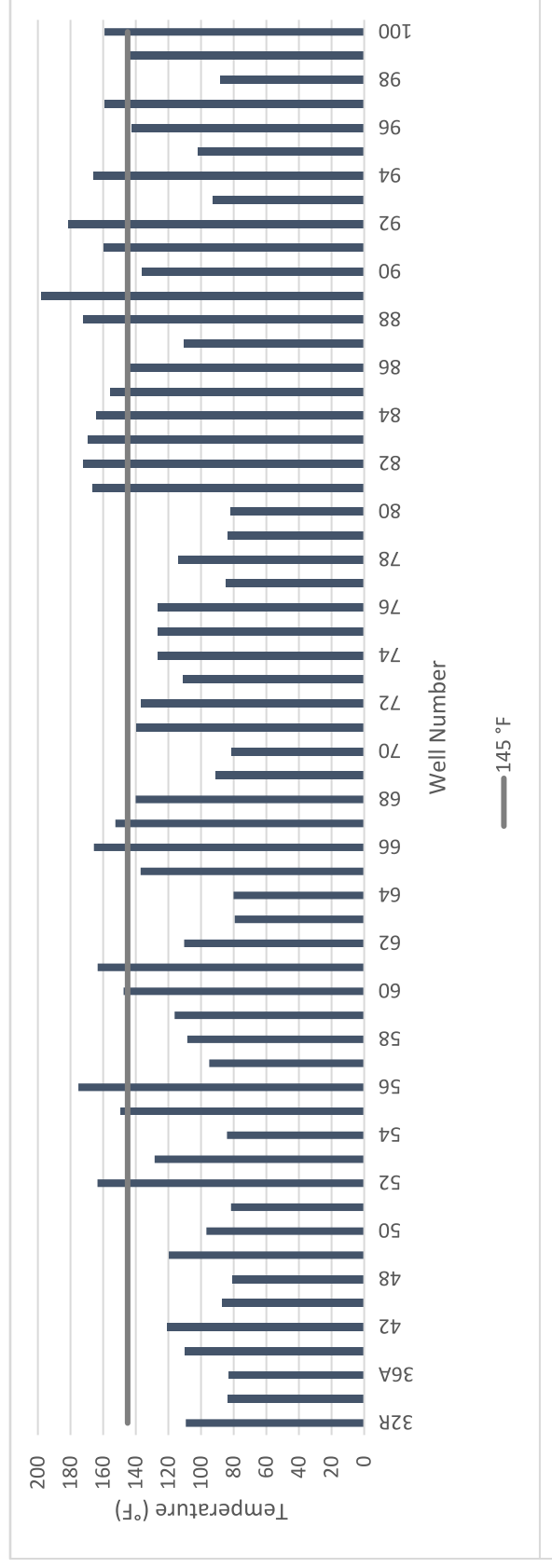
The City is providing the minimum, maximum, and average daily temperature recorded by each sensor to VDEQ on a daily basis via email. Minimum, maximum, and average daily temperatures recorded by the remote monitoring system during the month of July are included in Appendix C. In addition, SCS previously prepared semi-monthly status updates to satisfy the conditions of compliance provision no. 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. Accordingly, this section is a summary of temperature monitoring activities during the monthly monitoring period of July 2025.

1.3.1 Automated Wellhead Temperature Measurements

SCS reviewed the automated hourly temperature measurements from July 2025, and observed the following:

- The average temperature in July was above the regulatory threshold of 145°F at 21 wells (see Figure 1).
- The highest average temperature was 197.9°F at EW-89. Hourly temperature measurements at this well were consistent throughout the month (standard deviation of 3.7°F). High temperatures at EW-89 have been observed closely since May 2025, and SCS-FS has prioritized pump maintenance at this well to remove liquids (and associated heat) at this well. Per the stroke counter data documented in Table G-1, the pump in EW-89 was the most productive in the wellfield in July 2025.

Figure 1. Monthly Average Automated Wellhead Temperatures¹



¹ 145 °F is the NESHAP AAAA compliance threshold for well temperature, included here for reference.

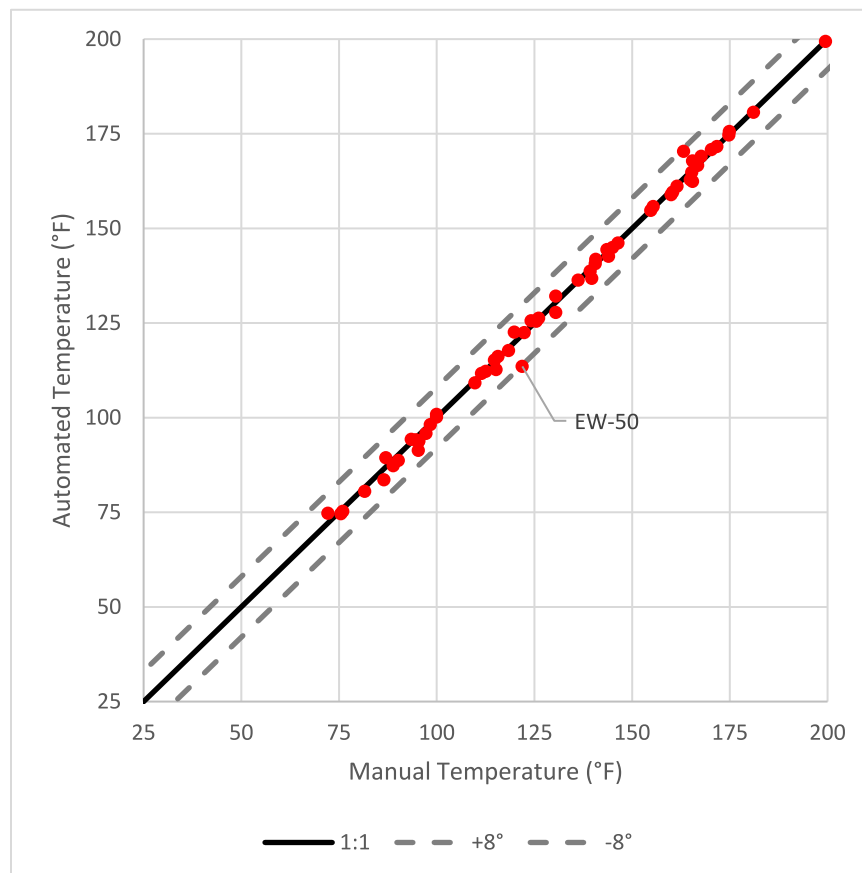
1.3.2 Comparison with Manual Temperature Measurements

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 compares instantaneous hourly automated temperature measurements with temperatures measured at each wellhead using a handheld sensor during monthly compliance monitoring. These comparisons are shown in Figure 2, with the $\pm 8^{\circ}\text{F}$ deviation thresholds as prescribed in the VDEQ approval.

Temperatures outside of the $\pm 8^{\circ}\text{F}$ deviation threshold were observed at one well during this reporting period: EW-50. The automated temperature was less than the manually measured temperature. This is a continuation of the improving trend shown in recent months, as SCS-FS has improved the sampling practices and evaluated sensor capabilities.

The flowrate at EW-50 was less than 10 cfm during the compared manual and automated temperature measurements, which can cause the ambient temperature to have greater influence on the automated temperature.

Figure 2. Automated vs. Manual Temperature Measurements



1.3.3 Monthly Regulatory Wellhead Temperature Measurements

Routine monthly temperature monitoring was conducted on July 28 and July 29, 2025 to comply with 40 CFR 60.36f(a)(5). Table 3 provides the status of exceedances recorded during this monitoring period.

Table 3. July Temperature Exceedance Summary

Well ID	Initial Exceedance Date	Compliant Reading	Most Recent Reading	Duration of Exceedance	Status as of 8/1/2025
EW-49	7/28/25	7/31/25 151.9°F	7/31/25 151.9°F	4 days	Resolved within 15-day timeline
EW-56	5/29/25	N/A	7/31/25 181.6°F	65 days	Ongoing, within 120-day timeline
EW-60	6/16/25	7/3/25 139.7°F	7/31/25 142.2°F	18 days	Resolved within 60-day timeline
EW-60	7/10/25	7/31/25 142.2°F	7/31/25 142.2°F	22 days	Resolved within 60-day timeline
EW-66	7/17/25	7/24/25 163.8°F	7/31/25 171.4°F	8 days	Resolved within 15-day timeline
EW-66	7/28/25	N/A	7/31/25 171.4°F	5 days	Ongoing, within 15-day timeline
EW-77	7/3/25	7/7/25 92.3°F	7/28/25 105.7°F	5 days	Resolved within 15-day timeline
EW-92	6/3/25	N/A	7/31/25 179.7°F	60 days	Ongoing, within 120-day timeline

1.3.4 LFG Sampling

SCS collected weekly LFG samples from wells with temperature exceedances lasting more than seven days using 1.5-L Summa canisters. The samples were sent to Enthalpy Analytical for laboratory analysis of carbon monoxide (CO) and hydrogen (H₂) content. As of July 1, 2025, the City has received lab results for sampling on May 21, 2025, May 29, 2025, June 5, 2025, June 12, and June 18, 2025 to fulfill the requirement in 40 CFR 63.1961(a)(5). The lab data are summarized in Table 4.

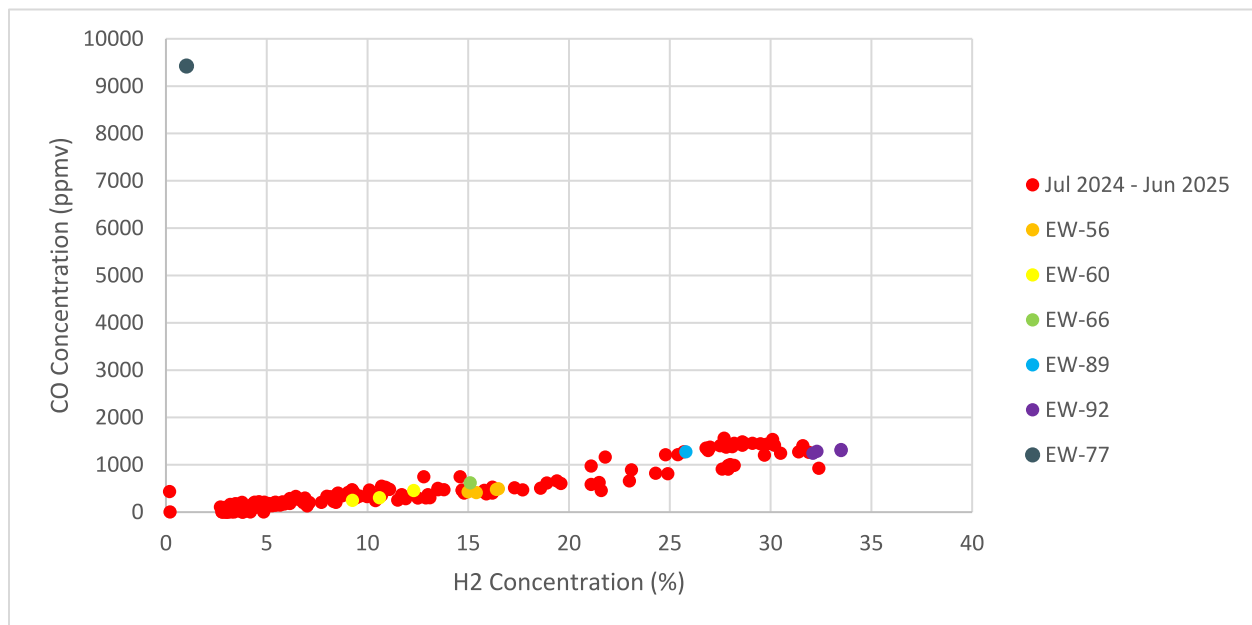
Table 4. LFG Wellhead Sampling Summary

Sample Date		6/25/25	7/3/25	7/10/25	7/18/25
EW-56	CO (ppmv)	410	426	477	492
	H2 (Vol. %)	15.4	15.0	16.4	16.5
EW-60	CO (ppmv)	245		452	301
	H2 (Vol. %)	9.26		12.3	10.6
EW-66	CO (ppmv)				614
	H2 (Vol. %)				15.1
EW-77	CO (ppmv)		9420		
	H2 (Vol. %)		1.03		

Sample Date		6/25/25	7/3/25	7/10/25	7/18/25
EW-89	CO (ppmv)	1270			
	H2 (Vol. %)	25.8			
EW-92	CO (ppmv)	1300	1240	1280	1320
	H2 (Vol. %)	33.5	32.1	32.3	33.5

As shown in Figure 3, the carbon monoxide and hydrogen data collected during this period appear to be generally consistent with the data collected previously in 2024 and 2025, except for EW-77. EW-77 has been kept offline since May due to concern for heightened risk of a subsurface oxidation in the area, and is being sampled periodically to inform decision-making regarding re-application of vacuum.

Figure 3. CO vs H₂ Concentration from gas wells in July 2025 with historical trend



2.0 SIDEWALL ODOR MITIGATION

On the City's behalf, SCS designed and constructed a system to control fugitive emissions emanating from the quarry sidewalls.

2.1 PERIMETER GAS COLLECTION SYSTEM

Refer to the April 2023 Monthly Compliance Report for the SWP No. 588 Landfill, for information about the perimeter gas extraction wells.

2.2 SIDEWALL ODOR MITIGATION SYSTEM

Refer to the October 2022 Monthly Compliance Report for the SWP No. 588 Landfill, for information about the design of the sidewall odor mitigation system.

2.3 PILOT SYSTEM CONSTRUCTION

Refer to the February 2023 Monthly Compliance Report for the SWP No. 588 Landfill, for information about the design of the construction of the pilot sidewall odor mitigation system.

2.4 FULL SYSTEM CONSTRUCTION

Operation of the sidewall odor mitigation system is monitored on a monthly basis. SCS-FS collected monitoring data at each wellhead under vacuum in May. A summary of system averages during the month is shown in Table 5.

Table 5. Average SOMS Gas Composition

Record Dates	Average CH ₄ [%]	Average CO ₂ [%]	Average O ₂ [%]	Average Bal Gas [%]
7/7/2025	6.2	10.5	15.1	68.2
7/23/2025	5.9	9.4	16.0	68.8

The sidewall system average gas composition indicates lower methane content than other components in the LFGCCS. These gas composition measurements indicate that the SOMS is collecting a mixture of LFG escaping the sidewall and ambient air. Adjustments to vacuum at each wellhead are made on a regular basis to address changes in sidewall emissions and facilitate placement of additional soil.

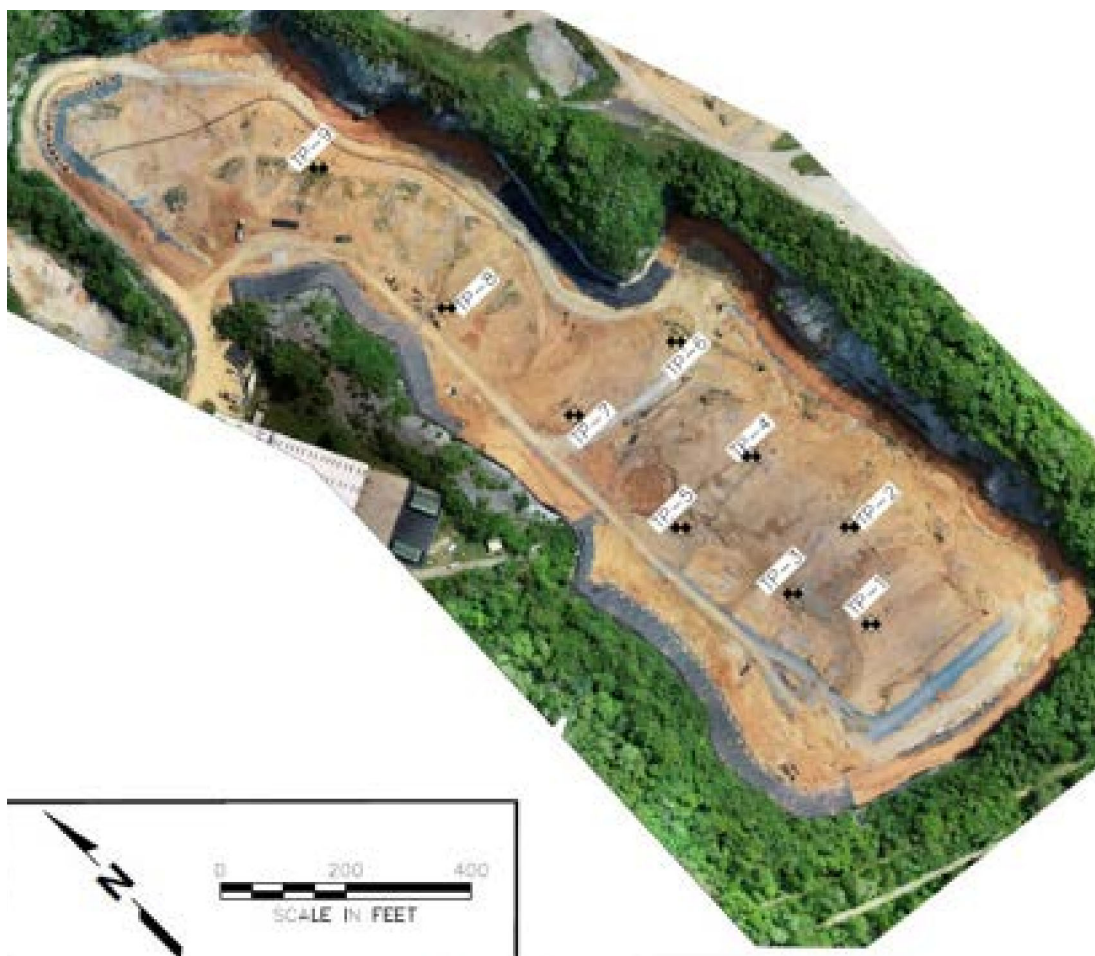
3.0 WASTE TEMPERATURE MONITORING

SCS designed a 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 SUMMARY OF WASTE TEMPERATURE MONITORING

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 4.

Figure 4. Temperature Monitoring Probe Locations



SCS began collecting temperature data daily on February 15, 2023.

Average daily temperatures recorded by the sensors for the month of June 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 June are shown in Appendix B. The average temperatures recorded for March 2023, March 2024, March 2025, June 2025, and July 2025 are shown in Figures 5 through 11 on the following pages.

Overall, these data indicate that temperatures within the landfill are generally stable and are typical of those observed at elevated temperature landfills (ETLFs). The temperatures recorded are substantially lower than those associated with landfill fires or other combustion processes, which can exceed 1000 °F, which is further evidence that the elevated temperatures are due to sources other than combustion.

3.1.1 Operational Challenges

Multiple sensors in TP-2 and TP-3 started to fault in late 2024/early 2025. SCS coordinated with the City in March to pull the string of thermocouples from TP-2 and TP-3 but were unable to remove the strings in either probe due to suspected pinching of the casings. TP-2 and TP-3 have been abandoned and a replacement plan is being developed. EW-91 and EW-92 have been jetted to remove solids that would impede the installation of temperature probes, however the wells' casing was unable to be cleared past 140 feet below surface. Because VDEQ has asked that the replacement probes achieve at least 150 feet in depth, the City is working with another contractor with more powerful equipment and a heat tolerant video camera to investigate further. This work is expected to be completed in August.

3.1.2 Temperature Profiles

During the month of June, SCS observed variations in measurements of temperatures reported by TP-6. Troubleshooting by field staff indicated that the sensor at the 75-foot level is malfunctioning. Given that the majority of the sensors within this casing appear to still be functioning normally, the sensor at 75 ft will not be retrieved to avoid damaging the other sensors within the casing. Data from the 75-foot level of TP-6 has been excluded from this report.

Figure 5. TP-1 Average Temperatures for the Months of March 2023, March 2024, March 2025, June 2025, and July 2025

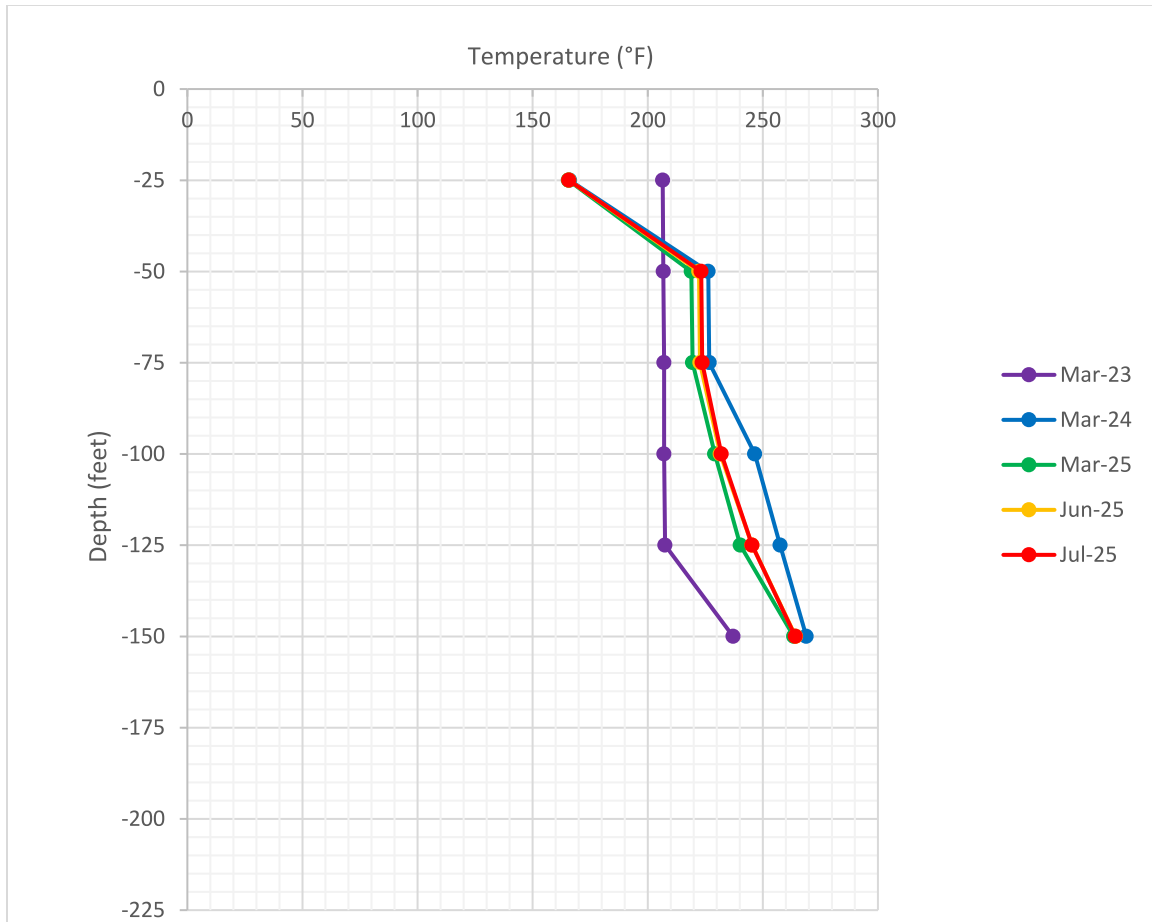


Figure 6. TP-3 Average Temperatures for the Months of March 2023, March 2024, March 2025, June 2025, and July 2025

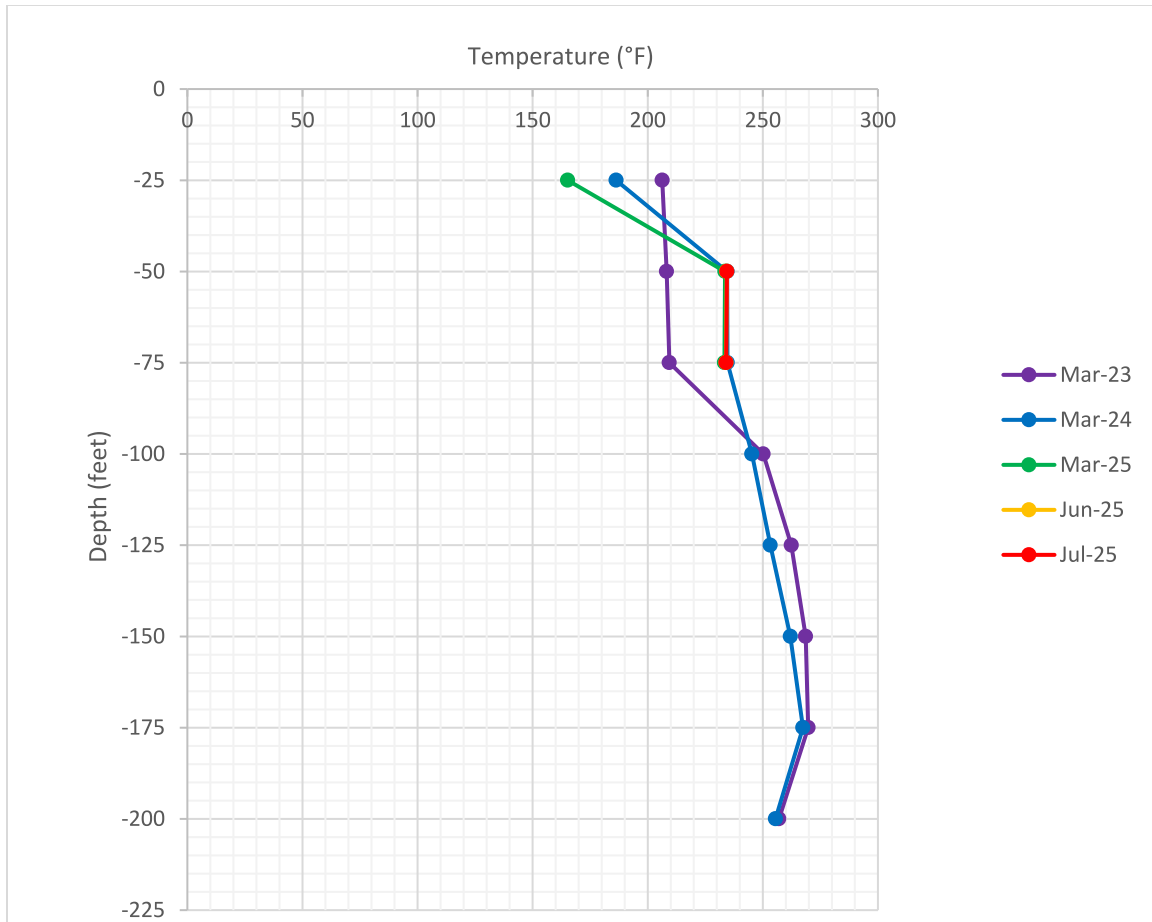


Figure 7. TP-5 Average Temperatures for the Months of March 2023, April 2024, March 2025, June 2025, and July 2025

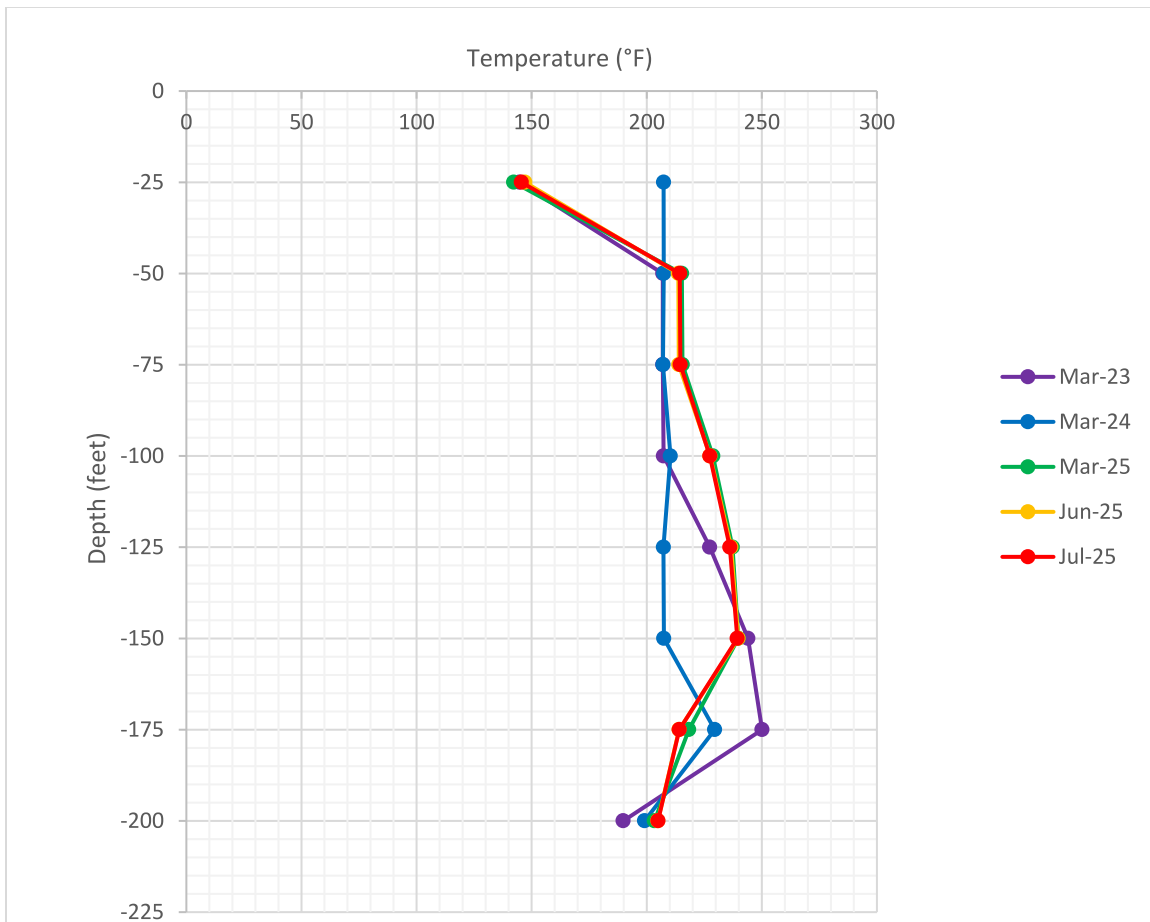


Figure 8. TP-6 Average Temperatures for the Months of March 2023, March 2024, March 2025, June 2025, and July 2025

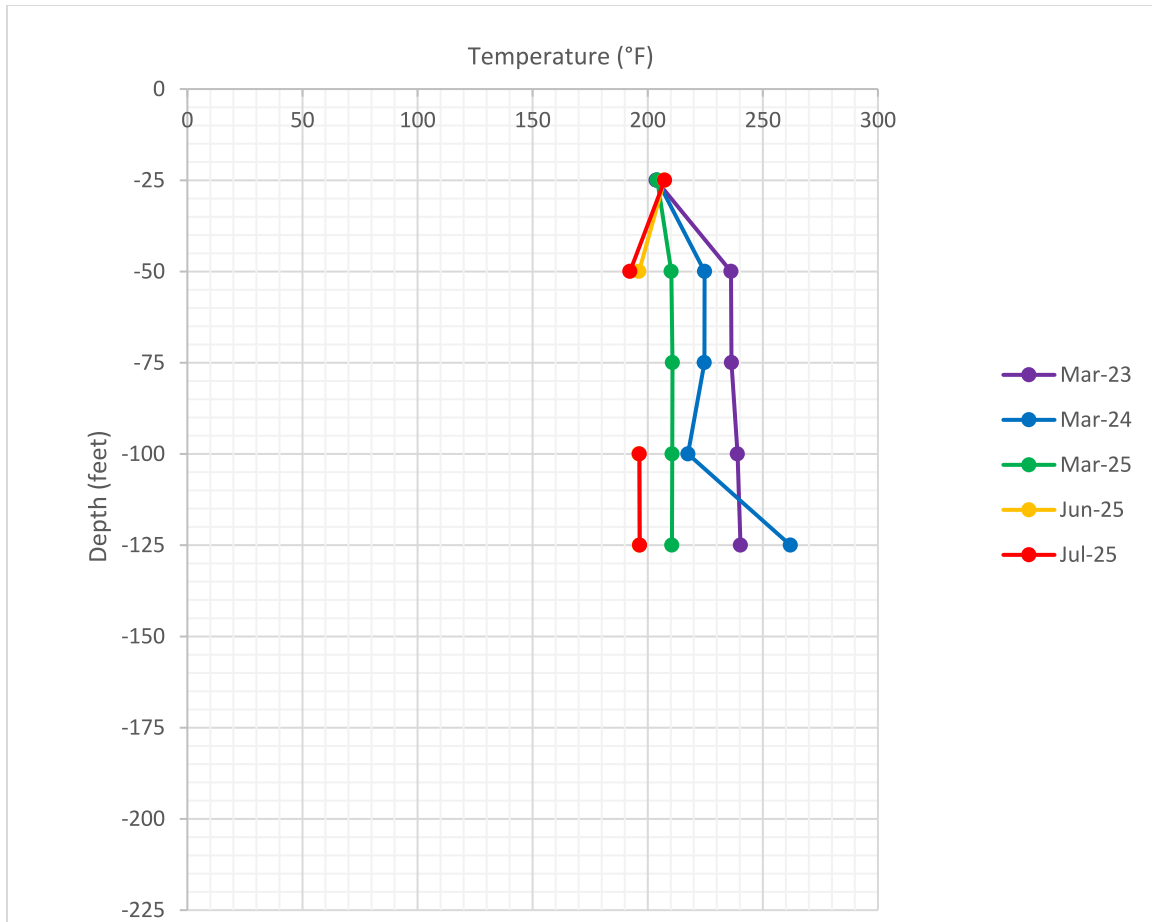


Figure 9. TP-7 Average Temperatures for the Months of March 2023, March 2024, March 2025, June 2025, and July 2025

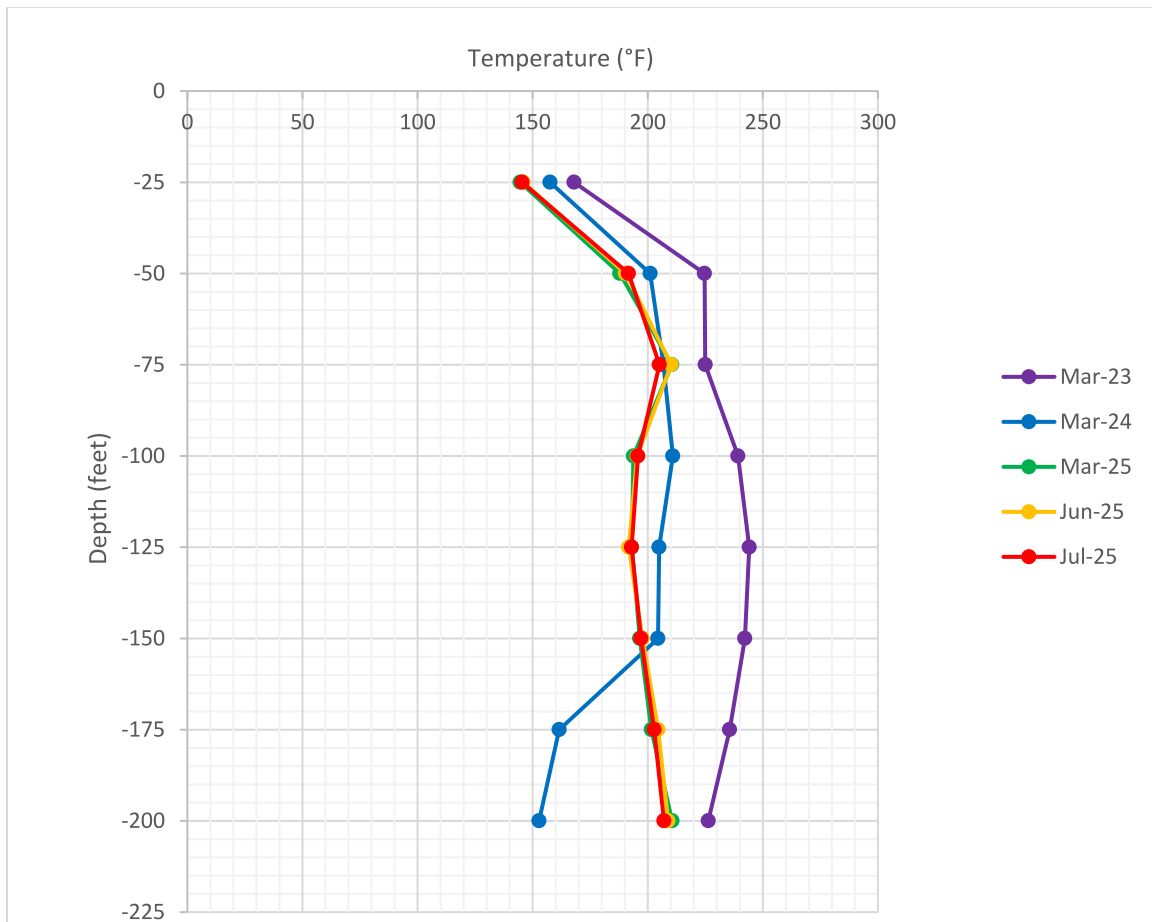


Figure 10. TP-8 Average Temperatures for the Months of March 2023, March 2024, March 2025, June 2025, and July 2025

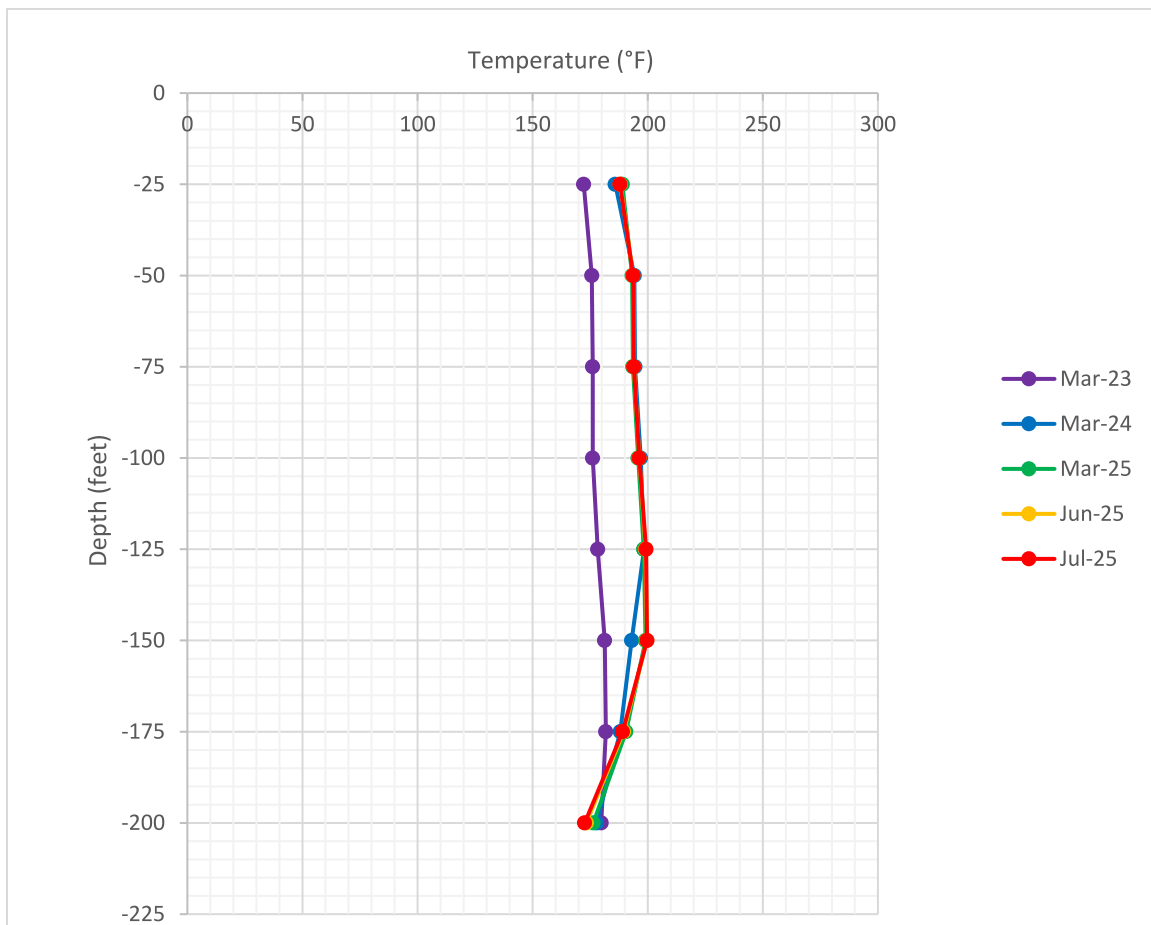
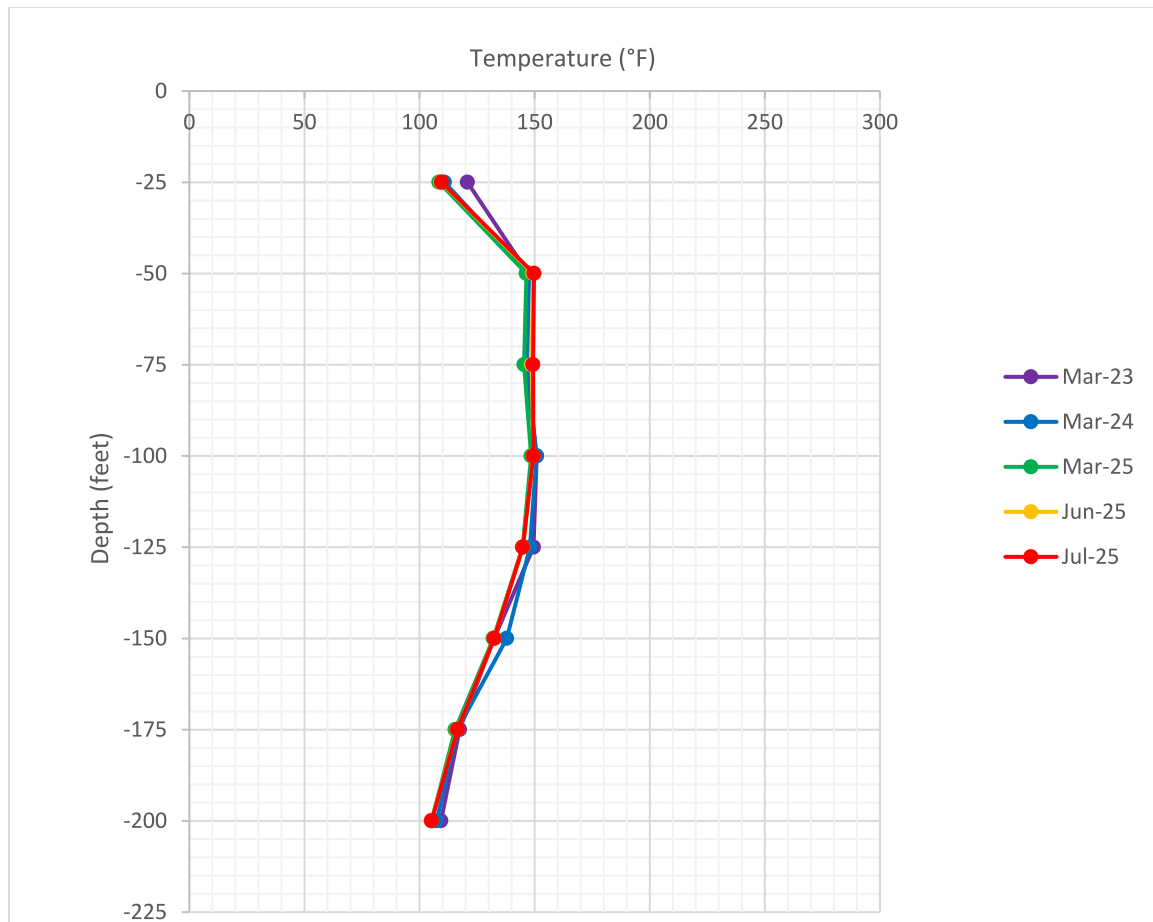


Figure 11. TP-9 Average Temperatures for the Months of March 2023, March 2024, March 2025, June 2025, and July 2025



4.0 LEACHATE EXTRACTION AND MONITORING

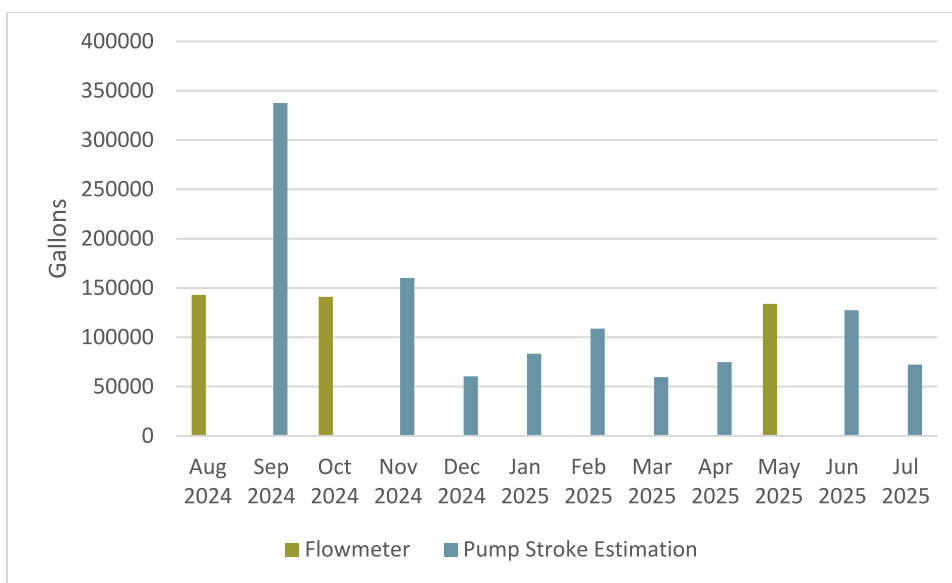
The City is continuously taking steps to maintain and improve the extraction of leachate from the waste mass and collect analytical data on leachate characteristics. The following sections detail steps taken to achieve these goals. Refer to Appendix G for narrative sections without updates.

4.1 DEWATERING PUMP OPERATIONS AND MAINTENANCE

4.1.1 Total LFG Liquids Removal

Figure 12 illustrates landfill gas liquids removal over the past year. During September, November, December 2024 through April 2025, June 2025, and July 2025, the volume was estimated from stroke counter data (colored in blue in Figure 13). A flow meter was used for volume in the other months. Over the past 6 months, the monthly leachate pumped has ranged from 59,636 to 134,000 gallons per month, and has averaged 96,158 gallons per month.

Figure 12. Total Dewatering Liquid Removal



4.1.2 LFG Liquids Pump Operations and Maintenance

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. Daily pump checks and maintenance of spare pumps will continue indefinitely, along with pump replacements as needed.

Estimated volumes of liquids removed at each pump are presented in **Table G-1, Appendix G**. SCS has prepared the summary below to outline the operating conditions and specific challenges associated with each pump in July 2025.

Pump Maintenance Activities

- The pumps in EW-50, EW-60, EW-65 and EW-94 were swapped.

- The air hose at EW-59 was replaced.
- The pumps in EW-61, EW-88, and EW-89 were swapped and the tri-tubing was replaced.
- The pump discharge line was replaced at EW-89.

Wells with Inactive Pumps

- The pumps in EW-33B and EW-76 are stuck in the well casing and have been disconnected. SCS-FS is coordinating with the City to attempt to pull the pumps with a piece of heavy equipment.
- The casings of EW-36A, EW-49, EW-81, EW-83, EW-91, and EW-96 extend too high above the existing ground level for a pump to be safely accessed. These are stainless steel wells that cannot be lowered through conventional means. SCS-FS and the City are coordinating placement of additional soil around the wells to provide safe access.
 - Soil was added around EW-36A in April, and SCS-FS intends to replace the Blackhawk pump with a QED.
- The pumps in EW-52, EW-53, EW-55, EW-66, and EW-68 are inactive due to excessive pressure buildup in the forcemain line. The LFG construction project currently underway includes modifications to the piping system to alleviate these issues.
- The pump in EW-62 is offline due to a damaged airline. SCS-FS will evaluate the extent of damage and will coordinate with the City to procure materials needed for the repair.
- All pump types deployed in EW-74 and EW-75 have experienced buildup on the intake screens preventing pump operation.
- The pumps in EW-51, EW-57, EW-90, and EW-100 are permanently stuck in their wells even after attempts to remove them with heavy equipment, therefore they cannot be cleaned and/or repaired.

In addition to the challenges associated with the individual pumps, SCS-FS has generally observed high forcemain pressures and significant build-up of solids within the forcemain. This results in SCS-FS dedicating substantial amounts of time to relieving air pressure on the system. Installation of additional cleanouts and air release valves in the wellfield to address the issue will be undertaken by The Harnden Group beginning in September or 2025.

4.2 SAMPLING AND ANALYSIS PLAN

4.2.1 Sample Collection

On July 22, 2025, SCS collected a leachate sample from a Dual Phase LFG extraction well (EW-98). Field measurements for dissolved oxygen, oxidation-reduction potential, pH, specific conductance, temperature, and turbidity were taken and recorded at the time of sample collection. The associated field logs are included in **Appendix F**. In July 2025, SCS field staff could not collect samples from the wells summarized in **Table 6**. Additional details about the condition of these wells and planned maintenance activities are included in Section 4.1.2.

Table 6. Summary Wells Unable to be Sampled for Leachate

Wells With Pumps	Wells Without Pumps
• Pump was not running at the time of monitoring for the following wells: EW-50, EW-59, EW-60, EW-62, EW-61, EW-65, EW-66, EW-68, EW-78 EW-85, EW-88, EW-89, and EW-93. • Pump was disconnected or off at the time of monitoring for EW-53, EW-55, EW-81, EW-82, EW-83, and EW-96. • Pump was disconnected or off at the time of monitoring and well was too tall to safely measure the liquid level for EW-49. • Pump was not running, and the liquid depth was not measured at the time of monitoring for EW-94. • Pump was disconnected or off at the time of monitoring and the liquid depth was not measured at the time of monitoring for EW-36A, EW-52, and EW-87. • EW-64 and EW-33B had the vacuum shut down and was unable to be approached during the time of the monitoring. • EW-50 and EW-55 alarmed the four gas meters when approached; thus, monitoring was not completed.	• There was no pump at the time of the monitoring for the following wells: EW-54, EW-56, EW-63, EW-67 EW-69, EW-70, EW-73, EW-76, EW-77, EW-79, EW-80, EW-84, EW-86, EW-91, EW-92, EW-95, EW-97, and EW-99. Without a pump, leachate cannot be collected. • Additional information: – There is no pump and the well appeared dry at the time of monitoring for EW-56. – EW-63, EW-77 and EW-79 had the vacuum shut down and were unable to be approached during the time of monitoring. – The liquid depth was not measured at the time of monitoring for EW-76. – There was no pump at the time of monitoring and well was too tall to safely measure the liquid level for EW-92 and EW-97.

The samples were delivered to Enthalpy Analytical (Enthalpy) in Richmond, Virginia for analysis. The samples were analyzed for the parameters utilizing the analytical methods described in the Dual Phase Landfill Gas Extraction Well Leachate Monitoring Plan, December 1, 2022, prepared by SCS Engineers. At the time of preparation of this report, laboratory analytical results were not available for the July 2025 monitoring event. The July 2025 analytical results will be provided in the August 2025 Monthly Compliance Report.

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 analysis. 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.

At the time of preparation of the June 2025 Compliance Report, laboratory analytical results were not available for the June 2025 monitoring event. Therefore, this report provides the June 2025 analytical results. No QC blank detects were identified for the June 2025 monitoring event. The laboratory analysis report for the June 2025 monitoring event trip blank is included in **Appendix F**. The June 2025 monitoring event laboratory QA/QC report, including the method blank results, is included in the certificate of analysis (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) guidance². 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 June 2025 monitoring event as there were no QC blank detections. The June 2025 detections flagged with a “J” qualifier are shown on **Table 7**.

4.2.4 Laboratory Analytical Results

The analytical results for the June 2025 leachate samples collected from extraction well EW-78 are summarized in **Table 7**. The associated COA is included in **Appendix F**. Parameter results from June 2025 and previous monitoring events (November 2022 – May 2025) are presented on a table in **Appendix F**. Time-series plots of each VOC for EW-78 and the wells that have historically been sampled are included in **Appendix F**.

Table 7. Monthly LFG-EW Leachate Monitoring Event Summary

Well ID	EW-78	LOD	LOQ
Parameter	June 2025 Concentration		
Ammonia as N (mg/L)	2160	120	200
Biological Oxygen Demand (mg/L)	230	0.2	2
Chemical Oxygen Demand (mg/L)	3500	630	1000
Nitrate as N (mg/L)	ND	0.1	0.5
Nitrite as N (mg/L)	ND	0.1	0.5
Total Recoverable Phenolics (mg/L)	0.508	0.031	0.05
Total Kjeldahl Nitrogen (mg/L)	1720	45.9	250
SEMI-VOLATILE ORGANIC COMPOUND (ug/L)			
Anthracene	ND	50	100
TOTAL METALS (mg/L)			
Arsenic	0.322	0.003	0.02
Barium	0.514	0.001	0.01
Cadmium	ND	0.0004	0.004

² 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 7. Monthly LFG-EW Leachate Monitoring Event Summary

Well ID	EW-78	LOD	LOQ
Parameter	June 2025 Concentration		
Chromium	0.178	0.001	0.01
Copper	0.0082 J	0.002	0.01
Lead	0.0079 J	0.003	0.01
Mercury	0.00237	0.0002	0.0002
Nickel	0.1796	0.001	0.01
Selenium	ND	0.008	0.05
Silver	ND	0.002	0.01
Zinc	0.0455	0.007	0.01
VOLATILE FATTY ACIDS (mg/L)			
Acetic Acid	29.9	0.7	5
Butyric Acid	ND	0.7	5
Lactic Acid	ND	0.6	5
Propionic Acid	ND	0.6	5
Pyruvic Acid	ND	0.9	5

VOLATILE ORGANIC COMPOUNDS (ug/L)			
2-Butanone	ND	60	200
Acetone	ND	140	200
Benzene	97.4	8	20
Ethylbenzene	29.2	8	20
Tetrahydrofuran	611	200	200
Toluene	40.2	10	20
Xylenes	29.6 J	20	60

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. Refer to Appendix G for narrative sections without updates.

5.1 SETTLEMENT MONITORING AND MANAGEMENT PLAN

Information about the Settlement Monitoring and Management Plan for the SWP No. 588 Landfill and a copy of the plan can be found in the November 2022 Compliance Report for the SWP No. 588 Landfill.

5.2 MONTHLY SURVEYS

5.2.1 Topographic Data Collection

SCS collected topographic data of the Solid Waste Permit No. 588 Landfill using photogrammetric methods via an unmanned aerial vehicle (UAV or drone) on July 27, 2025. Aerial imagery collected on July 27, 2025, is depicted in Figure 13. The topographic data collected is shown on Sheet 4 in Appendix E.

Figure 13. Aerial Photo of the SWP No. 588 Landfill

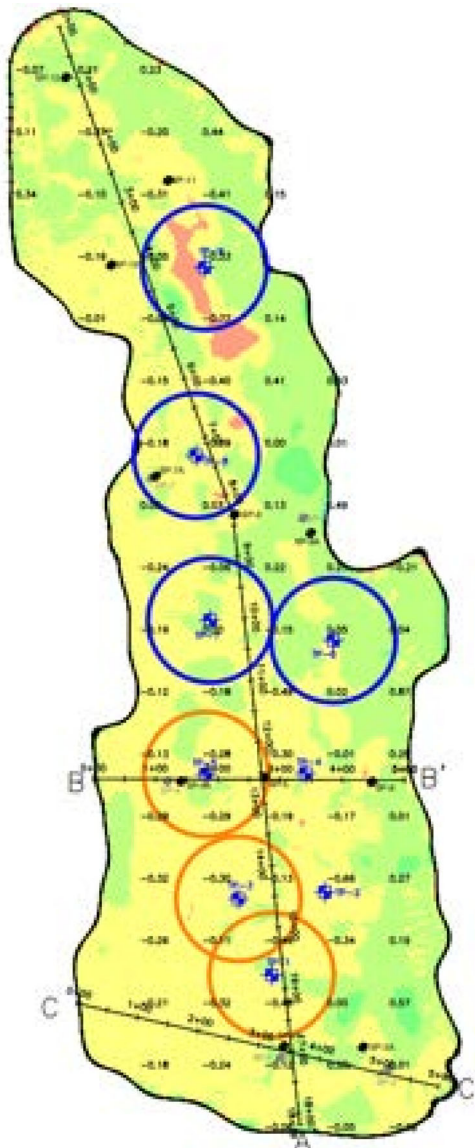


The topography within the landfill footprint was compared to topographic data collected by SCS using photogrammetric methods on June 12, 2025. A drawing depicting the June 12, 2025 topography is included as Sheet 3 in Appendix E.

Based on a comparison of the topographic data collected on those two dates, the data shows a fill of 3,300 cubic yards across the site. Fill may have been placed and spread on the site to address differential settlement, surface emissions, and to provide access to LFG collection vertical wells. Additionally, a substantial increase in vegetation at the site can influence the topographic data recorded by the drone, which contributes to the fill volume. During that same time period, calculations indicate a “cut” volume of approximately 4,800 cubic yards. Cut volumes are typically attributed to settlement. This resulted in a net volume decrease of approximately 1,600 cubic yards.

A visual depiction of settlement and filling at the landfill during this time is depicted in Figure 14. 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 14. 1-Month Elevation Change Map



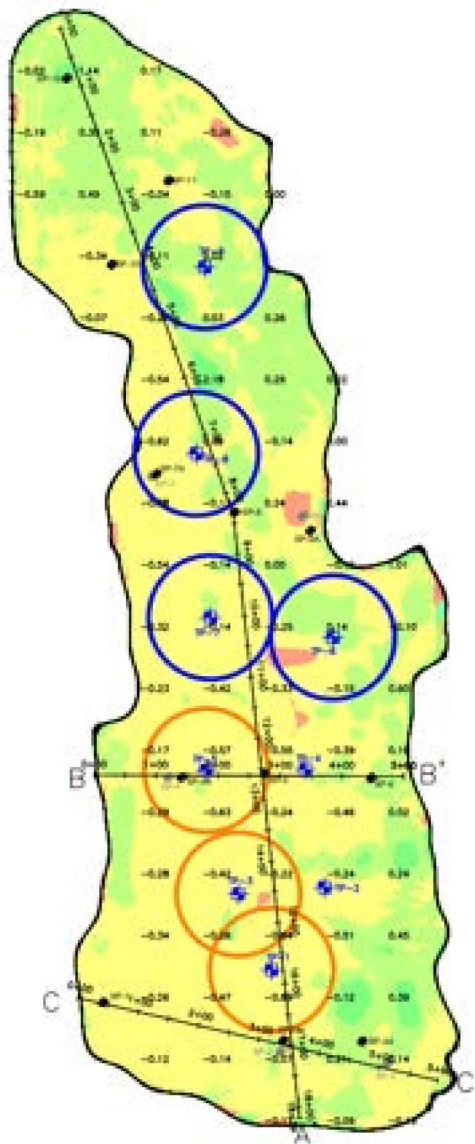
The locations of in-waste temperature monitoring probes are also shown on Figure 14, Figure 15, and Figure 16. The circles around the probes in each of these figures are indicative of the average borehole temperature. The circles shown are offset from the probes for clarity only and do not necessarily 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 no circle around them represent no temperature readings for this month due to sensor malfunctions. There were no probes measuring average temperatures greater than 250° F and less than 300° F during the month of July 2025.

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 decrease between the flyover dates was 0.1 feet.

SCS also compared the topographic data collected in July to the topographic data collected on April 16, 2025. 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 6,400 cubic yards. During that same time period calculations indicate approximately 3,300 cubic yards of fill were placed on the landfill, for a net decrease in waste volume of 3,100 cubic yards.

A visual depiction of settlement and filling at the landfill during this time is depicted in Figure 15. Areas in orange/yellow 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 15. 3-Month Elevation Change Map



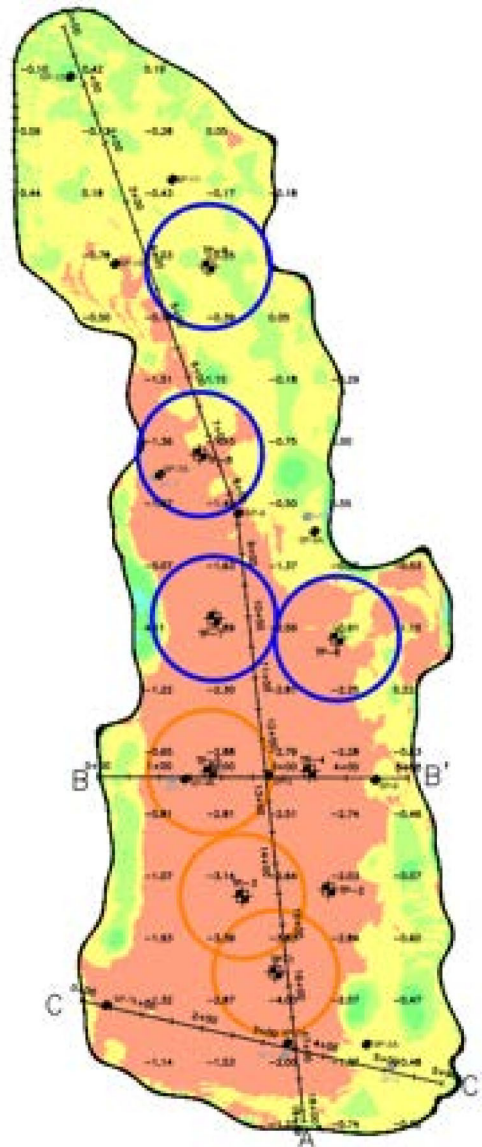
Based on the area of the landfill and the net volume change, the average elevation decrease was approximately 0.1 feet.

SCS also compared the topographic data collected in July 2025 to the drone topographic data collected on July 16, 2024. 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 34,400 cubic yards. During that same time period approximately 2,400 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 and ongoing maintenance (i.e. filling to compensate for settlement). This resulted in a net volume decrease of approximately 32,100 cubic yards.

A visual depiction of settlement and filling at the landfill during this time is depicted in Figure 16. 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 16. 1-Year Elevation Change Map



The largest settlement occurred primarily at the southern end of the landfill where the waste settled by 4 feet or more in some areas. Significant settlements are typical of elevated temperature landfill conditions. The landfill perimeter exhibited an increase in elevation, likely due to soil placement associated with construction and/or ongoing maintenance 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 1.1 feet.

SCS will collect topographic data covering the landfill surface again in July using photogrammetric methods via UAV. This data will be compared to the data collected in July 2024, April 2025, and June 2025.

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. Five new settlement plates (SP-2A, SP-3A, SP-4A, SP-7A, and SP-9A) installed during June 2024 are intended to replace non-operational settlement plates. The settlement plate locations are depicted in Figure 17 and on Sheet 1 in Appendix E. The construction and installation of the settlement plates generally conforms to the design outline in the Settlement Monitoring and Management Plan.

Figure 17. Settlement Plate Locations



The locations of the settlement plates were initially surveyed on November 14, 2022, and have been surveyed monthly thereafter. The survey coordinates and elevation changes of the settlement plates are shown in Table 8.

Table 8. Elevation and Strain Data at Settlement Plate Locations

Settlement Plate	Northing	Easting	Elevation on July 23, 2025 (ft)	Elevation Change Since June 27, 2025 (ft)	Strain ³ Since June 27, 2024	Elevation Change Since Installation (ft)
SP-1	3,397,887.7	10,412,080.8	1,828.6	-0.09	-0.1%	-5.8
SP-2A	3,397,823.2	10,412,370.6	1,792.4	-0.32	-0.2%	-3.3
SP-3A	3,397,820.2	10,412,498.1	1,778.8	-0.32	-0.3%	-1.4
SP-4A	3,398,247.0	10,412,207.4	1,802.3	-0.17	-0.1%	-2.8
SP-5	3,398,255.9	10,412,339.7	1,787.9	-0.26	-0.1%	-12.9
SP-6	3,398,248.8	10,412,510.1	1,772.7	-0.22	-0.2%	-4.9
SP-7A	3,398,731.5	10,412,158.2	1,821.9	-0.22	-0.2%	-1.5
SP-8	3,398,678.1	10,412,290.9	1,799.6	-0.10	0.0%	-7.8
SP-9A	3,398,644.2	10,412,416.1	1,788.1	-0.09	-0.1%	-0.6
SP-10	3,399,079.6	10,412,095.3	1,835.9	-0.11	0.0%	-4.3
SP-11	3,399,216.4	10,412,183.8	1,814.4	-0.07	0.0%	-2.0
SP-12	3,399,381.8	10,412,019.7	1,809.6	-0.07	-0.1%	-1.1

Prior to April 2024, the City's in-house surveyor read the settlement plate elevations. Starting April 2024 through June 2025, the settlement plate elevations were measured by FEI Civil Engineers and Land Surveyors. As of July 2025, the settlement plate elevations are measured by Miller Land Surveying LLC.

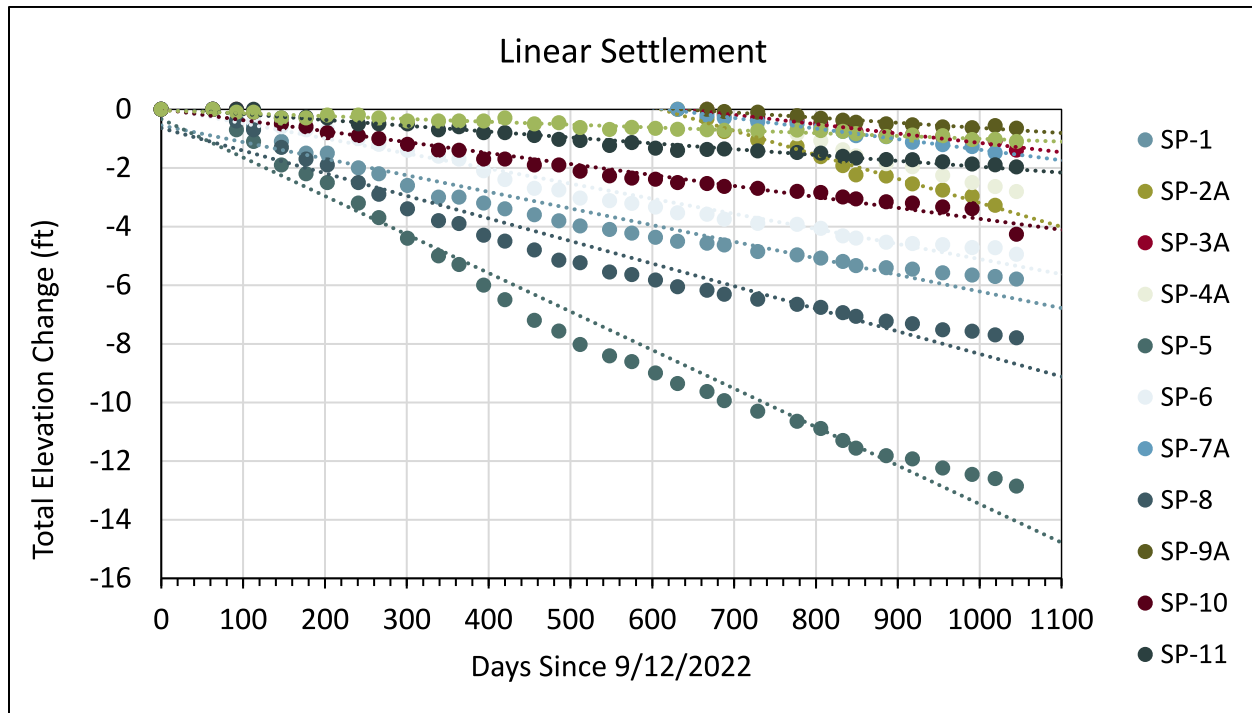
Settlement Plates 2A and 3A demonstrated larger strains due to settlement than at other locations. Settlement Plates 2A and 3A are in the southern end of the landfill. This area is the location of the gas wells and temperature probes exhibiting higher temperatures. These higher strain values are typical of elevated temperature landfill conditions.

The strains at the other settlement plates were lower during this monthly measurement period compared to Settlement Plates, 2A and 3A.

Figure 18 shows the changes in elevation of select settlement plates over time. For the purposes of recording data in this figure, times are reported in days since the landfill was required to stop accepting waste.

³ Strain is defined as the change in elevation divided by the estimated waste depth.

Figure 18. Elevation Change of Select Settlement Plates Over Time



The settlement plates will be surveyed again during August 2025. The elevations surveyed will be compared to the elevations surveyed the previous months.

6.0 INTERMEDIATE COVER AND EVOH COVER SYSTEM

The City has taken steps to provide intermediate and temporary cover of the wastes in the landfill. The sections below describe the steps taken by the City and future plans related to cover.

6.1 INTERMEDIATE COVER INSTALLATION

A summary of the intermediate cover installation can be found in the October 2022 Monthly Compliance Report for the SWP No. 588 Landfill.

6.2 EVOH COVER SYSTEM DESIGN

An amendment to the Consent Decree was issued on March 21, 2024 which requires an ethylene vinyl alcohol (EVOH) deployment no later than December 1, 2026. The amended Consent Decree also requires regular settlement assessments, and the EVOH deployment may occur earlier if settlement rates appear acceptable. The first of these assessments was submitted to VDEQ on April 11, 2024. The most recent assessment was submitted on April 10, 2025. The next assessment will be submitted on or before October 7, 2025.

6.3 EVOH COVER SYSTEM PROCUREMENT

Information about the procurement of materials for the EVOH cover system can be found in the January 2023 Monthly Compliance Report for the SWP No. 588 Landfill.

6.4 EVOH COVER SYSTEM INSTALLATION

As outlined in the amendment to the Consent Decree dated March 21, 2024, the deadline for EVOH Cover System installation has been extended. The City is conducting the assessments described in Section 6.2 to determine the appropriate time for installation.

7.0 STORMWATER MANAGEMENT

Information about the most recent stormwater management plans, basin location, plan implementation, long-term control, and stormwater monitoring for the SWP No. 588 Landfill can be found in the December 2023 Monthly Compliance Report for the SWP No. 588 Landfill.

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

Refer to the December 2022 and March 2023 Monthly Compliance Reports for the SWP No. 588 Landfill for additional information about the development and implementation of the Monitoring, Maintenance, and Repair Plan.

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, prepared a summary of the actions taken as part of their community outreach efforts. For the month of July 2025, those actions include:

- **Ongoing basis:** Three (3) posts on each the BristolVALandfill.org site and the existing City of Bristol Landfill Notifications and Information page covering important updates including:
 - Progress updates related to remediation efforts and normal maintenance activities at the Quarry Landfill.

- Updates at the Quarry Landfill included repairing/refurbishing numerous pumps in the gas extraction system; repairing the stormwater pump; installation of clay seals around gas wells to help with odor mitigation; the City hosted a pre-construction meeting for the new permanent flare project that should begin soon; inspection of the leachate collection systems; rebuilding spare leachate pumps; drained condensation from the gas lines and performed routine maintenance on the related well heads to increase the system's efficiency; and removed and rebuilt two faulty pumps from the leachate collection system.
- **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 from May 15, 2023, and running through July 6, 2025. Additional reports will be posted as the they are received.
- **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.



Appendix A

Surface Emissions Monitoring Summary

Quarterly SEM

SCS performed the Second Quarter 2025 surface emissions monitoring event on May 27, 2025. The results of the Quarterly SEM were summarized in the May 2025 Compliance Report for the SWP Np. 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 September 1, 2025.

The Third Quarter 2025 SEM Event is scheduled to be completed by September 30, 2025.

Weekly SEM

In addition to the standard regulatory quarterly surface emissions monitoring, the monitoring in July generally conformed 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 SEM route included the 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 applicable surface cover penetrations within the waste footprint.

The Facility submitted letters to VDEQ describing the results of the July monitoring events on July 9, 2025; July 16, 2025; July 23, 2025; July 30, 2025; and August 6, 2025. Copies of those letters are included in this Appendix.

The Facility continues to take proactive steps to limit fugitive surface emissions including dewatering activities, additional cover soil placement, and LFG system maintenance and tuning to increase gas extraction.

July 9, 2025
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 – July 2, 2025
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 Management Facility located in Bristol, Virginia on July 2, 2025. 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. 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 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	168
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	68
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 retests.

On June 5, 2025, the City submitted an Alternate Remedy Request for corrective actions for exceedances at four specific locations. Details regarding the proposed corrective actions are outlined in the letter request.

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

Table 2. Ongoing Weekly SEM Exceedances

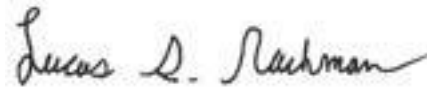
Point ID	Initial Exceedance Date	7/2/25 Event	7/2/25 Event Result	Comments
EW-54	2/24/25	N/A	Passed	Alternate Remedy Requested – undergoing corrective actions
EW-66	2/24/25	N/A	Failed	Alternate Remedy Requested – undergoing corrective actions
EW-67	4/18/25	N/A	Failed	Alternate Remedy Requested – undergoing corrective actions
EW-95	4/18/25	N/A	Passed	Alternate Remedy Requested – undergoing corrective actions
EW-76	6/2/25	N/A	Passed	Exceedance Resolved
EW-49	6/24/25	10-Day Retest	Passed	Requires 1-Month Retest
EW-51	6/24/25	10-Day Retest	Passed	Requires 1-Month Retest

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

Sincerely,



Quinn F. Bernier, PE
Senior Project Professional
SCS Engineers



Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/QFB

cc: Randall Eads, City of Bristol
Jonathan Hayes, 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 - JULY 2, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
1	0.7 PPM	OK			Start Serpentine Route
2	0.7 PPM	OK			
3	1.5 PPM	OK			
4	0.6 PPM	OK			
5	0.7 PPM	OK			
6	0.5 PPM	OK			
7	0.5 PPM	OK			
8	0.4 PPM	OK			
9	0.4 PPM	OK			
10	0.4 PPM	OK			
11	0.6 PPM	OK			
12	0.5 PPM	OK			
13	0.4 PPM	OK			
14	0.4 PPM	OK			
15	0.3 PPM	OK			
16	0.7 PPM	OK			
17	1.7 PPM	OK			
18	1.0 PPM	OK			
19	0.3 PPM	OK			
20	0.3 PPM	OK			
21	0.3 PPM	OK			
22	1.9 PPM	OK			
23	0.4 PPM	OK			
24	0.9 PPM	OK			
25	0.7 PPM	OK			
26	0.4 PPM	OK			
27	0.3 PPM	OK			
28	0.4 PPM	OK			
29	0.5 PPM	OK			
30	2.0 PPM	OK			
31	1.5 PPM	OK			
32	18.5 PPM	OK			
33	75.7 PPM	OK			
34	74.0 PPM	OK			
35	68.9 PPM	OK			
36	47.4 PPM	OK			
37	9.5 PPM	OK			
38	31.0 PPM	OK			
39	26.1 PPM	OK			
40	14.9 PPM	OK			
41	217.0 PPM	OK			
42	1.5 PPM	OK			
43	0.5 PPM	OK			
44	0.2 PPM	OK			
45	0.3 PPM	OK			
46	0.8 PPM	OK			
47	0.3 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 2, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
48	0.1 PPM	OK			
49	0.1 PPM	OK			
50	0.1 PPM	OK			
51	0.1 PPM	OK			
52	0.0 PPM	OK			
53	0.0 PPM	OK			
54	0.0 PPM	OK			
55	0.0 PPM	OK			
56	0.1 PPM	OK			
57	0.1 PPM	OK			
58	0.0 PPM	OK			
59	3.3 PPM	OK			
60	0.2 PPM	OK			
61	0.8 PPM	OK			
62	0.3 PPM	OK			
63	0.5 PPM	OK			
64	1.7 PPM	OK			
65	0.3 PPM	OK			
66	0.6 PPM	OK			
67	1.2 PPM	OK			
68	0.5 PPM	OK			
69	0.5 PPM	OK			
70	7.2 PPM	OK			
71	13.4 PPM	OK			
72	4.1 PPM	OK			
73	0.1 PPM	OK			
74	0.3 PPM	OK			
75	3.5 PPM	OK			
76	0.9 PPM	OK			
77	0.0 PPM	OK			
78	0.1 PPM	OK			
79	0.0 PPM	OK			
80	0.1 PPM	OK			
81	0.2 PPM	OK			
82	15.7 PPM	OK			
83	8.2 PPM	OK			
84	1.1 PPM	OK			
85	0.0 PPM	OK			
86	0.4 PPM	OK			
87	0.0 PPM	OK			
88	0.1 PPM	OK			
89	0.0 PPM	OK			
90	0.0 PPM	OK			
91	0.2 PPM	OK			
92	4.7 PPM	OK			
93	3.7 PPM	OK			
94	18.7 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 2, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
95	21.7 PPM	OK			
96	8.5 PPM	OK			
97	0.2 PPM	OK			
98	0.0 PPM	OK			
99	0.5 PPM	OK			
100	11.2 PPM	OK			End Serpentine Route
101	129.0 PPM	OK			EW-52
102	6.8 PPM	OK			TP-4
103	117.0 PPM	OK			EW-60
104	10.6 PPM	OK			EW-48
105	3.6 PPM	OK			TP-6
106	1.6 PPM	OK			EW-61
107	0.4 PPM	OK			EW-50
108	1138.0 PPM	HIGH_ALRM	36.59857	-82.14771	EW-67
109	0.3 PPM	OK			EW-47
110	28.8 PPM	OK			EW-54
111	0.8 PPM	OK			EW-55
112	23.8 PPM	OK			EW-92
113	7.2 PPM	OK			EW-91
114	0.0 PPM	OK			EW-96
115	14.9 PPM	OK			TP-2
116	832.0 PPM	HIGH_ALRM	36.59843	-82.14740	EW-66
117	1.2 PPM	OK			EW-58
118	4.2 PPM	OK			EW-57
119	0.1 PPM	OK			TP-1
120	17.8 PPM	OK			EW-59
121	238.0 PPM	OK			EW-100
122	1.2 PPM	OK			EW-56
123	0.4 PPM	OK			EW-97
124	0.6 PPM	OK			EW-53
125	1.0 PPM	OK			TP-3
126	5.8 PPM	OK			EW-51
127	0.5 PPM	OK			TP-5
128	32.0 PPM	OK			EW-68
129	1.8 PPM	OK			EW-87
130	2.8 PPM	OK			EW-38
131	17.8 PPM	OK			TP-7
132	146.0 PPM	OK			EW-49
133	0.1 PPM	OK			EW-83
134	0.2 PPM	OK			EW-65
135	0.1 PPM	OK			EW-81
136	0.1 PPM	OK			TP-8
137	0.2 PPM	OK			EW-64
138	0.0 PPM	OK			EW-63
139	0.2 PPM	OK			EW-42
140	349.0 PPM	OK			EW-76

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 2, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
141	0.4 PPM	OK			TP-9
142	0.4 PPM	OK			EW-62
143	0.3 PPM	OK			EW-74
144	0.1 PPM	OK			EW-32R
145	0.0 PPM	OK			EW-69
146	0.0 PPM	OK			EW-71
147	0.0 PPM	OK			EW-72
148	0.0 PPM	OK			EW-70
149	0.2 PPM	OK			EW-73
150	0.3 PPM	OK			EW-78
151	0.2 PPM	OK			EW-82
152	4.0 PPM	OK			EW-36A
153	0.2 PPM	OK			EW-85
154	1.5 PPM	OK			EW-88
155	9.5 PPM	OK			EW-89
156	0.3 PPM	OK			EW-93
157	4.2 PPM	OK			EW-94
158	0.2 PPM	OK			EW-98
159	2.0 PPM	OK			EW-99
160	0.9 PPM	OK			EW-95
161	66.7 PPM	OK			EW-90
162	1593.0 PPM	HIGH_ALRM	36.59937	-82.14819	EW-86
163	0.0 PPM	OK			EW-84
164	0.2 PPM	OK			EW-80
165	0.9 PPM	OK			EW-79
166	0.7 PPM	OK			EW-77
167	0.4 PPM	OK			EW-33B
168	0.2 PPM	OK			EW-75
Number of locations sampled: 168 Number of exceedance locations: 3					
NOTES: Points 1 through 100 represent serpentine SEM route. Points 101 through 168 represent SEM at Pipe Penetrations Weather Conditions: Partly Cloudy, 80°F Wind: 6 mph N <u>Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm</u> 7/2/2025 10:57 ZERO 0.1 PPM 7/2/2025 11:02 SPAN 503.0 PPM <u>Background Reading:</u> 7/2/2025 11:07 Upwind 1.4 PPM 7/2/2025 11:11 Downwind 0.8 PPM					



July 16, 2025
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 – July 7, 2025
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 Management Facility located in Bristol, Virginia on July 7, 2025. 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. 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 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	168
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	68
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 retests.

On June 5, 2025, the City submitted an Alternate Remedy Request for corrective actions for exceedances at four specific locations. Details regarding the proposed corrective actions are outlined in the letter request.

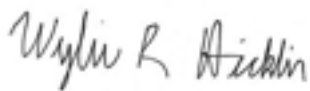
A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

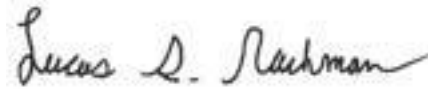
Point ID	Initial Exceedance Date	7/7/25 Event	7/7/25 Event Result	Comments
EW-54	2/24/25	N/A	Failed	Alternate Remedy Requested – undergoing corrective actions
EW-66	2/24/25	N/A	Passed	Alternate Remedy Requested – undergoing corrective actions
EW-67	4/18/25	N/A	Passed	Alternate Remedy Requested – undergoing corrective actions
EW-95	4/18/25	N/A	Passed	Alternate Remedy Requested – undergoing corrective actions
EW-49	6/24/25	N/A	Passed	Requires 1-Month Retest
EW-51	6/24/25	N/A	Passed	Requires 1-Month Retest
EW-86	7/2/25	10-Day Retest	Passed	Requires 1-Month Retest

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

Sincerely,



Wylie R Hicklin
Staff Professional
SCS Engineers



Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WRH

cc: Randall Eads, City of Bristol
Jonathan Hayes, 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 - JULY 7, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
1	0.1 PPM	OK			Start Serpentine Route
2	0.0 PPM	OK			
3	0.0 PPM	OK			
4	0.2 PPM	OK			
5	0.0 PPM	OK			
6	0.0 PPM	OK			
7	0.1 PPM	OK			
8	0.3 PPM	OK			
9	0.4 PPM	OK			
10	0.4 PPM	OK			
11	0.6 PPM	OK			
12	0.5 PPM	OK			
13	0.7 PPM	OK			
14	1.4 PPM	OK			
15	1.1 PPM	OK			
16	0.5 PPM	OK			
17	0.6 PPM	OK			
18	1.4 PPM	OK			
19	0.6 PPM	OK			
20	1.2 PPM	OK			
21	0.5 PPM	OK			
22	8.5 PPM	OK			
23	7.4 PPM	OK			
24	3.0 PPM	OK			
25	0.4 PPM	OK			
26	0.2 PPM	OK			
27	0.9 PPM	OK			
28	0.9 PPM	OK			
29	1.4 PPM	OK			
30	5.9 PPM	OK			
31	1.6 PPM	OK			
32	7.8 PPM	OK			
33	9.1 PPM	OK			
34	27.2 PPM	OK			
35	1.6 PPM	OK			
36	31.9 PPM	OK			
37	32.2 PPM	OK			
38	236.0 PPM	OK			
39	47.8 PPM	OK			
40	18.3 PPM	OK			
41	1.0 PPM	OK			
42	0.6 PPM	OK			
43	2.0 PPM	OK			
44	0.2 PPM	OK			
45	0.9 PPM	OK			
46	0.1 PPM	OK			
47	0.3 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 7, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
48	0.1 PPM	OK			
49	0.4 PPM	OK			
50	0.2 PPM	OK			
51	0.2 PPM	OK			
52	0.4 PPM	OK			
53	0.4 PPM	OK			
54	0.3 PPM	OK			
55	0.2 PPM	OK			
56	0.0 PPM	OK			
57	0.0 PPM	OK			
58	0.5 PPM	OK			
59	0.2 PPM	OK			
60	0.1 PPM	OK			
61	0.3 PPM	OK			
62	0.3 PPM	OK			
63	0.5 PPM	OK			
64	0.7 PPM	OK			
65	4.5 PPM	OK			
66	229.0 PPM	OK			
67	2.7 PPM	OK			
68	1.3 PPM	OK			
69	2.2 PPM	OK			
70	1.2 PPM	OK			
71	0.9 PPM	OK			
72	0.9 PPM	OK			
73	1.1 PPM	OK			
74	4.9 PPM	OK			
75	5.9 PPM	OK			
76	2.3 PPM	OK			
77	1.4 PPM	OK			
78	3.7 PPM	OK			
79	2.1 PPM	OK			
80	3.1 PPM	OK			
81	3.5 PPM	OK			
82	2.9 PPM	OK			
83	1.9 PPM	OK			
84	1.0 PPM	OK			
85	1.9 PPM	OK			
86	0.2 PPM	OK			
87	0.7 PPM	OK			
88	0.0 PPM	OK			
89	0.3 PPM	OK			
90	0.0 PPM	OK			
91	0.1 PPM	OK			
92	0.6 PPM	OK			
93	0.1 PPM	OK			
94	0.2 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 7, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
95	0.3 PPM	OK			
96	1.0 PPM	OK			
97	0.1 PPM	OK			
98	0.1 PPM	OK			
99	0.0 PPM	OK			
100	0.2 PPM	OK			End Serpentine Route
101	0.1 PPM	OK			EW-69
102	0.1 PPM	OK			EW-71
103	0.2 PPM	OK			EW-72
104	0.9 PPM	OK			EW-32R
105	0.0 PPM	OK			EW-74
106	0.0 PPM	OK			EW-62
107	0.2 PPM	OK			EW-33B
108	0.8 PPM	OK			EW-75
109	0.5 PPM	OK			EW-63
110	1.6 PPM	OK			EW-77
111	0.1 PPM	OK			EW-79
112	0.5 PPM	OK			TP-8
113	0.1 PPM	OK			EW-64
114	0.1 PPM	OK			EW-81
115	0.1 PPM	OK			EW-80
116	0.6 PPM	OK			EW-84
117	0.3 PPM	OK			EW-83
118	1.2 PPM	OK			EW-65
119	0.0 PPM	OK			EW-36A
120	186.0 PPM	OK			TP-6
121	0.5 PPM	OK			EW-61
122	0.1 PPM	OK			EW-85
123	1.0 PPM	OK			EW-88
124	2.7 PPM	OK			EW-50
125	45.3 PPM	OK			TP-7
126	41.1 PPM	OK			EW-49
127	204.0 PPM	OK			EW-86
128	114.0 PPM	OK			EW-38
129	270.0 PPM	OK			EW-87
130	8.2 PPM	OK			EW-48
131	63.8 PPM	OK			EW-60
132	3.1 PPM	OK			EW-89
133	0.3 PPM	OK			EW-93
134	83.9 PPM	OK			EW-92
135	219.0 PPM	OK			EW-52
136	25.9 PPM	OK			TP-4
137	30.6 PPM	OK			EW-68
138	0.0 PPM	OK			TP-5
139	0.2 PPM	OK			EW-90
140	59.3 PPM	OK			EW-51

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS					
WEEKLY MONITORING EVENT - JULY 7, 2025					
BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates		Comments
			Lat.	Long.	
141	1.3 PPM	OK			EW-91
142	149.0 PPM	OK			EW-67
143	0.7 PPM	OK			EW-47
144	35400.0 PPM	HIGH_ALRM	36.59859	-82.14738	EW-54
145	148.0 PPM	OK			TP-2
146	18.2 PPM	OK			EW-55
147	9.8 PPM	OK			EW-94
148	0.6 PPM	OK			EW-98
149	1155.0 PPM	HIGH_ALRM	36.59830	-82.14712	EW-58
150	23.3 PPM	OK			EW-66
151	10.7 PPM	OK			EW-96
152	1.4 PPM	OK			TP-3
153	1265.0 PPM	HIGH_ALRM	36.59842	-82.14789	EW-53
154	9.1 PPM	OK			EW-95
155	2.6 PPM	OK			EW-97
156	2.8 PPM	OK			EW-99
157	2.7 PPM	OK			EW-56
158	15.0 PPM	OK			EW-100
159	5.8 PPM	OK			EW-59
160	8.5 PPM	OK			EW-57
161	0.3 PPM	OK			TP-1
162	142.0 PPM	OK			EW-82
163	0.0 PPM	OK			EW-78
164	9.0 PPM	OK			EW-42
165	20.0 PPM	OK			EW-76
166	1.1 PPM	OK			TP-9
167	0.2 PPM	OK			EW-73
168	0.0 PPM	OK			EW-70
Number of locations sampled: 168 Number of exceedance locations: 3					
NOTES: Points 1 through 100 represent serpentine SEM route. Points 101 through 168 represent SEM at Pipe Penetrations Weather Conditions: Mostly Suny, 85°F Wind: 3 mph SW <u>Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm</u> 7/7/2025 10:59 ZERO 0.0 PPM 7/7/2025 11:14 SPAN 502.0 PPM <u>Background Reading:</u> 7/7/2025 11:17 Upwind 1.1 PPM 7/7/2025 11:20 Downwind 1.0 PPM					



- NOTES:
1. TAGS 1 – 100 REPRESENT SERPENTINE SEM ROUTE
 2. TAGS 101 – 168 REPRESENT SEM AT PIPE PENETRATIONS
 3. WEEKLY SEM PERFORMED ON JULY 7, 2025

SCS ENGINEERS		FILE: 02218208.04
STEARN, CONRAD AND SCHMIDT		DATE: 7/7/25
CONSULTING ENGINEERS, INC.		SCALE: AS SHOWN
15221 MIDLOTHIAN TRAIL, SUITE 200, ARLINGTON, VA 22204		DRAWING NO.
P.O. BOX 327614, ARLINGTON, VA 22232		
TEL: (800) 327-6140 FAX: (800) 327-6433		
CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY		
2655 VALLEY DRIVE		
BRISTOL, VA 24201		
CLIENT		
SHEET TITLE		
SEM ROUTE WITH BUFFER AREA		
PROJECT TITLE		
SURFACE EMISSIONS MONITORING		
SOLID WASTE PERMIT #588		
NO.		
REVISION		
DATE		

July 23, 2025
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 – July 15, 2025
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 Management Facility located in Bristol, Virginia on July 15, 2025. 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. 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 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	166
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	66
Number of Exceedances	4
Number of Serpentine Exceedances	1
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 retests.

On June 5, 2025, the City submitted an Alternate Remedy Request for corrective actions for exceedances at four specific locations. As of monitoring conducted on July 15, 2025, these corrective actions have been successful at reducing methane concentrations below the regulatory threshold at three of the four locations.

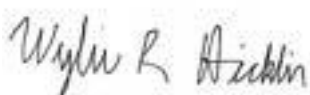
A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

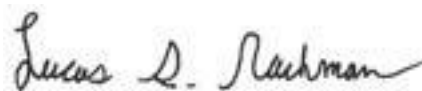
Point ID	Initial Exceedance Date	7/15/25 Event	7/15/25 Event Result	Comments
EW-54	2/24/25	N/A	Passed	Alternate Remedy Requested – corrective actions have resolved exceedance
EW-66	2/24/25	N/A	Passed	Alternate Remedy Requested – corrective actions have resolved exceedance
EW-67	4/18/25	N/A	Failed	Alternate Remedy Requested – undergoing corrective actions
EW-95	4/18/25	N/A	Passed	Alternate Remedy Requested – corrective actions have resolved exceedance
EW-49	6/24/25	N/A	Passed	Requires 1-Month Retest
EW-51	6/24/25	N/A	Passed	Requires 1-Month Retest
EW-86	7/2/25	N/A	Passed	Requires 1-Month Retest
EW-53	7/7/25	10-Day Retest	Passed	Requires 1-Month Retest
EW-58	7/7/25	10-Day Retest	Passed	Requires 1-Month Retest

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

Sincerely,



Wylie R Hicklin
Staff Professional
SCS Engineers



Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WRH

cc: Randall Eads, City of Bristol
Jonathan Hayes, 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 - JULY 15, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
1	0.0 PPM	OK			Start Serpentine Route
2	1.0 PPM	OK			
3	0.0 PPM	OK			
4	0.1 PPM	OK			
5	0.1 PPM	OK			
6	0.0 PPM	OK			
7	0.0 PPM	OK			
8	0.2 PPM	OK			
9	0.2 PPM	OK			
10	0.0 PPM	OK			
11	0.0 PPM	OK			
12	0.5 PPM	OK			
13	0.1 PPM	OK			
14	0.1 PPM	OK			
15	0.1 PPM	OK			
16	0.2 PPM	OK			
17	20.2 PPM	OK			
18	0.0 PPM	OK			
19	0.0 PPM	OK			
20	0.3 PPM	OK			
21	13.7 PPM	OK			
22	0.7 PPM	OK			
23	0.6 PPM	OK			
24	0.0 PPM	OK			
25	1.5 PPM	OK			
26	1.3 PPM	OK			
27	0.8 PPM	OK			
28	0.6 PPM	OK			
29	0.4 PPM	OK			
30	0.3 PPM	OK			
31	221.0 PPM	OK			
32	2.0 PPM	OK			
33	4.3 PPM	OK			
34	30.1 PPM	OK			
35	17900.0 PPM	HIGH_ALRM	36.59842	-82.14845	
36	5.1 PPM	OK			
37	4.6 PPM	OK			
38	1.2 PPM	OK			
39	0.9 PPM	OK			
40	1.0 PPM	OK			
41	0.7 PPM	OK			
42	1.5 PPM	OK			
43	0.0 PPM	OK			
44	0.1 PPM	OK			
45	0.1 PPM	OK			
46	0.0 PPM	OK			
47	0.0 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 15, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
48	0.0 PPM	OK			
49	0.2 PPM	OK			
50	0.0 PPM	OK			
51	0.1 PPM	OK			
52	0.1 PPM	OK			
53	0.0 PPM	OK			
54	0.0 PPM	OK			
55	0.0 PPM	OK			
56	0.1 PPM	OK			
57	0.2 PPM	OK			
58	0.3 PPM	OK			
59	68.2 PPM	OK			
60	0.2 PPM	OK			
61	0.3 PPM	OK			
62	0.1 PPM	OK			
63	0.3 PPM	OK			
64	0.7 PPM	OK			
65	6.9 PPM	OK			
66	0.3 PPM	OK			
67	0.1 PPM	OK			
68	0.0 PPM	OK			
69	2.1 PPM	OK			
70	0.3 PPM	OK			
71	0.0 PPM	OK			
72	0.0 PPM	OK			
73	0.3 PPM	OK			
74	0.9 PPM	OK			
75	1.0 PPM	OK			
76	0.6 PPM	OK			
77	0.1 PPM	OK			
78	0.7 PPM	OK			
79	1.2 PPM	OK			
80	8.6 PPM	OK			
81	0.6 PPM	OK			
82	3.0 PPM	OK			
83	3.7 PPM	OK			
84	2.2 PPM	OK			
85	0.4 PPM	OK			
86	0.0 PPM	OK			
87	0.0 PPM	OK			
88	0.0 PPM	OK			
89	0.2 PPM	OK			
90	0.1 PPM	OK			
91	0.0 PPM	OK			
92	0.0 PPM	OK			
93	0.0 PPM	OK			
94	0.1 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 15, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
95	0.1 PPM	OK			
96	0.5 PPM	OK			
97	0.4 PPM	OK			
98	0.0 PPM	OK			
99	0.1 PPM	OK			
100	0.1 PPM	OK			End Serpentine Route
101	0.0 PPM	OK			EW-75
102	0.0 PPM	OK			EW-74
103	0.1 PPM	OK			EW-32R
104	0.0 PPM	OK			EW-71
105	0.0 PPM	OK			EW-69
106	0.1 PPM	OK			EW-72
107	0.1 PPM	OK			EW-62
108	0.1 PPM	OK			EW-33B
109	0.0 PPM	OK			EW-63
110	0.1 PPM	OK			EW-77
111	0.0 PPM	OK			EW-79
112	0.0 PPM	OK			TP-8
113	0.0 PPM	OK			EW-64
114	1.5 PPM	OK			EW-81
115	0.0 PPM	OK			EW-65
116	0.0 PPM	OK			EW-83
117	0.0 PPM	OK			EW-80
118	0.1 PPM	OK			EW-84
119	316.0 PPM	OK			EW-49
120	1641.0 PPM	HIGH_ALRM	36.59982	-82.14800	TP-7
121	1.1 PPM	OK			EW-50
122	0.6 PPM	OK			EW-36A
123	12.4 PPM	OK			EW-61
124	20.0 PPM	OK			TP-6
125	0.0 PPM	OK			EW-85
126	2.1 PPM	OK			EW-88
127	10.8 PPM	OK			EW-48
128	17.1 PPM	OK			EW-38
129	6.1 PPM	OK			EW-87
130	31.4 PPM	OK			EW-86
131	0.6 PPM	OK			EW-90
132	0.3 PPM	OK			TP-5
133	9.7 PPM	OK			EW-68
134	292.0 PPM	OK			EW-52
135	6.2 PPM	OK			TP-4
136	350.0 PPM	OK			EW-60
137	31.5 PPM	OK			EW-89
138	4.9 PPM	OK			EW-93
139	20.6 PPM	OK			EW-92
140	229.0 PPM	OK			EW-91

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 15, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
141	84.2 PPM	OK			EW-51
142	11600.0 PPM	HIGH_ALRM	36.59866	-82.14775	EW-67
143	1.6 PPM	OK			EW-47
144	20.8 PPM	OK			EW-54
145	5.5 PPM	OK			EW-55
146	6.9 PPM	OK			EW-94
147	0.4 PPM	OK			EW-98
148	1.1 PPM	OK			EW-58
149	2.3 PPM	OK			EW-66
150	0.6 PPM	OK			EW-96
151	61.4 PPM	OK			EW-53
152	1.9 PPM	OK			TP-1
153	12.1 PPM	OK			EW-57
154	4.5 PPM	OK			EW-59
155	24.1 PPM	OK			EW-100
156	1.0 PPM	OK			EW-56
157	0.9 PPM	OK			EW-97
158	0.4 PPM	OK			EW-99
159	267.0 PPM	OK			EW-95
160	40.4 PPM	OK			EW-82
161	0.0 PPM	OK			EW-78
162	7.6 PPM	OK			EW-42
163	2391.0 PPM	HIGH_ALRM	36.60126	-82.14804	EW-76
164	7.8 PPM	OK			TP-9
165	23.0 PPM	OK			EW-73
166	0.3 PPM	OK			EW-70
Number of locations sampled: 166 Number of exceedance locations: 4					
NOTES: Points 1 through 100 represent serpentine SEM route. Points 101 through 166 represent SEM at Pipe Penetrations Weather Conditions: Mostly Sunny, 84°F Wind: 4 mph N <u>Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm</u> 7/15/2025 10:29 ZERO 0.0 PPM 7/15/2025 10:39 SPAN 501.0 PPM <u>Background Reading:</u> 7/15/2025 10:44 Upwind 2.1 PPM 7/15/2025 10:55 Downwind 0.0 PPM					



NO.	REVISION	DATE

SHEET TITLE	SEM ROUTE WITH BUFFER AREA
PROJECT TITLE	SURFACE EMISSIONS MONITORING SOLID WASTE PERMIT #588

CLIENT	CITY OF BRISTOL WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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CONSULTANT	SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15221 MIDLOTHIAN TNRK - MIDLOTHIAN, VA 23113 PH: (804) 378-7440 FAX: (804) 378-7433
DATE	07/15/25
FILE	02218208.04

DRAWING NO.	1 of 1
DRAWING NO.	75
SCALE	AS SHOWN
DATE	7/15/25
FILE	02218208.04

July 30, 2025
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 – July 23, 2025
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 Management Facility located in Bristol, Virginia on July 23, 2025. 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. 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 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	166
Number of Points in Serpentine Route	100
Number of Points at Surface Cover Penetrations	66
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 retests.

On June 5, 2025, the City submitted an Alternate Remedy Request for corrective actions for exceedances at four specific locations. As of monitoring conducted on July 23, 2025, these corrective actions have been successful at reducing methane concentrations below the regulatory threshold at all four locations.

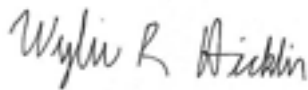
A summary of ongoing exceedance points is provided in Table 2.

Table 2. Ongoing Weekly SEM Exceedances

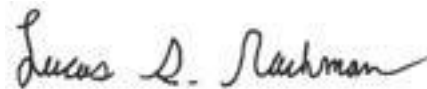
Point ID	Initial Exceedance Date	7/23/25 Event	7/23/25 Event Result	Comments
EW-67	4/18/25	N/A	Passed	Alternate Remedy Requested – corrective actions have resolved exceedance
EW-49	6/24/25	1-Month Retest	Passed	Exceedance Resolved
EW-51	6/24/25	1-Month Retest	Passed	Exceedance Resolved
EW-86	7/2/25	N/A	Failed	Requires 1-Month Retest
EW-53	7/7/25	N/A	Passed	Requires 1-Month Retest
EW-58	7/7/25	N/A	Passed	Requires 1-Month Retest
Tag 35	7/15/25	10-Day Retest	Passed	Requires 1-Month Retest
EW-76	7/15/25	10-Day Retest	Passed	Requires 1-Month Retest
TP-7	7/15/25	10-Day Retest	Passed	Requires 1-Month Retest

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

Sincerely,



Wylie R Hicklin
Staff Professional
SCS Engineers



Lucas S. Nachman
Senior Project Professional
SCS Engineers

LSN/WRH

cc: Randall Eads, City of Bristol
Jonathan Hayes, City of Bristol
Laura Socia, City of Bristol
Susan "Tracey" Blalock, VDEQ

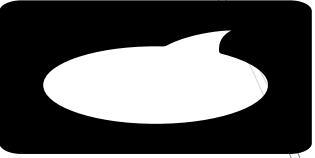
Encl. Surface Emissions Monitoring Results
Bristol SEM Route Drawing

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 23, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
1	4.7 PPM	OK			Start Serpentine Route
2	10.0 PPM	OK			
3	0.4 PPM	OK			
4	0.1 PPM	OK			
5	0.0 PPM	OK			
6	0.2 PPM	OK			
7	0.1 PPM	OK			
8	0.1 PPM	OK			
9	0.0 PPM	OK			
10	0.4 PPM	OK			
11	0.1 PPM	OK			
12	0.4 PPM	OK			
13	2.5 PPM	OK			
14	0.7 PPM	OK			
15	0.1 PPM	OK			
16	0.2 PPM	OK			
17	1.7 PPM	OK			
18	0.9 PPM	OK			
19	1.9 PPM	OK			
20	7.7 PPM	OK			
21	4.4 PPM	OK			
22	1.9 PPM	OK			
23	2.4 PPM	OK			
24	20.4 PPM	OK			
25	0.3 PPM	OK			
26	0.2 PPM	OK			
27	0.1 PPM	OK			
28	0.1 PPM	OK			
29	3.2 PPM	OK			
30	3.9 PPM	OK			
31	6.0 PPM	OK			
32	6.0 PPM	OK			
33	171.0 PPM	OK			
34	11.4 PPM	OK			
35	280.0 PPM	OK			
36	21.1 PPM	OK			
37	10.8 PPM	OK			
38	5.6 PPM	OK			
39	4.7 PPM	OK			
40	3.4 PPM	OK			
41	2.2 PPM	OK			
42	2.1 PPM	OK			
43	2.0 PPM	OK			
44	1.7 PPM	OK			
45	1.5 PPM	OK			
46	1.0 PPM	OK			
47	1.4 PPM	OK			

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 23, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
48	0.7 PPM	OK			
49	7.5 PPM	OK			
50	0.9 PPM	OK			
51	0.8 PPM	OK			
52	0.7 PPM	OK			
53	0.6 PPM	OK			
54	0.5 PPM	OK			
55	0.5 PPM	OK			
56	0.4 PPM	OK			
57	1.0 PPM	OK			
58	1.1 PPM	OK			
59	0.6 PPM	OK			
60	1.0 PPM	OK			
61	1.2 PPM	OK			
62	2.0 PPM	OK			
63	2.1 PPM	OK			
64	1.0 PPM	OK			
65	4.1 PPM	OK			
66	14.1 PPM	OK			
67	2.5 PPM	OK			
68	5.7 PPM	OK			
69	21.4 PPM	OK			
70	2.5 PPM	OK			
71	0.9 PPM	OK			
72	1.0 PPM	OK			
73	0.2 PPM	OK			
74	8.1 PPM	OK			
75	1.2 PPM	OK			
76	0.8 PPM	OK			
77	1.9 PPM	OK			
78	1.1 PPM	OK			
79	1.6 PPM	OK			
80	0.3 PPM	OK			
81	1.3 PPM	OK			
82	2.7 PPM	OK			
83	0.1 PPM	OK			
84	0.6 PPM	OK			
85	0.3 PPM	OK			
86	0.1 PPM	OK			
87	0.0 PPM	OK			
88	0.0 PPM	OK			
89	0.3 PPM	OK			
90	0.1 PPM	OK			
91	0.1 PPM	OK			
92	0.1 PPM	OK			
93	0.1 PPM	OK			
94	0.0 PPM	OK			

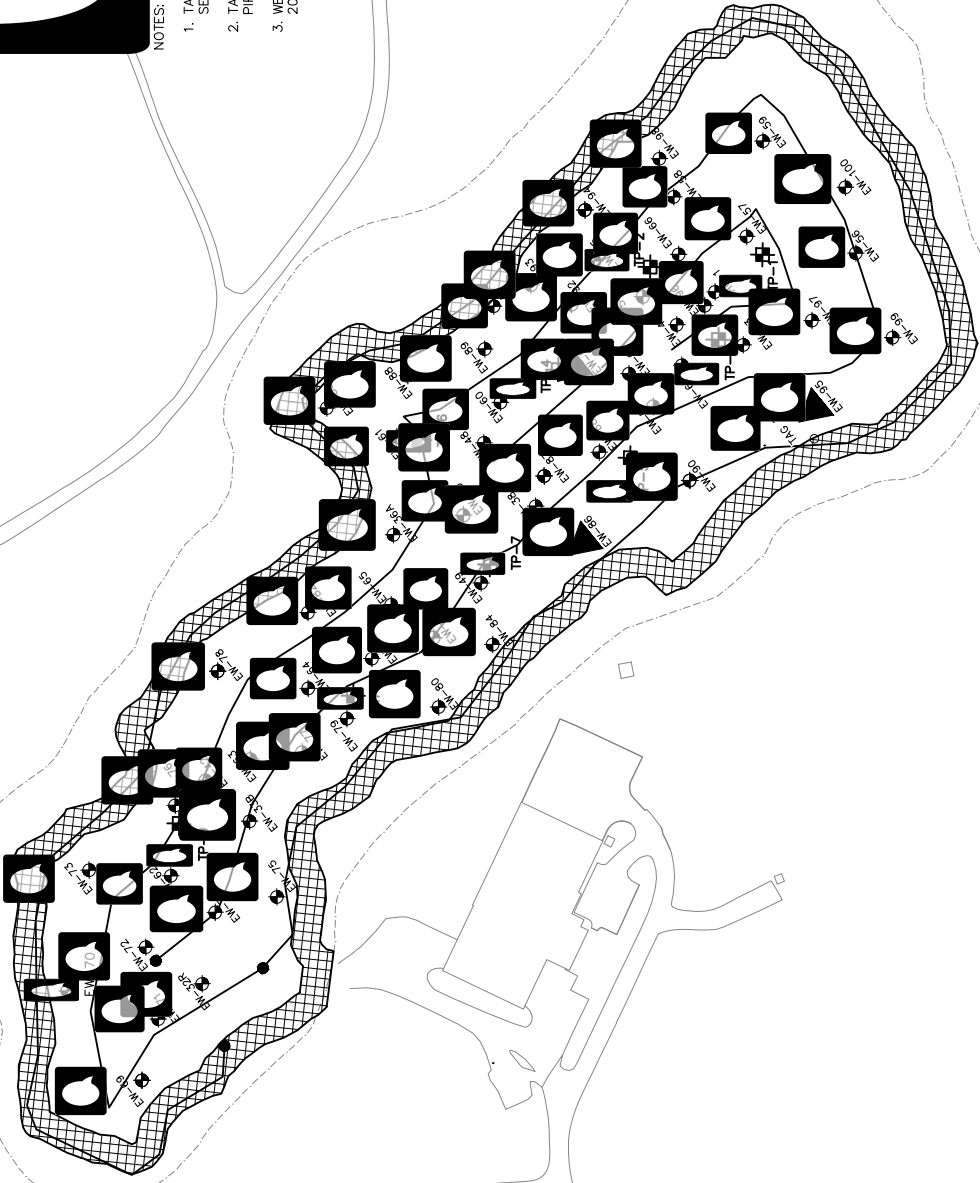
EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 23, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
95	0.0 PPM	OK			
96	0.2 PPM	OK			
97	0.9 PPM	OK			
98	0.6 PPM	OK			
99	0.4 PPM	OK			
100	0.6 PPM	OK			End Serpentine Route
101	0.3 PPM	OK			EW-74
102	1.6 PPM	OK			EW-75
103	0.6 PPM	OK			EW-32R
104	0.4 PPM	OK			EW-71
105	0.4 PPM	OK			EW-69
106	0.5 PPM	OK			EW-72
107	0.3 PPM	OK			EW-62
108	0.3 PPM	OK			EW-33B
109	0.1 PPM	OK			EW-63
110	0.1 PPM	OK			EW-77
111	0.2 PPM	OK			EW-64
112	0.3 PPM	OK			EW-79
113	0.1 PPM	OK			TP-8
114	0.2 PPM	OK			EW-81
115	1.8 PPM	OK			EW-65
116	0.7 PPM	OK			EW-83
117	0.7 PPM	OK			EW-80
118	0.2 PPM	OK			EW-84
119	4.0 PPM	OK			EW-49
120	189.0 PPM	OK			TP-7
121	0.7 PPM	OK			EW-50
122	0.5 PPM	OK			EW-36A
123	2.4 PPM	OK			EW-61
124	37.5 PPM	OK			TP-6
125	0.6 PPM	OK			EW-85
126	5.4 PPM	OK			EW-88
127	61.5 PPM	OK			EW-48
128	24.8 PPM	OK			EW-38
129	2136.0 PPM	HIGH_ALRM	36.59937	-82.14819	EW-86
130	3.0 PPM	OK			EW-87
131	258.0 PPM	OK			EW-60
132	4.0 PPM	OK			EW-93
133	349.0 PPM	OK			EW-92
134	209.0 PPM	OK			TP-4
135	1733.0 PPM	HIGH_ALRM	36.59900	-82.14749	EW-52
136	7.9 PPM	OK			EW-68
137	0.5 PPM	OK			TP-5
138	477.0 PPM	OK			EW-90
139	2.0 PPM	OK			EW-51
140	19.8 PPM	OK			EW-91

EXHIBIT 1. SURFACE EMISSIONS MONITORING RESULTS WEEKLY MONITORING EVENT - JULY 23, 2025 BRISTOL INTEGRATED SOLID WASTE FACILITY - BRISTOL, VIRGINIA					
ID #	Methane Concentration	Compliance	GPS Coordinates Lat. Long.		Comments
141	6.4 PPM	OK			EW-94
142	323.0 PPM	OK			EW-55
143	22.1 PPM	OK			EW-54
144	2.9 PPM	OK			EW-47
145	3.0 PPM	OK			EW-67
146	6.6 PPM	OK			EW-53
147	0.5 PPM	OK			EW-96
148	10.8 PPM	OK			EW-66
149	0.0 PPM	OK			TP-1
150	6.8 PPM	OK			EW-57
151	7.8 PPM	OK			EW-58
152	1.4 PPM	OK			EW-98
153	14.2 PPM	OK			EW-59
154	1.3 PPM	OK			EW-100
155	0.4 PPM	OK			EW-56
156	0.2 PPM	OK			EW-97
157	0.8 PPM	OK			EW-99
158	1598.0 PPM	HIGH_ALARM	36.59837	-82.14835	EW-95
159	48.6 PPM	OK			EW-89
160	0.1 PPM	OK			EW-82
161	10.0 PPM	OK			EW-78
162	6.0 PPM	OK			EW-42
163	261.0 PPM	OK			EW-76
164	0.7 PPM	OK			TP-9
165	142.0 PPM	OK			EW-73
166	0.6 PPM	OK			EW-70
Number of locations sampled: 166 Number of exceedance locations: 3					
NOTES: Points 1 through 100 represent serpentine SEM route. Points 101 through 166 represent SEM at Pipe Penetrations Weather Conditions: Mostly Cloudy, 80°F Wind: 7 mph E <u>Sampling Calibration: Methane - 500 ppm, Zero Air - 0.0 ppm</u> 7/23/2025 10:41 ZERO 0.1 PPM 7/23/2025 10:49 SPAN 501.0 PPM <u>Background Reading:</u> 7/23/2025 10:58 Upwind 1.3 PPM 7/23/2025 11:04 Downwind 1.3 PPM					



NOTES:

- 1. TAGS 1 - 100 REPRESENT SERPENTINE SEM ROUTE
- 2. TAGS 101 - 166 REPRESENT SEM AT PIPE PENETRATIONS
- 3. WEEKLY SEM PERFORMED ON JULY 23, 2025



LEGEND

- SEM ROUTE
- GAS WELL
- TEMPERATURE PROBE
- EXCEEDANCE LOCATION
- MONITORING ROUTE
- ENDPOINT

75

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

SHEET TITLE
SEM ROUTE WITH BUFFER AREA

PROJECT TITLE
SURFACE EMISSIONS MONITORING

SURFACE EMISSIONS MONITORING
SOLID WASTE PERMIT #588

NO. 1
REVISION
DATE

DRAWING NO. 8208.04
DATE 7/23/25

AS SHOWN

1 of 1



Appendix B

In-Waste Temperatures on Select Days in July

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Figure B - 1 Average Temperatures Recorded by TP-1 on July 2, 2025

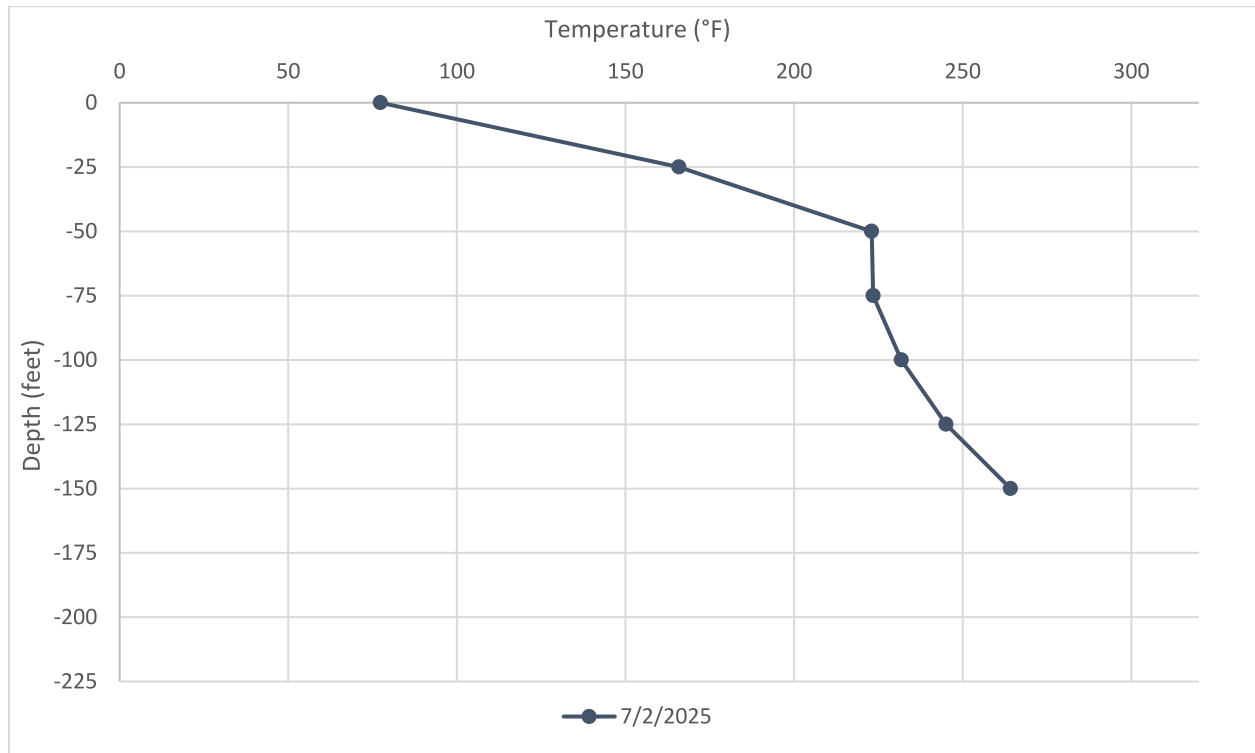


Figure B - 2 Average Temperatures Recorded by TP-1 on July 9, 2025

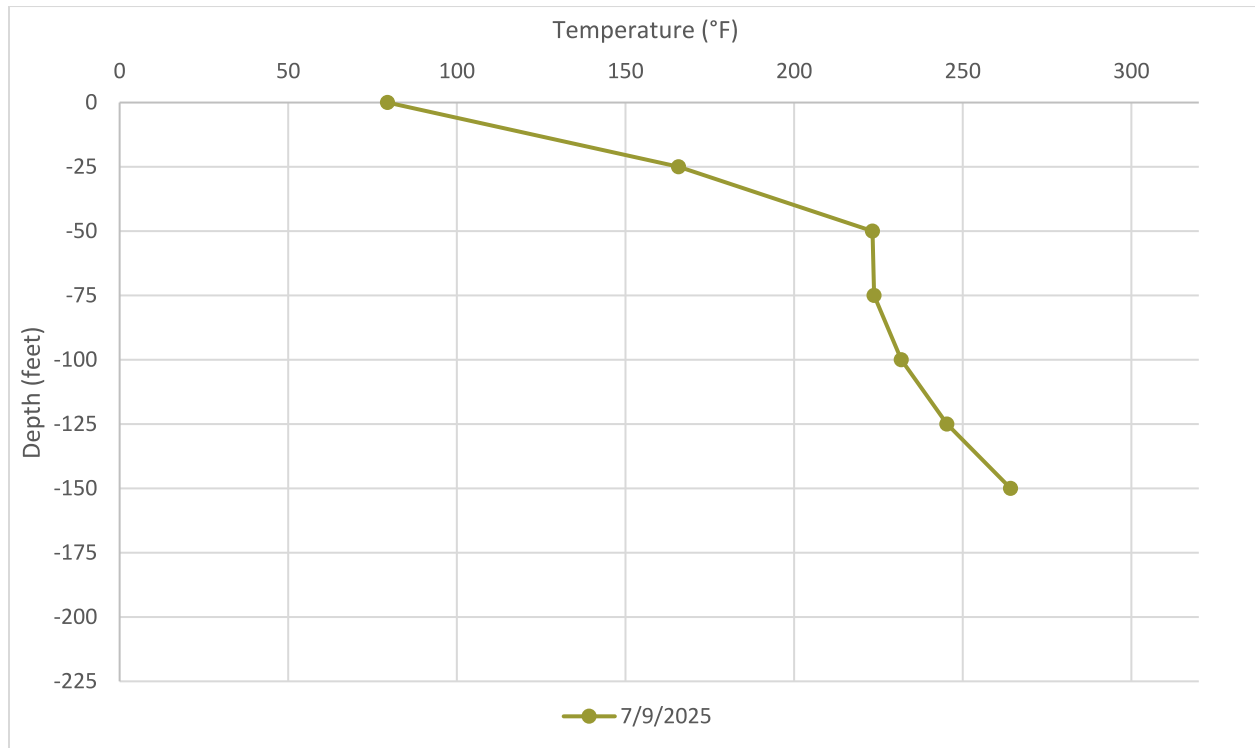


Figure B - 3 Average Temperatures Recorded by TP-1 on July 16, 2025

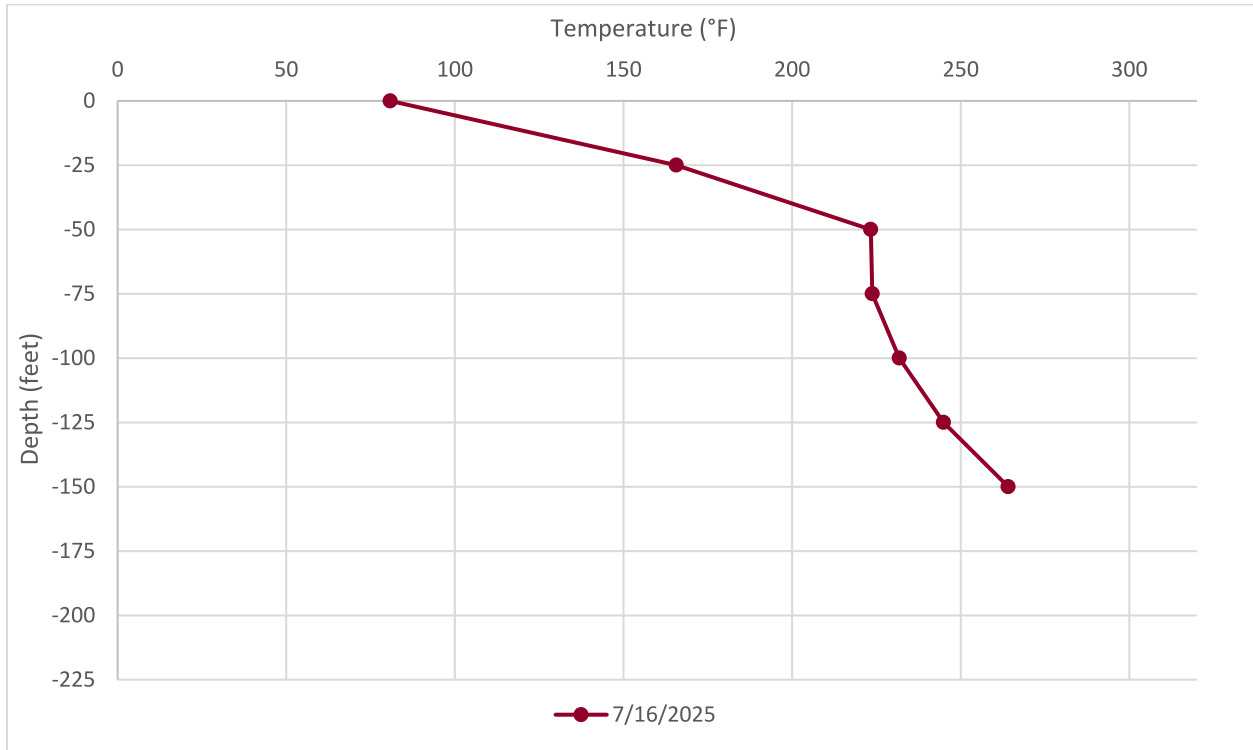


Figure B - 4 Average Temperatures Recorded by TP-1 on July 23, 2025

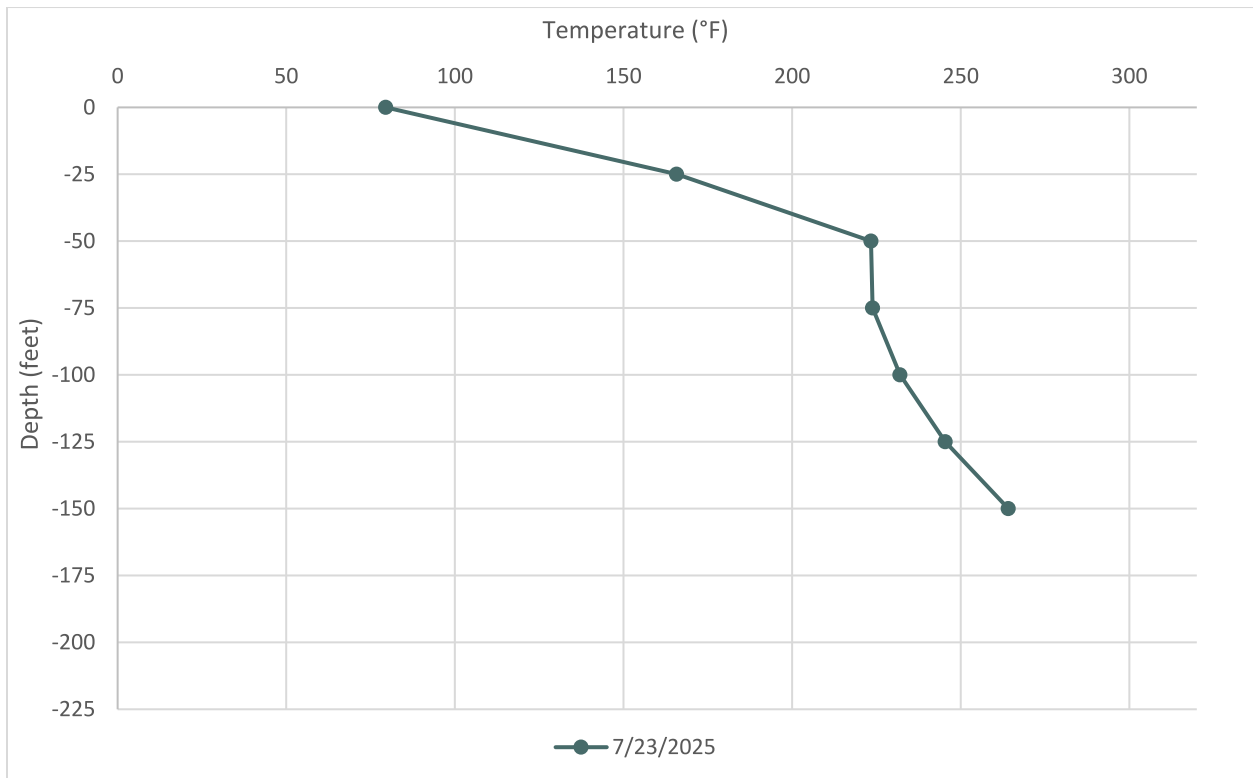


Figure B - 5 Average Temperatures Recorded by TP-1 on July 30, 2025

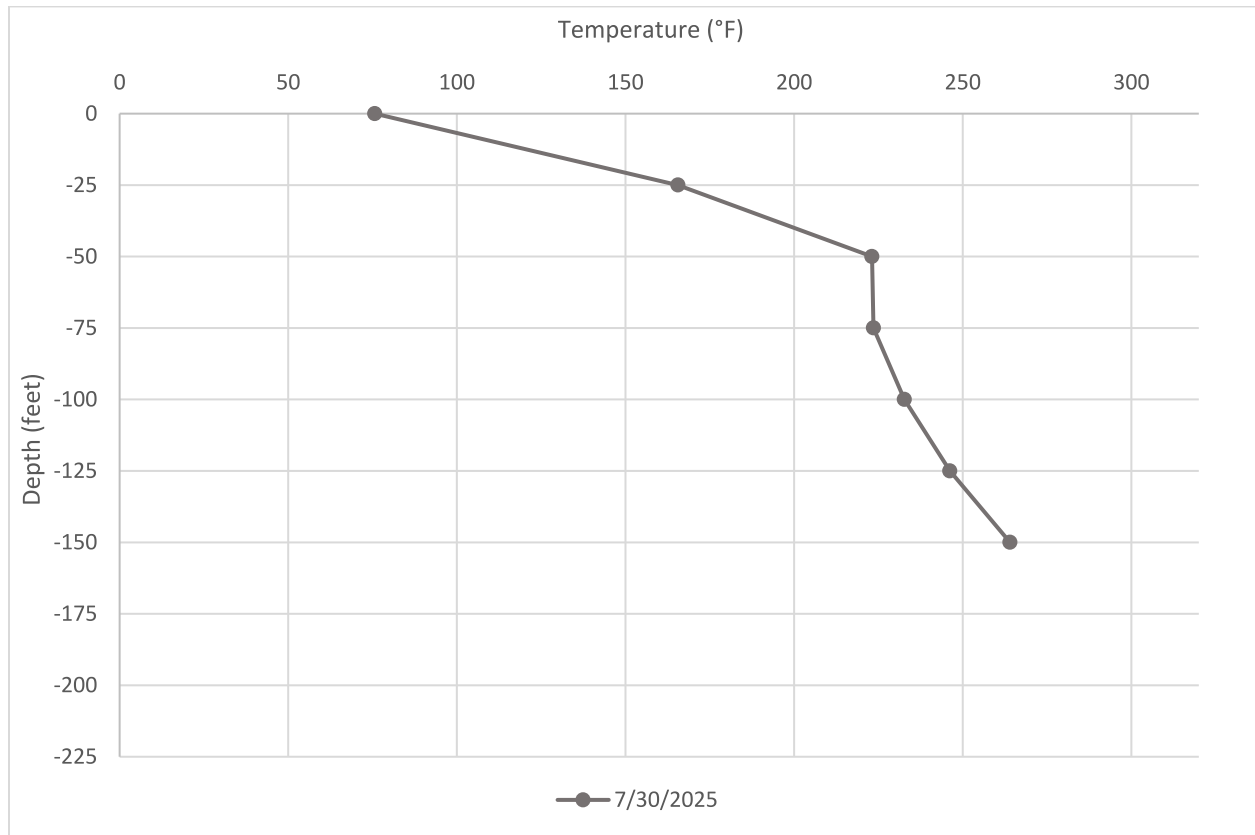


Figure B - 6 Average Temperatures Recorded by TP-3 on July 2, 2025

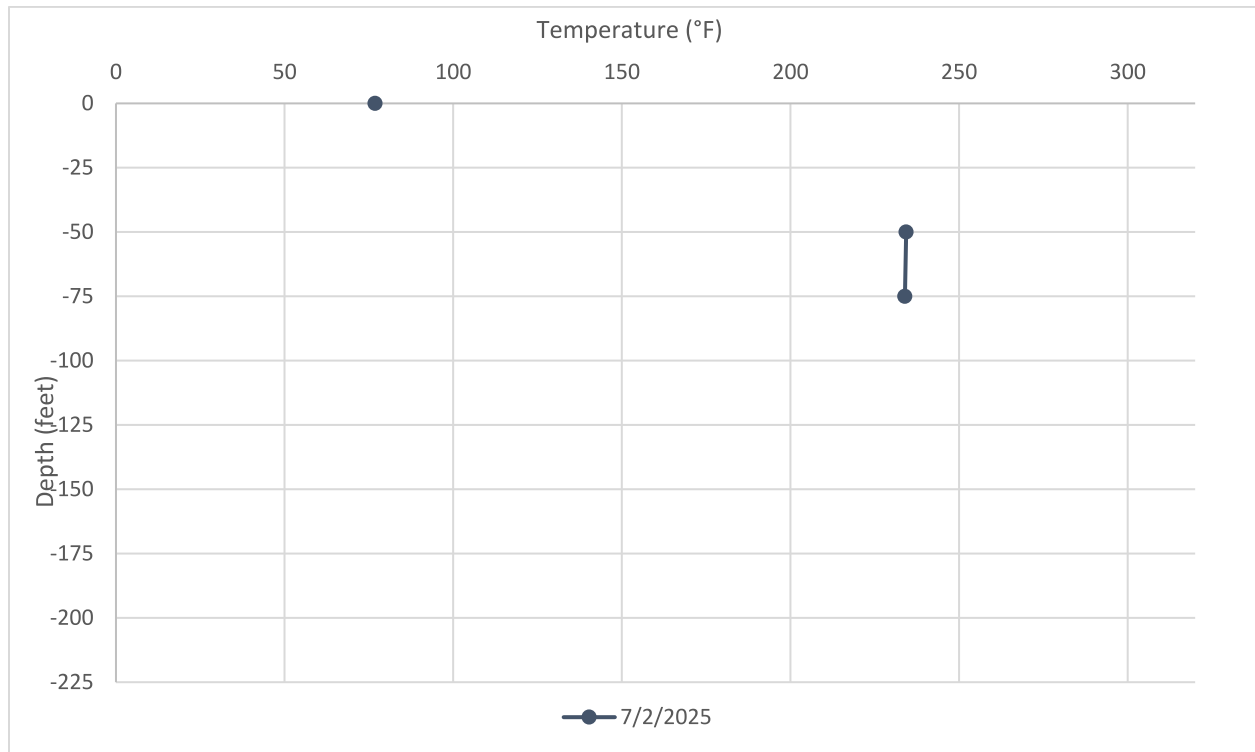


Figure B - 7 Average Temperatures Recorded by TP-3 on July 9, 2025

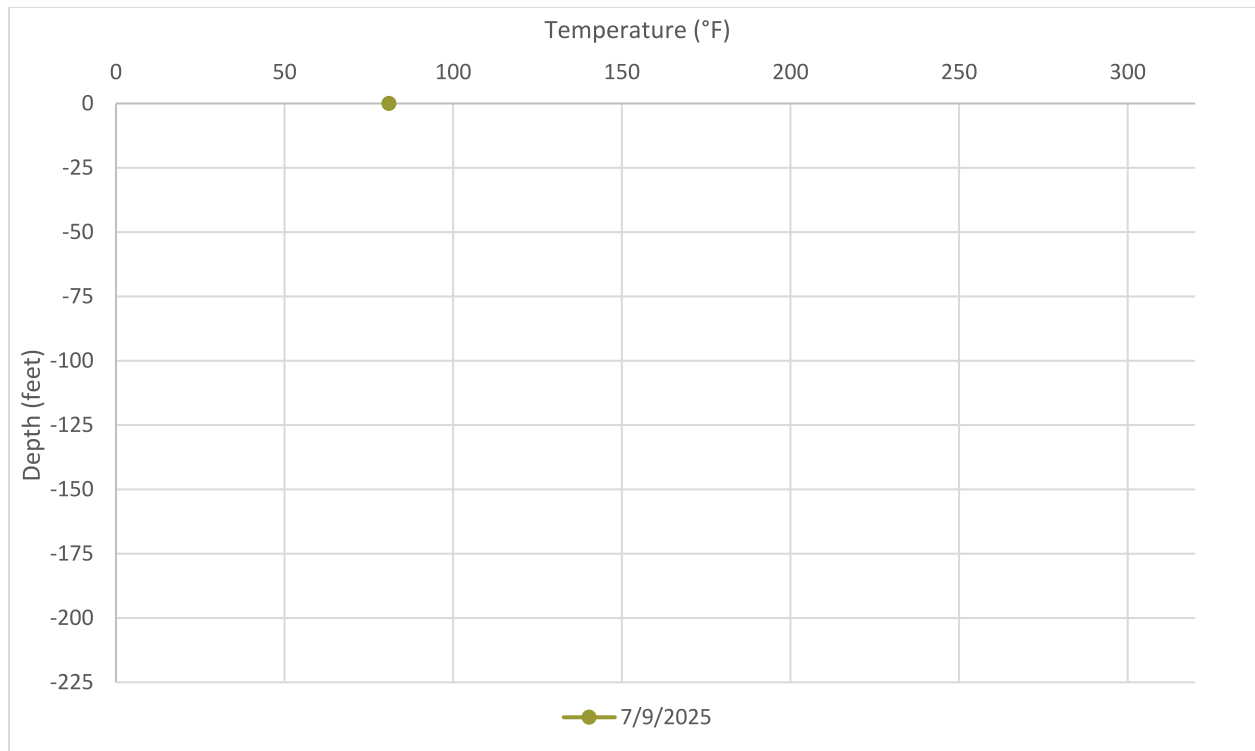


Figure B - 8 Average Temperatures Recorded by TP-5 on July 2, 2025

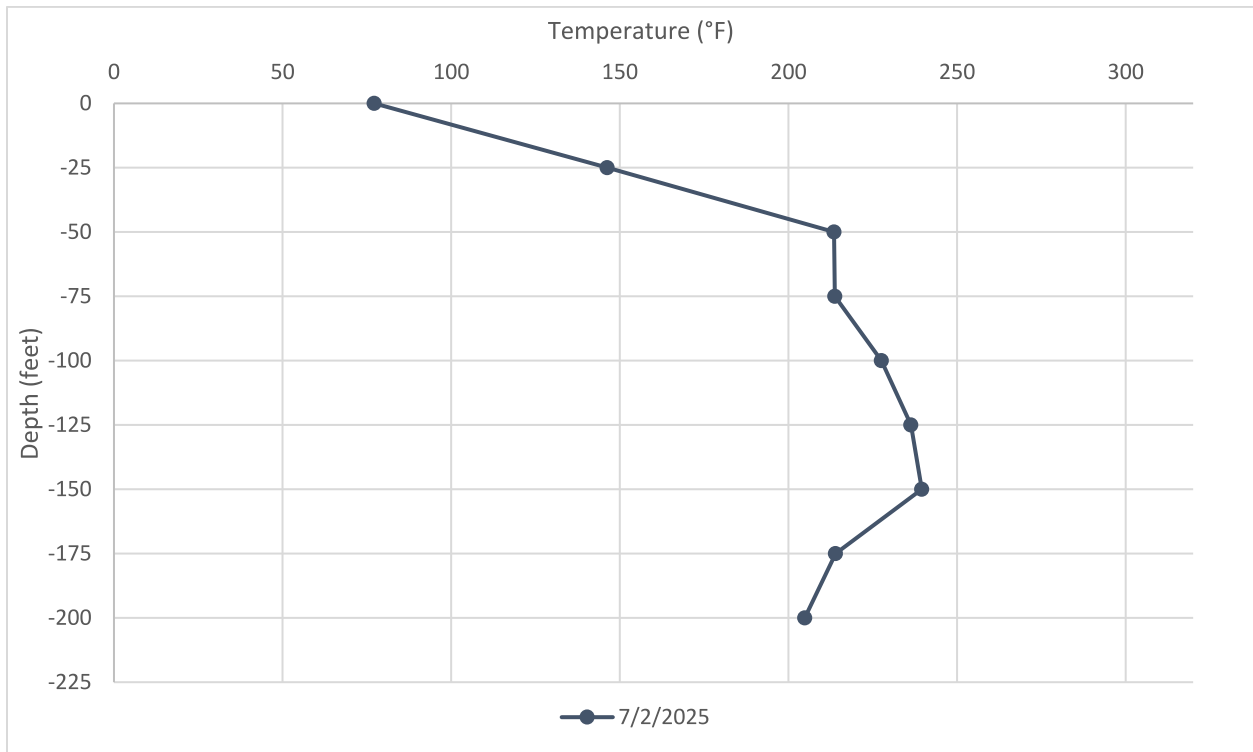


Figure B - 9 Average Temperatures Recorded by TP-5 on July 9, 2025

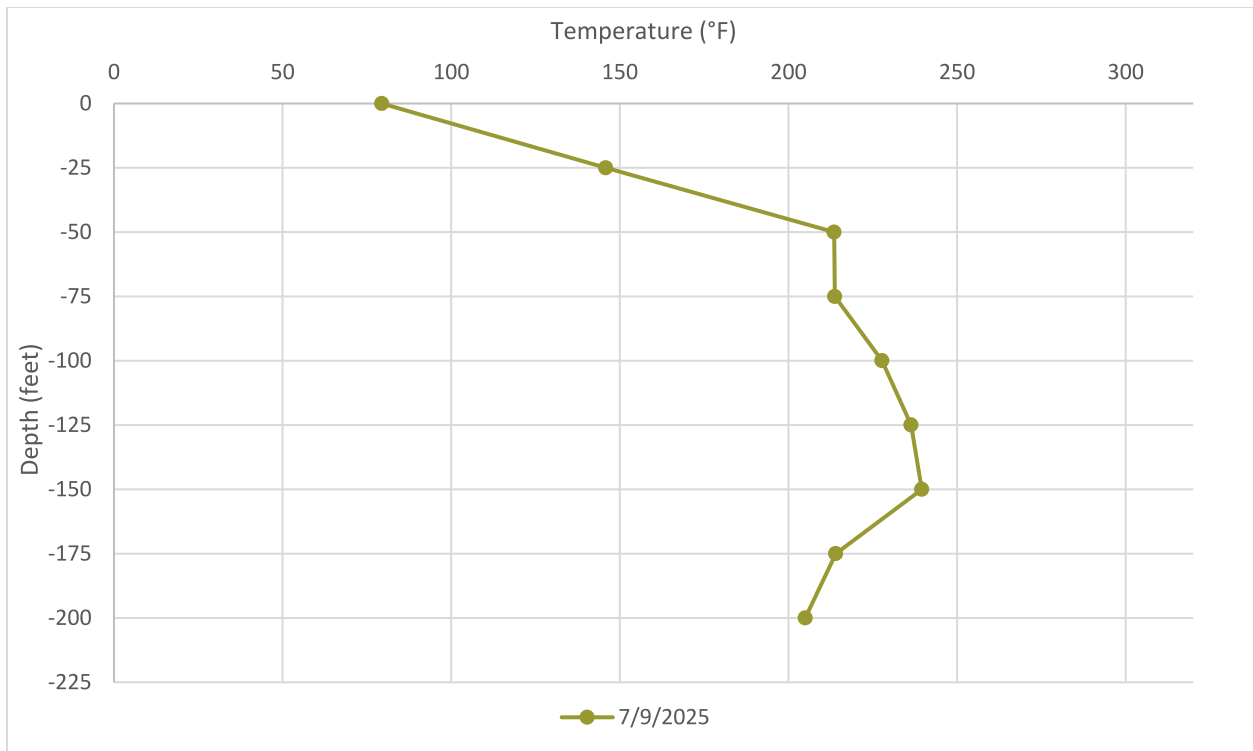


Figure B - 10 Average Temperatures Recorded by TP-5 on July 16, 2025

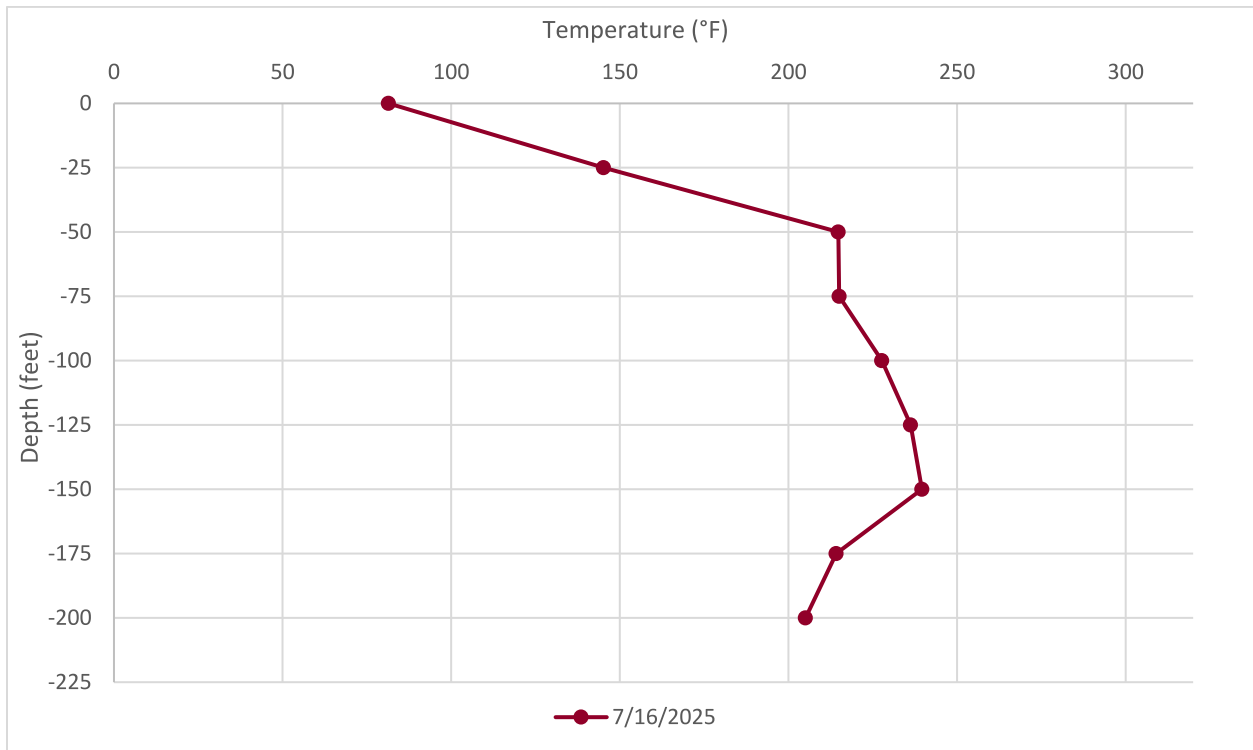


Figure B - 11 Average Temperatures Recorded by TP-5 on July 23, 2025

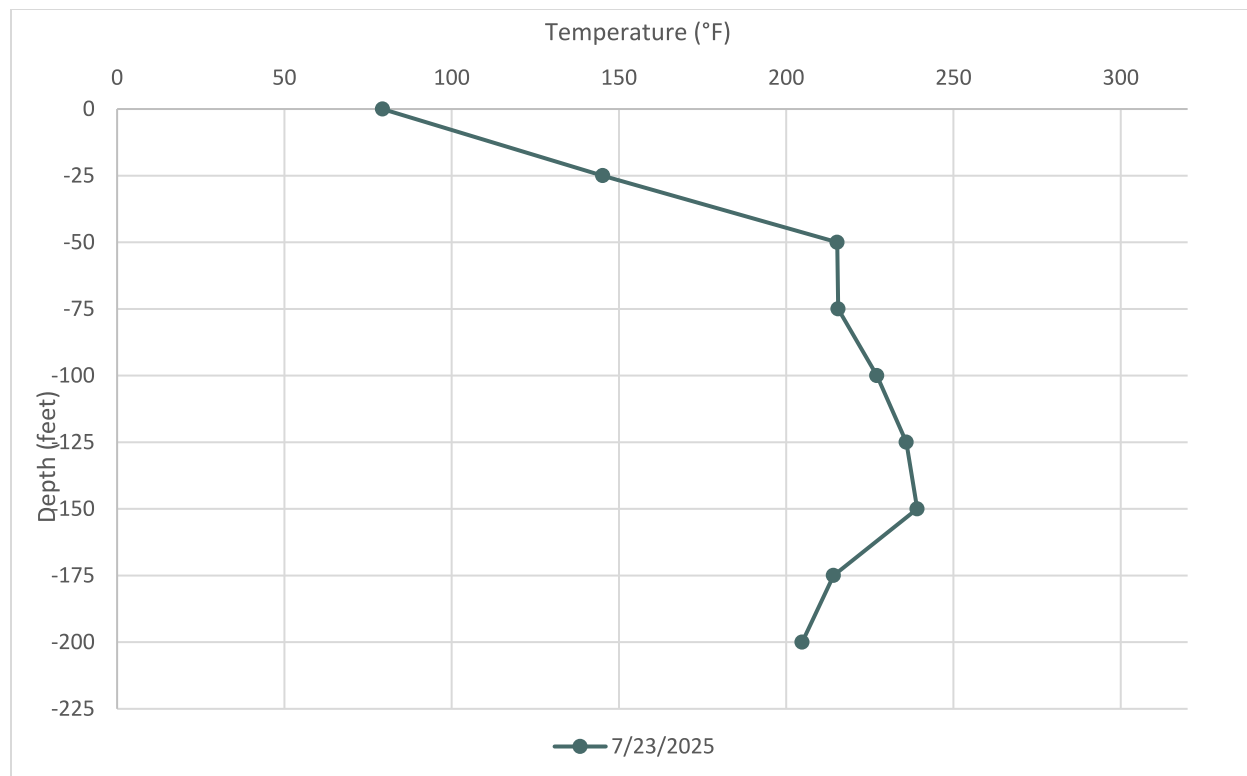


Figure B - 12 Average Temperatures Recorded by TP-5 on July 30, 2025

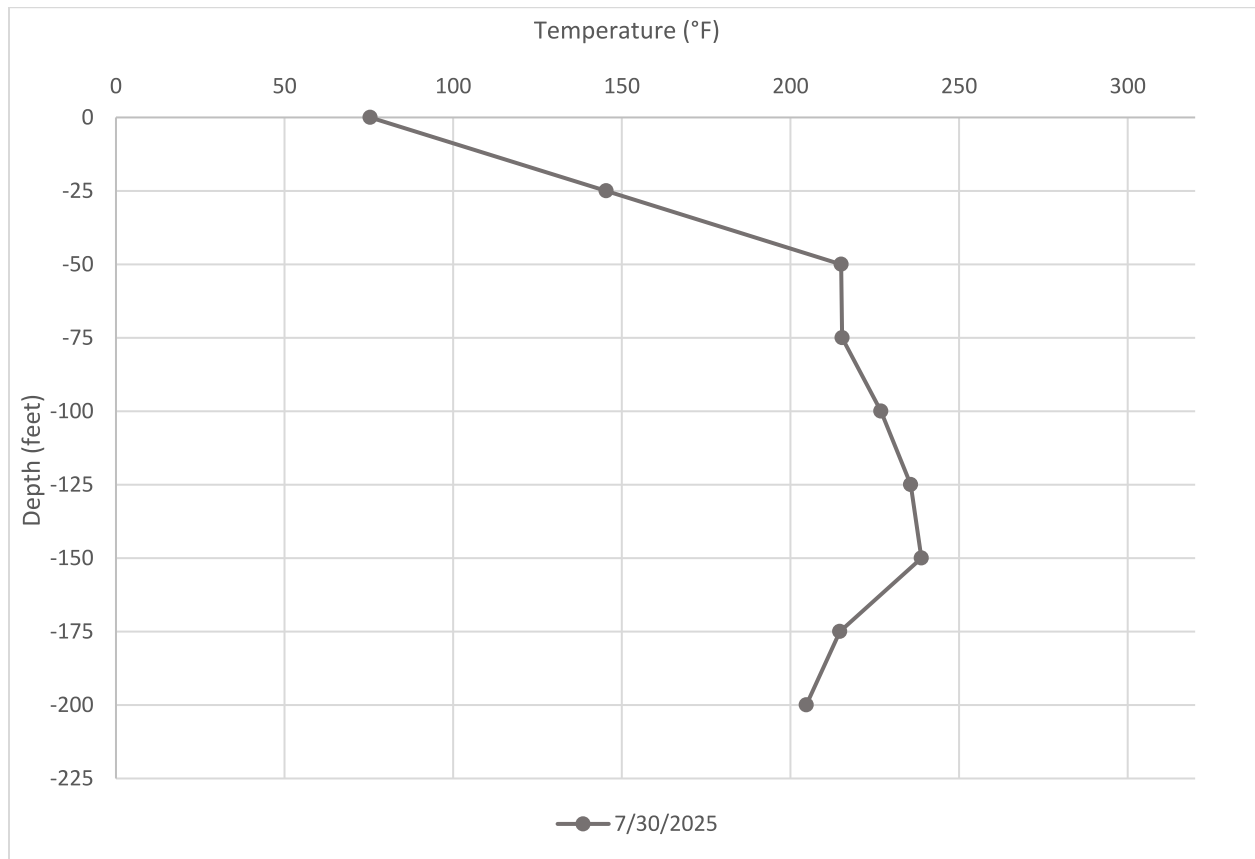


Figure B - 13 Average Temperatures Recorded by TP-6 on July 2, 2025

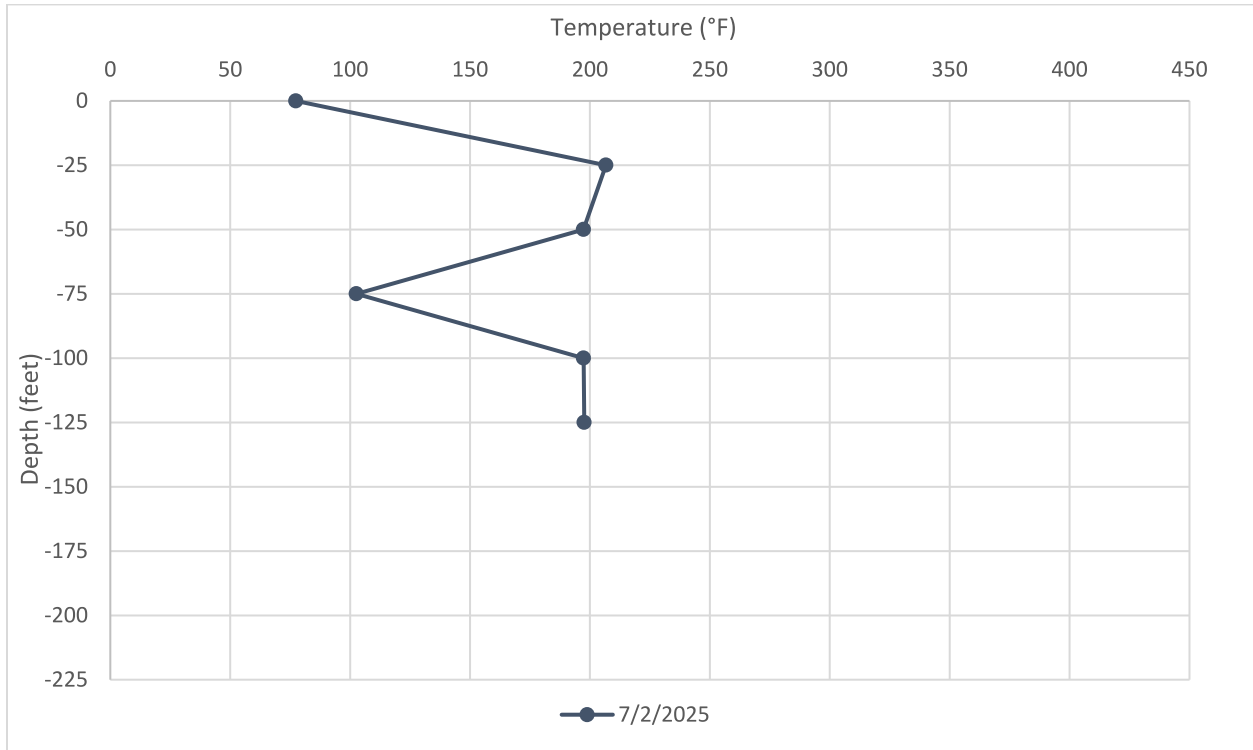


Figure B - 14 Average Temperatures Recorded by TP-6 on July 9, 2025

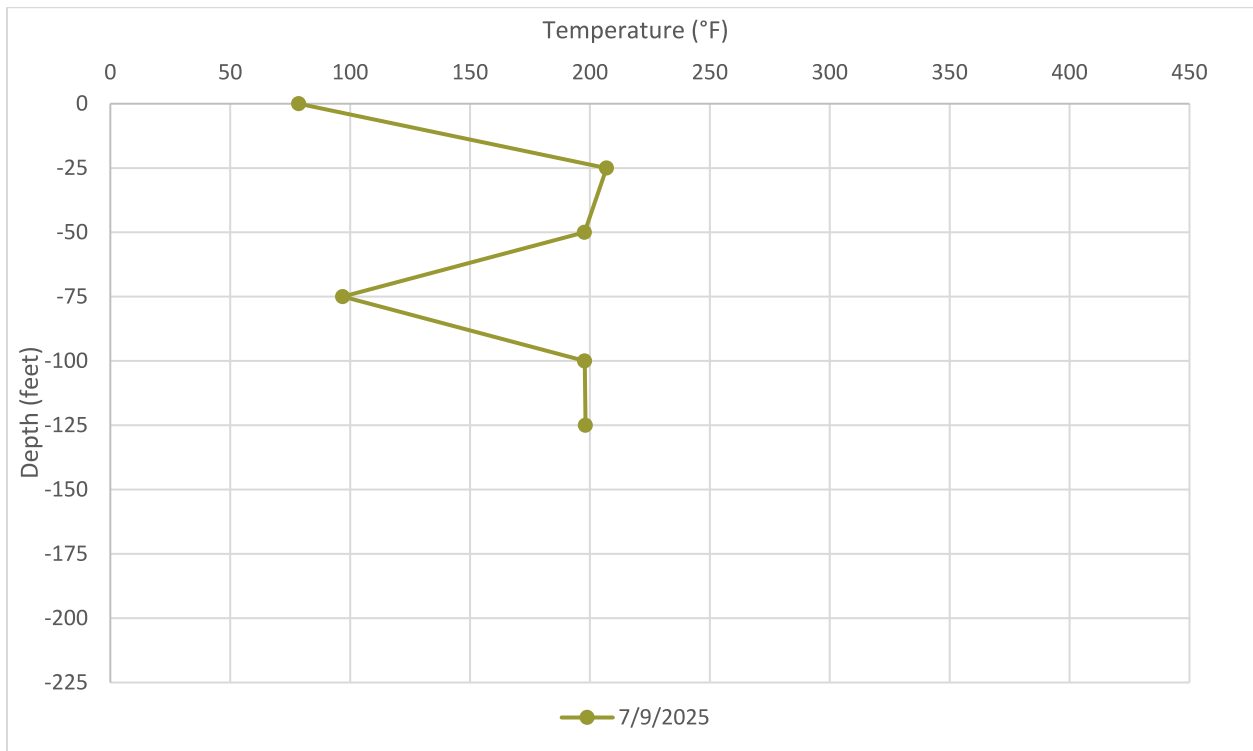


Figure B - 15 Average Temperatures Recorded by TP-6 on July 16, 2025

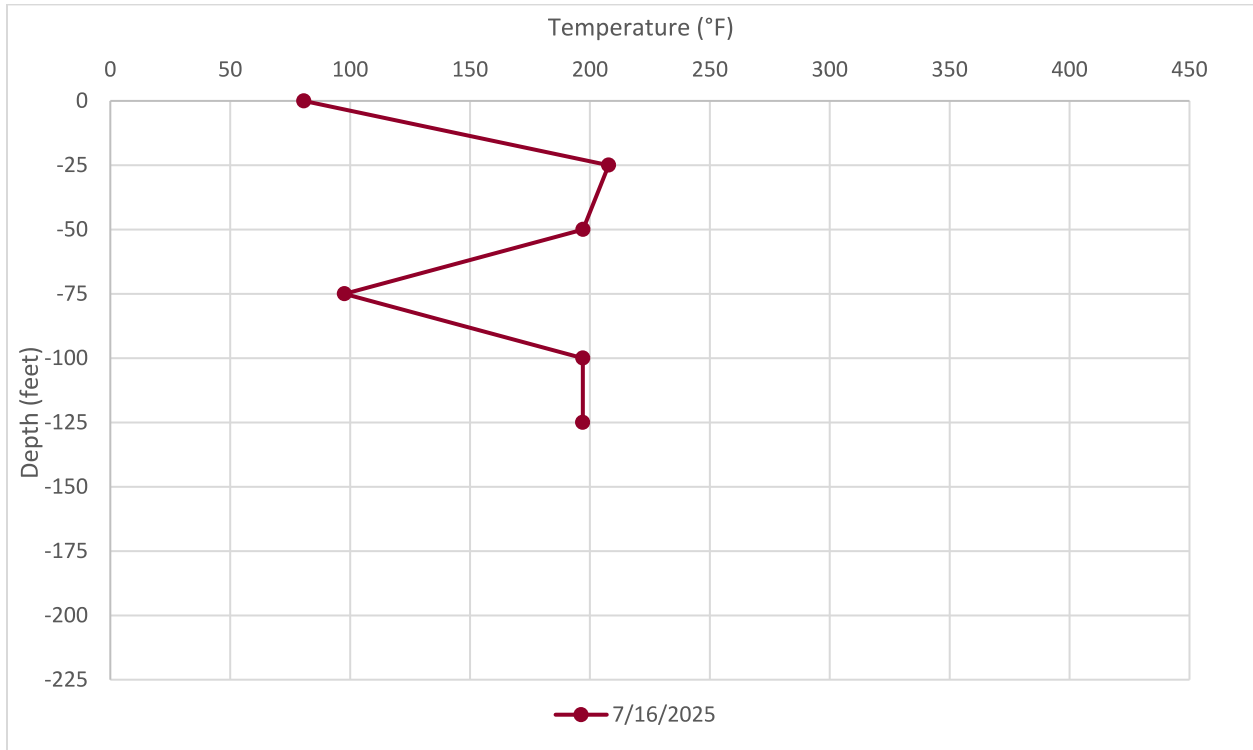


Figure B - 16 Average Temperatures Recorded by TP-6 on July 23, 2025

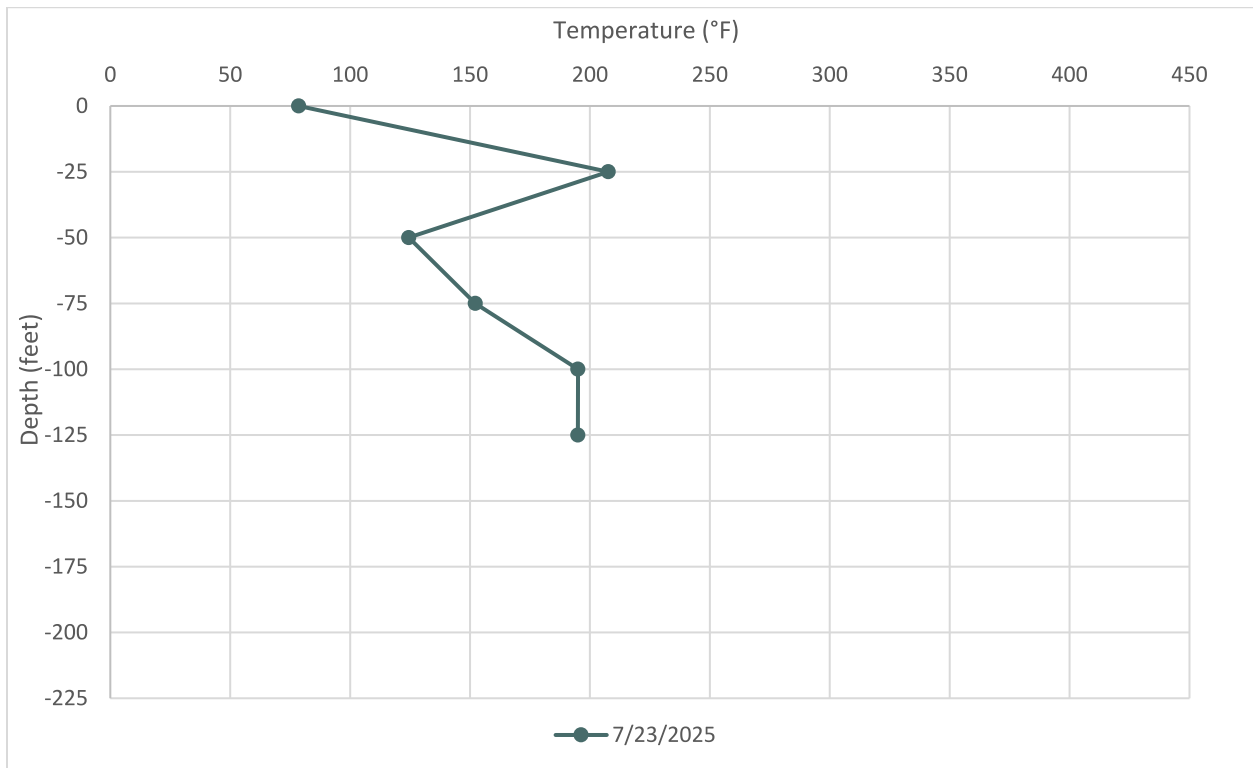


Figure B - 17 Average Temperatures Recorded by TP-6 on July 30, 2025

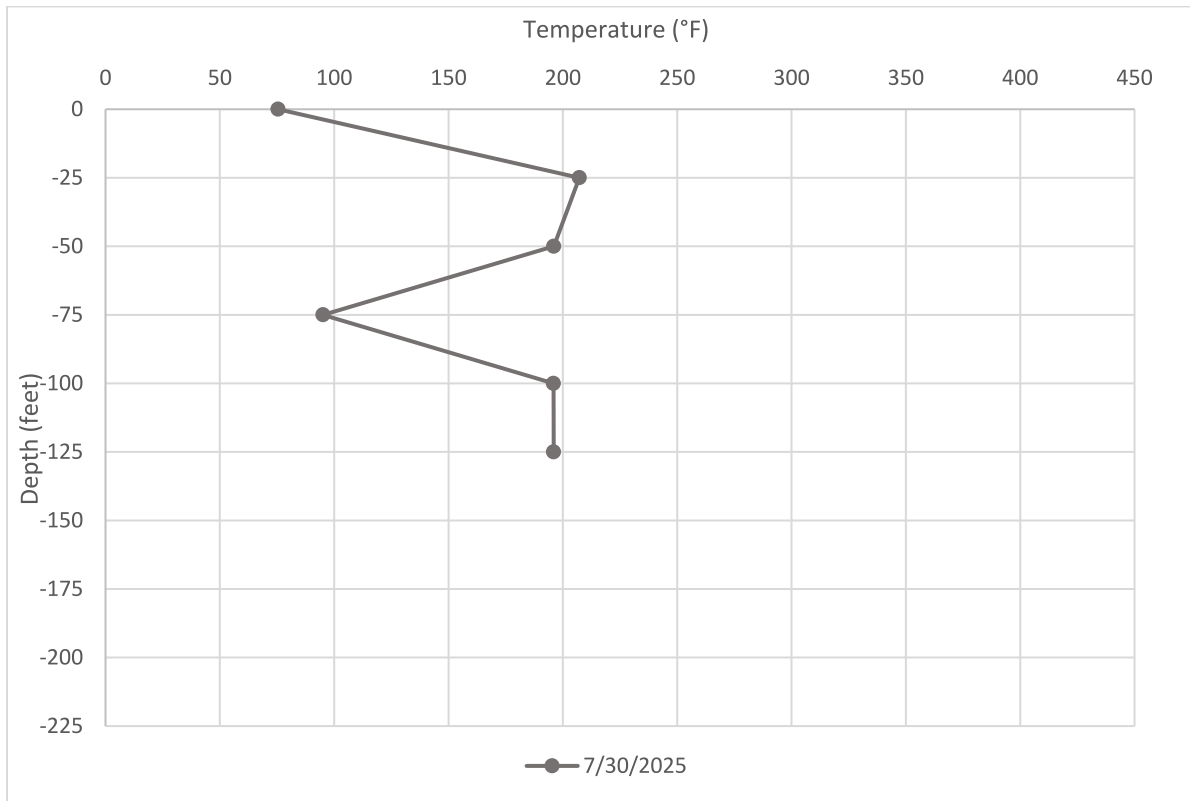


Figure B - 18 Average Temperatures Recorded by TP-7 on July 2, 2025

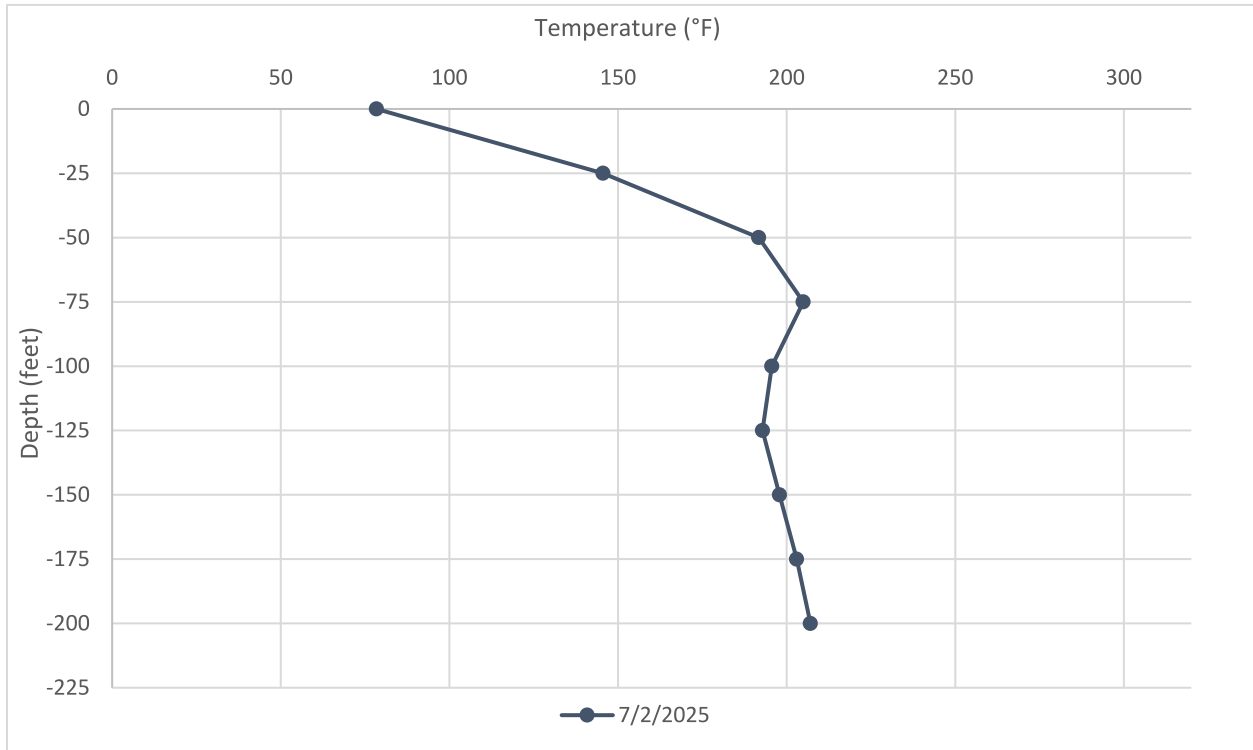


Figure B - 19 Average Temperatures Recorded by TP-7 on July 9, 2025

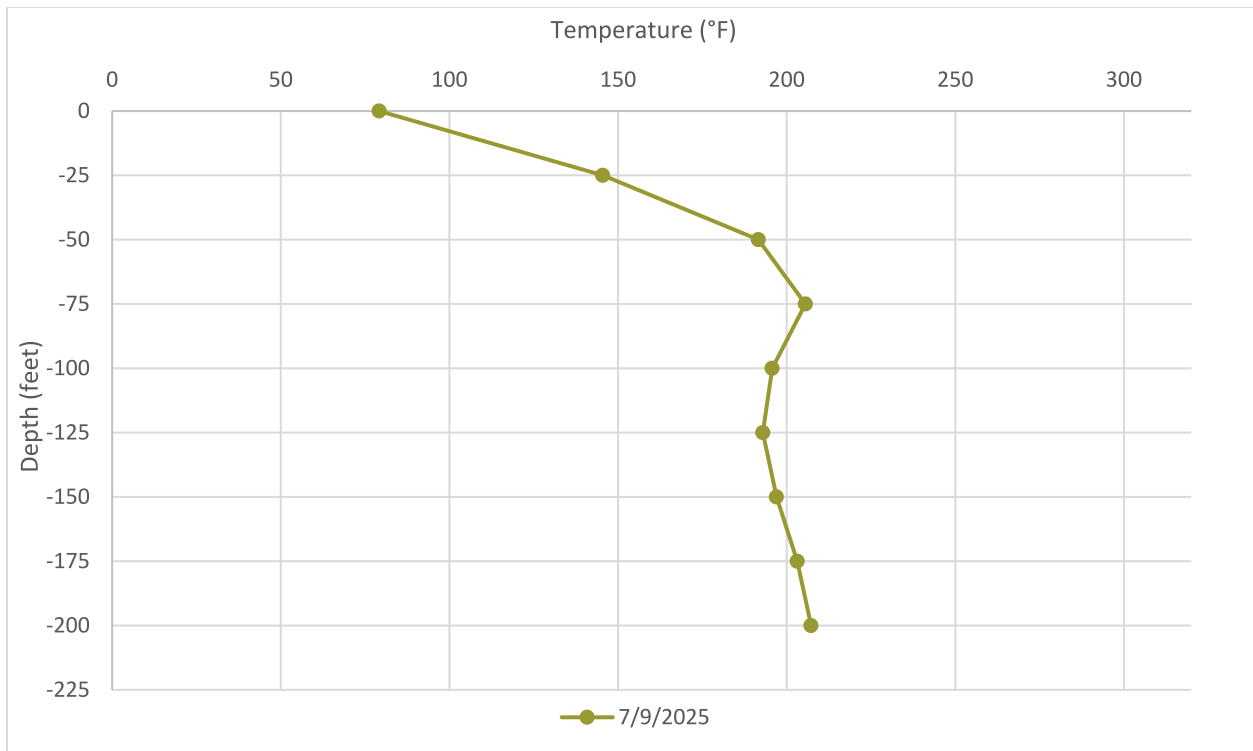


Figure B - 20 Average Temperatures Recorded by TP-7 on July 16, 2025

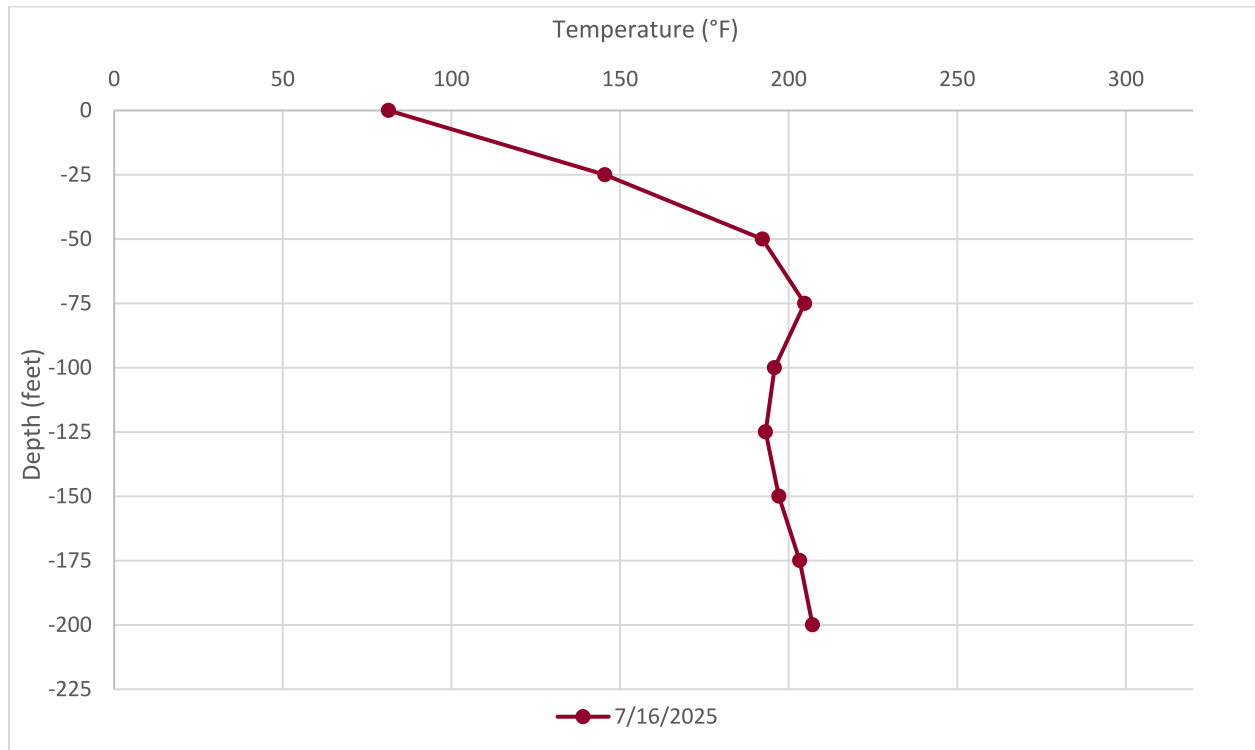


Figure B - 21 Average Temperatures Recorded by TP-7 on July 23, 2025

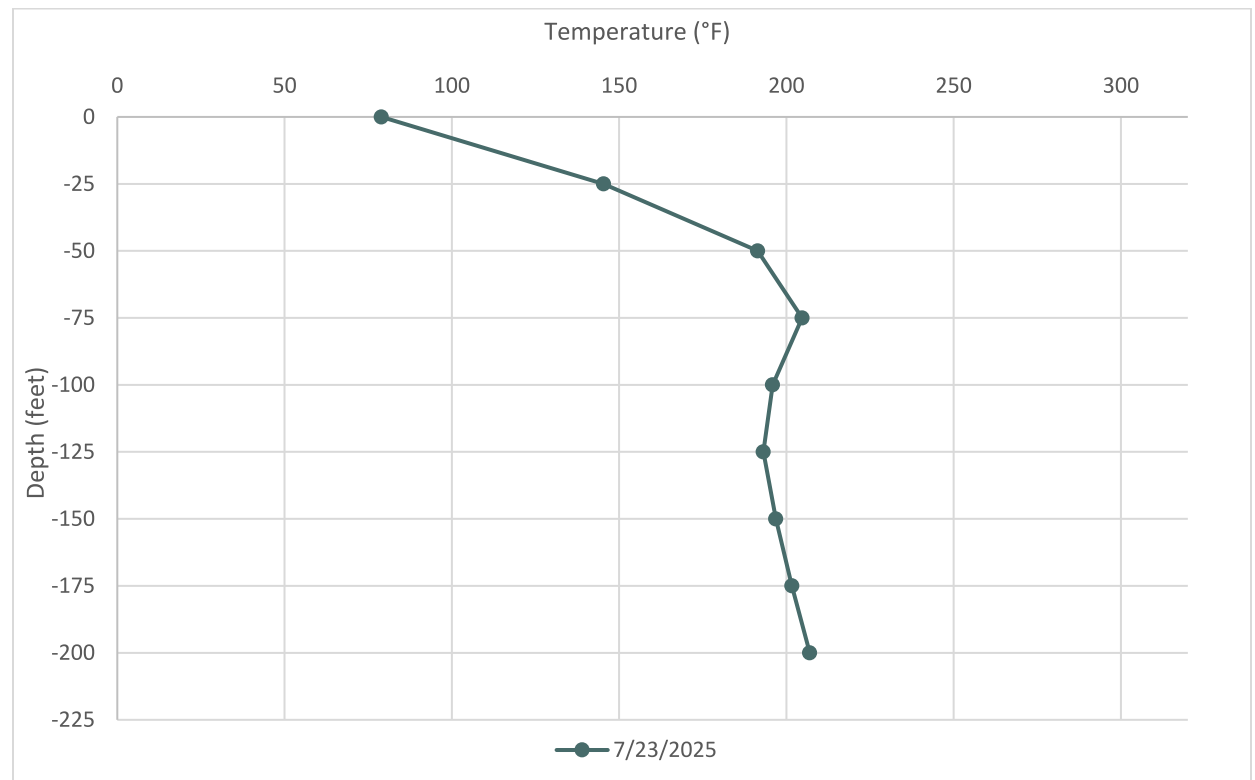


Figure B - 22 Average Temperatures Recorded by TP-7 on July 30, 2025

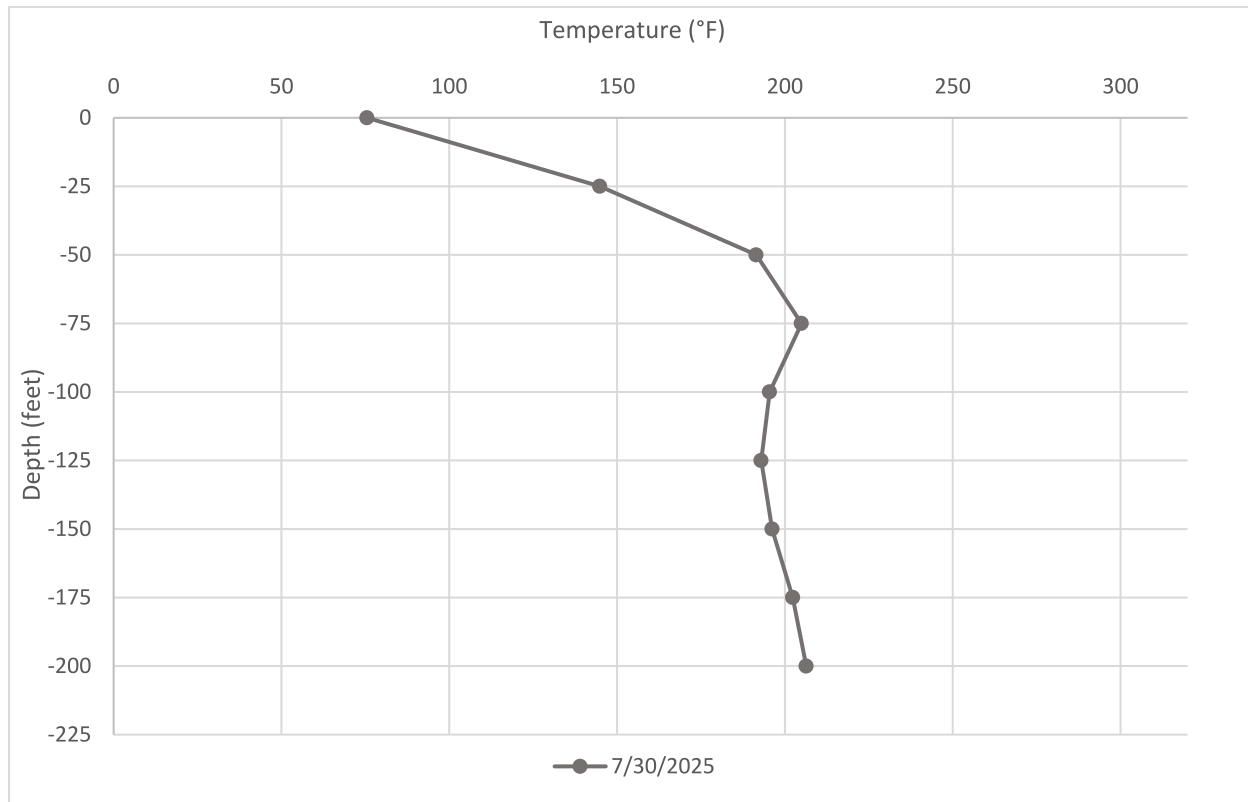


Figure B - 23 Average Temperatures Recorded by TP-8 on July 2, 2025

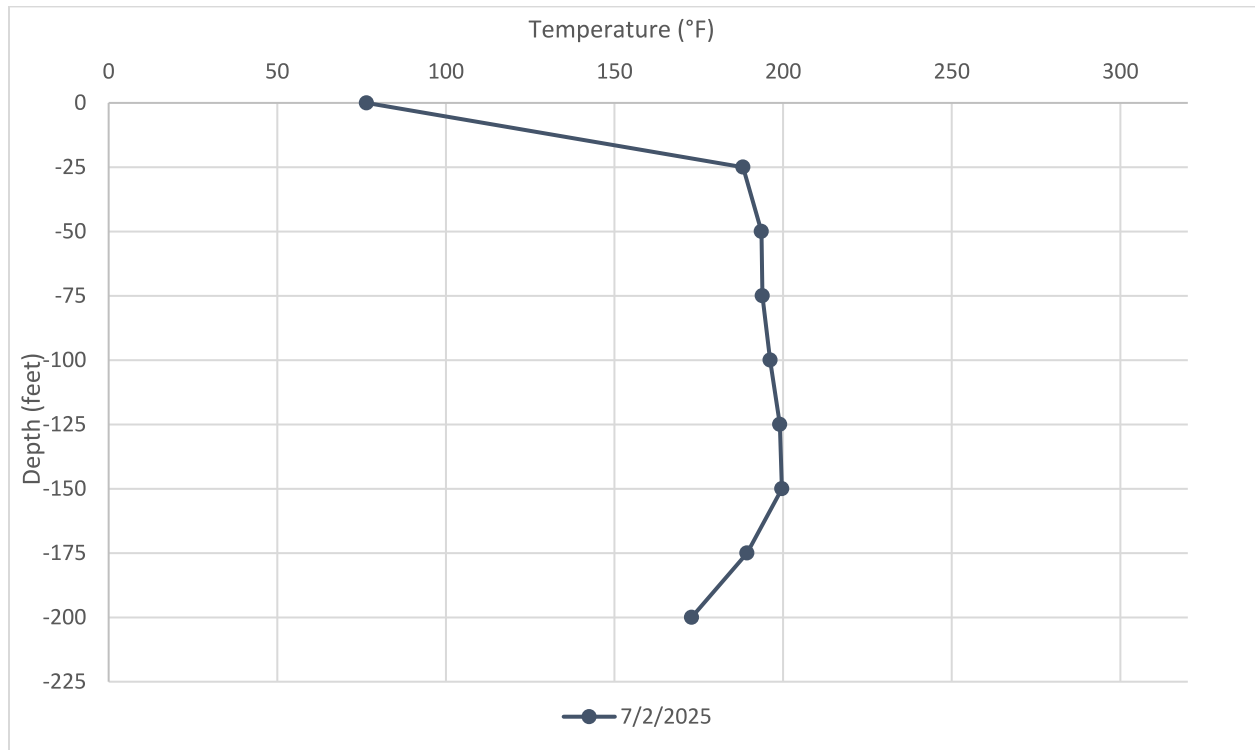


Figure B - 24 Average Temperatures Recorded by TP-8 on July 9, 2025

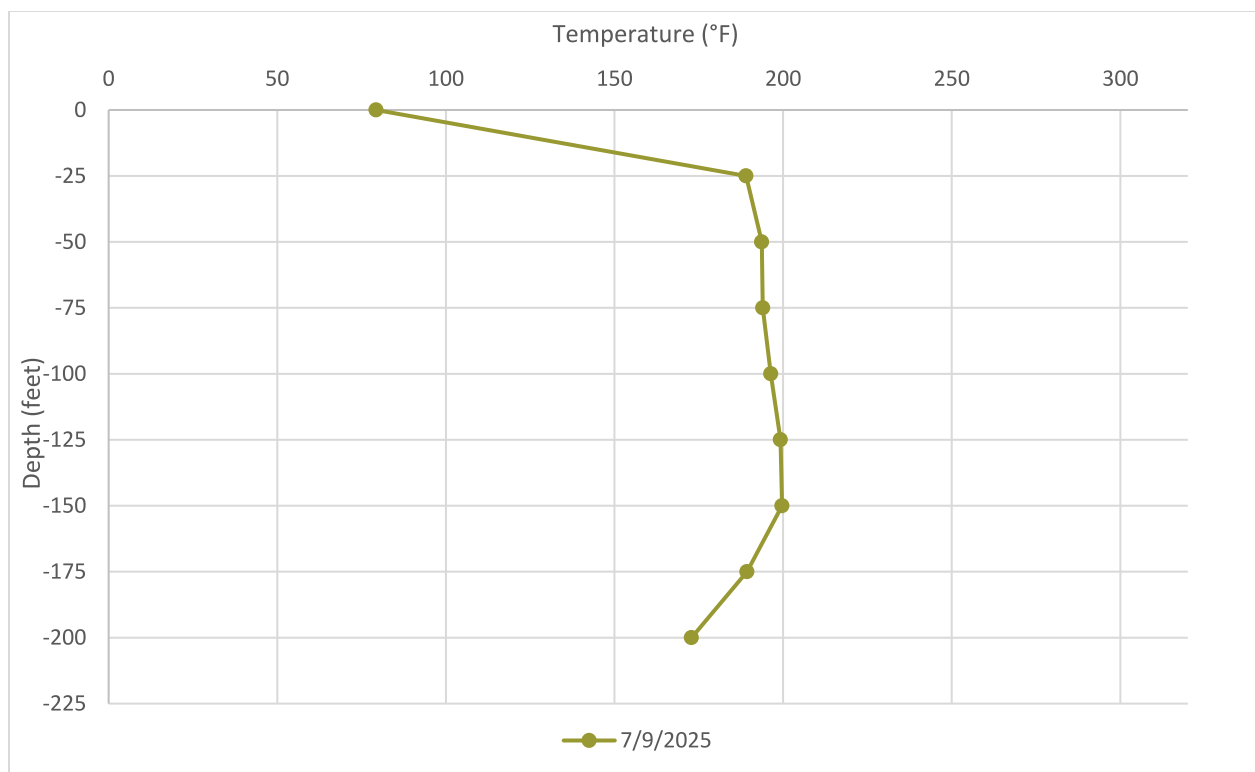


Figure B - 25 Average Temperatures Recorded by TP-8 on July 16, 2025

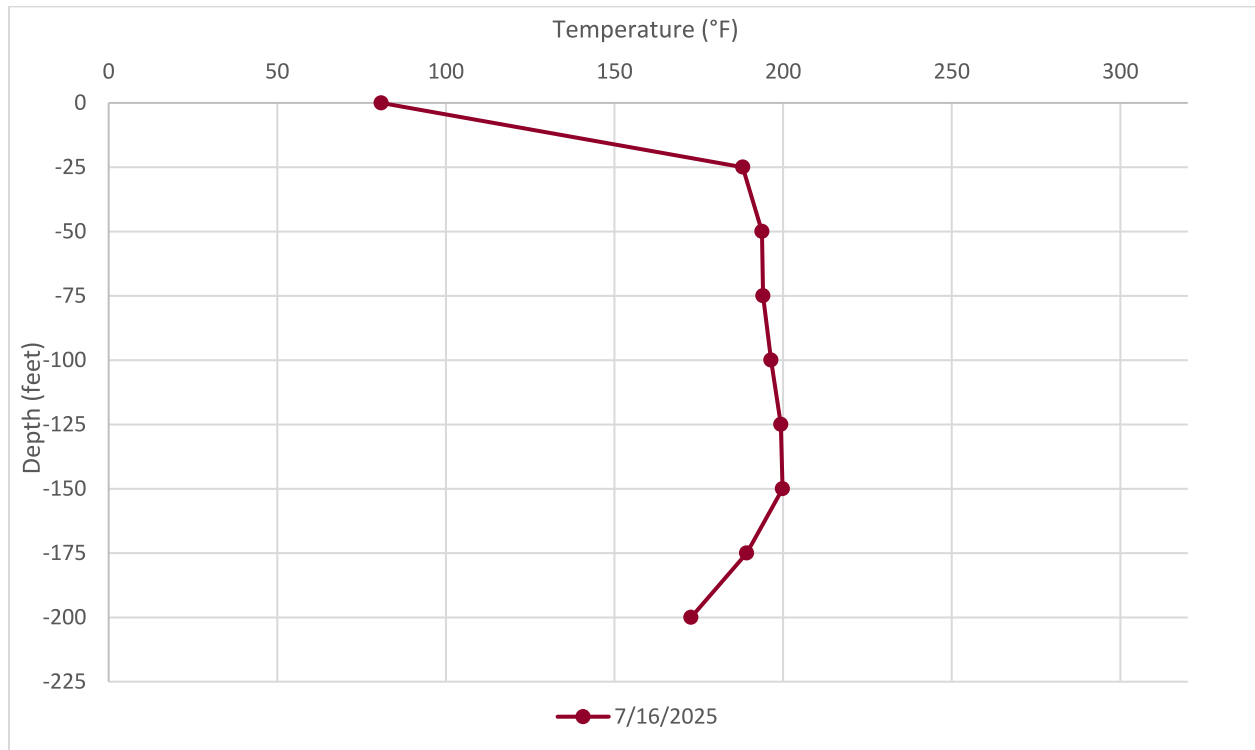


Figure B - 26 Average Temperatures Recorded by TP-8 on July 23, 2025

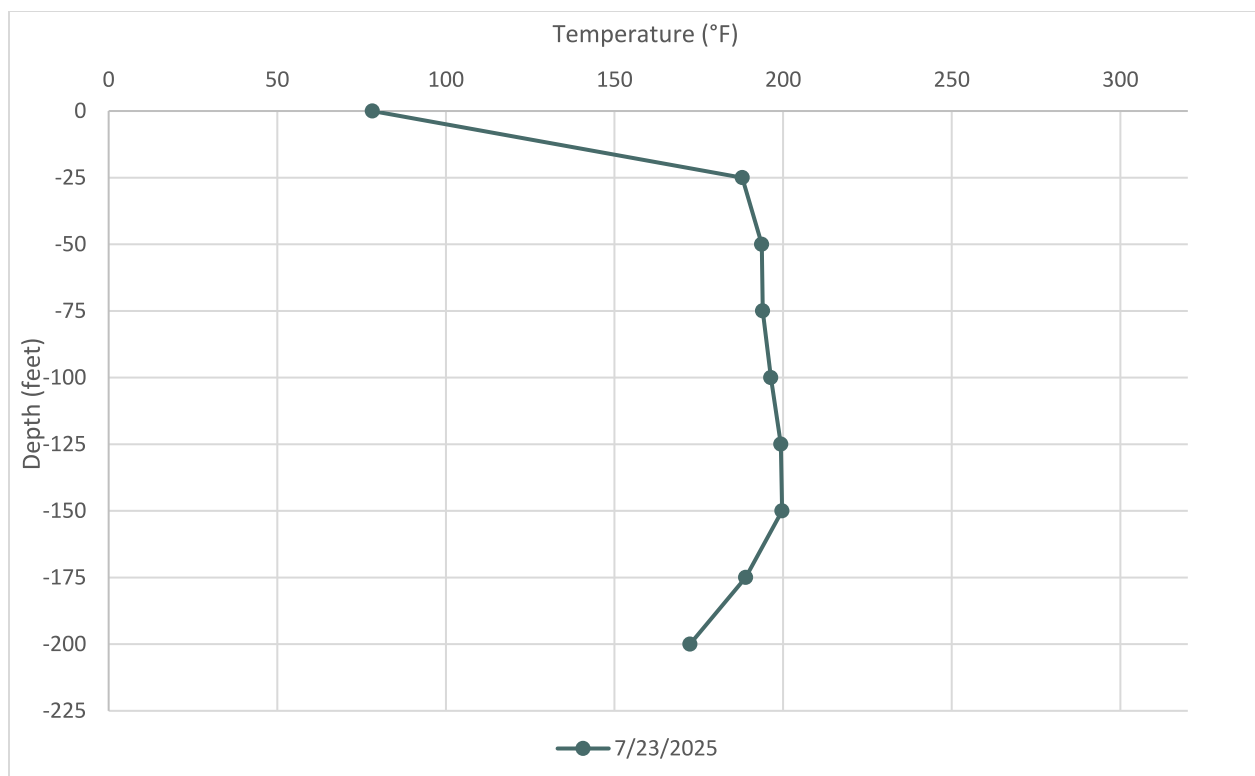


Figure B - 27 Average Temperatures Recorded by TP-8 on July 30, 2025

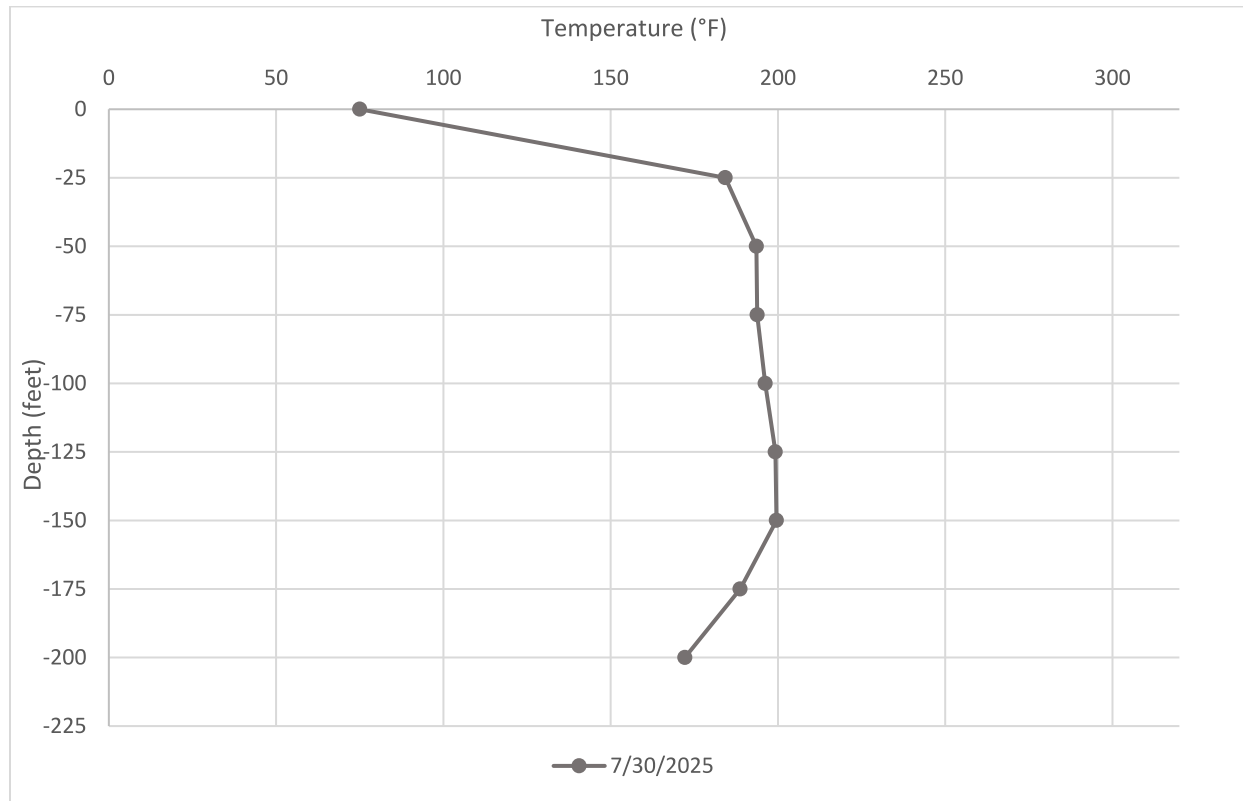


Figure B - 28 Average Temperatures Recorded by TP-9 on July 2, 2025

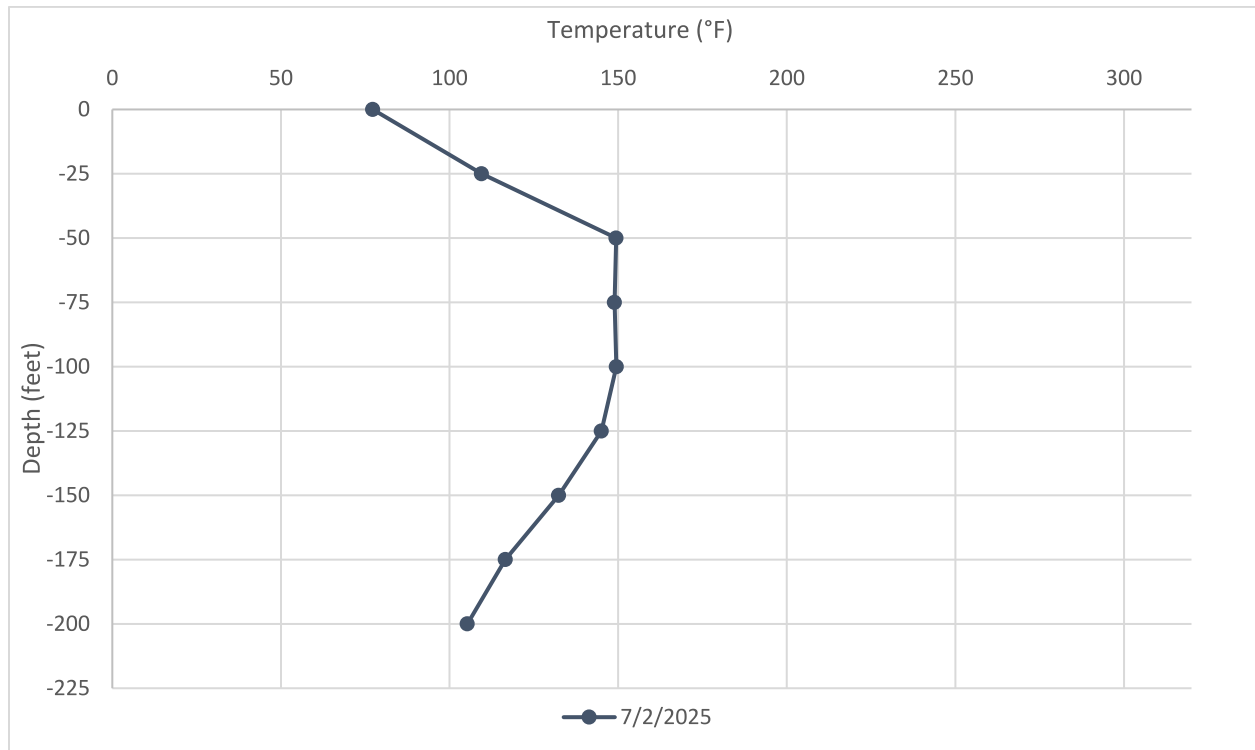


Figure B - 29 Average Temperatures Recorded by TP-9 on July 9, 2025

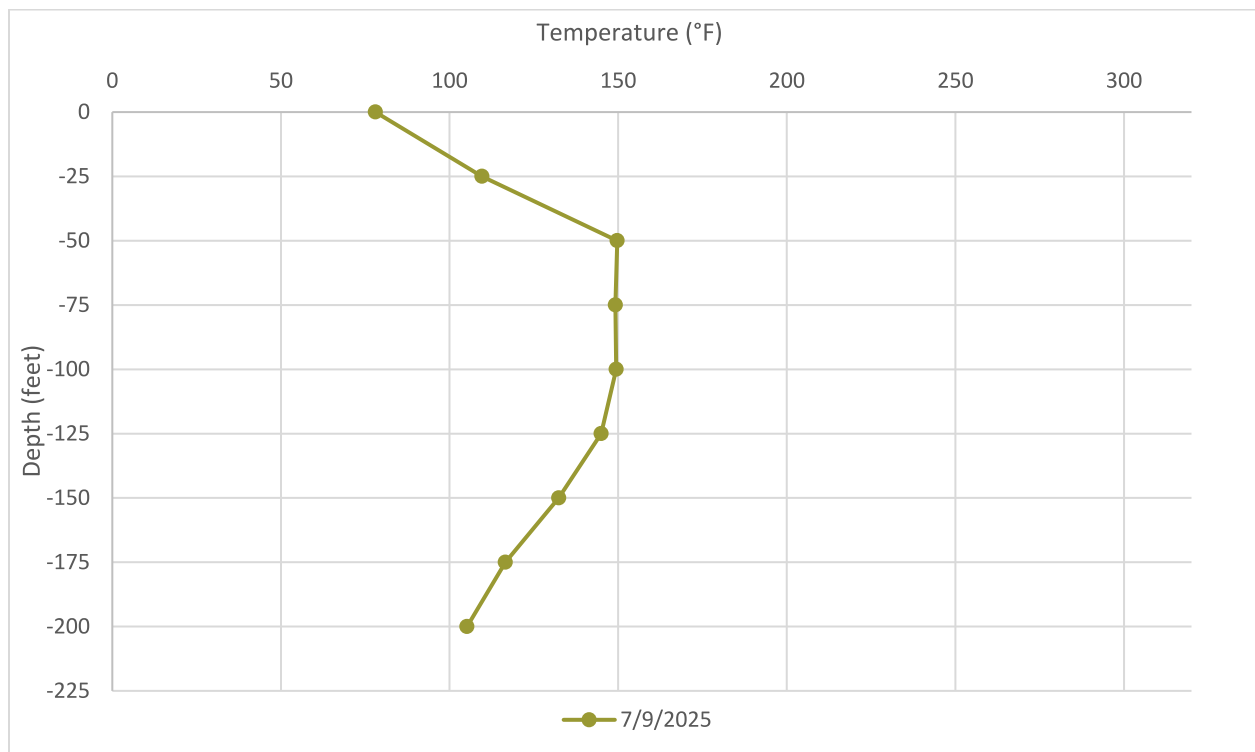


Figure B - 30 Average Temperatures Recorded by TP-9 on July 16, 2025

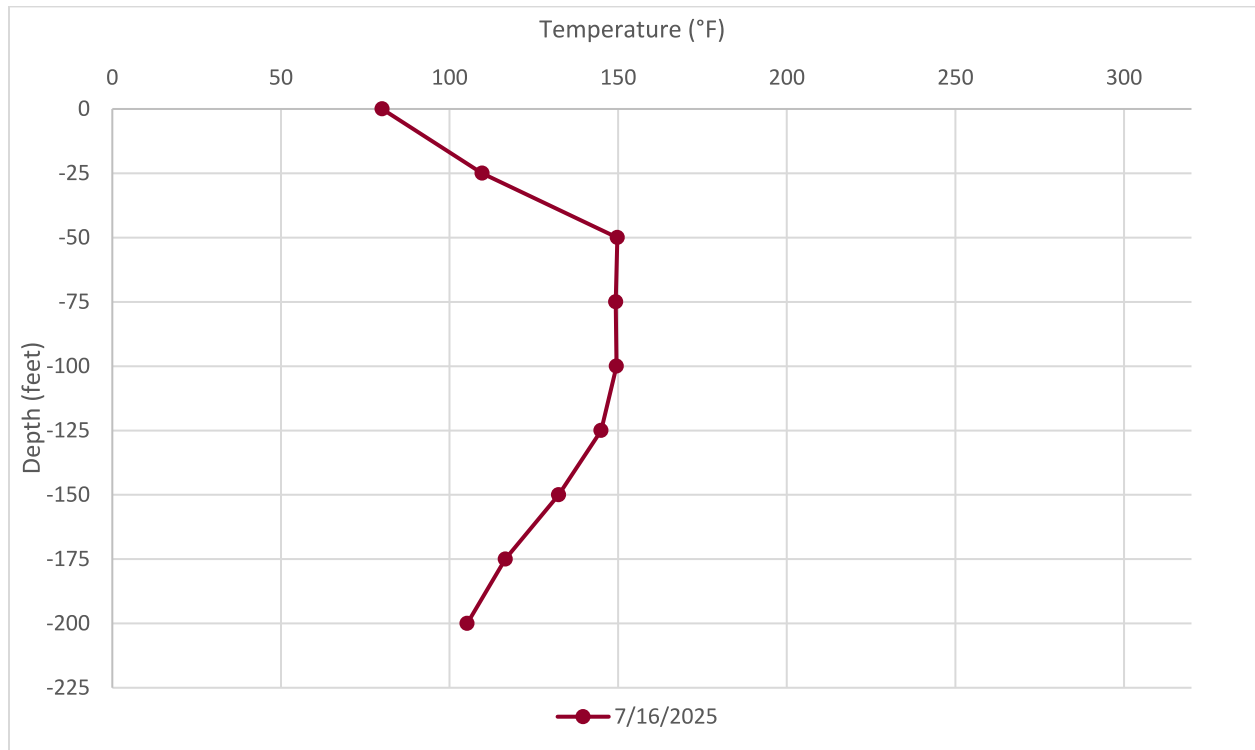


Figure B - 31 Average Temperatures Recorded by TP-9 on July 23, 2025

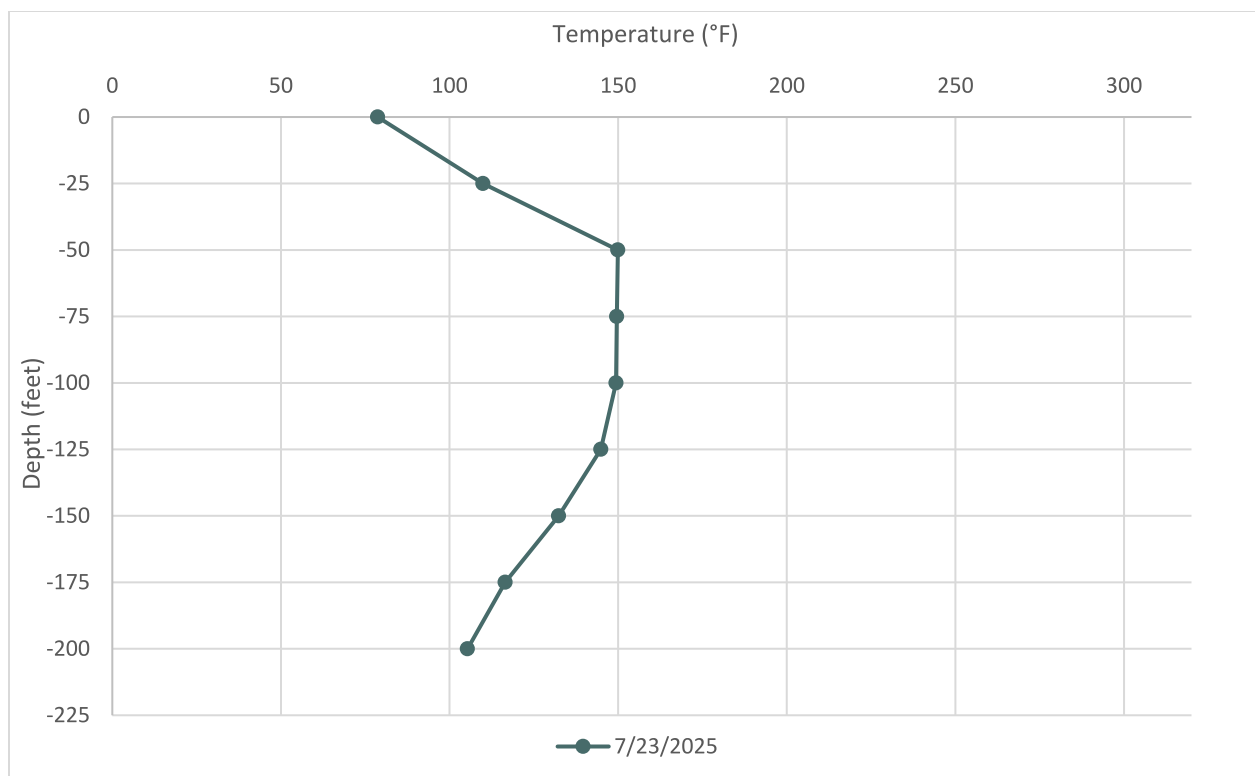
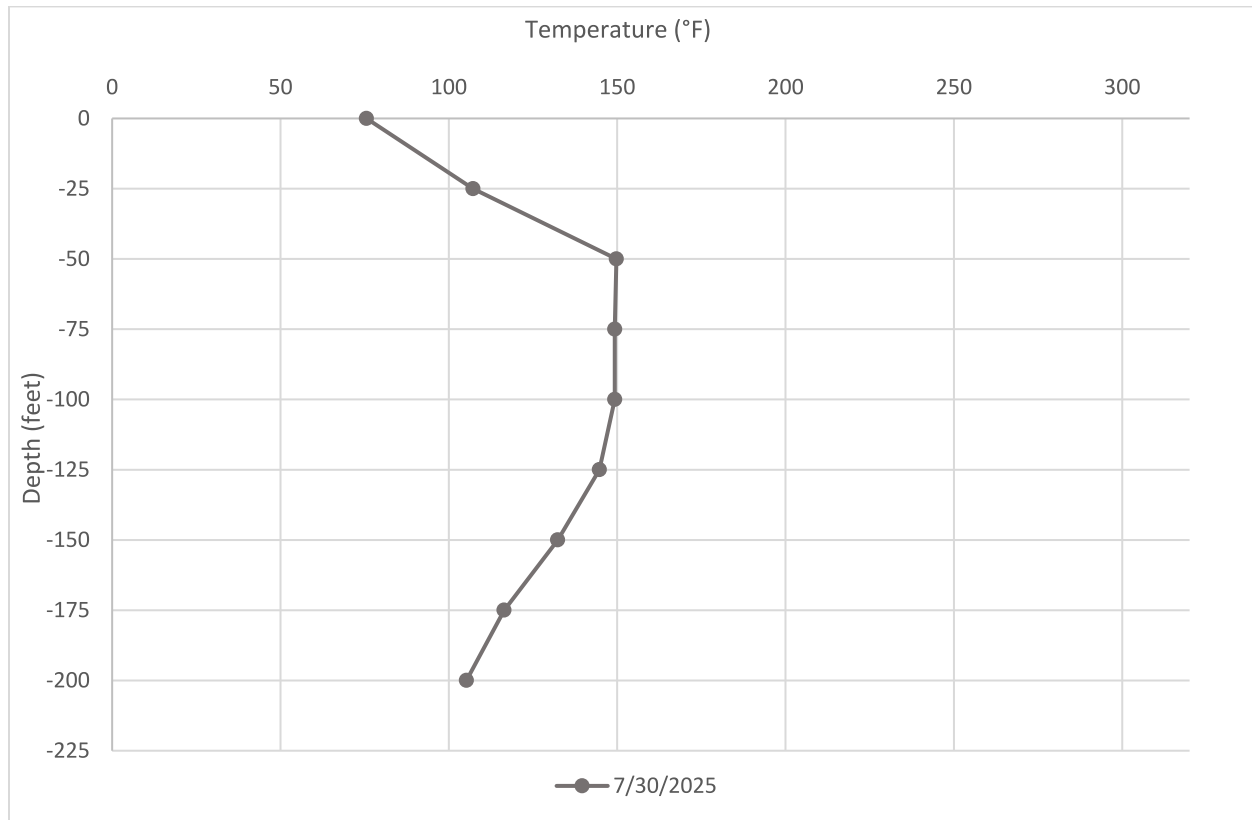


Figure B - 32 Average Temperatures Recorded by TP-9 on July 30, 2025





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 | August 4, 2025

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)
Jul 1	109.8	106.0	115.1
Jul 2	110.0	106.7	113.8
Jul 3	109.4	106.8	112.5
Jul 4	109.4	106.0	113.5
Jul 5	110.3	106.7	114.2
Jul 6	110.8	107.0	115.1
Jul 7	110.3	107.0	114.9
Jul 8	110.7	107.3	115.8
Jul 9	110.9	108.2	115.3
Jul 10	109.9	106.9	113.7
Jul 11	110.2	107.0	113.9
Jul 12	109.9	107.1	115.3
Jul 13	109.8	107.3	113.8
Jul 14	110.7	108.2	114.5
Jul 15	111.1	107.9	115.4
Jul 16	111.2	108.2	115.5
Jul 17	109.5	103.8	113.2
Jul 18	108.8	103.6	112.8
Jul 19	108.7	104.0	113.2
Jul 20	109.1	107.3	112.8
Jul 21	109.0	107.2	112.4
Jul 22	108.9	106.3	112.9
Jul 23	108.7	105.4	112.4
Jul 24	109.2	104.8	113.8
Jul 25	110.0	106.8	114.4
Jul 26	110.5	107.3	115.1
Jul 27	109.2	105.1	113.8
Jul 28	107.8	103.1	112.6
Jul 29	105.9	101.4	112.6
Jul 30	105.2	97.7	113.0
Summary	109.5	105.2	111.2

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 33B
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	79.6	70.6	99.1
Jul 2	83.5	68.6	100.3
Jul 3	82.5	64.7	102.5
Jul 4	83.8	64.8	105.0
Jul 5	85.5	67.4	104.3
Jul 6	84.9	66.9	103.8
Jul 7	85.9	67.4	104.5
Jul 8	87.1	70.0	105.8
Jul 9	84.4	71.1	103.0
Jul 10	78.8	71.4	95.4
Jul 11	84.0	68.1	102.7
Jul 12	82.5	70.3	105.6
Jul 13	79.9	69.5	98.2
Jul 14	85.2	70.2	104.0
Jul 15	86.8	69.2	105.4
Jul 16	86.2	71.8	103.4
Jul 17	84.1	71.4	102.6
Jul 18	81.3	69.1	97.4
Jul 19	79.3	70.2	96.6
Jul 20	82.4	74.5	95.6
Jul 21	79.4	72.2	93.9
Jul 22	83.3	71.8	102.9
Jul 23	85.2	70.0	103.1
Jul 24	86.1	67.0	106.9
Jul 25	87.0	69.6	104.8
Jul 26	89.7	73.2	108.9
Jul 27	83.7	73.8	103.0
Jul 28	81.5	71.3	102.5
Jul 29	82.9	70.7	107.8
Jul 30	82.1	71.5	106.7
Summary	83.6	78.8	89.7

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

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	79.4	71.9	95.9
Jul 2	82.8	70.2	99.7
Jul 3	82.0	67.1	99.2
Jul 4	83.2	67.1	103.8
Jul 5	86.3	69.3	105.1
Jul 6	84.5	68.8	104.7
Jul 7	84.2	69.1	103.5
Jul 8	85.6	71.1	105.7
Jul 9	83.7	72.4	100.6
Jul 10	79.5	72.9	91.7
Jul 11	82.4	69.9	100.5
Jul 12	82.4	72.0	102.4
Jul 13	79.8	71.8	94.6
Jul 14	84.1	72.3	101.0
Jul 15	86.1	71.5	103.8
Jul 16	85.5	73.2	102.4
Jul 17	83.2	73.6	101.4
Jul 18	80.8	71.7	97.9
Jul 19	79.6	72.6	94.7
Jul 20	81.9	76.0	93.9
Jul 21	79.5	74.1	93.0
Jul 22	83.6	74.2	100.7
Jul 23	85.2	72.3	101.4
Jul 24	85.9	69.4	107.3
Jul 25	86.7	71.9	102.5
Jul 26	89.3	74.9	107.7
Jul 27	83.8	75.6	100.7
Jul 28	81.3	73.6	100.2
Jul 29	83.7	73.1	105.9
Jul 30	82.5	73.3	106.4
Summary	83.3	79.4	89.3

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 38
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	107.0	104.5	110.7
Jul 2	108.1	104.5	111.7
Jul 3	108.2	104.9	112.0
Jul 4	108.2	103.8	113.3
Jul 5	108.6	104.9	113.0
Jul 6	108.5	104.5	113.3
Jul 7	108.7	104.8	113.3
Jul 8	109.5	106.0	113.8
Jul 9	108.9	105.8	112.9
Jul 10	108.0	105.9	111.3
Jul 11	109.5	106.8	113.1
Jul 12	110.0	107.5	113.8
Jul 13	109.1	106.5	112.9
Jul 14	109.6	106.7	113.5
Jul 15	110.7	107.4	114.1
Jul 16	110.8	107.9	114.0
Jul 17	110.1	106.7	114.1
Jul 18	109.5	106.1	112.9
Jul 19	109.4	107.4	112.9
Jul 20	109.6	108.3	112.3
Jul 21	109.6	108.2	112.2
Jul 22	110.4	108.6	114.1
Jul 23	110.7	108.5	114.4
Jul 24	111.1	107.5	115.5
Jul 25	111.3	108.5	114.9
Jul 26	112.0	108.9	115.8
Jul 27	110.9	107.6	115.1
Jul 28	110.7	108.3	114.8
Jul 29	111.2	107.6	115.3
Jul 30	111.4	107.9	115.7
Summary	109.7	107.0	112.0

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 42
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	120.3	118.6	121.6
Jul 2	120.6	119.5	121.8
Jul 3	120.5	119.3	121.9
Jul 4	120.6	119.3	122.0
Jul 5	120.8	119.5	122.1
Jul 6	120.7	119.6	122.0
Jul 7	120.7	119.7	121.9
Jul 8	120.7	119.6	122.1
Jul 9	120.6	119.4	121.9
Jul 10	120.5	119.6	121.5
Jul 11	120.7	119.8	122.0
Jul 12	120.7	119.7	122.3
Jul 13	120.6	119.5	122.3
Jul 14	121.1	120.0	122.3
Jul 15	121.1	120.0	122.4
Jul 16	121.2	120.2	122.5
Jul 17	121.0	119.7	122.6
Jul 18	121.0	120.2	122.0
Jul 19	121.0	120.5	122.1
Jul 20	121.1	120.6	121.7
Jul 21	121.1	120.5	122.1
Jul 22	121.5	120.8	122.7
Jul 23	121.8	120.5	123.1
Jul 24	121.9	120.7	123.4
Jul 25	122.0	120.9	123.4
Jul 26	122.3	121.2	123.7
Jul 27	122.0	121.1	123.4
Jul 28	122.0	121.0	123.7
Jul 29	122.1	120.5	123.5
Jul 30	122.0	120.1	123.8
Summary	121.1	120.3	122.3

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 47

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	85.0	77.4	96.5
Jul 2	88.3	78.1	99.8
Jul 3	88.1	77.1	101.1
Jul 4	88.5	76.1	102.0
Jul 5	89.9	78.4	104.4
Jul 6	89.2	76.8	103.7
Jul 7	88.8	76.5	102.2
Jul 8	90.3	77.8	104.3
Jul 9	88.7	79.6	102.6
Jul 10	85.5	79.4	97.6
Jul 11	87.1	76.1	101.0
Jul 12	87.3	78.9	102.2
Jul 13	85.5	78.9	101.9
Jul 14	87.8	78.0	100.3
Jul 15	89.8	77.2	104.3
Jul 16	90.2	79.5	101.8
Jul 17	87.4	76.3	102.5
Jul 18	85.0	75.9	95.9
Jul 19	83.9	76.0	96.1
Jul 20	86.4	81.0	98.6
Jul 21	83.6	78.0	95.3
Jul 22	86.6	79.1	100.7
Jul 23	87.1	76.9	101.0
Jul 24	87.7	73.7	104.2
Jul 25	87.8	76.3	101.2
Jul 26	89.3	76.1	106.3
Jul 27	84.4	77.0	101.3
Jul 28	86.3	79.3	101.6
Jul 29	88.1	79.6	104.5
Jul 30	88.3	80.9	103.9
Summary	87.4	83.6	90.3

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 48

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	77.7	69.5	94.0
Jul 2	80.7	66.0	98.5
Jul 3	80.0	62.6	97.3
Jul 4	80.5	62.7	101.0
Jul 5	82.6	65.1	102.9
Jul 6	82.1	64.0	102.6
Jul 7	81.8	64.7	99.9
Jul 8	83.3	67.4	102.2
Jul 9	81.8	69.3	99.6
Jul 10	78.1	70.0	94.8
Jul 11	81.2	65.8	98.4
Jul 12	79.3	68.3	100.4
Jul 13	78.6	67.9	96.4
Jul 14	81.5	68.3	98.9
Jul 15	83.7	66.9	102.4
Jul 16	83.7	69.3	99.1
Jul 17	81.7	70.4	99.0
Jul 18	78.8	67.4	93.7
Jul 19	77.6	68.8	92.3
Jul 20	80.9	73.4	93.7
Jul 21	76.9	70.3	91.5
Jul 22	81.1	70.5	99.8
Jul 23	81.2	67.5	97.7
Jul 24	82.4	64.3	103.2
Jul 25	83.8	67.1	103.0
Jul 26	85.4	70.7	104.0
Jul 27	81.4	71.9	97.8
Jul 28	78.9	70.5	99.0
Jul 29	80.8	69.2	101.8
Jul 30	80.4	71.0	102.7
Summary	80.9	76.9	85.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 49

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	91.9	72.8	122.0
Jul 2	126.1	68.8	169.8
Jul 3	164.6	163.3	166.0
Jul 4	162.7	161.3	164.6
Jul 5	161.9	160.4	163.1
Jul 6	161.2	159.6	162.8
Jul 7	150.0	113.1	161.4
Jul 8	93.2	76.1	110.6
Jul 9	83.9	72.4	99.1
Jul 10	119.5	74.0	170.1
Jul 11	163.9	161.8	165.5
Jul 12	161.7	158.4	163.9
Jul 13	159.1	147.0	161.0
Jul 14	117.8	96.6	145.2
Jul 15	99.0	86.3	114.1
Jul 16	92.7	80.6	109.8
Jul 17	108.8	76.2	172.1
Jul 18	125.2	82.6	169.6
Jul 19	94.6	86.7	109.4
Jul 20	89.4	83.7	98.7
Jul 21	83.8	76.6	96.4
Jul 22	116.6	76.1	173.6
Jul 23	91.2	76.9	102.9
Jul 24	87.2	70.1	106.7
Jul 25	120.7	72.6	174.3
Jul 26	99.9	86.8	116.6
Jul 27	87.1	73.7	109.7
Jul 28	116.5	70.6	173.5
Jul 29	133.0	79.0	173.8
Jul 30	126.7	82.1	173.6
Summary	119.7	83.8	164.6

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 50
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	85.7	77.0	95.9
Jul 2	104.2	73.3	130.4
Jul 3	122.4	119.0	127.3
Jul 4	118.3	115.7	121.0
Jul 5	116.8	114.2	119.6
Jul 6	115.6	113.6	118.9
Jul 7	110.1	94.4	117.1
Jul 8	91.3	80.6	103.7
Jul 9	87.0	78.2	101.0
Jul 10	101.8	79.3	130.0
Jul 11	118.3	115.5	120.7
Jul 12	114.7	112.0	117.4
Jul 13	111.6	99.6	115.4
Jul 14	91.7	83.7	99.9
Jul 15	87.5	75.5	101.5
Jul 16	86.5	75.1	98.8
Jul 17	89.7	74.8	121.8
Jul 18	92.3	73.9	117.4
Jul 19	83.0	77.3	94.3
Jul 20	83.4	78.1	93.1
Jul 21	80.4	75.1	91.3
Jul 22	92.0	75.1	125.6
Jul 23	85.3	74.7	97.2
Jul 24	84.5	70.1	100.9
Jul 25	93.6	72.3	126.4
Jul 26	87.8	76.5	101.8
Jul 27	82.8	74.6	97.4
Jul 28	90.8	71.5	124.7
Jul 29	96.2	74.6	126.0
Jul 30	96.8	77.7	122.9
Summary	96.7	80.4	122.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 51

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	78.9	70.2	96.4
Jul 2	81.6	67.7	96.2
Jul 3	80.4	65.1	98.2
Jul 4	80.9	64.2	101.5
Jul 5	83.6	67.6	103.3
Jul 6	83.0	65.7	103.6
Jul 7	83.1	66.3	103.2
Jul 8	85.5	68.8	104.9
Jul 9	83.7	71.0	101.8
Jul 10	79.1	72.0	93.8
Jul 11	81.8	67.1	100.8
Jul 12	81.8	69.9	103.1
Jul 13	79.2	69.7	97.3
Jul 14	82.1	69.6	99.9
Jul 15	84.5	68.1	103.1
Jul 16	84.8	70.4	101.6
Jul 17	82.5	71.4	100.6
Jul 18	80.3	68.3	96.8
Jul 19	78.8	69.9	95.0
Jul 20	81.6	74.6	94.2
Jul 21	78.0	71.2	91.2
Jul 22	81.2	71.1	97.8
Jul 23	82.2	68.1	101.4
Jul 24	82.6	65.2	105.3
Jul 25	83.4	68.0	102.0
Jul 26	86.0	71.1	104.0
Jul 27	81.2	72.1	94.6
Jul 28	79.3	71.0	97.8
Jul 29	80.6	69.8	101.0
Jul 30	80.4	71.0	102.6
Summary	81.7	78.0	86.0

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 52
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	162.0	158.8	163.6
Jul 2	161.3	160.1	162.4
Jul 3	159.7	157.5	161.6
Jul 4	160.8	158.3	163.6
Jul 5	162.2	160.2	164.1
Jul 6	163.0	161.3	164.8
Jul 7	161.5	161.7	165.0
Jul 8	161.8	70.0	165.3
Jul 9	163.8	162.7	164.8
Jul 10	162.7	159.0	163.8
Jul 11	164.0	162.6	166.0
Jul 12	163.9	162.5	165.7
Jul 13	163.6	162.2	165.1
Jul 14	164.2	163.5	165.1
Jul 15	164.7	163.2	166.3
Jul 16	164.7	163.5	165.8
Jul 17	164.0	161.8	165.5
Jul 18	164.0	160.7	165.5
Jul 19	163.7	161.8	165.0
Jul 20	164.2	163.4	165.3
Jul 21	164.0	161.4	166.9
Jul 22	164.0	162.4	165.6
Jul 23	165.1	163.7	166.4
Jul 24	165.4	163.6	167.2
Jul 25	166.2	163.5	169.4
Jul 26	168.3	166.8	169.8
Jul 27	167.2	164.4	169.3
Jul 28	162.7	161.3	164.2
Jul 29	163.1	143.0	167.0
Jul 30	162.8	157.6	167.6
Summary	163.6	159.7	168.3

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 53
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	122.5	110.2	136.1
Jul 2	122.5	114.3	134.5
Jul 3	120.2	109.7	134.0
Jul 4	123.0	111.6	138.7
Jul 5	125.2	115.1	140.3
Jul 6	126.4	116.5	140.4
Jul 7	126.6	116.8	139.2
Jul 8	127.7	118.2	140.6
Jul 9	127.8	121.3	139.3
Jul 10	123.9	115.1	133.6
Jul 11	126.2	119.5	139.1
Jul 12	127.1	120.9	139.3
Jul 13	125.3	119.9	137.4
Jul 14	128.0	121.9	139.2
Jul 15	129.9	121.5	141.1
Jul 16	130.4	123.3	140.0
Jul 17	128.6	116.2	140.7
Jul 18	128.8	114.5	139.3
Jul 19	129.1	119.6	138.0
Jul 20	131.5	127.4	139.2
Jul 21	130.7	127.5	139.5
Jul 22	132.2	127.8	141.8
Jul 23	131.9	124.9	143.6
Jul 24	132.9	121.8	145.6
Jul 25	134.2	125.7	144.9
Jul 26	136.3	129.3	146.9
Jul 27	132.3	119.9	143.0
Jul 28	129.6	123.1	145.5
Jul 29	133.6	125.8	146.7
Jul 30	130.2	108.5	148.5
Summary	128.5	120.2	136.3

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 54

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	79.5	70.8	97.0
Jul 2	82.4	68.7	97.3
Jul 3	81.4	66.4	100.4
Jul 4	81.2	65.5	102.3
Jul 5	83.7	68.0	103.2
Jul 6	83.5	66.9	103.5
Jul 7	82.8	67.5	101.6
Jul 8	85.3	69.6	102.9
Jul 9	84.8	73.9	100.8
Jul 10	81.2	74.4	95.1
Jul 11	84.1	70.9	101.7
Jul 12	84.0	74.1	102.9
Jul 13	80.9	72.9	98.0
Jul 14	84.9	72.9	101.6
Jul 15	87.1	71.6	104.4
Jul 16	87.7	74.8	102.5
Jul 17	85.5	74.2	102.1
Jul 18	82.7	72.2	98.8
Jul 19	81.3	72.6	96.2
Jul 20	84.1	77.6	95.6
Jul 21	81.8	75.6	94.0
Jul 22	85.1	75.9	102.2
Jul 23	85.2	73.2	103.0
Jul 24	86.2	68.8	108.4
Jul 25	86.6	73.0	103.0
Jul 26	90.4	75.7	107.1
Jul 27	84.0	75.6	98.1
Jul 28	83.2	75.9	99.7
Jul 29	84.6	75.1	105.4
Jul 30	84.7	76.2	106.3
Summary	84.0	79.5	90.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 55

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	146.2	133.3	150.5
Jul 2	147.2	144.5	150.7
Jul 3	146.1	143.8	149.9
Jul 4	145.7	142.1	149.9
Jul 5	147.0	143.9	150.7
Jul 6	147.6	144.0	152.9
Jul 7	147.7	143.9	152.3
Jul 8	148.0	143.9	152.8
Jul 9	148.1	142.1	152.4
Jul 10	147.4	143.7	150.5
Jul 11	148.9	146.3	153.1
Jul 12	148.6	144.9	152.2
Jul 13	147.6	141.5	151.9
Jul 14	149.0	147.0	153.3
Jul 15	149.9	146.8	154.5
Jul 16	150.0	148.0	153.7
Jul 17	147.5	126.6	156.1
Jul 18	150.0	139.4	157.0
Jul 19	151.7	142.6	158.6
Jul 20	151.9	148.8	155.9
Jul 21	153.0	132.8	160.3
Jul 22	155.1	150.5	161.5
Jul 23	153.1	149.5	156.7
Jul 24	153.7	148.5	160.4
Jul 25	153.7	149.8	158.8
Jul 26	152.5	148.2	159.1
Jul 27	148.8	131.8	158.1
Jul 28	155.4	147.4	166.6
Jul 29	152.1	147.8	156.6
Jul 30	147.3	124.3	153.4
Summary	149.7	145.7	155.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 56
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	170.4	168.3	171.9
Jul 2	170.4	169.9	171.5
Jul 3	170.2	169.3	171.3
Jul 4	170.4	169.3	171.6
Jul 5	171.1	169.9	172.4
Jul 6	171.7	170.6	173.1
Jul 7	172.1	171.2	173.4
Jul 8	172.4	171.6	173.7
Jul 9	172.7	172.0	174.0
Jul 10	172.7	171.9	173.7
Jul 11	173.1	172.5	174.0
Jul 12	173.4	172.2	174.8
Jul 13	173.6	172.4	175.1
Jul 14	174.1	173.6	175.2
Jul 15	174.5	173.8	175.7
Jul 16	174.8	174.1	175.9
Jul 17	174.4	172.9	175.8
Jul 18	174.5	173.3	175.4
Jul 19	174.6	173.7	175.7
Jul 20	175.1	174.7	176.2
Jul 21	175.3	173.8	175.7
Jul 22	175.6	175.0	176.8
Jul 23	175.9	175.2	176.8
Jul 24	176.3	175.2	177.6
Jul 25	179.1	176.0	183.0
Jul 26	180.0	110.8	184.3
Jul 27	183.4	182.3	184.3
Jul 28	183.0	182.3	183.7
Jul 29	182.2	181.4	182.9
Jul 30	181.8	180.3	182.9
Summary	175.0	170.2	183.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 57

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	92.4	81.8	108.2
Jul 2	94.9	83.2	108.9
Jul 3	92.9	78.6	109.7
Jul 4	93.4	77.6	113.3
Jul 5	96.2	81.6	115.4
Jul 6	96.1	80.3	115.5
Jul 7	95.6	80.6	113.1
Jul 8	97.4	82.8	114.9
Jul 9	96.4	85.8	112.0
Jul 10	92.0	85.6	106.8
Jul 11	94.9	81.9	113.4
Jul 12	94.7	84.6	112.9
Jul 13	92.1	84.1	109.5
Jul 14	95.7	84.8	110.9
Jul 15	98.1	83.9	114.7
Jul 16	98.0	86.1	111.1
Jul 17	95.2	82.9	111.4
Jul 18	93.3	80.3	109.5
Jul 19	91.8	82.8	105.9
Jul 20	94.6	88.3	107.7
Jul 21	92.1	87.1	105.9
Jul 22	95.9	86.6	111.7
Jul 23	95.9	83.7	114.1
Jul 24	96.6	80.4	115.8
Jul 25	96.5	83.1	112.6
Jul 26	98.3	84.6	115.3
Jul 27	92.9	83.2	108.5
Jul 28	94.1	85.2	116.8
Jul 29	96.2	86.6	115.9
Jul 30	94.6	82.3	118.0
Summary	95.0	91.8	98.3

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 58

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	108.5	107.3	110.1
Jul 2	108.7	106.9	110.0
Jul 3	108.0	106.6	109.8
Jul 4	108.3	106.7	110.1
Jul 5	108.5	107.1	110.4
Jul 6	108.5	106.9	110.6
Jul 7	108.4	106.9	110.1
Jul 8	108.6	107.0	110.6
Jul 9	108.5	107.1	110.5
Jul 10	108.4	107.5	109.9
Jul 11	108.6	107.3	110.6
Jul 12	108.7	107.6	110.6
Jul 13	108.3	107.6	110.2
Jul 14	108.8	107.6	110.2
Jul 15	106.0	37.3	110.8
Jul 16	109.1	107.9	110.5
Jul 17	108.7	106.9	110.5
Jul 18	108.6	107.3	110.1
Jul 19	108.5	107.5	110.0
Jul 20	108.5	107.8	109.8
Jul 21	108.3	107.3	110.0
Jul 22	105.8	34.9	110.6
Jul 23	108.9	107.6	110.7
Jul 24	109.0	107.4	110.9
Jul 25	108.8	107.5	110.5
Jul 26	109.0	107.2	111.1
Jul 27	108.4	107.0	110.5
Jul 28	109.0	108.0	111.0
Jul 29	109.0	108.2	111.0
Jul 30	108.7	106.6	110.8
Summary	108.4	105.8	109.1

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 59
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	115.8	115.3	116.7
Jul 2	116.3	115.3	117.7
Jul 3	116.2	114.9	119.3
Jul 4	116.2	115.2	117.5
Jul 5	116.3	115.3	117.6
Jul 6	116.4	115.3	117.7
Jul 7	116.1	115.1	117.1
Jul 8	116.2	115.0	117.2
Jul 9	116.1	115.3	117.7
Jul 10	115.8	115.2	116.5
Jul 11	116.0	115.0	118.2
Jul 12	115.9	115.2	117.1
Jul 13	115.7	115.1	116.9
Jul 14	116.1	115.2	117.6
Jul 15	113.3	42.9	117.7
Jul 16	116.4	115.5	117.4
Jul 17	116.2	115.1	117.3
Jul 18	116.3	115.3	117.4
Jul 19	116.3	115.6	117.1
Jul 20	116.7	116.1	117.5
Jul 21	113.1	32.6	117.5
Jul 22	117.1	115.2	118.6
Jul 23	117.2	116.2	118.4
Jul 24	117.4	116.0	119.5
Jul 25	114.4	46.2	120.1
Jul 26	117.8	116.3	119.4
Jul 27	117.5	116.4	119.3
Jul 28	117.8	117.1	119.0
Jul 29	117.8	116.9	119.5
Jul 30	117.7	116.6	119.6
Summary	116.3	113.1	117.8

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 60

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	126.8	120.5	140.6
Jul 2	128.9	120.1	141.2
Jul 3	153.9	134.5	173.1
Jul 4	147.1	141.7	158.3
Jul 5	141.5	138.7	144.0
Jul 6	140.1	137.8	142.9
Jul 7	152.6	117.1	174.9
Jul 8	172.4	157.5	177.7
Jul 9	164.6	147.7	177.3
Jul 10	164.4	156.2	178.4
Jul 11	158.6	150.7	171.9
Jul 12	148.6	145.3	150.9
Jul 13	145.3	142.1	147.0
Jul 14	151.9	143.4	172.6
Jul 15	146.8	145.0	148.6
Jul 16	145.3	143.8	147.6
Jul 17	143.6	140.4	146.4
Jul 18	142.4	139.4	144.6
Jul 19	141.2	138.9	143.5
Jul 20	140.8	139.4	142.9
Jul 21	140.7	138.7	143.1
Jul 22	154.3	139.5	174.5
Jul 23	145.8	143.4	147.7
Jul 24	151.3	139.6	175.4
Jul 25	145.9	143.0	148.2
Jul 26	146.1	143.5	148.9
Jul 27	143.8	138.7	147.6
Jul 28	150.4	140.0	172.1
Jul 29	149.2	142.2	168.4
Jul 30	142.9	137.3	146.5
Summary	147.6	126.8	172.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 61

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	164.3	163.4	165.5
Jul 2	164.3	163.4	165.5
Jul 3	164.5	163.4	165.5
Jul 4	164.5	163.4	165.8
Jul 5	165.0	163.8	166.4
Jul 6	165.4	164.5	166.7
Jul 7	165.3	164.3	166.7
Jul 8	164.8	163.9	165.7
Jul 9	164.9	163.9	166.5
Jul 10	164.3	163.5	165.5
Jul 11	164.7	163.9	165.7
Jul 12	164.6	163.8	165.9
Jul 13	164.5	163.8	165.5
Jul 14	164.4	163.8	165.0
Jul 15	158.4	154.6	163.6
Jul 16	157.7	153.3	164.3
Jul 17	163.2	161.9	164.7
Jul 18	163.3	162.0	164.2
Jul 19	162.6	161.7	163.9
Jul 20	163.0	162.3	164.1
Jul 21	163.2	161.7	164.2
Jul 22	163.3	162.5	164.5
Jul 23	163.0	162.1	164.3
Jul 24	162.8	161.7	164.0
Jul 25	163.5	161.7	165.2
Jul 26	164.1	163.2	165.4
Jul 27	163.5	162.5	164.5
Jul 28	162.7	161.7	164.2
Jul 29	163.2	161.6	165.2
Jul 30	162.8	159.1	165.6
Summary	163.5	157.7	165.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 62

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	110.1	106.1	113.8
Jul 2	110.6	108.1	113.8
Jul 3	110.3	107.4	113.5
Jul 4	110.6	107.3	114.4
Jul 5	111.1	108.0	114.9
Jul 6	111.3	108.2	114.9
Jul 7	111.5	109.0	114.9
Jul 8	111.8	109.5	115.3
Jul 9	111.5	109.6	114.9
Jul 10	110.9	107.0	113.6
Jul 11	111.7	109.4	114.4
Jul 12	111.5	109.7	116.1
Jul 13	111.0	109.1	113.9
Jul 14	112.2	110.0	115.5
Jul 15	112.5	110.1	116.2
Jul 16	112.7	110.4	115.7
Jul 17	110.0	103.6	113.8
Jul 18	105.4	97.8	111.4
Jul 19	105.8	100.7	112.2
Jul 20	106.7	104.2	111.3
Jul 21	106.0	100.8	112.6
Jul 22	107.3	104.2	113.9
Jul 23	108.2	102.7	115.6
Jul 24	108.0	102.5	115.9
Jul 25	108.2	102.7	113.7
Jul 26	109.1	104.1	116.0
Jul 27	106.7	100.9	114.2
Jul 28	111.4	101.6	122.6
Jul 29	116.4	114.9	118.7
Jul 30	114.8	112.6	117.1
Summary	110.2	105.4	116.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 63
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	76.8	69.5	91.4
Jul 2	78.7	65.8	93.7
Jul 3	77.1	62.2	93.6
Jul 4	79.3	62.4	98.8
Jul 5	80.5	64.4	100.3
Jul 6	79.8	63.4	97.5
Jul 7	80.5	64.5	96.8
Jul 8	82.2	67.4	99.0
Jul 9	79.7	68.6	96.0
Jul 10	76.0	69.5	91.1
Jul 11	79.4	65.3	99.4
Jul 12	78.7	68.0	99.0
Jul 13	76.1	67.8	94.7
Jul 14	81.0	68.3	96.4
Jul 15	82.5	66.4	99.4
Jul 16	81.8	69.5	96.0
Jul 17	80.0	69.9	94.3
Jul 18	77.6	67.4	93.0
Jul 19	75.9	68.2	88.8
Jul 20	79.3	72.6	91.1
Jul 21	76.6	69.9	90.0
Jul 22	79.9	69.8	93.6
Jul 23	80.6	66.7	96.3
Jul 24	80.1	63.1	98.6
Jul 25	81.6	66.7	98.4
Jul 26	84.6	70.6	102.4
Jul 27	79.9	71.5	96.0
Jul 28	77.9	70.0	100.3
Jul 29	80.0	68.7	101.5
Jul 30	79.3	70.4	102.7
Summary	79.4	75.9	84.6

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 64
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	77.6	69.2	95.9
Jul 2	80.1	65.8	98.2
Jul 3	78.1	62.6	98.4
Jul 4	79.5	62.2	102.7
Jul 5	81.9	64.4	103.8
Jul 6	80.6	63.7	101.0
Jul 7	80.8	64.5	99.8
Jul 8	82.7	66.9	101.6
Jul 9	80.4	68.6	98.0
Jul 10	76.5	69.4	92.6
Jul 11	79.7	65.1	98.9
Jul 12	79.5	68.0	101.7
Jul 13	76.6	67.7	96.5
Jul 14	81.3	67.7	98.9
Jul 15	82.6	66.5	102.4
Jul 16	83.0	69.0	99.5
Jul 17	78.1	26.6	97.9
Jul 18	78.2	67.0	95.7
Jul 19	77.2	68.3	93.0
Jul 20	79.7	72.8	92.9
Jul 21	76.7	69.7	90.2
Jul 22	80.3	70.0	99.4
Jul 23	81.5	67.1	99.7
Jul 24	81.7	63.8	103.3
Jul 25	82.6	66.8	101.3
Jul 26	86.4	70.9	104.6
Jul 27	80.7	71.5	99.0
Jul 28	77.9	69.9	101.3
Jul 29	80.1	68.8	103.1
Jul 30	80.1	70.5	105.1
Summary	80.1	76.5	86.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 65
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	134.5	131.3	136.9
Jul 2	136.6	132.4	140.1
Jul 3	137.8	135.2	141.0
Jul 4	137.1	134.0	140.6
Jul 5	138.0	134.7	140.9
Jul 6	134.8	132.0	137.6
Jul 7	135.2	129.3	140.2
Jul 8	136.9	131.8	141.4
Jul 9	133.5	130.6	137.5
Jul 10	134.2	130.0	138.3
Jul 11	137.2	133.5	140.5
Jul 12	133.5	129.7	137.5
Jul 13	131.5	126.7	134.4
Jul 14	134.2	128.8	139.8
Jul 15	138.1	134.9	141.6
Jul 16	136.5	132.5	140.6
Jul 17	136.2	129.1	142.4
Jul 18	137.8	136.7	139.0
Jul 19	132.9	129.0	134.8
Jul 20	129.5	127.6	131.9
Jul 21	133.1	127.1	138.7
Jul 22	141.0	136.5	143.9
Jul 23	142.6	141.3	144.7
Jul 24	142.6	140.1	145.4
Jul 25	142.5	140.3	144.9
Jul 26	142.4	138.3	145.3
Jul 27	137.4	134.1	140.0
Jul 28	139.5	134.1	143.1
Jul 29	141.1	138.5	142.9
Jul 30	140.8	138.5	143.1
Summary	137.0	129.5	142.6

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 66

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	162.0	148.8	165.0
Jul 2	164.4	161.9	167.0
Jul 3	164.3	161.8	166.6
Jul 4	164.1	161.4	166.6
Jul 5	165.0	162.9	167.2
Jul 6	165.5	163.8	168.4
Jul 7	165.1	163.3	167.7
Jul 8	166.3	164.2	169.1
Jul 9	167.6	165.2	169.5
Jul 10	167.5	163.0	168.6
Jul 11	168.5	167.4	169.8
Jul 12	168.5	165.4	170.2
Jul 13	168.1	164.0	169.9
Jul 14	168.7	168.0	170.0
Jul 15	169.4	167.9	170.8
Jul 16	169.5	168.2	170.8
Jul 17	168.7	158.8	171.0
Jul 18	168.8	166.3	170.5
Jul 19	168.6	166.2	170.6
Jul 20	169.7	164.5	180.5
Jul 21	148.4	127.4	163.8
Jul 22	145.8	134.0	154.3
Jul 23	157.4	151.6	160.6
Jul 24	163.3	158.5	168.5
Jul 25	165.7	163.3	168.3
Jul 26	167.8	164.8	170.1
Jul 27	167.9	161.1	171.8
Jul 28	169.5	168.1	172.4
Jul 29	170.4	167.1	172.6
Jul 30	169.9	160.7	173.0
Summary	165.5	145.8	170.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 67
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	154.7	147.0	159.7
Jul 2	155.7	152.3	159.3
Jul 3	154.9	150.3	158.9
Jul 4	155.1	150.6	161.6
Jul 5	156.4	150.9	161.0
Jul 6	157.4	153.2	162.8
Jul 7	157.1	152.9	161.2
Jul 8	157.9	154.4	163.3
Jul 9	146.0	111.9	156.9
Jul 10	144.7	135.3	148.8
Jul 11	146.9	143.8	151.2
Jul 12	147.5	144.1	153.1
Jul 13	147.3	142.5	152.7
Jul 14	148.7	146.2	152.9
Jul 15	149.9	146.3	154.7
Jul 16	150.5	147.4	153.6
Jul 17	148.9	142.2	154.4
Jul 18	149.6	144.1	152.6
Jul 19	149.9	146.2	154.2
Jul 20	150.8	149.1	154.2
Jul 21	151.2	145.3	154.7
Jul 22	151.8	148.4	156.2
Jul 23	152.4	149.9	156.4
Jul 24	153.0	147.5	159.7
Jul 25	155.3	151.6	161.3
Jul 26	156.9	154.0	161.1
Jul 27	155.8	151.5	160.9
Jul 28	154.4	151.8	158.8
Jul 29	156.2	149.7	160.5
Jul 30	155.6	144.8	161.5
Summary	152.4	144.7	157.9

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 68
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	139.4	136.1	141.4
Jul 2	140.1	137.4	142.4
Jul 3	139.9	138.5	141.0
Jul 4	139.0	137.3	141.3
Jul 5	139.5	137.8	141.5
Jul 6	139.8	137.6	142.2
Jul 7	139.6	137.9	142.4
Jul 8	140.3	137.0	142.9
Jul 9	139.8	138.3	141.9
Jul 10	139.7	138.7	142.4
Jul 11	140.0	138.6	141.6
Jul 12	139.9	137.8	142.7
Jul 13	139.5	136.9	142.1
Jul 14	140.2	138.5	142.1
Jul 15	140.6	138.7	142.6
Jul 16	140.8	139.2	143.2
Jul 17	140.0	137.1	142.3
Jul 18	139.9	137.0	141.8
Jul 19	140.1	138.2	142.5
Jul 20	140.0	139.2	141.1
Jul 21	140.2	135.0	142.4
Jul 22	140.3	138.1	142.5
Jul 23	139.8	138.0	142.1
Jul 24	140.4	137.5	143.5
Jul 25	140.8	138.6	143.9
Jul 26	140.5	137.5	144.2
Jul 27	140.0	135.8	142.9
Jul 28	141.8	140.4	143.0
Jul 29	140.9	137.2	143.6
Jul 30	140.2	119.6	143.0
Summary	140.1	139.0	141.8

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 69

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	91.5	85.8	103.8
Jul 2	93.1	84.6	104.9
Jul 3	91.6	81.6	106.7
Jul 4	92.2	82.2	107.1
Jul 5	93.0	82.4	106.9
Jul 6	92.3	81.3	106.1
Jul 7	93.1	82.5	107.7
Jul 8	93.9	84.0	107.9
Jul 9	92.4	84.0	106.3
Jul 10	89.4	84.6	99.9
Jul 11	91.7	82.0	105.8
Jul 12	91.5	83.9	106.4
Jul 13	90.0	83.9	101.6
Jul 14	92.4	83.7	106.8
Jul 15	93.2	82.8	105.9
Jul 16	93.1	84.3	104.1
Jul 17	91.6	83.2	105.2
Jul 18	90.2	82.4	101.2
Jul 19	88.8	83.1	100.4
Jul 20	90.7	85.5	99.9
Jul 21	88.7	83.9	97.9
Jul 22	90.4	83.6	105.2
Jul 23	91.8	81.5	108.4
Jul 24	91.6	79.4	107.7
Jul 25	91.8	81.5	104.5
Jul 26	93.8	83.6	109.9
Jul 27	90.0	84.5	102.2
Jul 28	90.3	83.0	106.6
Jul 29	90.9	82.5	107.8
Jul 30	90.5	83.0	109.4
Summary	91.5	88.7	93.9

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 70
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	78.5	72.3	93.6
Jul 2	81.7	69.5	99.8
Jul 3	80.5	66.5	100.9
Jul 4	81.3	66.1	105.4
Jul 5	84.1	67.2	106.7
Jul 6	82.2	66.8	104.0
Jul 7	82.7	67.8	101.5
Jul 8	83.6	69.9	103.1
Jul 9	82.7	71.0	101.6
Jul 10	79.2	72.3	94.4
Jul 11	81.1	68.7	102.6
Jul 12	80.9	70.9	100.6
Jul 13	78.9	70.4	98.5
Jul 14	82.4	70.8	98.5
Jul 15	83.9	69.7	103.2
Jul 16	83.8	71.6	97.5
Jul 17	81.6	72.7	97.8
Jul 18	79.2	70.2	92.9
Jul 19	78.5	71.7	91.0
Jul 20	81.2	74.9	94.7
Jul 21	78.0	72.5	88.9
Jul 22	81.1	72.6	97.1
Jul 23	83.1	69.8	104.3
Jul 24	82.4	66.8	103.6
Jul 25	82.4	69.5	100.9
Jul 26	85.3	72.6	102.6
Jul 27	80.8	73.4	99.0
Jul 28	79.8	72.6	97.6
Jul 29	81.6	71.3	102.7
Jul 30	80.9	72.7	103.3
Summary	81.4	78.0	85.3

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 71
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	138.7	135.5	139.5
Jul 2	139.1	138.3	140.0
Jul 3	139.0	138.2	139.8
Jul 4	139.2	138.2	139.9
Jul 5	139.3	138.2	140.4
Jul 6	139.1	138.1	140.3
Jul 7	139.2	138.4	140.2
Jul 8	139.3	138.3	140.5
Jul 9	139.1	138.4	140.3
Jul 10	139.1	138.6	139.8
Jul 11	139.4	138.7	140.2
Jul 12	139.2	137.7	140.6
Jul 13	139.1	135.8	140.1
Jul 14	139.5	138.8	140.6
Jul 15	139.7	138.9	140.9
Jul 16	139.5	138.9	140.6
Jul 17	139.5	138.1	141.2
Jul 18	139.9	138.8	140.7
Jul 19	139.8	139.2	140.6
Jul 20	139.8	139.4	140.6
Jul 21	139.8	137.6	140.4
Jul 22	140.0	139.5	140.9
Jul 23	140.2	139.5	140.9
Jul 24	140.3	139.2	141.3
Jul 25	140.4	139.6	141.2
Jul 26	140.4	139.8	141.4
Jul 27	140.1	139.2	141.3
Jul 28	140.1	139.5	140.9
Jul 29	140.1	139.4	141.0
Jul 30	139.5	134.6	141.1
Summary	139.6	138.7	140.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 72
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	136.3	131.3	138.3
Jul 2	136.7	134.8	138.3
Jul 3	136.5	135.3	138.0
Jul 4	136.9	135.2	139.3
Jul 5	137.1	135.0	139.4
Jul 6	136.8	135.2	138.6
Jul 7	136.8	135.0	138.7
Jul 8	137.0	134.9	139.2
Jul 9	136.7	135.3	138.2
Jul 10	136.6	135.8	138.4
Jul 11	137.0	135.7	138.5
Jul 12	136.6	134.1	139.1
Jul 13	136.4	130.2	138.4
Jul 14	137.1	136.0	139.3
Jul 15	137.4	135.8	139.6
Jul 16	137.2	135.4	139.1
Jul 17	136.4	131.2	138.7
Jul 18	136.5	133.3	138.6
Jul 19	136.8	134.4	138.8
Jul 20	136.6	135.9	138.1
Jul 21	136.6	131.4	138.6
Jul 22	136.8	135.9	138.6
Jul 23	137.3	135.6	139.3
Jul 24	137.5	135.7	139.8
Jul 25	137.7	136.1	139.8
Jul 26	138.0	136.6	140.1
Jul 27	137.2	134.9	139.9
Jul 28	137.2	135.9	138.9
Jul 29	137.4	136.0	139.6
Jul 30	136.6	128.9	139.6
Summary	136.9	136.3	138.0

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 73

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	108.6	108.0	109.5
Jul 2	109.2	108.3	110.6
Jul 3	109.6	108.7	110.9
Jul 4	110.2	109.2	111.3
Jul 5	110.7	109.8	112.0
Jul 6	110.9	110.1	112.0
Jul 7	111.1	110.2	112.2
Jul 8	111.2	110.6	112.2
Jul 9	110.7	110.0	111.8
Jul 10	110.4	109.8	111.4
Jul 11	110.5	109.8	111.6
Jul 12	110.6	110.0	112.0
Jul 13	110.6	110.1	111.6
Jul 14	110.9	110.0	112.0
Jul 15	111.2	110.4	112.2
Jul 16	110.9	110.3	111.8
Jul 17	110.8	110.1	112.2
Jul 18	111.0	110.4	112.0
Jul 19	111.2	110.6	112.1
Jul 20	111.6	111.0	112.4
Jul 21	111.9	111.4	113.0
Jul 22	112.5	111.9	113.5
Jul 23	112.6	111.9	113.6
Jul 24	112.3	111.6	113.4
Jul 25	112.2	111.4	113.0
Jul 26	111.9	111.2	112.9
Jul 27	111.3	110.7	112.1
Jul 28	111.0	110.4	112.0
Jul 29	111.0	110.4	112.0
Jul 30	110.6	109.7	111.8
Summary	111.0	108.6	112.6

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 74

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	129.6	127.7	131.4
Jul 2	128.2	126.7	129.6
Jul 3	127.3	125.9	128.3
Jul 4	126.9	125.1	128.8
Jul 5	127.2	125.5	129.3
Jul 6	127.4	125.5	129.5
Jul 7	126.8	125.5	128.8
Jul 8	126.7	125.8	129.0
Jul 9	126.8	125.4	128.6
Jul 10	126.3	125.4	128.3
Jul 11	126.6	125.3	128.1
Jul 12	125.8	123.9	128.4
Jul 13	125.6	122.7	127.2
Jul 14	126.4	125.3	128.0
Jul 15	126.6	124.8	128.8
Jul 16	126.6	125.2	128.6
Jul 17	125.2	120.7	128.2
Jul 18	125.4	122.6	127.8
Jul 19	125.5	122.6	127.9
Jul 20	125.7	124.9	127.4
Jul 21	125.6	120.8	127.8
Jul 22	125.8	124.7	127.8
Jul 23	125.3	123.6	127.3
Jul 24	125.7	123.7	127.8
Jul 25	126.5	125.2	128.3
Jul 26	126.5	124.9	128.8
Jul 27	125.7	122.7	128.3
Jul 28	125.2	123.8	126.6
Jul 29	126.2	123.7	128.8
Jul 30	126.3	117.3	129.7
Summary	126.4	125.2	129.6

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 75

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	126.7	126.0	128.0
Jul 2	126.9	126.3	128.0
Jul 3	126.9	126.2	128.1
Jul 4	127.1	126.3	128.3
Jul 5	127.2	126.3	128.5
Jul 6	127.1	126.2	128.5
Jul 7	127.1	126.3	128.2
Jul 8	127.2	126.3	128.6
Jul 9	126.9	125.6	128.0
Jul 10	126.5	126.0	127.5
Jul 11	126.9	126.0	128.1
Jul 12	126.7	125.8	127.9
Jul 13	126.6	125.9	127.9
Jul 14	127.0	126.2	128.1
Jul 15	127.1	126.2	128.4
Jul 16	127.0	126.2	128.1
Jul 17	126.5	123.9	128.0
Jul 18	126.6	125.2	128.2
Jul 19	126.4	125.5	127.2
Jul 20	126.4	126.0	127.5
Jul 21	126.3	124.3	127.1
Jul 22	126.6	125.8	128.0
Jul 23	126.8	125.5	128.1
Jul 24	126.9	125.7	128.2
Jul 25	126.9	125.9	128.2
Jul 26	127.0	125.8	128.3
Jul 27	126.6	124.9	127.8
Jul 28	126.3	125.5	128.0
Jul 29	126.3	125.3	128.1
Jul 30	125.9	122.6	127.9
Summary	126.7	125.9	127.2

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 76
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	126.6	126.3	127.1
Jul 2	126.7	126.4	127.1
Jul 3	126.7	126.4	127.2
Jul 4	126.7	126.3	127.2
Jul 5	126.7	126.3	127.3
Jul 6	126.7	126.3	127.1
Jul 7	126.6	126.3	127.0
Jul 8	126.7	126.3	127.1
Jul 9	126.6	126.3	126.9
Jul 10	126.5	126.2	126.8
Jul 11	126.6	126.2	127.0
Jul 12	126.5	126.2	127.0
Jul 13	126.5	126.2	126.9
Jul 14	126.6	126.2	127.0
Jul 15	126.6	126.2	127.1
Jul 16	126.5	126.1	126.9
Jul 17	126.4	126.1	126.9
Jul 18	126.3	126.1	126.9
Jul 19	126.3	126.1	126.7
Jul 20	126.3	126.1	126.7
Jul 21	126.3	126.0	126.8
Jul 22	126.4	126.1	126.8
Jul 23	126.4	126.1	126.8
Jul 24	126.4	126.0	126.9
Jul 25	126.4	126.1	126.9
Jul 26	126.5	126.1	126.9
Jul 27	126.3	126.0	126.8
Jul 28	126.2	125.9	126.9
Jul 29	126.3	126.0	126.9
Jul 30	126.3	125.8	126.8
Summary	126.5	126.2	126.7

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 77

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	80.3	70.6	100.4
Jul 2	83.8	69.9	98.5
Jul 3	86.6	66.1	132.8
Jul 4	84.6	66.3	104.3
Jul 5	87.0	69.4	105.3
Jul 6	86.0	68.6	105.6
Jul 7	86.2	69.1	105.3
Jul 8	88.0	71.7	107.2
Jul 9	84.9	72.7	101.7
Jul 10	80.0	72.6	95.6
Jul 11	84.7	70.0	102.6
Jul 12	83.6	71.7	105.9
Jul 13	80.9	70.7	99.5
Jul 14	85.5	71.7	103.9
Jul 15	87.9	70.7	106.9
Jul 16	87.5	73.3	104.7
Jul 17	84.7	71.4	104.1
Jul 18	81.9	70.4	96.3
Jul 19	80.7	71.1	99.2
Jul 20	83.5	76.3	95.9
Jul 21	81.0	74.5	94.2
Jul 22	85.0	74.5	101.5
Jul 23	87.4	73.6	104.9
Jul 24	88.8	71.0	109.7
Jul 25	90.1	73.8	108.1
Jul 26	92.4	76.9	112.0
Jul 27	86.8	75.2	106.5
Jul 28	84.9	75.8	105.3
Jul 29	86.4	75.1	108.0
Jul 30	85.1	71.8	108.8
Summary	85.2	80.0	92.4

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 78

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	113.6	109.8	116.8
Jul 2	114.2	111.6	117.6
Jul 3	113.9	111.4	117.3
Jul 4	114.2	111.0	118.6
Jul 5	114.6	110.1	118.8
Jul 6	114.9	111.8	118.8
Jul 7	114.3	112.0	116.9
Jul 8	114.6	112.0	118.2
Jul 9	114.0	111.4	117.3
Jul 10	113.7	109.4	116.9
Jul 11	114.6	112.4	118.1
Jul 12	114.3	111.6	118.4
Jul 13	113.8	112.2	117.2
Jul 14	114.7	112.6	117.9
Jul 15	114.9	112.6	118.3
Jul 16	114.9	112.7	117.8
Jul 17	114.1	109.6	117.3
Jul 18	113.5	108.1	117.2
Jul 19	113.7	110.4	116.5
Jul 20	113.8	112.6	115.9
Jul 21	114.0	112.7	117.0
Jul 22	114.8	113.1	118.4
Jul 23	114.6	111.7	118.6
Jul 24	114.7	111.1	119.1
Jul 25	114.9	112.1	118.3
Jul 26	115.4	112.3	119.6
Jul 27	114.3	111.2	117.9
Jul 28	114.0	111.7	118.3
Jul 29	114.6	111.3	118.9
Jul 30	113.5	103.8	119.7
Summary	114.3	113.5	115.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 79
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	80.0	70.9	99.5
Jul 2	83.5	69.5	105.0
Jul 3	82.7	65.5	104.0
Jul 4	83.7	65.4	108.7
Jul 5	85.6	68.6	107.3
Jul 6	85.4	67.8	105.9
Jul 7	85.7	68.0	107.1
Jul 8	87.4	70.8	109.6
Jul 9	84.6	71.9	104.6
Jul 10	79.1	69.5	97.2
Jul 11	83.7	69.2	102.9
Jul 12	83.0	71.2	108.7
Jul 13	80.0	70.5	97.0
Jul 14	85.0	71.1	106.7
Jul 15	87.1	70.3	106.2
Jul 16	86.7	72.6	103.6
Jul 17	84.3	71.5	104.6
Jul 18	81.9	69.8	99.8
Jul 19	80.0	71.0	99.5
Jul 20	82.7	75.3	95.4
Jul 21	80.4	73.1	97.7
Jul 22	83.6	72.9	104.5
Jul 23	85.1	71.0	104.0
Jul 24	85.8	67.8	107.8
Jul 25	86.7	70.6	103.9
Jul 26	89.7	74.4	110.9
Jul 27	83.8	73.6	102.8
Jul 28	80.8	71.8	103.3
Jul 29	83.2	71.6	108.7
Jul 30	81.6	71.1	106.3
Summary	83.8	79.1	89.7

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 80
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	79.5	70.1	96.7
Jul 2	81.8	66.2	101.5
Jul 3	80.7	62.3	102.2
Jul 4	81.3	62.5	106.1
Jul 5	84.2	64.9	110.0
Jul 6	84.0	63.6	108.8
Jul 7	84.1	64.8	103.7
Jul 8	86.1	67.5	107.0
Jul 9	82.7	69.1	103.6
Jul 10	78.1	70.3	98.7
Jul 11	82.1	65.9	108.2
Jul 12	81.3	68.3	105.6
Jul 13	78.9	68.2	102.7
Jul 14	83.2	68.5	106.0
Jul 15	85.8	67.0	109.5
Jul 16	84.6	69.7	102.3
Jul 17	82.3	70.6	102.4
Jul 18	80.1	67.6	100.4
Jul 19	77.7	68.6	93.3
Jul 20	81.8	73.9	97.1
Jul 21	78.1	70.3	96.2
Jul 22	82.4	70.3	102.5
Jul 23	83.6	67.2	105.1
Jul 24	83.7	64.0	107.9
Jul 25	84.9	67.2	106.2
Jul 26	89.2	70.8	112.4
Jul 27	82.3	71.8	104.3
Jul 28	81.5	70.3	108.5
Jul 29	82.9	69.2	108.4
Jul 30	81.2	70.9	111.0
Summary	82.3	77.7	89.2

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 81
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	167.4	164.6	168.5
Jul 2	167.2	165.9	167.9
Jul 3	167.0	165.8	168.3
Jul 4	166.7	165.8	168.1
Jul 5	167.1	166.1	168.2
Jul 6	167.3	165.9	168.4
Jul 7	167.1	165.8	168.2
Jul 8	166.9	165.3	168.2
Jul 9	167.0	165.3	168.1
Jul 10	166.3	163.2	167.4
Jul 11	167.1	166.2	167.9
Jul 12	166.8	165.0	167.8
Jul 13	166.3	162.5	167.3
Jul 14	166.7	165.8	167.5
Jul 15	167.2	166.0	168.4
Jul 16	167.0	165.8	167.9
Jul 17	167.2	164.1	170.7
Jul 18	168.0	165.5	169.4
Jul 19	167.7	165.7	169.7
Jul 20	166.2	165.4	167.1
Jul 21	166.4	161.9	167.7
Jul 22	167.7	165.4	183.8
Jul 23	167.4	164.7	168.9
Jul 24	166.3	165.0	167.7
Jul 25	167.1	165.8	168.4
Jul 26	167.7	166.7	168.6
Jul 27	166.6	159.0	169.3
Jul 28	166.3	164.7	168.1
Jul 29	166.5	161.2	168.5
Jul 30	165.3	147.3	169.0
Summary	166.9	165.3	168.0

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 82

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	170.6	165.8	173.1
Jul 2	171.0	170.0	172.3
Jul 3	171.5	170.1	172.8
Jul 4	171.9	170.5	173.3
Jul 5	172.9	171.8	173.8
Jul 6	173.4	172.2	174.6
Jul 7	172.9	170.8	174.1
Jul 8	172.8	170.5	173.9
Jul 9	172.8	171.5	173.7
Jul 10	172.5	159.9	174.0
Jul 11	173.7	171.1	174.7
Jul 12	173.5	169.9	174.5
Jul 13	173.1	171.5	174.2
Jul 14	173.5	172.6	174.5
Jul 15	173.8	172.7	174.7
Jul 16	173.4	172.3	174.2
Jul 17	172.4	170.4	173.4
Jul 18	172.1	168.0	173.6
Jul 19	172.3	170.1	173.4
Jul 20	172.1	169.8	173.6
Jul 21	173.1	171.7	174.1
Jul 22	172.9	168.0	173.8
Jul 23	172.3	170.9	173.2
Jul 24	172.6	171.2	173.6
Jul 25	172.8	171.8	173.4
Jul 26	172.7	171.7	173.5
Jul 27	171.6	161.4	173.8
Jul 28	171.6	168.4	172.6
Jul 29	171.4	156.3	172.7
Jul 30	170.6	151.6	173.5
Summary	172.5	170.6	173.8

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 83
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	170.0	166.9	170.7
Jul 2	170.3	169.9	170.6
Jul 3	170.1	169.3	170.7
Jul 4	170.0	169.3	170.6
Jul 5	170.1	169.6	170.7
Jul 6	170.3	169.4	170.9
Jul 7	170.2	169.5	170.7
Jul 8	170.1	169.2	170.7
Jul 9	169.9	169.2	170.5
Jul 10	169.6	168.4	170.1
Jul 11	169.9	169.3	170.4
Jul 12	169.9	168.8	170.5
Jul 13	169.9	167.4	170.3
Jul 14	169.9	169.6	170.3
Jul 15	169.9	169.5	170.5
Jul 16	169.7	169.0	170.3
Jul 17	169.0	164.2	169.8
Jul 18	169.3	168.0	170.0
Jul 19	169.1	168.3	169.7
Jul 20	169.1	168.5	169.6
Jul 21	168.9	161.3	169.6
Jul 22	169.1	168.5	169.6
Jul 23	168.8	168.1	169.3
Jul 24	168.9	168.2	169.6
Jul 25	169.0	168.0	169.6
Jul 26	169.2	168.7	169.9
Jul 27	168.8	167.0	169.8
Jul 28	168.6	168.0	169.4
Jul 29	168.8	167.2	169.6
Jul 30	168.0	162.0	169.7
Summary	169.5	168.0	170.3

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 84

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	163.1	162.6	163.6
Jul 2	163.0	162.7	163.5
Jul 3	162.8	162.4	163.3
Jul 4	162.7	162.1	163.2
Jul 5	162.7	162.2	163.5
Jul 6	162.8	162.3	163.4
Jul 7	164.5	162.2	166.1
Jul 8	165.4	164.9	166.0
Jul 9	165.3	165.0	165.8
Jul 10	165.2	164.9	165.8
Jul 11	165.2	164.8	165.8
Jul 12	165.2	164.7	165.8
Jul 13	165.0	164.5	165.5
Jul 14	165.0	164.7	165.5
Jul 15	165.0	164.5	165.5
Jul 16	165.0	164.6	165.4
Jul 17	164.8	164.1	165.2
Jul 18	164.5	163.8	164.8
Jul 19	164.3	163.9	164.9
Jul 20	164.3	164.0	164.7
Jul 21	164.3	163.9	164.5
Jul 22	164.2	163.9	164.7
Jul 23	164.0	163.7	164.5
Jul 24	164.1	163.6	164.8
Jul 25	164.2	163.6	164.9
Jul 26	164.4	164.0	165.0
Jul 27	164.3	163.7	164.9
Jul 28	163.9	163.7	164.7
Jul 29	164.0	163.5	164.7
Jul 30	163.8	163.1	164.8
Summary	164.2	162.7	165.4

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 85
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	157.6	154.9	159.0
Jul 2	156.2	153.5	158.7
Jul 3	154.5	153.2	156.8
Jul 4	154.3	152.6	156.8
Jul 5	154.4	152.4	157.8
Jul 6	154.3	152.3	157.0
Jul 7	155.5	152.6	158.4
Jul 8	157.2	155.1	159.9
Jul 9	157.0	154.8	159.2
Jul 10	157.3	155.9	159.3
Jul 11	156.8	154.6	158.9
Jul 12	154.8	152.6	157.6
Jul 13	154.0	152.5	156.7
Jul 14	155.9	152.6	159.4
Jul 15	157.5	156.4	159.4
Jul 16	156.2	153.0	157.5
Jul 17	153.9	151.1	156.4
Jul 18	153.0	151.0	155.3
Jul 19	153.0	150.0	155.5
Jul 20	152.7	151.4	153.6
Jul 21	155.1	152.4	157.7
Jul 22	156.9	155.5	159.1
Jul 23	156.9	155.1	159.7
Jul 24	157.2	154.7	160.4
Jul 25	156.8	155.4	159.4
Jul 26	156.9	155.0	159.4
Jul 27	156.7	154.4	160.1
Jul 28	156.6	155.2	159.2
Jul 29	155.4	151.3	157.3
Jul 30	155.9	152.8	159.0
Summary	155.7	152.7	157.6

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 86
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	146.0	145.3	146.8
Jul 2	146.0	145.3	146.9
Jul 3	145.9	145.2	146.8
Jul 4	145.7	144.8	146.9
Jul 5	145.8	144.8	146.8
Jul 6	146.0	145.1	147.1
Jul 7	146.0	145.2	147.2
Jul 8	145.9	145.0	146.9
Jul 9	145.8	145.1	146.7
Jul 10	145.5	144.8	146.5
Jul 11	145.6	145.0	146.4
Jul 12	145.6	144.9	146.8
Jul 13	145.4	144.9	146.3
Jul 14	145.5	145.0	146.4
Jul 15	145.7	145.0	146.6
Jul 16	145.6	145.0	146.5
Jul 17	145.3	144.3	146.3
Jul 18	145.2	144.3	146.1
Jul 19	145.1	144.5	146.1
Jul 20	145.3	144.9	145.8
Jul 21	145.2	144.9	146.0
Jul 22	143.2	95.8	146.1
Jul 23	145.1	144.5	145.9
Jul 24	145.2	144.2	146.4
Jul 25	145.5	144.5	146.6
Jul 26	145.9	145.1	146.9
Jul 27	145.5	144.4	146.8
Jul 28	145.1	144.7	146.3
Jul 29	145.3	144.5	146.5
Jul 30	145.2	144.0	146.6
Summary	145.5	143.2	146.0

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 87

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	107.4	89.3	118.2
Jul 2	111.7	102.4	120.8
Jul 3	111.5	100.7	122.3
Jul 4	109.3	98.6	120.7
Jul 5	111.5	100.5	122.8
Jul 6	112.0	102.5	125.0
Jul 7	111.8	102.2	121.8
Jul 8	113.0	103.5	124.3
Jul 9	109.5	100.5	120.5
Jul 10	107.2	101.0	112.9
Jul 11	112.0	106.0	119.8
Jul 12	111.5	102.1	122.6
Jul 13	109.4	96.5	116.7
Jul 14	112.3	107.2	120.7
Jul 15	115.0	105.2	124.9
Jul 16	113.8	106.7	122.6
Jul 17	109.3	95.8	120.5
Jul 18	108.8	94.2	118.6
Jul 19	108.3	99.7	119.1
Jul 20	108.6	105.1	114.9
Jul 21	108.6	91.0	117.8
Jul 22	111.9	106.3	122.4
Jul 23	111.6	104.3	118.5
Jul 24	113.3	101.1	127.5
Jul 25	114.5	103.5	125.8
Jul 26	116.6	107.3	127.0
Jul 27	111.1	96.1	123.8
Jul 28	108.3	101.1	120.3
Jul 29	109.8	86.9	122.3
Jul 30	106.6	84.1	123.9
Summary	110.9	106.6	116.6

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 88

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	170.1	169.2	170.8
Jul 2	170.5	91.4	174.0
Jul 3	172.7	171.9	173.5
Jul 4	172.6	171.7	173.5
Jul 5	172.7	171.7	173.8
Jul 6	173.0	172.0	174.1
Jul 7	172.9	171.8	174.2
Jul 8	172.6	171.5	173.6
Jul 9	172.8	171.7	173.8
Jul 10	172.5	171.7	173.4
Jul 11	172.5	171.9	173.5
Jul 12	172.2	171.2	173.5
Jul 13	172.3	171.4	173.1
Jul 14	172.5	171.6	173.3
Jul 15	172.6	171.7	173.7
Jul 16	172.6	171.9	173.6
Jul 17	172.1	171.4	172.9
Jul 18	172.7	172.0	173.4
Jul 19	172.4	171.6	173.7
Jul 20	172.5	171.8	173.5
Jul 21	172.6	172.0	173.1
Jul 22	172.5	171.8	173.6
Jul 23	172.1	171.2	173.1
Jul 24	172.0	171.2	173.3
Jul 25	172.5	171.5	173.7
Jul 26	172.9	171.8	174.0
Jul 27	172.4	171.4	173.6
Jul 28	172.1	171.4	173.3
Jul 29	172.5	171.5	173.7
Jul 30	172.2	169.9	174.0
Summary	172.4	170.1	173.0

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 89
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	186.0	151.7	197.1
Jul 2	198.1	197.2	198.7
Jul 3	199.0	198.5	199.4
Jul 4	199.4	199.0	199.7
Jul 5	199.6	199.4	199.8
Jul 6	199.6	199.4	199.9
Jul 7	199.7	199.4	199.9
Jul 8	199.8	199.6	200.0
Jul 9	199.7	198.2	200.0
Jul 10	198.3	196.4	199.8
Jul 11	199.9	199.7	200.2
Jul 12	200.0	199.8	200.3
Jul 13	199.9	199.7	200.2
Jul 14	200.0	199.7	200.2
Jul 15	197.6	195.9	200.0
Jul 16	195.7	195.3	196.0
Jul 17	195.4	194.7	196.0
Jul 18	195.5	195.2	195.9
Jul 19	195.2	194.9	195.5
Jul 20	194.9	194.5	195.1
Jul 21	194.7	193.3	195.1
Jul 22	194.7	193.2	195.3
Jul 23	196.4	194.3	199.4
Jul 24	199.5	199.2	199.8
Jul 25	199.6	199.3	199.9
Jul 26	199.7	199.5	200.0
Jul 27	199.7	199.5	200.0
Jul 28	199.3	198.9	199.6
Jul 29	199.0	198.6	199.4
Jul 30	199.0	198.4	199.7
Summary	197.8	186.0	200.0

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 90
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	136.8	136.4	137.5
Jul 2	136.8	136.3	137.4
Jul 3	136.8	136.3	137.4
Jul 4	136.7	136.2	137.4
Jul 5	136.7	136.0	137.5
Jul 6	136.8	136.2	137.7
Jul 7	136.8	136.2	137.4
Jul 8	136.8	136.2	137.5
Jul 9	136.7	136.2	137.6
Jul 10	136.5	136.1	137.2
Jul 11	136.6	136.1	137.3
Jul 12	136.5	136.1	137.4
Jul 13	136.5	136.0	137.1
Jul 14	136.5	136.1	137.3
Jul 15	136.7	136.0	137.4
Jul 16	136.6	136.1	137.3
Jul 17	136.4	135.5	137.2
Jul 18	136.3	135.6	136.9
Jul 19	136.2	135.8	136.6
Jul 20	136.3	136.0	136.8
Jul 21	136.2	135.5	136.7
Jul 22	136.3	135.8	137.1
Jul 23	136.2	135.7	136.9
Jul 24	136.2	135.4	137.1
Jul 25	136.4	135.7	137.0
Jul 26	136.6	136.1	137.4
Jul 27	136.3	135.5	137.0
Jul 28	136.2	135.2	137.0
Jul 29	136.3	135.8	137.2
Jul 30	136.1	135.5	137.1
Summary	136.5	136.1	136.8

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 91

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	158.5	153.1	160.1
Jul 2	159.0	157.8	159.9
Jul 3	158.5	157.3	159.3
Jul 4	158.5	157.6	160.0
Jul 5	158.9	157.8	160.5
Jul 6	159.4	158.3	160.7
Jul 7	159.5	158.5	160.8
Jul 8	159.7	159.0	160.4
Jul 9	159.6	158.1	161.2
Jul 10	159.6	158.4	160.2
Jul 11	159.9	158.9	160.5
Jul 12	159.6	156.2	161.2
Jul 13	159.2	150.8	160.3
Jul 14	159.9	158.8	161.1
Jul 15	160.4	159.2	161.4
Jul 16	160.3	157.5	161.2
Jul 17	159.5	156.7	161.1
Jul 18	159.7	157.1	160.8
Jul 19	159.7	158.6	160.7
Jul 20	159.8	158.9	160.7
Jul 21	159.9	153.9	160.9
Jul 22	160.2	158.9	161.1
Jul 23	160.1	159.2	161.6
Jul 24	160.6	159.1	162.4
Jul 25	161.3	159.8	163.2
Jul 26	162.0	161.3	162.9
Jul 27	161.4	157.2	163.3
Jul 28	159.8	148.9	161.1
Jul 29	160.1	159.0	161.7
Jul 30	159.1	152.5	161.5
Summary	159.8	158.5	162.0

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 92
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	175.6	138.4	183.7
Jul 2	179.5	174.7	182.2
Jul 3	178.2	171.7	182.4
Jul 4	179.1	173.0	186.0
Jul 5	180.5	171.4	187.1
Jul 6	181.7	176.3	185.7
Jul 7	179.5	171.7	186.1
Jul 8	180.0	173.9	184.4
Jul 9	179.0	163.7	185.5
Jul 10	179.6	170.8	184.1
Jul 11	183.3	180.0	186.1
Jul 12	181.5	158.8	185.2
Jul 13	180.9	168.1	185.8
Jul 14	182.1	175.5	186.5
Jul 15	184.3	178.8	188.9
Jul 16	183.1	171.6	186.9
Jul 17	179.9	156.5	185.8
Jul 18	181.5	159.0	187.4
Jul 19	181.3	170.7	186.1
Jul 20	180.2	169.0	186.4
Jul 21	183.4	173.7	187.8
Jul 22	185.0	178.2	187.3
Jul 23	183.0	176.0	187.0
Jul 24	184.5	180.5	187.5
Jul 25	185.2	179.9	187.8
Jul 26	186.2	183.8	188.8
Jul 27	181.8	130.8	189.4
Jul 28	183.6	163.3	188.1
Jul 29	183.9	129.2	188.9
Jul 30	181.8	108.7	189.3
Summary	181.6	175.6	186.2

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 93
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	85.3	77.1	102.5
Jul 2	89.6	76.7	105.4
Jul 3	88.0	73.9	108.5
Jul 4	87.8	73.2	108.3
Jul 5	89.6	75.3	109.8
Jul 6	89.2	74.4	110.5
Jul 7	89.1	74.5	107.2
Jul 8	90.5	76.8	110.8
Jul 9	89.2	78.3	105.4
Jul 10	86.9	80.3	99.8
Jul 11	89.4	76.5	106.2
Jul 12	89.6	79.4	108.8
Jul 13	87.1	79.8	103.0
Jul 14	92.2	79.8	108.9
Jul 15	92.6	79.3	110.6
Jul 16	94.3	81.9	110.5
Jul 17	92.7	82.3	110.0
Jul 18	90.0	79.9	105.4
Jul 19	90.9	81.7	107.6
Jul 20	93.1	86.5	104.7
Jul 21	91.3	85.3	102.9
Jul 22	95.5	86.9	112.5
Jul 23	95.5	84.5	112.1
Jul 24	95.2	80.2	118.5
Jul 25	96.2	84.6	112.6
Jul 26	98.0	85.9	116.0
Jul 27	93.6	85.6	112.1
Jul 28	97.0	87.9	112.5
Jul 29	98.7	90.1	116.6
Jul 30	100.6	93.1	118.9
Summary	92.0	85.3	100.6

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 94

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	158.3	149.2	171.3
Jul 2	159.4	146.8	172.1
Jul 3	169.7	168.0	173.1
Jul 4	170.3	168.7	173.3
Jul 5	171.0	169.5	174.1
Jul 6	171.6	170.2	174.5
Jul 7	172.5	171.0	175.0
Jul 8	173.0	171.0	175.4
Jul 9	173.0	169.7	175.5
Jul 10	171.3	164.2	175.0
Jul 11	164.3	160.0	173.1
Jul 12	158.2	154.7	161.3
Jul 13	155.2	153.1	159.3
Jul 14	158.0	152.8	169.7
Jul 15	154.3	151.8	157.6
Jul 16	161.0	150.9	176.4
Jul 17	169.0	158.1	176.1
Jul 18	159.5	154.7	162.6
Jul 19	156.4	153.7	159.8
Jul 20	154.3	152.9	157.9
Jul 21	158.4	151.8	175.8
Jul 22	166.9	157.6	177.1
Jul 23	167.8	161.3	176.8
Jul 24	168.9	160.8	179.0
Jul 25	176.9	175.7	179.7
Jul 26	177.3	176.0	179.7
Jul 27	176.8	174.5	179.3
Jul 28	176.6	175.2	178.6
Jul 29	176.3	174.8	179.2
Jul 30	167.3	161.5	175.9
Summary	166.4	154.3	177.3

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 95
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	92.1	80.5	104.3
Jul 2	111.7	80.5	135.7
Jul 3	133.0	123.4	140.1
Jul 4	116.7	89.9	130.2
Jul 5	94.2	77.7	109.3
Jul 6	88.2	73.7	108.2
Jul 7	89.1	74.4	109.2
Jul 8	91.1	77.0	110.3
Jul 9	87.9	72.9	107.8
Jul 10	105.0	79.4	140.9
Jul 11	96.6	84.2	110.0
Jul 12	90.9	80.1	105.9
Jul 13	87.4	73.7	105.5
Jul 14	89.4	74.7	107.2
Jul 15	91.7	78.9	108.5
Jul 16	106.1	78.0	140.7
Jul 17	110.7	93.9	138.5
Jul 18	98.9	89.0	109.9
Jul 19	91.9	85.0	100.9
Jul 20	90.7	79.5	102.4
Jul 21	90.1	79.7	107.5
Jul 22	92.8	83.0	107.1
Jul 23	90.7	79.5	105.8
Jul 24	91.2	76.0	111.8
Jul 25	105.9	78.5	141.4
Jul 26	99.9	86.4	110.7
Jul 27	92.0	83.5	105.6
Jul 28	128.7	112.4	142.7
Jul 29	131.6	114.8	143.9
Jul 30	134.1	122.8	143.4
Summary	100.7	87.4	134.1

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 96

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	139.0	132.7	140.7
Jul 2	139.3	138.4	140.1
Jul 3	139.0	137.7	140.6
Jul 4	139.3	137.9	141.3
Jul 5	140.1	138.2	141.8
Jul 6	140.7	138.8	142.5
Jul 7	141.0	139.6	143.0
Jul 8	141.4	140.4	143.0
Jul 9	141.5	139.5	143.1
Jul 10	140.9	131.8	142.5
Jul 11	141.9	141.0	143.9
Jul 12	142.0	140.3	144.2
Jul 13	142.0	139.9	143.2
Jul 14	142.4	141.7	143.7
Jul 15	143.1	141.7	144.6
Jul 16	143.0	142.0	144.3
Jul 17	142.4	139.1	144.0
Jul 18	142.5	138.7	144.5
Jul 19	142.5	139.6	143.6
Jul 20	143.1	142.3	144.7
Jul 21	143.1	141.9	144.3
Jul 22	143.3	142.4	144.7
Jul 23	143.6	142.4	145.0
Jul 24	144.2	142.5	146.3
Jul 25	145.4	143.2	148.5
Jul 26	147.1	146.0	148.4
Jul 27	146.4	138.7	148.9
Jul 28	143.9	141.6	145.2
Jul 29	144.3	141.0	147.2
Jul 30	143.5	132.6	146.7
Summary	142.4	139.0	147.1

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 97
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	157.5	151.5	159.0
Jul 2	156.5	155.2	157.8
Jul 3	155.3	154.3	155.8
Jul 4	155.8	154.3	157.5
Jul 5	156.7	155.0	158.1
Jul 6	157.6	156.4	159.1
Jul 7	158.2	156.9	159.8
Jul 8	158.5	157.6	159.8
Jul 9	158.5	157.4	159.4
Jul 10	158.1	156.8	159.1
Jul 11	158.4	157.2	159.8
Jul 12	158.3	157.3	160.2
Jul 13	158.6	157.7	160.1
Jul 14	159.4	158.7	160.4
Jul 15	159.8	158.7	161.2
Jul 16	159.7	158.4	160.6
Jul 17	159.0	152.5	160.7
Jul 18	159.3	157.8	160.5
Jul 19	159.2	157.9	160.7
Jul 20	159.8	159.2	160.7
Jul 21	159.6	152.2	160.5
Jul 22	159.9	158.8	161.2
Jul 23	160.2	159.5	161.3
Jul 24	161.0	159.2	162.8
Jul 25	162.7	160.4	165.7
Jul 26	164.8	163.7	165.9
Jul 27	164.3	162.9	165.7
Jul 28	160.5	159.2	162.4
Jul 29	160.2	150.5	162.3
Jul 30	159.1	148.1	162.8
Summary	159.2	155.3	164.8

Solid Waste Permit 588 Daily Wellhead Temperature

Averages for Well 98

Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	90.7	84.3	101.2
Jul 2	92.7	84.6	103.5
Jul 3	89.4	72.5	103.3
Jul 4	82.0	64.0	104.6
Jul 5	82.0	65.1	107.1
Jul 6	81.3	63.8	107.7
Jul 7	83.3	64.4	102.0
Jul 8	90.3	78.8	104.3
Jul 9	91.0	82.5	102.8
Jul 10	90.2	84.7	101.1
Jul 11	89.1	71.9	107.2
Jul 12	93.3	85.6	106.6
Jul 13	81.2	70.3	101.4
Jul 14	85.7	68.3	102.7
Jul 15	94.2	83.5	108.6
Jul 16	95.3	87.0	105.6
Jul 17	95.0	87.3	105.8
Jul 18	86.9	76.4	97.6
Jul 19	78.4	69.2	95.9
Jul 20	81.3	73.7	97.6
Jul 21	81.0	70.2	97.8
Jul 22	92.2	83.5	105.8
Jul 23	92.3	78.2	106.5
Jul 24	83.7	66.2	105.3
Jul 25	87.0	67.4	106.0
Jul 26	97.1	87.4	109.6
Jul 27	94.9	84.4	107.5
Jul 28	89.3	73.9	109.5
Jul 29	91.5	77.6	109.1
Jul 30	83.8	72.6	107.1
Summary	88.2	78.4	97.1

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 99
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	146.6	146.1	147.1
Jul 2	146.6	146.2	147.1
Jul 3	146.6	146.3	147.0
Jul 4	146.6	146.1	147.2
Jul 5	146.7	146.2	147.3
Jul 6	146.7	146.2	147.3
Jul 7	146.7	146.3	147.3
Jul 8	146.8	146.2	147.6
Jul 9	146.7	146.2	147.4
Jul 10	146.6	146.2	147.1
Jul 11	146.7	146.1	147.4
Jul 12	146.6	146.2	147.2
Jul 13	146.5	146.1	147.1
Jul 14	146.6	146.2	147.3
Jul 15	146.8	146.3	147.6
Jul 16	146.8	146.3	147.4
Jul 17	146.6	145.8	147.2
Jul 18	146.6	146.0	147.2
Jul 19	146.5	146.0	146.9
Jul 20	146.6	146.3	147.1
Jul 21	146.5	146.2	147.0
Jul 22	146.5	145.8	147.1
Jul 23	146.5	146.2	147.2
Jul 24	146.6	145.9	147.3
Jul 25	146.5	146.0	147.2
Jul 26	146.4	145.8	147.2
Jul 27	146.2	145.3	146.9
Jul 28	146.7	146.1	147.7
Jul 29	146.5	146.1	147.1
Jul 30	146.6	146.2	147.4
Summary	146.6	146.2	146.8

Solid Waste Permit 588 Daily Wellhead Temperature
Averages for Well 100
 Bristol, Virginia

Date	Average (°F)	Minimum (°F)	Maximum (°F)
Jul 1	157.9	157.5	158.8
Jul 2	140.1	137.4	142.4
Jul 3	158.0	157.3	158.8
Jul 4	139.0	137.3	141.3
Jul 5	158.2	157.4	159.0
Jul 6	139.8	137.6	142.2
Jul 7	158.6	158.0	159.6
Jul 8	140.3	137.0	142.9
Jul 9	158.7	158.0	159.5
Jul 10	139.7	138.7	142.4
Jul 11	158.8	158.3	159.7
Jul 12	139.9	137.8	142.7
Jul 13	158.7	158.3	159.4
Jul 14	140.2	138.5	142.1
Jul 15	159.3	158.4	160.3
Jul 16	140.8	139.2	143.2
Jul 17	159.2	158.0	160.1
Jul 18	139.9	137.0	141.8
Jul 19	159.3	158.7	160.0
Jul 20	140.0	139.2	141.1
Jul 21	159.4	158.4	160.1
Jul 22	140.3	138.1	142.5
Jul 23	159.7	159.2	160.5
Jul 24	140.4	137.5	143.5
Jul 25	160.2	159.2	161.5
Jul 26	140.5	137.5	144.2
Jul 27	160.7	159.6	161.8
Jul 28	141.8	140.4	143.0
Jul 29	160.3	159.7	161.5
Jul 30	140.2	119.6	143.0
Summary	159.2	157.9	160.8

Appendix D

Solid Waste Permit 588 Daily Borehole Temperature Averages

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Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 1

Date	Depth from Surface					
	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft
1-Jul	165.7	222.9	223.3	231.8	245.1	264.1
2-Jul	165.9	223.0	223.5	231.8	245.1	264.2
3-Jul	165.6	223.0	223.4	231.7	245.2	264.1
4-Jul	165.6	223.0	223.4	231.7	245.3	264.2
5-Jul	165.8	223.1	223.6	231.9	245.3	264.3
6-Jul	165.8	223.2	223.6	231.8	245.2	264.2
7-Jul	165.8	223.2	223.6	231.8	245.2	264.1
8-Jul	165.9	223.3	223.7	231.8	245.4	264.2
9-Jul	165.8	223.3	223.7	231.8	245.4	264.2
10-Jul	165.7	223.0	223.6	231.6	245.0	264.0
11-Jul	165.8	223.2	223.7	231.7	245.2	264.2
12-Jul	165.8	223.2	223.7	231.7	244.9	264.1
13-Jul	165.7	223.2	223.7	231.7	244.8	264.1
14-Jul	165.7	223.3	223.7	231.7	244.9	264.1
15-Jul	165.8	223.4	223.9	231.8	245.0	264.2
16-Jul	165.7	223.3	223.8	231.8	244.9	264.1
17-Jul	165.8	223.3	223.8	231.8	245.1	264.1
18-Jul	165.6	223.3	223.8	231.7	245.1	264.0
19-Jul	165.6	223.2	223.6	231.7	245.1	263.9
20-Jul	165.6	223.3	223.8	231.8	245.3	264.1
21-Jul	165.6	223.1	223.7	231.9	245.2	264.0
22-Jul	165.7	223.4	223.8	231.9	245.3	264.0
23-Jul	165.8	223.4	223.9	232.0	245.4	264.2
24-Jul	165.8	223.5	223.8	232.0	245.5	264.1
25-Jul	165.9	223.5	223.9	232.2	245.6	264.1
26-Jul	166.0	223.5	223.9	232.3	245.6	264.1
27-Jul	165.9	223.3	223.7	232.4	245.7	264.1
28-Jul	165.7	223.2	223.6	232.4	245.8	264.1
29-Jul	165.7	223.1	223.6	232.7	246.0	264.1
30-Jul	165.7	223.2	223.7	232.7	246.2	264.1
31-Jul	165.5	222.8	223.3	233.2	246.3	264.0
Average	165.7	223.2	223.7	232.0	245.3	264.1

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 3

Date	Depth from Surface							
	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jul	*	234.4	234.0	*	*	*	*	*
2-Jul	*	234.3	234.0	*	*	*	*	*
3-Jul	*	234.2	233.9	*	*	*	*	*
4-Jul	*	234.3	233.9	*	*	*	*	*
5-Jul	*	234.4	234.1	*	*	*	*	*
6-Jul	*	234.5	234.1	*	*	*	*	*
7-Jul	*	234.5	234.2	*	*	*	*	*
8-Jul	*	234.6	234.2	*	*	*	*	*
9-Jul	*	234.5	234.2	*	*	*	*	*
10-Jul	*	*	*	*	*	*	*	*
11-Jul	*	*	*	*	*	*	*	*
12-Jul	*	*	*	*	*	*	*	*
13-Jul	*	*	*	*	*	*	*	*
14-Jul	*	*	*	*	*	*	*	*
15-Jul	*	*	*	*	*	*	*	*
16-Jul	*	*	*	*	*	*	*	*
17-Jul	*	*	*	*	*	*	*	*
18-Jul	*	*	*	*	*	*	*	*
19-Jul	*	*	*	*	*	*	*	*
20-Jul	*	*	*	*	*	*	*	*
21-Jul	*	*	*	*	*	*	*	*
22-Jul	*	*	*	*	*	*	*	*
23-Jul	*	*	*	*	*	*	*	*
24-Jul	*	*	*	*	*	*	*	*
25-Jul	*	*	*	*	*	*	*	*
26-Jul	*	*	*	*	*	*	*	*
27-Jul	*	*	*	*	*	*	*	*
28-Jul	*	*	*	*	*	*	*	*
29-Jul	*	*	*	*	*	*	*	*
30-Jul	*	*	*	*	*	*	*	*
31-Jul	*	*	*	*	*	*	*	*
Average	N/A	234.4	234.1	N/A	N/A	N/A	N/A	N/A

* Indicates sensor reading issues

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 5

Date	Depth from Surface							
	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jul	146.5	213.5	213.7	227.5	236.3	239.5	214.0	204.9
2-Jul	146.3	213.6	213.8	227.6	236.3	239.6	214.0	204.9
3-Jul	146.1	213.5	213.7	227.6	236.3	239.4	213.8	204.8
4-Jul	146.4	213.5	213.8	227.6	236.2	239.4	213.8	204.8
5-Jul	147.1	213.6	213.9	227.7	236.4	239.5	214.0	204.9
6-Jul	146.9	213.6	213.8	227.7	236.4	239.6	214.0	205.0
7-Jul	146.2	213.6	213.8	227.8	236.4	239.6	214.0	205.0
8-Jul	145.8	213.6	213.8	227.8	236.5	239.6	214.1	205.0
9-Jul	145.9	213.6	213.8	227.7	236.4	239.5	214.0	205.0
10-Jul	145.5	213.5	213.7	227.7	236.4	239.5	214.0	205.0
11-Jul	145.2	213.5	213.7	227.6	236.3	239.4	213.9	204.8
12-Jul	145.1	213.6	213.7	227.6	236.3	239.5	214.0	204.9
13-Jul	145.2	213.5	213.7	227.6	236.2	239.4	213.9	204.9
14-Jul	145.1	213.6	213.8	227.6	236.2	239.5	214.1	204.9
15-Jul	145.2	213.7	213.9	227.7	236.2	239.5	214.1	205.0
16-Jul	145.2	214.8	215.1	227.7	236.2	239.6	214.2	205.0
17-Jul	145.2	215.0	215.3	227.6	236.2	239.5	214.1	205.0
18-Jul	145.1	215.0	215.3	227.5	236.0	239.3	214.0	204.8
19-Jul	145.0	215.0	215.4	227.4	235.9	239.2	214.0	204.8
20-Jul	145.1	215.1	215.4	227.4	235.9	239.2	214.1	204.8
21-Jul	145.0	215.1	215.4	227.3	235.8	239.2	214.1	204.8
22-Jul	145.2	215.1	215.4	227.2	235.8	239.2	214.1	204.8
23-Jul	145.2	215.3	215.5	227.1	235.9	239.2	214.2	204.8
24-Jul	145.3	215.3	215.6	227.1	236.0	239.2	214.2	204.9
25-Jul	145.3	215.3	215.6	227.2	236.0	239.2	214.3	204.9
26-Jul	145.4	215.3	215.6	227.2	236.2	239.4	214.5	205.1
27-Jul	145.4	215.2	215.5	227.0	235.9	239.1	214.4	204.9
28-Jul	145.2	215.1	215.4	226.9	235.8	239.0	214.5	204.8
29-Jul	145.2	215.2	215.5	227.1	235.9	239.1	214.9	205.0
30-Jul	145.6	215.1	215.4	226.9	235.7	238.9	214.7	204.7
31-Jul	145.3	215.1	215.4	226.8	235.8	238.9	214.8	204.8
Average	145.5	214.4	214.6	227.4	236.1	239.4	214.2	204.9

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 6

Date	Depth from Surface				
	25 ft	50 ft	75 ft	100 ft	125 ft
1-Jul	206.5	196.3	*	196.4	196.7
2-Jul	206.7	197.4	*	197.4	197.7
3-Jul	206.9	196.9	*	196.9	197.1
4-Jul	207.0	198.0	*	198.0	198.3
5-Jul	207.0	198.1	*	198.2	198.5
6-Jul	206.8	197.0	*	197.1	197.4
7-Jul	207.0	196.2	*	196.3	196.5
8-Jul	207.0	197.7	*	197.7	198.1
9-Jul	206.9	197.8	*	197.9	198.3
10-Jul	207.0	197.0	*	196.9	197.2
11-Jul	207.0	197.7	*	197.6	198.0
12-Jul	207.2	198.1	*	198.1	198.3
13-Jul	207.5	196.1	*	196.0	196.0
14-Jul	207.6	196.4	*	196.5	196.6
15-Jul	207.9	197.1	*	196.9	196.9
16-Jul	207.8	197.2	*	197.1	197.1
17-Jul	207.8	196.5	*	196.4	196.3
18-Jul	207.7	195.4	*	195.4	195.4
19-Jul	207.5	194.9	*	194.8	194.8
20-Jul	207.4	195.3	*	195.2	195.2
21-Jul	207.3	194.8	*	194.8	194.8
22-Jul	207.4	139.6	*	194.8	194.8
23-Jul	207.7	121.6	*	195.1	195.0
24-Jul	207.9	195.9	*	195.9	195.8
25-Jul	207.8	195.8	*	195.7	195.7
26-Jul	207.8	196.5	*	196.5	196.5
27-Jul	207.8	195.5	*	195.5	195.4
28-Jul	207.6	195.1	*	195.1	195.2
29-Jul	207.5	197.1	*	197.0	196.9
30-Jul	207.2	195.6	*	195.5	195.7
31-Jul	207.4	196.1	*	196.0	195.9
Average	207.4	192.3	N/A	196.4	196.5

* Indicates sensor reading issues

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 7

Date	Depth from Surface							
	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jul	145.6	191.0	205.7	195.6	192.4	197.0	204.3	207.5
2-Jul	145.6	191.8	205.0	195.6	192.9	197.9	203.0	207.1
3-Jul	145.5	191.8	204.7	195.7	192.8	198.2	203.4	207.2
4-Jul	145.5	191.3	206.0	195.7	192.5	197.9	203.4	207.6
5-Jul	145.5	191.5	205.4	195.9	192.9	198.3	203.2	207.6
6-Jul	145.5	191.4	205.4	195.6	192.7	197.4	203.7	207.4
7-Jul	145.6	191.7	205.6	195.9	193.1	197.4	202.8	207.6
8-Jul	145.6	192.1	205.2	196.0	193.3	197.5	203.1	207.5
9-Jul	145.5	191.6	205.6	195.7	193.0	197.0	203.2	207.3
10-Jul	145.4	191.4	205.5	195.7	192.6	196.9	202.9	207.3
11-Jul	145.5	191.9	205.3	195.9	192.9	197.3	202.6	207.4
12-Jul	145.5	191.9	205.1	195.8	192.9	197.2	202.6	207.2
13-Jul	145.4	191.7	205.2	195.7	192.9	197.0	202.7	207.1
14-Jul	145.5	191.8	204.9	196.0	193.3	197.4	202.7	207.4
15-Jul	145.5	192.0	204.9	195.9	193.2	197.2	202.9	207.4
16-Jul	145.5	192.2	204.8	195.8	193.2	197.2	203.4	207.1
17-Jul	145.5	192.4	205.0	196.0	193.2	197.3	202.0	207.2
18-Jul	145.3	191.2	205.0	195.8	193.0	196.9	203.0	206.9
19-Jul	145.4	191.7	204.9	195.8	193.1	197.0	202.3	206.9
20-Jul	145.3	191.9	205.1	195.8	193.0	196.9	202.3	206.9
21-Jul	145.2	191.4	204.5	195.5	192.7	196.6	202.7	206.5
22-Jul	145.4	191.2	204.8	195.7	192.9	196.7	201.8	206.8
23-Jul	145.4	191.5	204.7	195.9	193.2	196.9	201.6	207.0
24-Jul	145.5	191.6	205.2	195.9	193.2	196.8	203.2	206.7
25-Jul	145.5	191.6	205.0	195.8	193.1	196.7	203.0	206.8
26-Jul	145.5	191.9	205.0	196.0	193.3	196.9	203.0	206.7
27-Jul	145.4	191.8	204.9	195.8	193.1	196.6	202.6	206.5
28-Jul	145.3	191.8	204.9	195.8	193.1	196.6	202.8	206.5
29-Jul	145.3	191.6	205.1	195.6	193.1	196.5	202.6	206.5
30-Jul	145.1	191.4	205.0	195.4	192.9	196.2	202.2	206.3
31-Jul	144.7	191.7	204.8	195.6	193.1	196.3	202.5	206.5
Average	145.4	191.7	205.1	195.8	193.0	197.1	202.8	207.0

Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 8

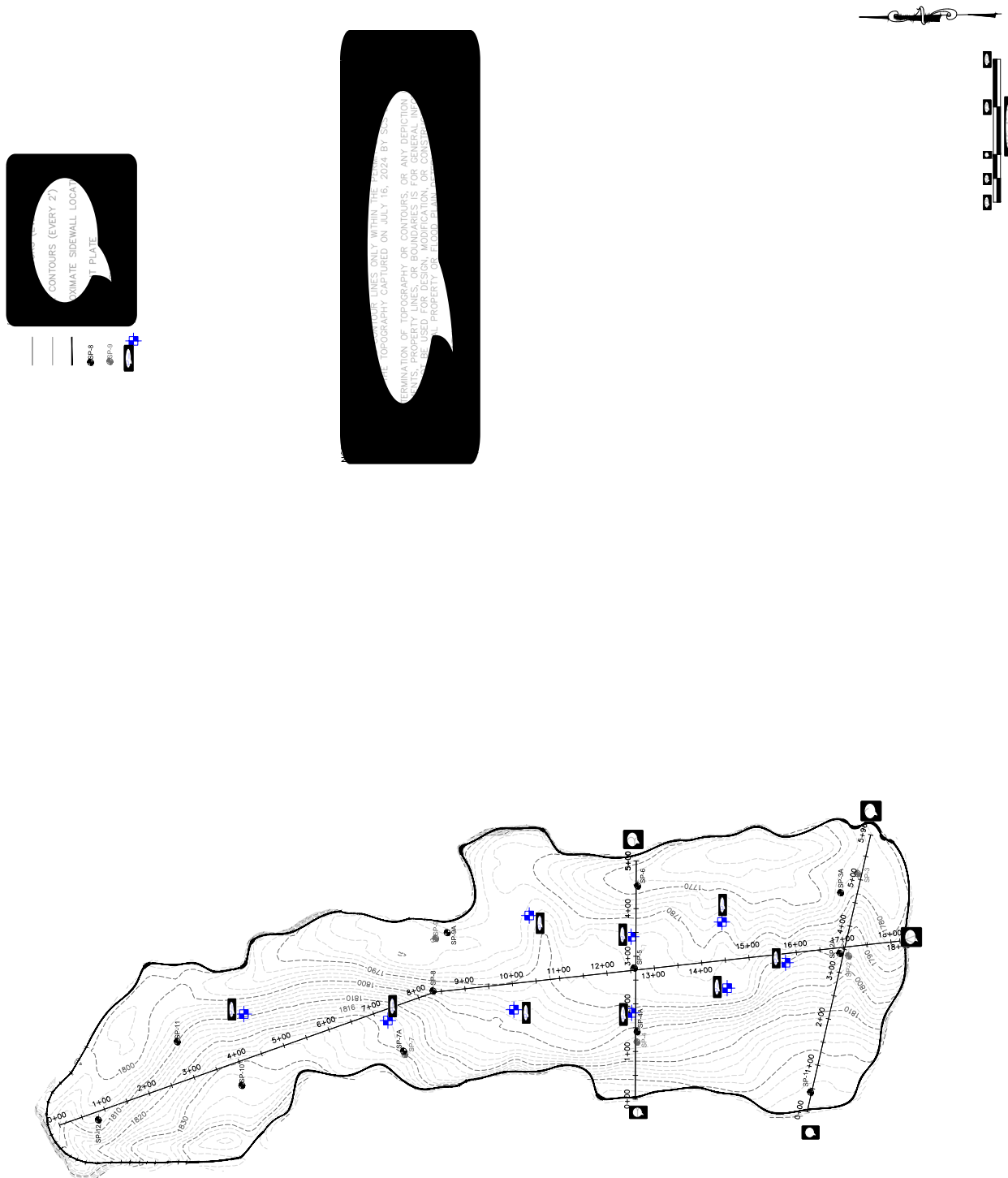
Date	Depth from Surface							
	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jul	188.1	193.6	193.9	196.2	199.1	199.7	189.4	172.9
2-Jul	188.1	193.6	193.9	196.2	199.1	199.7	189.3	172.9
3-Jul	188.3	193.5	193.8	196.2	199.0	199.6	189.3	172.8
4-Jul	189.1	193.6	193.9	196.2	199.1	199.6	189.2	172.8
5-Jul	188.6	193.6	194.0	196.4	199.2	199.7	189.3	172.9
6-Jul	188.2	193.6	193.9	196.3	199.1	199.7	189.3	172.9
7-Jul	188.0	193.6	194.0	196.4	199.2	199.8	189.4	172.9
8-Jul	189.0	193.7	194.0	196.4	199.3	199.8	189.4	172.9
9-Jul	189.0	193.7	194.0	196.4	199.2	199.7	189.3	172.9
10-Jul	188.9	193.6	194.0	196.3	199.2	199.7	189.3	172.8
11-Jul	188.2	193.6	193.9	196.3	199.1	199.7	189.1	172.7
12-Jul	189.0	193.6	194.0	196.3	199.2	199.7	189.1	172.7
13-Jul	187.9	193.6	193.9	196.3	199.2	199.6	189.1	172.6
14-Jul	188.4	193.7	194.0	196.4	199.3	199.8	189.2	172.7
15-Jul	188.0	193.7	194.0	196.4	199.3	199.8	189.2	172.7
16-Jul	188.1	193.7	194.1	196.4	199.3	199.9	189.2	172.7
17-Jul	188.3	193.8	194.0	196.4	199.4	199.8	189.2	172.6
18-Jul	188.8	193.6	193.9	196.3	199.2	199.6	189.0	172.5
19-Jul	188.2	193.6	194.0	196.4	199.3	199.7	189.1	172.5
20-Jul	187.9	193.6	193.9	196.2	199.2	199.6	188.9	172.4
21-Jul	187.8	193.6	193.9	196.2	199.1	199.6	188.9	172.4
22-Jul	187.9	193.7	193.9	196.3	199.3	199.7	188.9	172.4
23-Jul	187.9	193.7	194.0	196.4	199.4	199.7	188.9	172.4
24-Jul	187.8	193.7	194.0	196.4	199.4	199.7	188.9	172.5
25-Jul	187.8	193.7	194.0	196.4	199.4	199.8	189.0	172.4
26-Jul	187.7	193.8	194.1	196.5	199.6	199.9	189.1	172.7
27-Jul	187.8	193.7	194.1	196.4	199.5	199.8	189.0	172.5
28-Jul	186.8	193.7	193.9	196.4	199.4	199.7	188.9	172.4
29-Jul	188.3	193.7	194.0	196.4	199.4	199.8	188.9	172.5
30-Jul	183.5	193.6	193.9	196.2	199.3	199.6	188.8	172.3
31-Jul	185.5	193.7	193.9	196.4	199.4	199.5	188.7	172.3
Average	188.0	193.7	194.0	196.3	199.3	199.7	189.1	172.6

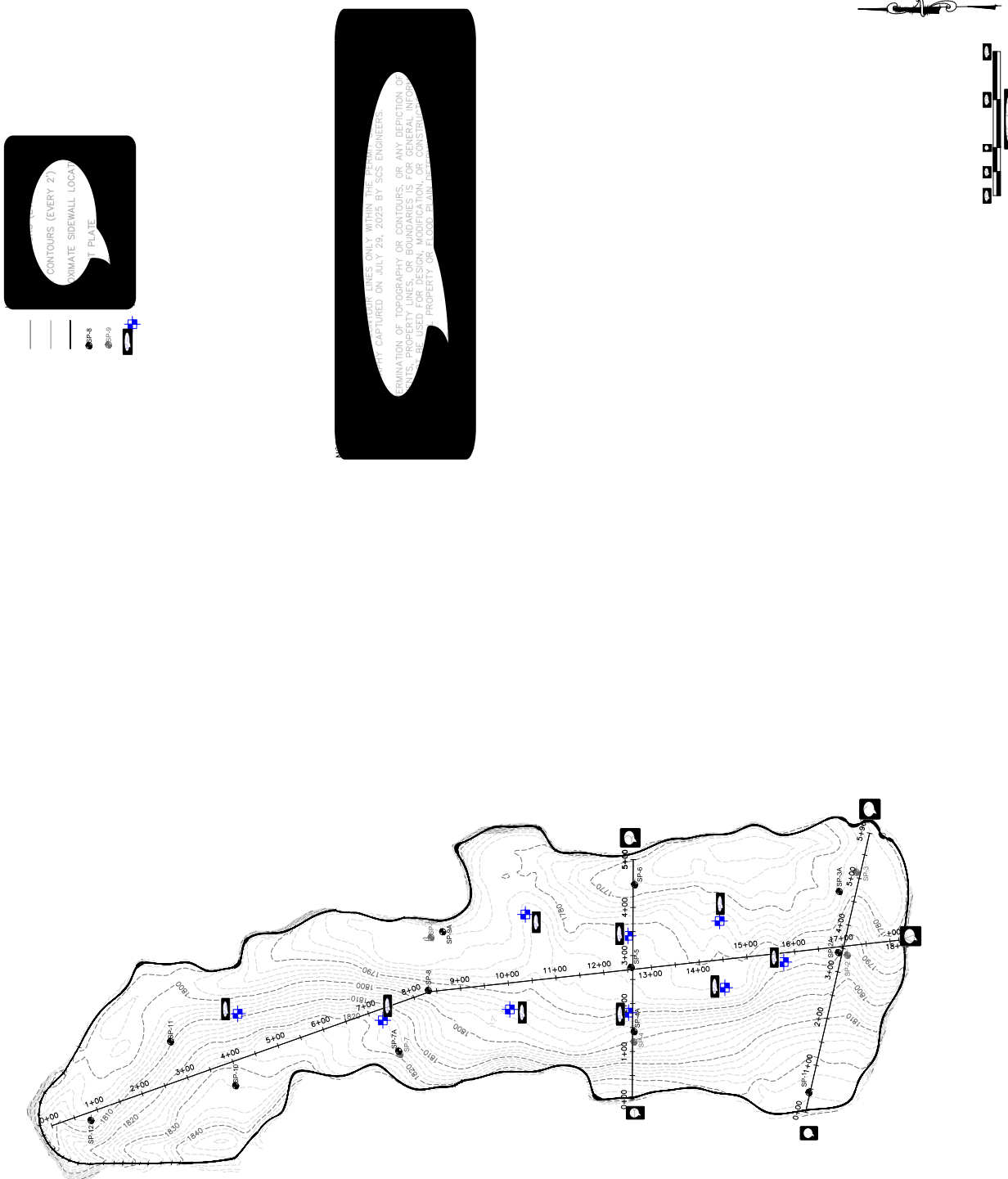
Solid Waste Permit 588 Daily Borehole Temperature Averages for Borehole 9

Date	Depth from Surface							
	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
1-Jul	108.9	149.3	148.8	149.4	144.9	132.2	116.4	105.1
2-Jul	109.5	149.4	149.0	149.5	145.1	132.4	116.6	105.3
3-Jul	109.5	149.4	149.0	149.4	144.9	132.4	116.5	105.2
4-Jul	109.5	149.5	149.0	149.5	145.1	132.6	116.6	105.3
5-Jul	109.8	149.6	149.2	149.6	145.1	132.8	116.6	105.3
6-Jul	109.4	149.5	149.0	149.5	145.1	132.7	116.6	105.3
7-Jul	109.8	149.7	149.2	149.5	145.0	132.5	116.5	105.2
8-Jul	109.6	149.8	149.3	149.5	145.1	132.5	116.6	105.3
9-Jul	109.6	149.8	149.2	149.4	145.0	132.4	116.6	105.2
10-Jul	109.6	149.5	149.0	149.3	144.8	132.4	116.4	105.0
11-Jul	109.5	149.6	149.0	149.5	145.0	132.6	116.5	105.1
12-Jul	109.7	149.7	149.2	149.5	144.9	132.5	116.5	105.1
13-Jul	109.7	149.7	149.1	149.4	144.9	132.4	116.5	105.1
14-Jul	109.9	149.7	149.2	149.5	144.9	132.5	116.6	105.2
15-Jul	109.9	149.8	149.3	149.5	145.0	132.4	116.6	105.3
16-Jul	109.7	149.8	149.3	149.5	145.0	132.4	116.6	105.3
17-Jul	110.0	149.8	149.3	149.5	144.9	132.3	116.5	105.2
18-Jul	109.8	149.7	149.3	149.4	144.7	132.3	116.4	105.1
19-Jul	109.8	149.7	149.2	149.2	144.6	132.3	116.3	105.0
20-Jul	109.8	149.7	149.3	149.4	144.7	132.4	116.4	105.2
21-Jul	109.8	149.7	149.3	149.2	144.7	132.2	116.3	105.1
22-Jul	109.8	149.8	149.4	149.4	144.9	132.3	116.5	105.3
23-Jul	109.9	149.9	149.6	149.4	144.9	132.4	116.5	105.4
24-Jul	110.0	150.0	149.6	149.4	144.9	132.4	116.5	105.4
25-Jul	110.1	150.0	149.5	149.5	145.0	132.4	116.6	105.4
26-Jul	110.1	150.1	149.7	149.5	145.0	132.5	116.7	105.5
27-Jul	109.9	150.0	149.5	149.3	144.8	132.4	116.5	105.3
28-Jul	110.1	150.0	149.5	149.3	144.7	132.2	116.4	105.3
29-Jul	109.9	150.1	149.7	149.4	144.8	132.3	116.5	105.4
30-Jul	108.2	150.0	149.5	149.4	144.8	132.4	116.5	105.4
31-Jul	106.0	149.5	148.9	149.2	144.7	132.3	116.4	104.9
Average	109.6	149.7	149.3	149.4	144.9	132.4	116.5	105.2

Appendix E

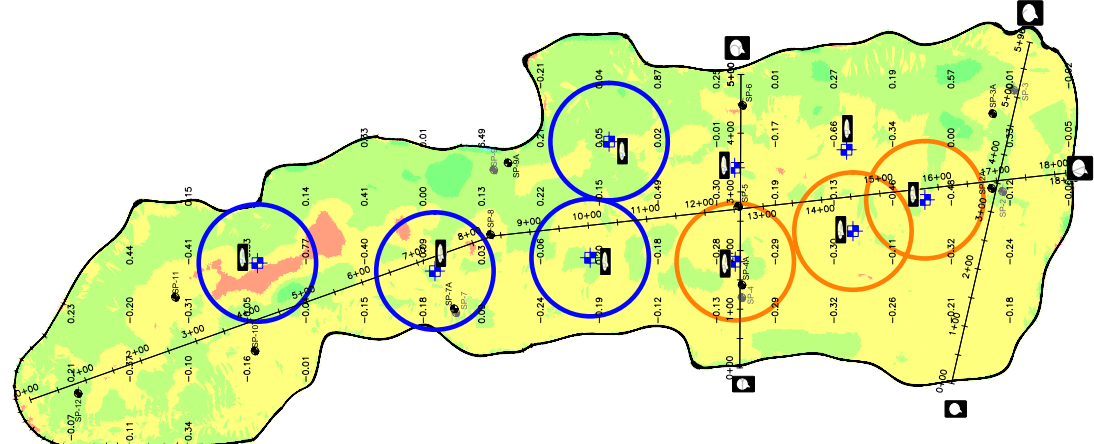
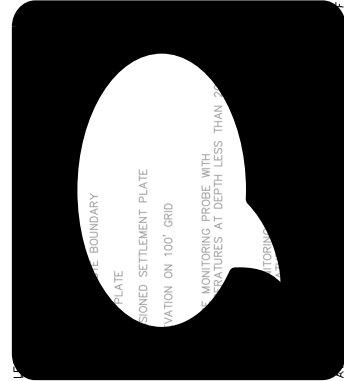
Monthly Topography Analysis

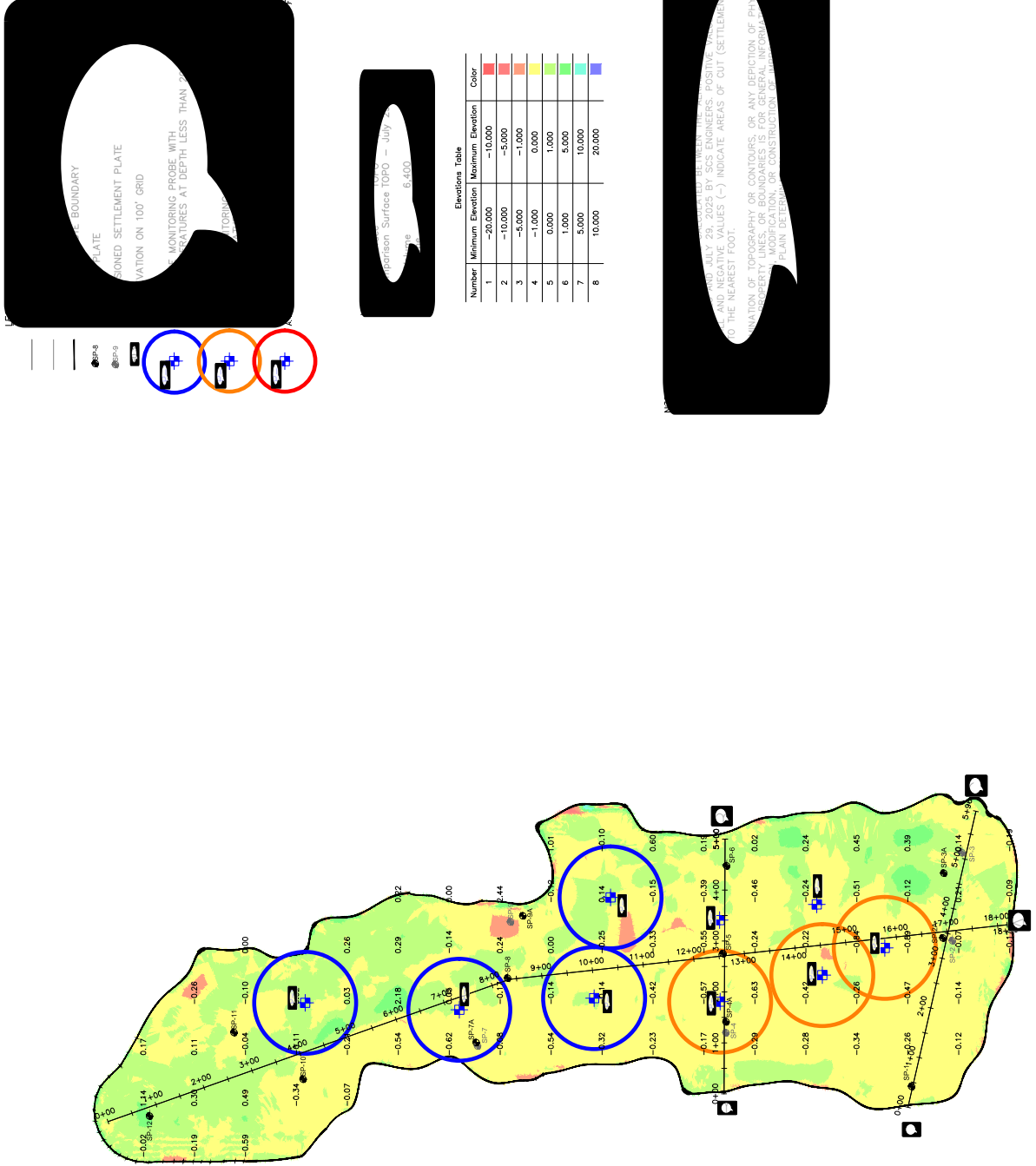


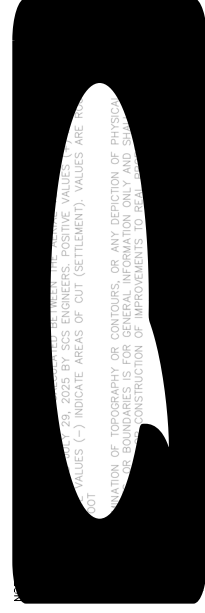




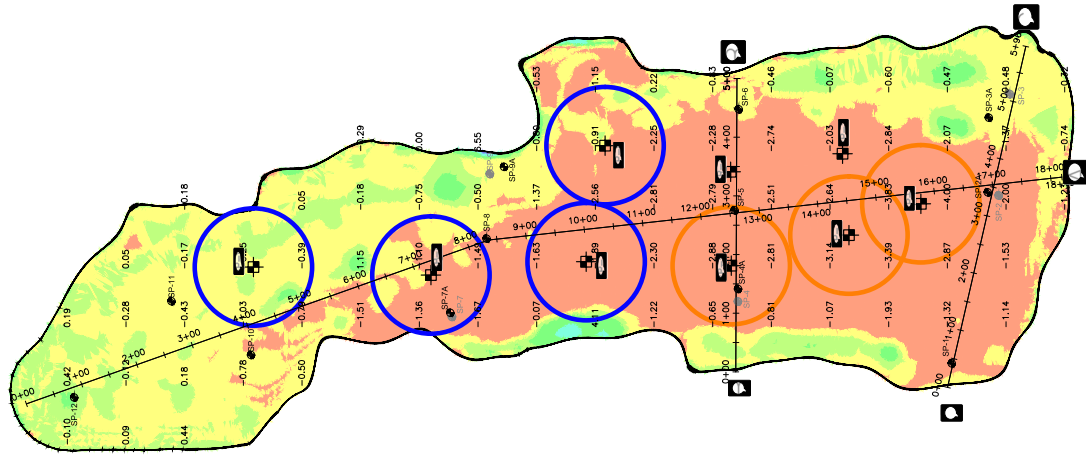
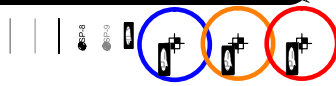
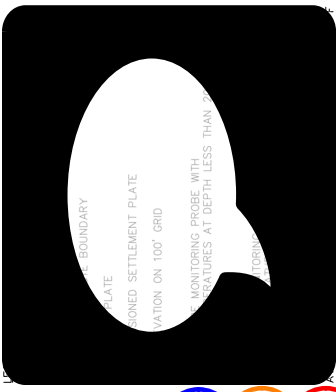
Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-20.000	-10.000	Red
2	-10.000	-5.000	Orange
3	-5.000	-1.000	Yellow
4	-1.000	0.000	Light Green
5	0.000	1.000	Green
6	1.000	5.000	Dark Green
7	5.000	10.000	Blue
8	10.000	20.000	Dark Blue







Number	Elevations Table		Color
	Minimum Elevation	Maximum Elevation	
1	-20,000	-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	
8	10,000	20,000	

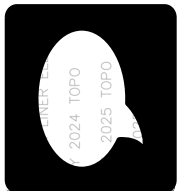




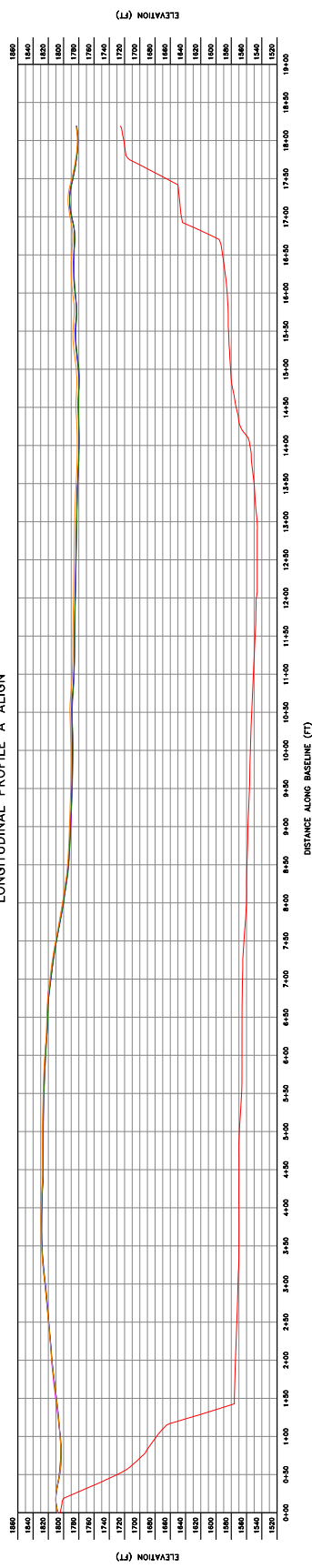
SCS ENGINEERS
STEARN'S, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
1521 MIDLOTHIAN TURN - MIDLOTHIAN, VA 23113
PH: (804) 378-7440 FAX: (804) 378-7433

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

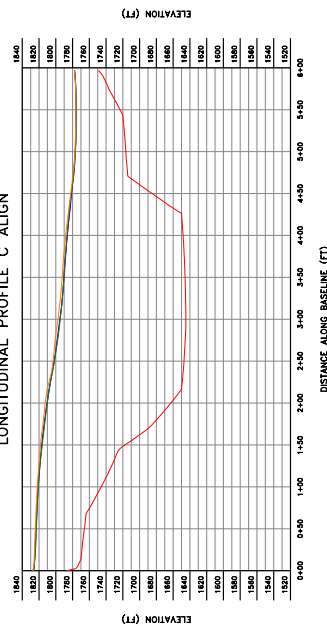
PROFILES
MONTHLY TOPOGRAPHY ANALYSIS
SOLID WASTE PERMIT #588



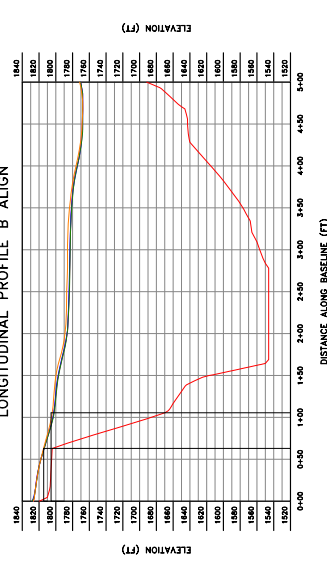
LONGITUDINAL PROFILE A ALIGN



LONGITUDINAL PROFILE C ALIGN



LONGITUDINAL PROFILE B ALIGN



Appendix F

Field Logs (July 2025)
Lab Report (June 2025)
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	7/22-7/23													
Personnel	M.Myers & C.Kirby							Checked By: L. Howard						
Location ID	Date	Casing Stickup (in)	Depth to Liquid (ft)	Prior Depth to Liquid (ft)	Cycle Count	Prior Cycle Count	Well Casing Depth (ft)	Pump Depth (ft)	Liquid Column Thickness	Pump (Y/N)	Pump PSI	Sample Collected	Check/Photo	Comments
PUMP INSTALLED														
EW-49	7/22/2025	65.00	---	---	79565	79565	96.15	87	---	Y	0	N	Y	Too Tall
EW-50	7/22/2025	49.00	---	---	1604584	157797	77.70	83	---	Y	95	N	Y	MX4 Alarmed
EW-52 ²	7/22/2025	43.00	---	---	1239186	1239186	98.70	80	---	Y	0	N	Y	
EW-53	7/22/2025	52.00	50.95	50.70	3294540	3294540	100.70	77	49.75	Y	0	N	Y	
EW-55	7/22/2025	54.00	---	---	73387	73387	90.40	90	---	Y	0	N	Y	MX4 Alarmed, Air Disconnected
EW-59	7/22/2025	56.00	44.15	40.99	3681145	3679152	73.40	61	29.25	Y	110	N	Y	
EW-60	7/22/2025	44.00	69.25	42.62	272869	245163	81.80	72.5	12.55	Y	95	N	Y	
EW-61	7/22/2025	40.00	75.75	72.35	135257	103848	87.80	75	12.05	Y	95	N	Y	
EW-62	7/22/2025	47.00	84.61	81.24	214599	214599	110.60	91.5	25.99	Y	0	N	Y	Air Disconnected
EW-65	7/22/2025	34.00	46.05	46.42	119158	111452	88.40	70	42.35	Y	110	N	Y	
EW-67	7/22/2025	29.00	40.42	40.11	---	288744	107.75	76	67.33	N	---	N	Y	Pump Removed
EW-68	7/22/2025	27.00	45.74	44.79	2662098	2662091	73.57	60	27.83	Y	110	N	Y	
EW-76 ²	7/22/2025	30.00	---	---	---	---	127.00	108	---	Y	---	N	Y	
EW-78	7/22/2025	46.00	46.66	46.21	119520	77174	57.00	47	10.34	Y	90	N	Y	
EW-81	7/22/2025	59.00	106.06	105.05	---	---	151.56	125	45.50	Y	0	N	Y	Air Disconnected
EW-82	7/22/2025	46.00	122.25	120.31	631288	631288	163.26	145	41.01	Y	0	N	Y	Air Disconnected
EW-83	7/22/2025	57.00	84.64	81.39	Too Tall	Too Tall	167.04	145	82.40	Y	0	N	Y	Air Disconnected
EW-85	7/22/2025	58.00	61.91	61.05	334195	312919	91.00	78	29.09	Y	100	N	Y	
EW-87	7/22/2025	57.00	53.27	---	346749	340749	149.57	110	96.30	Y	0	N	Y	
EW-88	7/22/2025	43.00	60.81	61.32	438820	365317	100.00	61	39.19	Y	95	N	Y	
EW-89	7/22/2025	59.00	34.84	---	317018	229976	84.57	70	49.73	Y	35	N	Y	
EW-96	7/22/2025	81.00	51.98	47.97	Too Tall	Too Tall	164.35	145	112.37	Y	Too Tall	N	Y	Air Disconnected
EW-98	7/22/2025	52.00	46.09	35.05	1886306	1886306	51.00	46	4.91	Y	105	Y	Y	

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

Date	7/22-7/23													
Personnel	M.Myers & C.Kirby						Checked By: L. Howard							
Location ID	Date	Casing Stickup (in)	Depth to Liquid (ft)	Prior Depth to Liquid (ft)	Cycle Count	Prior Cycle Count	Well Casing Depth (ft)	Pump Depth (ft)	Liquid Column Thickness	Pump (Y/N)	Pump PSI	Sample Collected	Check/Photo	Comments
NO PUMP														
EW-54	7/22/2025	41.00	37.45	35.12	---	---	82.70	65	45.25	N	---	N	Y	
EW-56	7/22/2025	36.00	Dry	Dry	---	---	42.71	---	---	N	---	N	Y	
EW-69	7/22/2025	56.00	92.60	93	---	---	98.00	---	5.40	N	---	N	Y	
EW-70	7/22/2025	19.00	63.89	64.64	---	---	71.00	58	7.11	N	---	N	Y	
EW-73	7/22/2025	40.00	106.31	107.42	---	---	116.00	---	9.69	N	---	N	Y	
EW-80	7/22/2025	28.00	137.05	137.15	---	---	149.00	---	11.95	N	---	N	Y	
EW-84	7/22/2025	49.00	78.49	79.95	---	---	130.56	---	52.07	N	---	N	Y	
EW-86	7/22/2025	45.00	76.54	77.02	---	---	153.00	---	76.46	N	---	N	Y	
EW-91	7/22/2025	54.00	47.26	46.06	---	---	137.70	---	90.44	N	---	N	Y	
EW-92	7/22/2025	86.00	---	---	---	---	112.99	---	---	N	---	N	Y	Too Tall
EW-95	7/22/2025	45.00	59.45	---	---	---	68.00	---	---	N	---	N	Y	
EW-97	7/22/2025	98.00	---	---	---	---	144.50	---	---	N	---	N	Y	Too Tall
EW-99	7/22/2025	45.00	59.92	59.11	---	---	65.00	---	5.08	N	---	N	Y	

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

Date	7/22-7/23										L. Howard			
Personnel	M. Myers & C. Kirby										Checked By:			
Location ID	Date	Casing Stickup (in)	Depth to Liquid (ft)	Prior Depth to Liquid (ft)	Cycle Count	Prior Cycle Count	Well Casing Depth (ft)	Pump Depth (ft)	Liquid Column Thickness	Pump (Y/N)	Pump PSI	Sample Collected	Check/Photo	Comments
MEASURE CASING STICKUP AND CYCLE COUNTER ONLY														
EW-36A¹	7/22/2025	64.00	----	----	459999	459999	180.00	135	----	Y	50	N	Y	
EW-66²	7/22/2025	32.00	----	32.91	39018	38790	----	----	----	Y	0	N	Y	
EW-93²	7/22/2025	50.00	----	35.82	1409960	1408232	111.00	----	----	Y	0	N	Y	Air Disconnected
EW-94¹	7/22/2025	----	----	----	----	1642543	50.00	38	----	Y	----	N	Y	Spraying Liquid
DO NOT APPROACH														
EW-33B	----	----	----	----	----	----	----	----	----	----	----	----	----	SSO Concerns - Do not approach
EW-63	----	----	----	----	----	----	----	----	----	----	----	----	----	SSO Concerns - Do not approach
EW-64	----	----	----	----	----	----	----	----	----	----	----	----	----	SSO Concerns - Do not approach
EW-77	----	----	----	----	----	----	----	----	----	----	----	----	----	SSO Concerns - Do not approach
EW-79	----	----	----	----	----	----	----	----	----	----	----	----	----	SSO Concerns - Do not approach

DNM = Do not measure

1 = Not Measured as gauging equipment has historically become stuck in well.

2 = Not Measured as pump is shut off and intended to be pulled for maintenance/replacement.

Dual Phase LFG-EW Sample Collection Log

Location ID	Sample Date	Sample Time	Temperature (oC)	pH (s.u.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Observations
EW-33B	2023-09-15	08:00:00	18.5	7.2	150	8.5	120	0.5	Clear water, slight green tint
EW-36A	2023-09-15	09:30:00	19.0	7.5	160	9.0	130	0.6	Water surface shows minor ripples
EW-49	2023-09-15	11:00:00	19.5	7.8	170	9.5	140	0.7	Small amount of organic debris visible
EW-50	2023-09-15	12:30:00	20.0	8.0	180	10.0	150	0.8	Water appears slightly more turbid
EW-51	2023-09-15	14:00:00	20.5	8.2	190	10.5	160	0.9	Noticeable increase in green color
EW-52	2023-09-15	15:30:00	21.0	8.5	200	11.0	170	1.0	Water surface shows some floating particles
EW-53	2023-09-15	17:00:00	21.5	8.8	210	11.5	180	1.1	Water appears slightly more turbid
EW-54	2023-09-15	18:30:00	22.0	9.0	220	12.0	190	1.2	Water surface shows some floating particles
EW-55	2023-09-15	20:00:00	22.5	9.2	230	12.5	200	1.3	Water appears slightly more turbid
EW-57	2023-09-15	21:30:00	23.0	9.5	240	13.0	210	1.4	Water appears slightly more turbid
EW-58	2023-09-15	23:00:00	23.5	9.8	250	13.5	220	1.5	Water appears slightly more turbid
EW-59	2023-09-16	00:30:00	24.0	10.0	260	14.0	230	1.6	Water appears slightly more turbid
EW-60	2023-09-16	02:00:00	24.5	10.2	270	14.5	240	1.7	Water appears slightly more turbid
EW-61	2023-09-16	03:30:00	25.0	10.5	280	15.0	250	1.8	Water appears slightly more turbid
EW-62	2023-09-16	05:00:00	25.5	10.8	290	15.5	260	1.9	Water appears slightly more turbid
EW-64	2023-09-16	06:30:00	26.0	11.0	300	16.0	270	2.0	Water appears slightly more turbid
EW-67	2023-09-16	08:00:00	26.5	11.2	310	16.5	280	2.1	Water appears slightly more turbid
EW-68	2023-09-16	09:30:00	27.0	11.5	320	17.0	290	2.2	Water appears slightly more turbid
EW-70	2023-09-16	11:00:00	27.5	11.8	330	17.5	300	2.3	Water appears slightly more turbid
EW-72	2023-09-16	12:30:00	28.0	12.0	340	18.0	310	2.4	Water appears slightly more turbid

Dual Phase LFG-EW Sample Collection Log

Location ID	Sample Date	Sample Time	Temperature (oC)	pH (s.u.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Observations
EW-73	---	---	---	---	---	---	---	---	---
EW-74	---	---	---	---	---	---	---	---	---
EW-75	---	---	---	---	---	---	---	---	---
EW-76	---	---	---	---	---	---	---	---	---
EW-78	---	---	---	---	---	---	---	---	---
EW-81	---	---	---	---	---	---	---	---	---
EW-82	---	---	---	---	---	---	---	---	---
EW-83	---	---	---	---	---	---	---	---	---
EW-85	---	---	---	---	---	---	---	---	---
EW-87	---	---	---	---	---	---	---	---	---
EW-88	---	---	---	---	---	---	---	---	---
EW-89	---	---	---	---	---	---	---	---	---
EW-90	---	---	---	---	---	---	---	---	---
EW-91	---	---	---	---	---	---	---	---	---
EW-92	---	---	---	---	---	---	---	---	---
EW-94	---	---	---	---	---	---	---	---	---
EW-96	---	---	---	---	---	---	---	---	---
EW-98	7/22/2025	9:30	51.20	6.74	19.87	0.60	-75.00	11.57	Black
EW-100	---	---	---	---	---	---	---	---	---
Sampler:		M.Myers, C. Kirby		Samples Shipped By: Courier					
Log Checked By:		L. Howard		Laboratory: Enthalpy Analytical					



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

Certificate of Analysis

Final Report

Laboratory Order ID 25F2356

Client Name: SCS Engineers - Winchester

296 Victory Road

Winchester, VA 22602

Submitted To: Jennifer Robb

Client Site I.D.: Bristol LFG-EW Monthly Monitoring

Date Received: June 25, 2025 8:00

Date Issued: July 9, 2025 18:24

Project Number: [none]

Purchase Order:

Enclosed are the results of analyses for samples received by the laboratory on 06/25/2025 08:00. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Keith Sprouse

Laboratory Manager

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

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

Date Issued: 7/9/2025 6:24:27PM

Laboratory Sample ID:	25F2356-01	Client Sample ID:	EW-78					
Parameter	Samp ID	Reference Method	Sample Results	Qual	DL	LOQ	Dil. Factor	Units
Arsenic	01	SW6010D	0.322		0.0030	0.0200	1	mg/L
Barium	01	SW6010D	0.514		0.0010	0.0100	1	mg/L
Chromium	01	SW6010D	0.178		0.0010	0.0100	1	mg/L
Copper	01	SW6010D	0.0082	J	0.0020	0.0100	1	mg/L
Lead	01	SW6010D	0.0079	J	0.0030	0.0100	1	mg/L
Mercury	01	SW6020B	2.37		0.200	0.200	1	ug/L
Nickel	01	SW6010D	0.1796		0.0010	0.0100	1	mg/L
Zinc	01	SW6010D	0.0455		0.0070	0.0100	1	mg/L
Benzene	01	SW8260D	97.4		8.00	20.0	20	ug/L
Ethylbenzene	01	SW8260D	29.2		8.00	20.0	20	ug/L
Tetrahydrofuran	01	SW8260D	611		200	200	20	ug/L
Toluene	01	SW8260D	40.2		10.0	20.0	20	ug/L
Xylenes, Total	01	SW8260D	29.6	J	20.0	60.0	20	ug/L
Acetic Acid	01	D3705	29.9		0.7	5.0	10	mg/L
Ammonia as N	01RE1	EPA350.1 R2.0	2160		120	200	2000	mg/L
BOD	01	SM5210B-2016	230		0.2	2.0	1	mg/L
COD	01	SM5220D-2011	3500		630	1000	100	mg/L
Nitrate+Nitrite as N	01	SM4500-NO3F-2019	0.28		0.03	0.10	2	mg/L
TKN as N	01	EPA351.2 R2.0	1720		45.9	250	1	mg/L
Total Recoverable Phenolics	01	SW9065	0.508		0.031	0.050	1	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 " .

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW-78	25F2356-01	Ground Water	06/24/2025 09:20	06/25/2025 08:00
Trip Blank	25F2356-02	Non-Potable Water	06/11/2025 10:35	06/25/2025 08:00

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Client Sample ID: EW-78

Laboratory Sample ID: 25F2356-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analysis
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Metals (Total) by EPA 6000/7000 Series Methods

Silver	01	7440-22-4	SW6010D	06/30/2025 17:00	07/01/2025 10:21	BLOD		0.0020	0.0100	1	mg/L	NBT
Arsenic	01	7440-38-2	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.322		0.0030	0.0200	1	mg/L	NBT
Barium	01	7440-39-3	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.514		0.0010	0.0100	1	mg/L	NBT
Cadmium	01	7440-43-9	SW6010D	06/30/2025 17:00	07/01/2025 10:21	BLOD		0.0004	0.0040	1	mg/L	NBT
Chromium	01	7440-47-3	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.178		0.0010	0.0100	1	mg/L	NBT
Copper	01	7440-50-8	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.0082	J	0.0020	0.0100	1	mg/L	NBT
Mercury	01	7439-97-6	SW6020B	06/30/2025 17:00	07/01/2025 10:09	2.37		0.200	0.200	1	ug/L	AB
Nickel	01	7440-02-0	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.1796		0.0010	0.0100	1	mg/L	NBT
Lead	01	7439-92-1	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.0079	J	0.0030	0.0100	1	mg/L	NBT
Selenium	01	7782-49-2	SW6010D	06/30/2025 17:00	07/01/2025 10:21	BLOD		0.0080	0.0500	1	mg/L	NBT
Zinc	01	7440-66-6	SW6010D	06/30/2025 17:00	07/01/2025 10:21	0.0455		0.0070	0.0100	1	mg/L	NBT

Volatile Organic Compounds by GCMS

2-Butanone (MEK)	01	78-93-3	SW8260D	07/01/2025 18:43	07/01/2025 18:43	BLOD		60.0	200	20	ug/L	TLH
Acetone	01	67-64-1	SW8260D	07/01/2025 18:43	07/01/2025 18:43	BLOD		140	200	20	ug/L	TLH
Benzene	01	71-43-2	SW8260D	07/01/2025 18:43	07/01/2025 18:43	97.4		8.00	20.0	20	ug/L	TLH
Ethylbenzene	01	100-41-4	SW8260D	07/01/2025 18:43	07/01/2025 18:43	29.2		8.00	20.0	20	ug/L	TLH
Toluene	01	108-88-3	SW8260D	07/01/2025 18:43	07/01/2025 18:43	40.2		10.0	20.0	20	ug/L	TLH
Xylenes, Total	01	1330-20-7	SW8260D	07/01/2025 18:43	07/01/2025 18:43	29.6	J	20.0	60.0	20	ug/L	TLH
Tetrahydrofuran	01	109-99-9	SW8260D	07/01/2025 18:43	07/01/2025 18:43	611		200	200	20	ug/L	TLH

Surr: 1,2-Dichloroethane-d4 (Surr) 01 112 % 70-120 07/01/2025 18:43 07/01/2025 18:43

Surr: 4-Bromofluorobenzene (Surr) 01 99.9 % 75-120 07/01/2025 18:43 07/01/2025 18:43

Surr: Dibromofluoromethane (Surr) 01 106 % 70-130 07/01/2025 18:43 07/01/2025 18:43

Surr: Toluene-d8 (Surr) 01 101 % 70-130 07/01/2025 18:43 07/01/2025 18:43

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM
Work Order: 25F2356

Client Sample ID: EW-78 Laboratory Sample ID: 25F2356-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analys
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Semivolatile Organic Compounds by GCMS

Anthracene	01	120-12-7	SW8270E	06/30/2025 11:45	07/01/2025 23:22	BLOD		50.0	100	10	ug/L	BMS
Surr: 2,4,6-Tribromophenol (Surr)	01	80.0 %	5-136	06/30/2025 11:45	07/01/2025 23:22							
Surr: 2-Fluorobiphenyl (Surr)	01	39.6 %	9-117	06/30/2025 11:45	07/01/2025 23:22							
Surr: 2-Fluorophenol (Surr)	01	18.2 %	5-60	06/30/2025 11:45	07/01/2025 23:22							
Surr: Nitrobenzene-d5 (Surr)	01	38.2 %	5-151	06/30/2025 11:45	07/01/2025 23:22							
Surr: Phenol-d5 (Surr)	01	19.4 %	5-60	06/30/2025 11:45	07/01/2025 23:22							
Surr: p-Terphenyl-d14 (Surr)	01	24.8 %	5-141	06/30/2025 11:45	07/01/2025 23:22							



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1941 Reymet Road
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Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Client Sample ID: EW-78

Laboratory Sample ID: 25F2356-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analysis
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Ion Chromatography Analyses

Acetic Acid	01	64-19-7	D3705	06/26/2025 14:04	06/26/2025 14:04	29.9		0.7	5.0	10	mg/L	MGC
Butyric Acid	01	107-92-6	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.7	5.0	10	mg/L	MGC
Formic Acid	01	64-18-6	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.6	5.0	10	mg/L	MGC
n-Hexanoic Acid	01	142-62-1	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.6	5.0	10	mg/L	MGC
i-Hexanoic Acid	01	646-07-1	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.5	5.0	10	mg/L	MGC
Lactic Acid	01	50-21-5	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.6	5.0	10	mg/L	MGC
n-Pentanoic Acid	01	109-52-4	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.6	5.0	10	mg/L	MGC
i-Pentanoic Acid	01	503-74-2	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		1.0	5.0	10	mg/L	MGC
Propionic Acid	01	79-09-4	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.6	5.0	10	mg/L	MGC
Pyruvic Acid	01	127-17-3	D3705	06/26/2025 14:04	06/26/2025 14:04	BLOD		0.9	5.0	10	mg/L	MGC

Wet Chemistry Analysis

Ammonia as N	01RE1	7664-41-7	EPA350.1 R2.0	07/08/2025 10:00	07/08/2025 13:54	2160		120	200	2000	mg/L	AAL
BOD	01	E1640606	SM5210B-20 16	06/25/2025 14:37	06/25/2025 14:37	230		0.2	2.0	1	mg/L	CET
COD	01	NA	SM5220D-20 11	06/26/2025 23:48	06/26/2025 23:48	3500		630	1000	100	mg/L	AAH
Nitrate as N	01	14797-55-8	SM4500-NO 3F-2019CAL C	07/08/2025 11:00	07/08/2025 13:23	BLOD		0.100	0.500	2	mg/L	MKS
Nitrate+Nitrite as N	01	E701177	SM4500-NO 3F-2019	07/08/2025 11:00	07/08/2025 13:23	0.28		0.03	0.10	2	mg/L	BKR
Nitrite as N	01	14797-65-0	SM4500-NO 2B-2021	06/25/2025 17:00	06/25/2025 17:30	BLOD		0.10	0.50	1	mg/L	MKS
Total Recoverable Phenolics	01	NA	SW9065	07/02/2025 14:49	07/02/2025 14:49	0.508		0.031	0.050	1	mg/L	SPH
TKN as N	01	E17148461	EPA351.2 R2.0	07/08/2025 12:07	07/09/2025 10:20	1720		45.9	250	1	mg/L	HJB

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Client Sample ID: Trip Blank

Laboratory Sample ID: 25F2356-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	DL	LOQ	DF	Units	Analys
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Volatile Organic Compounds by GCMS

2-Butanone (MEK)	02	78-93-3	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		3.00	10.0	1	ug/L	TLH
Acetone	02	67-64-1	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		7.00	10.0	1	ug/L	TLH
Benzene	02	71-43-2	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		0.40	1.00	1	ug/L	TLH
Ethylbenzene	02	100-41-4	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		0.40	1.00	1	ug/L	TLH
Toluene	02	108-88-3	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		0.50	1.00	1	ug/L	TLH
Xylenes, Total	02	1330-20-7	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		1.00	3.00	1	ug/L	TLH
Tetrahydrofuran	02	109-99-9	SW8260D	07/01/2025 15:57	07/01/2025 15:57	BLOD		10.0	10.0	1	ug/L	TLH
Surr: 1,2-Dichloroethane-d4 (Surr)	02	107 %	70-120	07/01/2025 15:57	07/01/2025 15:57							
Surr: 4-Bromofluorobenzene (Surr)	02	98.4 %	75-120	07/01/2025 15:57	07/01/2025 15:57							
Surr: Dibromofluoromethane (Surr)	02	107 %	70-130	07/01/2025 15:57	07/01/2025 15:57							
Surr: Toluene-d8 (Surr)	02	102 %	70-130	07/01/2025 15:57	07/01/2025 15:57							

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

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

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIF1543 - EPA200.2R2.8/SW3005A-ICP

Prepared: 06/30/2025 Analyzed: 07/01/2025

Blank (BIF1543-BLK1)

Arsenic	ND	0.0200	mg/L						
Barium	ND	0.0100	mg/L						
Cadmium	ND	0.0040	mg/L						
Chromium	ND	0.0100	mg/L						
Copper	ND	0.0100	mg/L						
Lead	ND	0.0100	mg/L						
Nickel	ND	0.0100	mg/L						
Selenium	ND	0.0500	mg/L						
Silver	ND	0.0100	mg/L						
Zinc	ND	0.0100	mg/L						

LCS (BIF1543-BS1)

Prepared: 06/30/2025 Analyzed: 07/01/2025

Arsenic	0.489	0.0200	mg/L	0.500		97.7		80-120	
Barium	0.493	0.0100	mg/L	0.500		98.7		80-120	
Cadmium	0.500	0.0040	mg/L	0.500		100		80-120	
Chromium	0.498	0.0100	mg/L	0.500		99.6		80-120	
Copper	0.491	0.0100	mg/L	0.500		98.2		80-120	
Lead	0.501	0.0100	mg/L	0.500		100		80-120	
Nickel	0.4980	0.0100	mg/L	0.500		99.6		80-120	
Selenium	0.487	0.0500	mg/L	0.500		97.4		80-120	
Silver	0.0988	0.0100	mg/L	0.100		98.8		80-120	
Zinc	0.483	0.0100	mg/L	0.500		96.6		80-120	

Matrix Spike (BIF1543-MS1)

Source: 25F2607-01

Prepared: 06/30/2025 Analyzed: 07/01/2025

Arsenic	0.402	0.0200	mg/L	0.500	0.0058	79.3		75-125	
Barium	0.442	0.0100	mg/L	0.500	0.0566	77.1		75-125	



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

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

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

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIF1543 - EPA200.2R2.8/SW3005A-ICP

Matrix Spike (BIF1543-MS1)		Source: 25F2607-01		Prepared: 06/30/2025 Analyzed: 07/01/2025					
Cadmium	0.382	0.0040	mg/L	0.500	BLOD	76.4	75-125		
Chromium	0.390	0.0100	mg/L	0.500	0.0019	77.6	75-125		
Copper	0.485	0.0100	mg/L	0.500	0.0982	77.3	75-125		
Lead	0.387	0.0100	mg/L	0.500	0.0061	76.2	75-125		
Nickel	0.5149	0.0100	mg/L	0.500	0.1335	76.3	75-125		
Selenium	0.381	0.0500	mg/L	0.500	BLOD	76.1	75-125		
Silver	0.0768	0.0100	mg/L	0.100	BLOD	76.8	75-125		
Zinc	0.652	0.0100	mg/L	0.500	0.202	90.0	75-125		

Matrix Spike Dup (BIF1543-MSD1)

Source: 25F2607-01		Prepared: 06/30/2025 Analyzed: 07/01/2025							
Arsenic	0.400	0.0200	mg/L	0.500	0.0058	78.9	75-125	0.448	20
Barium	0.443	0.0100	mg/L	0.500	0.0566	77.3	75-125	0.203	20
Cadmium	0.380	0.0040	mg/L	0.500	BLOD	76.0	75-125	0.446	20
Chromium	0.389	0.0100	mg/L	0.500	0.0019	77.4	75-125	0.205	20
Copper	0.484	0.0100	mg/L	0.500	0.0982	77.3	75-125	0.0825	20
Lead	0.385	0.0100	mg/L	0.500	0.0061	75.8	75-125	0.518	20
Nickel	0.5142	0.0100	mg/L	0.500	0.1335	76.1	75-125	0.136	20
Selenium	0.376	0.0500	mg/L	0.500	BLOD	75.1	75-125	1.35	20
Silver	0.0771	0.0100	mg/L	0.100	BLOD	77.1	75-125	0.390	20
Zinc	0.670	0.0100	mg/L	0.500	0.202	93.6	75-125	2.72	20

Batch BIF1547 - EPA200.2R2.8/SW3005A-ICPMS

Blank (BIF1547-BLK1)		Prepared: 06/30/2025 Analyzed: 07/01/2025							
Mercury	ND	0.200	ug/L						
LCS (BIF1547-BS1)		Prepared: 06/30/2025 Analyzed: 07/01/2025							

Certificate of Analysis

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Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

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

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIF1547 - EPA200.2R2.8/SW3005A-ICPMS

LCS (BIF1547-BS1)		Prepared: 06/30/2025 Analyzed: 07/01/2025							
Mercury	0.943	0.200	ug/L	1.00		94.3		80-120	
Matrix Spike (BIF1547-MS1)		Source: 25F2747-02 Prepared: 06/30/2025 Analyzed: 07/01/2025							
Mercury	0.983	0.200	ug/L	1.00	BLOD	98.3		70-130	
Matrix Spike Dup (BIF1547-MSD1)		Source: 25F2747-02 Prepared: 06/30/2025 Analyzed: 07/01/2025							
Mercury	1.01	0.200	ug/L	1.00	BLOD	101	3.06	70-130	20

Certificate of Analysis

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Work Order: 25F2356

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

Blank (BIG0065-BLK1)									
Prepared & Analyzed: 07/01/2025									
2-Butanone (MEK)	ND	10.0	ug/L						
Acetone	ND	10.0	ug/L						
Benzene	ND	1.00	ug/L						
Ethylbenzene	ND	1.00	ug/L						
Toluene	ND	1.00	ug/L						
Xylenes, Total	ND	3.00	ug/L						
Surr: 1,2-Dichloroethane-d4 (Surr)	51.4		ug/L	50.0		103		70-120	
Surr: 4-Bromofluorobenzene (Surr)	49.5		ug/L	50.0		98.9		75-120	
Surr: Dibromofluoromethane (Surr)	53.1		ug/L	50.0		106		70-130	
Surr: Toluene-d8 (Surr)	50.6		ug/L	50.0		101		70-130	

LCS (BIG0065-BS1)

Prepared & Analyzed: 07/01/2025									
1,1,1,2-Tetrachloroethane	49.8		ug/L	50.0		99.6		80-130	
1,1,1-Trichloroethane	50.6		ug/L	50.0		101		65-130	
1,1,2,2-Tetrachloroethane	48.7		ug/L	50.0		97.4		65-130	
1,1,2-Trichloroethane	48.4		ug/L	50.0		96.8		75-125	
1,1-Dichloroethane	46.6		ug/L	50.0		93.3		70-135	
1,1-Dichloroethylene	48.2		ug/L	50.0		96.4		70-130	
1,1-Dichloropropene	50.6		ug/L	50.0		101		75-135	
1,2,3-Trichlorobenzene	49.0		ug/L	50.0		97.9		55-140	
1,2,3-Trichloropropane	47.3		ug/L	50.0		94.6		75-125	
1,2,4-Trichlorobenzene	49.1		ug/L	50.0		98.3		65-135	
1,2,4-Trimethylbenzene	50.2		ug/L	50.0		100		75-130	
1,2-Dibromo-3-chloropropane (DBCP)	47.7		ug/L	50.0		95.4		50-130	
1,2-Dibromoethane (EDB)	48.4		ug/L	50.0		96.8		80-120	

Certificate of Analysis

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Work Order: 25F2356

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

LCS (BIG0065-BS1)									
Prepared & Analyzed: 07/01/2025									
1,2-Dichlorobenzene	49.6		ug/L	50.0		99.1		70-120	
1,2-Dichloroethane	46.6		ug/L	50.0		93.1		70-130	
1,2-Dichloropropane	50.3		ug/L	50.0		101		75-125	
1,3,5-Trimethylbenzene	49.9		ug/L	50.0		99.8		75-125	
1,3-Dichlorobenzene	49.3		ug/L	50.0		98.6		75-125	
1,3-Dichloropropane	48.6		ug/L	50.0		97.1		75-125	
1,4-Dichlorobenzene	48.2		ug/L	50.0		96.3		75-125	
2,2-Dichloropropane	52.5		ug/L	50.0		105		70-135	
2-Butanone (MEK)	53.7		ug/L	50.0		107		30-150	
2-Chlorotoluene	48.7		ug/L	50.0		97.4		75-125	
2-Hexanone (MBK)	47.0		ug/L	50.0		94.0		55-130	
4-Chlorotoluene	50.2		ug/L	50.0		100		75-130	
4-Isopropyltoluene	49.8		ug/L	50.0		99.6		75-130	
4-Methyl-2-pentanone (MIBK)	46.2		ug/L	50.0		92.5		60-135	
Acetone	51.7		ug/L	50.0		103		40-140	
Benzene	48.2		ug/L	50.0		96.5		80-120	
Bromobenzene	48.3		ug/L	50.0		96.5		75-125	
Bromochloromethane	50.1		ug/L	50.0		100		65-130	
Bromodichloromethane	47.6		ug/L	50.0		95.2		75-120	
Bromoform	48.6		ug/L	50.0		97.1		70-130	
Bromomethane	48.7		ug/L	50.0		97.4		30-145	
Carbon disulfide	53.6		ug/L	50.0		107		35-160	
Carbon tetrachloride	48.5		ug/L	50.0		97.0		65-140	
Chlorobenzene	47.1		ug/L	50.0		94.2		80-120	
Chloroethane	50.3		ug/L	50.0		101		60-135	

Certificate of Analysis

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Work Order: 25F2356

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

LCS (BIG0065-BS1)										
Prepared & Analyzed: 07/01/2025										
Chloroform	53.0		ug/L	50.0		106	65-135			
Chloromethane	56.9		ug/L	50.0		114	40-125			
cis-1,2-Dichloroethylene	49.3		ug/L	50.0		98.6	70-125			
cis-1,3-Dichloropropene	50.6		ug/L	50.0		101	70-130			
Dibromochloromethane	51.0		ug/L	50.0		102	60-135			
Dibromomethane	49.0		ug/L	50.0		98.0	75-125			
Dichlorodifluoromethane	67.4		ug/L	50.0		135	30-155			
Ethylbenzene	48.5		ug/L	50.0		97.1	75-125			
Hexachlorobutadiene	47.3		ug/L	50.0		94.5	50-140			
Isopropylbenzene	47.8		ug/L	50.0		95.5	75-125			
m+p-Xylenes	95.7		ug/L	100		95.7	75-130			
Methylene chloride	50.8		ug/L	50.0		102	55-140			
Methyl-t-butyl ether (MTBE)	50.9		ug/L	50.0		102	65-125			
Naphthalene	50.6		ug/L	50.0		101	55-140			
n-Butylbenzene	51.4		ug/L	50.0		103	70-135			
n-Propylbenzene	48.0		ug/L	50.0		96.0	70-130			
o-Xylene	46.7		ug/L	50.0		93.4	80-120			
sec-Butylbenzene	50.0		ug/L	50.0		100	70-125			
Styrene	48.7		ug/L	50.0		97.3	65-135			
tert-Butylbenzene	49.5		ug/L	50.0		99.0	70-130			
Tetrachloroethylene (PCE)	46.0		ug/L	50.0		92.0	45-150			
Toluene	47.3		ug/L	50.0		94.5	75-120			
trans-1,2-Dichloroethylene	49.5		ug/L	50.0		98.9	60-140			
trans-1,3-Dichloropropene	51.9		ug/L	50.0		104	55-140			
Trichloroethylene	49.4		ug/L	50.0		98.9	70-125			

Certificate of Analysis

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 Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

LCS (BIG0065-BS1)								
Prepared & Analyzed: 07/01/2025								
Trichlorofluoromethane	50.0		ug/L	50.0		99.9		60-145
Vinyl chloride	46.3		ug/L	50.0		92.6		50-145
<i>Surr: 1,2-Dichloroethane-d4 (Surr)</i>	51.8		ug/L	50.0		104		70-120
<i>Surr: 4-Bromofluorobenzene (Surr)</i>	49.3		ug/L	50.0		98.6		75-120
<i>Surr: Dibromofluoromethane (Surr)</i>	52.3		ug/L	50.0		105		70-130
<i>Surr: Toluene-d8 (Surr)</i>	49.7		ug/L	50.0		99.3		70-130

Matrix Spike (BIG0065-MS1)								
Source: 25F2612-02 Prepared & Analyzed: 07/01/2025								
1,1,1,2-Tetrachloroethane	50.0		ug/L	50.0	BLOD	99.9		80-130
1,1,1-Trichloroethane	52.2		ug/L	50.0	BLOD	104		65-130
1,1,2,2-Tetrachloroethane	48.5		ug/L	50.0	BLOD	96.9		65-130
1,1,2-Trichloroethane	46.4		ug/L	50.0	BLOD	92.8		75-125
1,1-Dichloroethane	51.3		ug/L	50.0	BLOD	103		70-135
1,1-Dichloroethylene	50.3		ug/L	50.0	BLOD	101		50-145
1,1-Dichloropropene	52.2		ug/L	50.0	BLOD	104		75-135
1,2,3-Trichlorobenzene	46.9		ug/L	50.0	BLOD	93.7		55-140
1,2,3-Trichloropropane	47.8		ug/L	50.0	BLOD	95.7		75-125
1,2,4-Trichlorobenzene	48.3		ug/L	50.0	BLOD	96.5		65-135
1,2,4-Trimethylbenzene	50.4		ug/L	50.0	BLOD	101		75-130
1,2-Dibromo-3-chloropropane (DBCP)	46.0		ug/L	50.0	BLOD	92.0		50-130
1,2-Dibromoethane (EDB)	48.9		ug/L	50.0	BLOD	97.8		80-120
1,2-Dichlorobenzene	48.6		ug/L	50.0	BLOD	97.1		70-120
1,2-Dichloroethane	46.8		ug/L	50.0	BLOD	93.6		70-130
1,2-Dichloropropane	50.2		ug/L	50.0	BLOD	100		75-125
1,3,5-Trimethylbenzene	50.2		ug/L	50.0	BLOD	100		75-124

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 Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

Matrix Spike (BIG0065-MS1)		Source: 25F2612-02		Prepared & Analyzed: 07/01/2025					
1,3-Dichlorobenzene	48.8		ug/L	50.0	BLOD	97.5		75-125	
1,3-Dichloropropane	47.5		ug/L	50.0	BLOD	95.0		75-125	
1,4-Dichlorobenzene	47.8		ug/L	50.0	BLOD	95.6		75-125	
2,2-Dichloropropane	53.3		ug/L	50.0	BLOD	107		70-135	
2-Butanone (MEK)	41.9		ug/L	50.0	BLOD	83.9		30-150	
2-Chlorotoluene	48.6		ug/L	50.0	BLOD	97.3		75-125	
2-Hexanone (MBK)	46.2		ug/L	50.0	BLOD	92.5		55-130	
4-Chlorotoluene	49.0		ug/L	50.0	BLOD	98.1		75-130	
4-Isopropyltoluene	49.8		ug/L	50.0	BLOD	99.6		75-130	
4-Methyl-2-pentanone (MIBK)	44.4		ug/L	50.0	BLOD	88.8		60-135	
Acetone	56.3		ug/L	50.0	43.2	26.2		40-140	M
Benzene	48.3		ug/L	50.0	BLOD	96.7		80-120	
Bromobenzene	47.8		ug/L	50.0	BLOD	95.5		75-125	
Bromochloromethane	48.3		ug/L	50.0	BLOD	96.6		65-130	
Bromodichloromethane	45.7		ug/L	50.0	BLOD	91.4		75-136	
Bromoform	48.6		ug/L	50.0	BLOD	97.2		70-130	
Bromomethane	50.1		ug/L	50.0	BLOD	100		30-145	
Carbon disulfide	52.9		ug/L	50.0	BLOD	106		35-160	
Carbon tetrachloride	48.4		ug/L	50.0	BLOD	96.7		65-140	
Chlorobenzene	48.5		ug/L	50.0	BLOD	97.0		80-120	
Chloroethane	50.5		ug/L	50.0	BLOD	101		60-135	
Chloroform	53.8		ug/L	50.0	BLOD	108		65-135	
Chloromethane	57.8		ug/L	50.0	BLOD	116		40-125	
cis-1,2-Dichloroethylene	51.9		ug/L	50.0	BLOD	104		70-125	
cis-1,3-Dichloropropene	49.7		ug/L	50.0	BLOD	99.3		47-136	

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 Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

Matrix Spike (BIG0065-MS1)		Source: 25F2612-02		Prepared & Analyzed: 07/01/2025					
Dibromochloromethane	49.6		ug/L	50.0	BLOD	99.2		60-135	
Dibromomethane	47.5		ug/L	50.0	BLOD	95.1		75-125	
Dichlorodifluoromethane	49.6		ug/L	50.0	BLOD	99.2		30-155	
Ethylbenzene	50.0		ug/L	50.0	BLOD	100		75-125	
Hexachlorobutadiene	48.0		ug/L	50.0	BLOD	95.9		50-140	
Isopropylbenzene	49.3		ug/L	50.0	12.0	74.5		75-125	M
m+p-Xylenes	97.0		ug/L	100	2.20	94.8		75-130	
Methylene chloride	50.9		ug/L	50.0	BLOD	102		55-140	
Methyl-t-butyl ether (MTBE)	50.5		ug/L	50.0	BLOD	101		65-125	
Naphthalene	49.4		ug/L	50.0	5.40	88.1		55-140	
n-Butylbenzene	51.7		ug/L	50.0	BLOD	103		70-135	
n-Propylbenzene	48.3		ug/L	50.0	BLOD	96.7		70-130	
o-Xylene	47.5		ug/L	50.0	BLOD	94.9		80-120	
sec-Butylbenzene	50.2		ug/L	50.0	BLOD	100		70-125	
Styrene	49.3		ug/L	50.0	BLOD	98.5		65-135	
tert-Butylbenzene	49.5		ug/L	50.0	BLOD	99.0		70-130	
Tetrachloroethylene (PCE)	47.6		ug/L	50.0	BLOD	95.1		51-231	
Toluene	46.9		ug/L	50.0	BLOD	93.7		75-120	
trans-1,2-Dichloroethylene	50.0		ug/L	50.0	BLOD	100		60-140	
trans-1,3-Dichloropropene	51.0		ug/L	50.0	BLOD	102		55-140	
Trichloroethylene	47.8		ug/L	50.0	BLOD	95.6		70-125	
Trichlorofluoromethane	50.8		ug/L	50.0	BLOD	102		60-145	
Vinyl chloride	47.1		ug/L	50.0	BLOD	94.2		50-145	
Surr: 1,2-Dichloroethane-d4 (Surr)		53.3	ug/L	50.0		107		70-120	

Certificate of Analysis

Client Name: SCS Engineers - Winchester
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Work Order: 25F2356

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

Matrix Spike (BIG0065-MS1) Source: 25F2612-02 Prepared & Analyzed: 07/01/2025

Surr: 4-Bromofluorobenzene (Surr)	49.4	ug/L	50.0	98.8	75-120
Surr: Dibromofluoromethane (Surr)	53.1	ug/L	50.0	106	70-130
Surr: Toluene-d8 (Surr)	49.2	ug/L	50.0	98.3	70-130

Matrix Spike Dup (BIG0065-MSD1) Source: 25F2612-02 Prepared & Analyzed: 07/01/2025

1,1,1,2-Tetrachloroethane	47.8	ug/L	50.0	BLOD	95.6	80-130	4.38	30
1,1,1-Trichloroethane	50.6	ug/L	50.0	BLOD	101	65-130	3.04	30
1,1,2,2-Tetrachloroethane	45.9	ug/L	50.0	BLOD	91.8	65-130	5.38	30
1,1,2-Trichloroethane	46.3	ug/L	50.0	BLOD	92.6	75-125	0.151	30
1,1-Dichloroethane	47.8	ug/L	50.0	BLOD	95.5	70-135	7.17	30
1,1-Dichloroethylene	47.5	ug/L	50.0	BLOD	94.9	50-145	5.75	30
1,1-Dichloropropene	50.6	ug/L	50.0	BLOD	101	75-135	3.02	30
1,2,3-Trichlorobenzene	46.4	ug/L	50.0	BLOD	92.9	55-140	0.900	30
1,2,3-Trichloropropane	44.8	ug/L	50.0	BLOD	89.5	75-125	6.65	30
1,2,4-Trichlorobenzene	47.5	ug/L	50.0	BLOD	95.1	65-135	1.50	30
1,2,4-Trimethylbenzene	49.1	ug/L	50.0	BLOD	98.3	75-130	2.45	30
1,2-Dibromo-3-chloropropane (DBCP)	44.5	ug/L	50.0	BLOD	88.9	50-130	3.34	30
1,2-Dibromoethane (EDB)	46.6	ug/L	50.0	BLOD	93.2	80-120	4.82	30
1,2-Dichlorobenzene	47.2	ug/L	50.0	BLOD	94.5	70-120	2.73	30
1,2-Dichloroethane	44.8	ug/L	50.0	BLOD	89.6	70-130	4.32	30
1,2-Dichloropropane	50.0	ug/L	50.0	BLOD	100	75-125	0.340	30
1,3,5-Trimethylbenzene	49.0	ug/L	50.0	BLOD	98.1	75-124	2.34	30
1,3-Dichlorobenzene	47.4	ug/L	50.0	BLOD	94.8	75-125	2.85	30
1,3-Dichloropropane	47.1	ug/L	50.0	BLOD	94.2	75-125	0.825	30
1,4-Dichlorobenzene	47.0	ug/L	50.0	BLOD	94.1	75-125	1.56	30

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Volatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

Matrix Spike Dup (BIG0065-MSD1)		Source: 25F2612-02		Prepared & Analyzed: 07/01/2025					
2,2-Dichloropropane	51.3		ug/L	50.0	BLOD	103	70-135	3.75	30
2-Butanone (MEK)	42.9		ug/L	50.0	BLOD	85.9	30-150		30
2-Chlorotoluene	47.4		ug/L	50.0	BLOD	94.8	75-125	2.58	30
2-Hexanone (MBK)	41.2		ug/L	50.0	BLOD	82.5	55-130	11.4	30
4-Chlorotoluene	48.6		ug/L	50.0	BLOD	97.1	75-130	1.00	30
4-Isopropyltoluene	48.7		ug/L	50.0	BLOD	97.4	75-130	2.25	30
4-Methyl-2-pentanone (MIBK)	42.2		ug/L	50.0	BLOD	84.4	60-135	5.08	30
Acetone	53.7		ug/L	50.0	43.2	21.0	40-140		30
Benzene	48.0		ug/L	50.0	BLOD	96.0	80-120	0.706	30
Bromobenzene	45.9		ug/L	50.0	BLOD	91.9	75-125	3.93	30
Bromochloromethane	47.9		ug/L	50.0	BLOD	95.9	65-130	0.810	30
Bromodichloromethane	46.2		ug/L	50.0	BLOD	92.3	75-136	1.02	30
Bromoform	46.5		ug/L	50.0	BLOD	93.0	70-130	4.42	30
Bromomethane	46.9		ug/L	50.0	BLOD	93.9	30-145	6.61	30
Carbon disulfide	49.4		ug/L	50.0	BLOD	98.7	35-160		30
Carbon tetrachloride	48.1		ug/L	50.0	BLOD	96.3	65-140	0.456	30
Chlorobenzene	46.1		ug/L	50.0	BLOD	92.1	80-120	5.14	30
Chloroethane	49.3		ug/L	50.0	BLOD	98.6	60-135	2.43	30
Chloroform	51.6		ug/L	50.0	BLOD	103	65-135	4.18	30
Chloromethane	55.9		ug/L	50.0	BLOD	112	40-125	3.25	30
cis-1,2-Dichloroethylene	50.0		ug/L	50.0	BLOD	100	70-125	3.73	30
cis-1,3-Dichloropropene	48.7		ug/L	50.0	BLOD	97.3	47-136	2.03	30
Dibromochloromethane	48.9		ug/L	50.0	BLOD	97.9	60-135	1.38	30
Dibromomethane	46.0		ug/L	50.0	BLOD	92.1	75-125	3.16	30
Dichlorodifluoromethane	49.7		ug/L	50.0	BLOD	99.4	30-155	0.181	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 Limits	RPD	RPD Limit	Qual
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Batch BIG0065 - SW5030B-MS

Matrix Spike Dup (BIG0065-MSD1)		Source: 25F2612-02		Prepared & Analyzed: 07/01/2025					
Ethylbenzene	47.7		ug/L	50.0	BLOD	95.4	75-125	4.67	30
Hexachlorobutadiene	47.4		ug/L	50.0	BLOD	94.8	50-140	1.22	30
Isopropylbenzene	47.2		ug/L	50.0	12.0	70.3	75-125	4.38	30
m+p-Xylenes	93.8		ug/L	100	2.20	91.6	75-130	3.29	30
Methylene chloride	50.4		ug/L	50.0	BLOD	101	55-140		30
Methyl-t-butyl ether (MTBE)	48.1		ug/L	50.0	BLOD	96.2	65-125	4.77	30
Naphthalene	47.9		ug/L	50.0	5.40	84.9	55-140	3.23	30
n-Butylbenzene	50.5		ug/L	50.0	BLOD	101	70-135	2.43	30
n-Propylbenzene	47.2		ug/L	50.0	BLOD	94.5	70-130	2.30	30
o-Xylene	45.7		ug/L	50.0	BLOD	91.5	80-120	3.71	30
sec-Butylbenzene	49.3		ug/L	50.0	BLOD	98.6	70-125	1.83	30
Styrene	47.8		ug/L	50.0	BLOD	95.6	65-135	2.99	30
tert-Butylbenzene	48.6		ug/L	50.0	BLOD	97.3	70-130	1.73	30
Tetrachloroethylene (PCE)	45.8		ug/L	50.0	BLOD	91.6	51-231	3.79	30
Toluene	46.8		ug/L	50.0	BLOD	93.6	75-120	0.128	30
trans-1,2-Dichloroethylene	48.1		ug/L	50.0	BLOD	96.2	60-140	4.02	30
trans-1,3-Dichloropropene	50.5		ug/L	50.0	BLOD	101	55-140	1.08	30
Trichloroethylene	47.3		ug/L	50.0	BLOD	94.6	70-125	1.11	30
Trichlorofluoromethane	48.6		ug/L	50.0	BLOD	97.1	60-145	4.59	30
Vinyl chloride	45.3		ug/L	50.0	BLOD	90.5	50-145	4.03	30

Surr: 1,2-Dichloroethane-d4 (Surr)
 Surr: 4-Bromofluorobenzene (Surr)
 Surr: Dibromofluoromethane (Surr)
 Surr: Toluene-d8 (Surr)

Certificate of Analysis

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Work Order: 25F2356

Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIF1552 - SW3510C/EPA600-MS

Blank (BIF1552-BLK1)								
Prepared & Analyzed: 06/30/2025								
Anthracene	ND	10.0	ug/L					
Surr: 2,4,6-Tribromophenol (Surr)	72.2		ug/L	100		72.2	5-136	
Surr: 2-Fluorobiphenyl (Surr)	33.3		ug/L	50.0		66.5	9-117	
Surr: 2-Fluorophenol (Surr)	42.4		ug/L	100		42.4	5-60	
Surr: Nitrobenzene-d5 (Surr)	35.8		ug/L	50.0		71.6	5-151	
Surr: Phenol-d5 (Surr)	29.1		ug/L	100		29.1	5-60	
Surr: p-Terphenyl-d14 (Surr)	30.6		ug/L	50.0		61.3	5-141	

LCS (BIF1552-BS1)

Prepared & Analyzed: 06/30/2025								
1,2,4-Trichlorobenzene	37.6	10.0	ug/L	50.0		75.2	57-130	
1,2-Dichlorobenzene	36.0	10.0	ug/L	50.0		72.1	22-115	
1,3-Dichlorobenzene	36.2	10.0	ug/L	50.0		72.4	22-112	
1,4-Dichlorobenzene	32.4	10.0	ug/L	50.0		64.8	13-112	
2,4,6-Trichlorophenol	34.6	10.0	ug/L	50.0		69.1	52-129	
2,4-Dichlorophenol	38.9	10.0	ug/L	50.0		77.8	53-122	
2,4-Dimethylphenol	34.8	5.00	ug/L	50.0		69.6	42-120	
2,4-Dinitrophenol	58.7	50.0	ug/L	50.0		117	48-127	
2,4-Dinitrotoluene	56.1	10.0	ug/L	50.0		112	10-173	
2,6-Dinitrotoluene	45.1	10.0	ug/L	50.0		90.2	68-137	
2-Chloronaphthalene	31.8	10.0	ug/L	50.0		63.7	65-120	L
2-Chlorophenol	34.0	10.0	ug/L	50.0		68.1	36-120	
2-Nitrophenol	48.8	10.0	ug/L	50.0		97.6	45-167	
3,3'-Dichlorobenzidine	28.2	10.0	ug/L	50.0		56.3	10-213	
4,6-Dinitro-2-methylphenol	74.8	50.0	ug/L	50.0		150	53-130	L
4-Bromophenyl phenyl ether	33.0	10.0	ug/L	50.0		66.1	65-120	

Certificate of Analysis

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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIF1552 - SW3510C/EPA600-MS

Prepared & Analyzed: 06/30/2025								
LCS (BIF1552-BS1)								
4-Chlorophenyl phenyl ether	40.1	10.0	ug/L	50.0		80.3	38-145	
4-Nitrophenol	19.8	50.0	ug/L	50.0		39.6	13-129	
Acenaphthene	31.7	10.0	ug/L	50.0		63.4	60-132	
Acenaphthylene	32.6	10.0	ug/L	50.0		65.2	54-126	
Acetophenone	31.7	20.0	ug/L	50.0		63.3	0-200	
Anthracene	33.4	10.0	ug/L	50.0		66.7	43-120	
Benzo (a) anthracene	32.5	10.0	ug/L	50.0		65.0	42-133	
Benzo (a) pyrene	40.9	10.0	ug/L	50.0		81.9	32-148	
Benzo (b) fluoranthene	38.9	10.0	ug/L	50.0		77.8	42-140	
Benzo (g,h,i) perylene	44.1	10.0	ug/L	50.0		88.1	10-195	
Benzo (k) fluoranthene	34.9	10.0	ug/L	50.0		69.8	25-146	
bis (2-Chloroethoxy) methane	34.0	10.0	ug/L	50.0		68.0	49-165	
bis (2-Chloroethyl) ether	36.2	10.0	ug/L	50.0		72.5	43-126	
2,2'-Oxybis (1-chloropropane)	38.7	10.0	ug/L	50.0		77.4	63-139	
bis (2-Ethylhexyl) phthalate	31.9	10.0	ug/L	50.0		63.7	29-137	
Butyl benzyl phthalate	38.4	10.0	ug/L	50.0		76.7	10-140	
Chrysene	36.0	10.0	ug/L	50.0		72.0	44-140	
Dibenz (a,h) anthracene	38.4	10.0	ug/L	50.0		76.8	10-200	
Diethyl phthalate	39.3	10.0	ug/L	50.0		78.5	10-120	
Dimethyl phthalate	36.8	10.0	ug/L	50.0		73.6	10-120	
Di-n-butyl phthalate	32.9	10.0	ug/L	50.0		65.7	10-120	
Di-n-octyl phthalate	35.1	10.0	ug/L	50.0		70.2	19-132	
Fluoranthene	38.7	10.0	ug/L	50.0		77.3	43-121	
Fluorene	33.8	10.0	ug/L	50.0		67.6	70-120	L
Hexachlorobenzene	30.5	2.50	ug/L	50.0		60.9	10-142	

Certificate of Analysis

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Semivolatile Organic Compounds by GCMS - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIF1552 - SW3510C/EPA600-MS

Prepared & Analyzed: 06/30/2025									
LCS (BIF1552-BS1)									
Hexachlorobutadiene	51.3	10.0	ug/L	50.0		103		38-120	
Hexachlorocyclopentadiene	38.5	10.0	ug/L	50.0		77.1		10-76	L
Hexachloroethane	41.9	10.0	ug/L	50.0		83.8		55-120	
Indeno (1,2,3-cd) pyrene	35.0	10.0	ug/L	50.0		70.1		10-151	
Isophorone	29.8	10.0	ug/L	50.0		59.7		47-180	
Naphthalene	26.5	5.00	ug/L	50.0		52.9		36-120	
Nitrobenzene	38.4	10.0	ug/L	50.0		76.8		54-158	
n-Nitrosodimethylamine	19.7	10.0	ug/L	50.0		39.4		10-85	
n-Nitrosodi-n-propylamine	27.0	10.0	ug/L	50.0		54.0		14-198	
n-Nitrosodiphenylamine	34.6	10.0	ug/L	50.0		69.2		12-97	
p-Chloro-m-cresol	38.5	10.0	ug/L	50.0		77.0		10-142	
Pentachloronitrobenzene (quintozone)	ND	10.0	ug/L					0-200	
Pentachlorophenol	37.0	20.0	ug/L	50.0		74.0		38-152	
Phenanthrene	39.3	10.0	ug/L	50.0		78.6		65-120	
Phenol	16.4	10.0	ug/L	50.5		32.4		17-120	
Pyrene	34.1	10.0	ug/L	50.0		68.3		70-120	L
Pyridine	33.5	10.0	ug/L	50.0		67.0		10-103	

Surr: 2,4,6-Tribromophenol (Surr)	69.1		ug/L	100		69.1		5-136	
Surr: 2-Fluorobiphenyl (Surr)	30.2		ug/L	50.0		60.4		9-117	
Surr: 2-Fluorophenol (Surr)	46.1		ug/L	100		46.1		5-60	
Surr: Nitrobenzene-d5 (Surr)	39.0		ug/L	50.0		78.0		5-151	
Surr: Phenol-d5 (Surr)	28.2		ug/L	100		28.2		5-60	
Surr: p-Terphenyl-d14 (Surr)	32.7		ug/L	50.0		65.3		5-141	

Certificate of Analysis

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Work Order: 25F2356

Ion Chromatography Analyses - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qual
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Batch BIF1384 - No Prep IC

Blank (BIF1384-BLK1)									
Prepared & Analyzed: 06/26/2025									
Acetic Acid	ND	0.5	mg/L						
Butyric Acid	ND	0.5	mg/L						
Formic Acid	ND	0.5	mg/L						
n-Hexanoic Acid	ND	0.5	mg/L						
i-Hexanoic Acid	ND	0.5	mg/L						
Lactic Acid	ND	0.5	mg/L						
n-Pentanoic Acid	ND	0.5	mg/L						
i-Pentanoic Acid	ND	0.5	mg/L						
Propionic Acid	ND	0.5	mg/L						
Pyruvic Acid	ND	0.5	mg/L						
LCS (BIF1384-BS1)									
Prepared & Analyzed: 06/26/2025									
Acetic Acid	5.6		mg/L	5.00		112		70-130	
Butyric Acid	4.5		mg/L	5.00		89.3		70-130	
Formic Acid	5.0		mg/L	4.99		99.6		70-130	
n-Hexanoic Acid	4.9		mg/L	5.00		98.1		70-130	
i-Hexanoic Acid	5.1		mg/L	5.00		101		70-130	
Lactic Acid	5.5		mg/L	5.00		110		70-130	
n-Pentanoic Acid	5.0		mg/L	5.00		100		70-130	
i-Pentanoic Acid	4.9		mg/L	5.00		98.6		70-130	
Propionic Acid	4.7		mg/L	5.00		94.2		70-130	
Pyruvic Acid	5.3		mg/L	5.00		106		70-130	

Matrix Spike (BIF1384-MS1)

Source: 25F2356-01

Prepared & Analyzed: 06/26/2025

Acetic Acid	76.5	5.0	mg/L	50.0	29.9	93.2		70-130
Butyric Acid	50.6	5.0	mg/L	50.0	BLOD	101		70-130

Certificate of Analysis

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Ion Chromatography Analyses - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIF1384 - No Prep IC

Matrix Spike (BIF1384-MS1)		Source: 25F2356-01						
		Prepared & Analyzed: 06/26/2025						
Formic Acid	51.5	5.0	mg/L	50.0	BLOD	103	70-130	
n-Hexanoic Acid	54.3	5.0	mg/L	50.0	BLOD	109	70-130	
i-Hexanoic Acid	47.6	5.0	mg/L	50.0	BLOD	95.3	70-130	
Lactic Acid	51.2	5.0	mg/L	50.0	BLOD	102	70-130	
n-Pentanoic Acid	54.1	5.0	mg/L	50.0	BLOD	108	70-130	
i-Pentanoic Acid	49.8	5.0	mg/L	50.0	BLOD	99.7	70-130	
Propionic Acid	51.3	5.0	mg/L	50.0	BLOD	103	70-130	
Pyruvic Acid	54.0	5.0	mg/L	50.0	BLOD	108	70-130	

Matrix Spike Dup (BIF1384-MSD1)

		Source: 25F2356-01						
		Prepared & Analyzed: 06/26/2025						
Acetic Acid	79.5	5.0	mg/L	50.0	29.9	99.3	70-130	20
Butyric Acid	47.6	5.0	mg/L	50.0	BLOD	95.1	70-130	20
Formic Acid	52.5	5.0	mg/L	50.0	BLOD	105	70-130	20
n-Hexanoic Acid	56.0	5.0	mg/L	50.0	BLOD	112	70-130	20
i-Hexanoic Acid	54.3	5.0	mg/L	50.0	BLOD	109	70-130	20
Lactic Acid	54.5	5.0	mg/L	50.0	BLOD	109	70-130	20
n-Pentanoic Acid	56.0	5.0	mg/L	50.0	BLOD	112	70-130	20
i-Pentanoic Acid	52.2	5.0	mg/L	50.0	BLOD	104	70-130	20
Propionic Acid	53.0	5.0	mg/L	50.0	BLOD	106	70-130	20
Pyruvic Acid	55.9	5.0	mg/L	50.0	BLOD	112	70-130	20

Certificate of Analysis

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Wet Chemistry Analysis - Quality Control
 Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIF1312 - No Prep Wet Chem

Blank (BIF1312-BLK1)								
BOD	ND	2.0	mg/L		Prepared & Analyzed: 06/25/2025			
LCS (BIF1312-BS1)								
BOD	197		mg/L	198	Prepared & Analyzed: 06/25/2025	99.4	84.6-115.4	
Duplicate (BIF1312-DUP1)								
BOD	11.1	2.0	mg/L	10.8	Prepared & Analyzed: 06/25/2025		3.02	20

Batch BIF1364 - No Prep Wet Chem

Blank (BIF1364-BLK1)								
Nitrite as N	ND	0.05	mg/L		Prepared & Analyzed: 06/25/2025			
LCS (BIF1364-BS1)								
Nitrite as N	0.10	0.05	mg/L	0.100	Prepared & Analyzed: 06/25/2025	98.0	80-120	
Matrix Spike (BIF1364-MS1)								
Nitrite as N	0.09	0.05	mg/L	0.100	Prepared & Analyzed: 06/25/2025	86.0	80-120	
Matrix Spike Dup (BIF1364-MSD1)								
Nitrite as N	0.09	0.05	mg/L	0.100	Prepared & Analyzed: 06/25/2025	86.0	80-120	20

Batch BIF1425 - No Prep Wet Chem

Blank (BIF1425-BLK1)								
COD	ND	10.0	mg/L		Prepared & Analyzed: 06/26/2025			

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIF1425 - No Prep Wet Chem

LCS (BIF1425-BS1)								
COD	47.5	10.0	mg/L	50.0		95.1	88-119	
Matrix Spike (BIF1425-MS1) Source: 25F1967-02								
COD	46.9	10.0	mg/L	50.0	BLOD	93.8	72.4-130	
Matrix Spike Dup (BIF1425-MSD1) Source: 25F1967-02								
COD	48.8	10.0	mg/L	50.0	BLOD	97.6	72.4-130	20

Batch BIG0103 - No Prep Wet Chem

Blank (BIG0103-BLK1)								
Total Recoverable Phenolics	ND	0.050	mg/L					
LCS (BIG0103-BS1)								
Total Recoverable Phenolics	0.47	0.050	mg/L	0.505		93.5	80-120	
Matrix Spike (BIG0103-MS1) Source: 25F2356-01								
Total Recoverable Phenolics	1.05	0.050	mg/L	0.500	0.51	108	70-130	
Matrix Spike Dup (BIG0103-MSD1) Source: 25F2356-01								
Total Recoverable Phenolics	1.08	0.050	mg/L	0.500	0.51	115	70-130	20

Batch BIG0299 - No Prep Wet Chem

Blank (BIG0299-BLK1)								
TKN as N	ND	0.50	mg/L					

Prepared: 07/08/2025 Analyzed: 07/09/2025

Certificate of Analysis

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Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIG0299 - No Prep Wet Chem

LCS (BIG0299-BS1)								
TKN as N	5.06		mg/L	5.00		101		90-110
Matrix Spike (BIG0299-MS1)								
TKN as N	5.70	0.50	mg/L	5.00	0.43	105		90-110
Matrix Spike (BIG0299-MS2)								
TKN as N	5.81	0.50	mg/L	5.00	0.27	111		90-110
Matrix Spike Dup (BIG0299-MSD1)								
TKN as N	5.96	0.50	mg/L	5.00	0.43	111	20	M
Matrix Spike Dup (BIG0299-MSD2)								
TKN as N	5.60	0.50	mg/L	5.00	0.27	107	20	M

Batch BIG0308 - No Prep Wet Chem

Blank (BIG0308-BLK1)								
Nitrate+Nitrite as N	ND	0.10	mg/L					
LCS (BIG0308-BS1)								
Nitrate+Nitrite as N	1.06		mg/L	1.00		106		90-110
Matrix Spike (BIG0308-MS1)								
Nitrate+Nitrite as N	17.4	2.00	mg/L	10.0	BLOD	174		M
Matrix Spike Dup (BIG0308-MSD1)								
Nitrate+Nitrite as N	17.3	2.00	mg/L	10.0	BLOD	173	20	M

Certificate of Analysis

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Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Wet Chemistry Analysis - Quality Control

Enthalpy Analytical

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Qual
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Batch BIG0328 - No Prep Wet Chem

Blank (BIG0328-BLK1)								
Ammonia as N	ND	0.10	mg/L					
LCS (BIG0328-BS1)								
Ammonia as N	1.05		mg/L	1.00		105	90-110	
Matrix Spike (BIG0328-MS1)								
Ammonia as N	1.89	0.10	mg/L	1.00	0.72	117	89.3-131	
Matrix Spike (BIG0328-MS2)								
Ammonia as N	116	6.00	mg/L	60.0	43.8	120	89.3-131	
Matrix Spike Dup (BIG0328-MSD1)								
Ammonia as N	1.79	0.10	mg/L	1.00	0.72	107	89.3-131	20
Matrix Spike Dup (BIG0328-MSD2)								
Ammonia as N	110	6.00	mg/L	60.0	43.8	110	89.3-131	20



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

Certificate of Analysis

Client Name:

SCS Engineers - Winchester

Client Site I.D.:

Bristol LFG-EW Monthly Monitoring

Submitted To:

Jennifer Robb

Date Issued:

7/9/2025 6:24:27PM

Work Order:

25F2356

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods					
25F2356-01	50.0 mL / 50.0 mL	SW6010D	BIF1543	EPA200.2R2.8/SW3005A-ICP SIG0004	AG50153
Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods					
25F2356-01	50.0 mL / 50.0 mL	SW6020B	BIF1547	EPA200.2R2.8/SW3005A-ICPMS SIG0009	AG50151
Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Ion Chromatography Analyses					
25F2356-01	1.00 mL / 1.00 mL	D3705	BIF1384	No Prep IC SIF1154	AE50224
Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis					
25F2356-01	300 mL / 300 mL	SM5210B-2016	BIF1312	No Prep Wet Chem SIF1291	
25F2356-01	2.50 mL / 25.0 mL	SM4500-NO2B-2021	BIF1364	SIF1146	AD50358
25F2356-01	2.00 mL / 2.00 mL	SM5220D-2011	BIF1425	SIF1197	AE50148
25F2356-01	5.00 mL / 10.0 mL	SW9065	BIG0103	SIG0083	AG50168
25F2356-01	0.0500 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
25F2356-01	5.00 mL / 5.00 mL	SM4500-NO3F-2019	BIG0308	SIG0270	AG50199
25F2356-01	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
25F2356-01RE1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID

Certificate of Analysis

Client Name: SCS Engineers - Winchester
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Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS					
25F2356-01	500 mL / 0.500 mL	SW8270E	BIF1552	SIG0064	AD50293
Volatile Organic Compounds by GCMS					
25F2356-01	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156
25F2356-02	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156

Certificate of Analysis

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Work Order: 25F2356

QC Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods					
BIF1543-BLK1	50.0 mL / 50.0 mL	SW6010D	BIF1543	SIG0004	AG50153
BIF1543-BS1	50.0 mL / 50.0 mL	SW6010D	BIF1543	SIG0004	AG50153
BIF1543-MS1	50.0 mL / 50.0 mL	SW6010D	BIF1543	SIG0004	AG50153
BIF1543-MSD1	50.0 mL / 50.0 mL	SW6010D	BIF1543	SIG0004	AG50153

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods					
BIF1547-BLK1	50.0 mL / 50.0 mL	SW6020B	BIF1547	SIG0009	AG50151
BIF1547-BS1	50.0 mL / 50.0 mL	SW6020B	BIF1547	SIG0009	AG50151
BIF1547-MS1	50.0 mL / 50.0 mL	SW6020B	BIF1547	SIG0009	AG50151
BIF1547-MSD1	50.0 mL / 50.0 mL	SW6020B	BIF1547	SIG0009	AG50151

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Ion Chromatography Analyses					
BIF1384-BLK1	1.00 mL / 1.00 mL	D3705	BIF1384	No Prep IC SIF1154	AE50224
BIF1384-BS1	1.00 mL / 1.00 mL	D3705	BIF1384	SIF1154	AE50224
BIF1384-MS1	0.500 mL / 5.00 mL	D3705	BIF1384	SIF1154	AE50224
BIF1384-MSD1	0.500 mL / 5.00 mL	D3705	BIF1384	SIF1154	AE50224

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis					
BIF1312-BLK1	300 mL / 300 mL	SM5210B-2016	BIF1312	No Prep Wet Chem SIF1291	
BIF1312-BS1	300 mL / 300 mL	SM5210B-2016	BIF1312	SIF1291	
BIF1312-DUP1	300 mL / 300 mL	SM5210B-2016	BIF1312	SIF1291	

Certificate of Analysis

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Work Order: 25F2356

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis					
BIF1364-BLK1	25.0 mL / 25.0 mL	SM4500-NO2B-2021	BIF1364	No Prep Wet Chem	AD50358
BIF1364-BS1	25.0 mL / 25.0 mL	SM4500-NO2B-2021	BIF1364	SIF1146	AD50358
BIF1364-MRL1	25.0 mL / 25.0 mL	SM4500-NO2B-2021	BIF1364	SIF1146	AD50358
BIF1364-MS1	25.0 mL / 25.0 mL	SM4500-NO2B-2021	BIF1364	SIF1146	AD50358
BIF1364-MSD1	25.0 mL / 25.0 mL	SM4500-NO2B-2021	BIF1364	SIF1146	AD50358
BIF1425-BLK1	2.00 mL / 2.00 mL	SM5220D-2011	BIF1425	SIF1197	AE50148
BIF1425-BS1	2.00 mL / 2.00 mL	SM5220D-2011	BIF1425	SIF1197	AE50148
BIF1425-MRL1	2.00 mL / 2.00 mL	SM5220D-2011	BIF1425	SIF1197	AE50148
BIF1425-MS1	2.00 mL / 2.00 mL	SM5220D-2011	BIF1425	SIF1197	AE50148
BIF1425-MSD1	2.00 mL / 2.00 mL	SM5220D-2011	BIF1425	SIF1197	AE50148
BIG0103-BLK1	5.00 mL / 10.0 mL	SW9065	BIG0103	SIG0083	AG50168
BIG0103-BS1	5.00 mL / 10.0 mL	SW9065	BIG0103	SIG0083	AG50168
BIG0103-MRL1	5.00 mL / 10.0 mL	SW9065	BIG0103	SIG0083	AG50168
BIG0103-MS1	5.00 mL / 10.0 mL	SW9065	BIG0103	SIG0083	AG50168
BIG0103-MSD1	5.00 mL / 10.0 mL	SW9065	BIG0103	SIG0083	AG50168
BIG0299-BLK1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0299-BS1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0299-MRL1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0299-MS1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0299-MS2	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0299-MSD1	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0299-MSD2	25.0 mL / 25.0 mL	EPA351.2 R2.0	BIG0299	SIG0320	AG50206
BIG0308-BLK1	5.00 mL / 5.00 mL	SM4500-NO3F-2019	BIG0308	SIG0270	AG50199
BIG0308-BS1	5.00 mL / 5.00 mL	SM4500-NO3F-2019	BIG0308	SIG0270	AG50199
BIG0308-MS1	1.00 mL / 10.0 mL	SM4500-NO3F-2019	BIG0308	SIG0270	AG50199
BIG0308-MSD1	1.00 mL / 10.0 mL	SM4500-NO3F-2019	BIG0308	SIG0270	AG50199
BIG0328-BLK1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
BIG0328-BS1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200

Certificate of Analysis

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Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Wet Chemistry Analysis					
BIG0328-MRL1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	No Prep Wet Chem SIG0282	AG50200
BIG0328-MS1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
BIG0328-MS2	0.100 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
BIG0328-MSD1	6.00 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
BIG0328-MSD2	0.100 mL / 6.00 mL	EPA350.1 R2.0	BIG0328	SIG0282	AG50200
Semivolatile Organic Compounds by GC/MS					
BIF1552-BLK1	1000 mL / 1.00 mL	SW8270E	BIF1552	SIG0018	AC50298
BIF1552-BS1	1000 mL / 1.00 mL	SW8270E	BIF1552	SIG0018	AC50298
Volatile Organic Compounds by GC/MS					
BIG0065-BLK1	5.00 mL / 5.00 mL	SW8260D	BIG0065	SW5030B-MS SIG0041	AG50156
BIG0065-BLK2	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156
BIG0065-BS1	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156
BIG0065-BS2	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156
BIG0065-MS1	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156
BIG0065-MSD1	5.00 mL / 5.00 mL	SW8260D	BIG0065	SIG0041	AG50156

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Certified Analyses included in this Report

Analyte	Certifications
<i>EPA350.1 R2.0 in Non-Potable Water</i>	
Ammonia as N	VELAP,NCDEQ,PADEP,WVDEP,SCDHEC,TXCEQ
<i>EPA351.2 R2.0 in Non-Potable Water</i>	
TKN as N	VELAP,NCDEQ,WVDEP,SCDHEC,PADEP
<i>SM4500-NO2B-2021 in Non-Potable Water</i>	
Nitrite as N	VELAP,WVDEP,NCDEQ,SCDHEC,PADEP
<i>SM4500-NO3F-2019 in Non-Potable Water</i>	
Nitrate+Nitrite as N	VELAP,WVDEP,NCDEQ,SCDHEC,PADEP
<i>SM5210B-2016 in Non-Potable Water</i>	
BOD	VELAP,NCDEQ,WVDEP,PADEP
<i>SM5220D-2011 in Non-Potable Water</i>	
COD	VELAP,NCDEQ,PADEP,WVDEP,SCDHEC,TXCEQ
<i>SW6010D in Non-Potable Water</i>	
Arsenic	VELAP,WVDEP,NCDEQ,SCDHEC,PADEP
Barium	VELAP,WVDEP,PADEP,NCDEQ,SCDHEC
Cadmium	VELAP,WVDEP,PADEP,NCDEQ,SCDHEC
Chromium	VELAP,WVDEP,NCDEQ,SCDHEC,TXCEQ,PADEP
Copper	VELAP,WVDEP,NCDEQ,SCDHEC,PADEP
Lead	VELAP,WVDEP,SCDHEC,NCDEQ,PADEP
Nickel	VELAP,WVDEP,SCDHEC,NCDEQ,PADEP
Selenium	VELAP,WVDEP,SCDHEC,NCDEQ,PADEP
Silver	VELAP,WVDEP,PADEP,SCDHEC,NCDEQ
Zinc	VELAP,WVDEP,SCDHEC,NCDEQ,PADEP
<i>SW6020B in Non-Potable Water</i>	
Mercury	VELAP,NCDEQ,PADEP,WVDEP

Certificate of Analysis

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Work Order: 25F2356

Certified Analyses included in this Report

Analyte	Certifications
<i>SW8260D in Non-Potable Water</i>	
2-Butanone (MEK)	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ
Acetone	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ
Benzene	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ
Ethylbenzene	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ
Toluene	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ
Xylenes, Total	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ
Tetrahydrofuran	NCDEQ, PADEP, VELAP, WVDEP, TXCEQ VELAP
<i>SW8270E in Non-Potable Water</i>	
Anthracene	NCDEQ, VELAP, PADEP, WVDEP, TXCEQ
<i>SW9065 in Non-Potable Water</i>	
Total Recoverable Phenolics	VELAP, WVDEP, PADEP

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Code	Description	Laboratory ID	Expires
DURSC-NCDEQ	NCDEQ Durham Service Center	703	12/31/2025
DURSC-NCDHHS	NCDHHS Durham Service Center	37918	07/31/2025
MdDOE	Maryland DE Drinking Water	341	12/31/2025
NCDEQ	North Carolina DEQ	495	12/31/2025
NCDHHS	North Carolina Department of Health and Human Services	51714	07/31/2025
PADEP	NELAP-Pennsylvania Certificate #009	68-03503	10/31/2025
TXCEQ	Texas Comm on Environmental Quality #TX-C25-00143	T-104704576	05/31/2026
VELAP	NELAP-Virginia Certificate #13428	460021	06/14/2026
WVDEP	West Virginia DEP Cert ID: WV-C25-00105	350	11/30/2025

Certificate of Analysis

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Work Order: 25F2356

Qualifiers and Definitions

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 Qual	Relative Percent Difference
-RE	Qualifiers
LOD	Denotes sample was re-analyzed
BLOD	Limit of Detection, same as Method Detection Limit (MDL) as defined by 40 CFR 136 Appendix B
LOQ	Below Limit of Detection, same as Below Method Detection Limit (MDL) as defined by 40 CFR 136 Appendix B
DF	Limit of Quantitation
DL	Dilution Factor
TIC	Detection Limit, same as MDL as defined by 40 CFR 136 Appendix B
PCBs, Total	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.
	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.



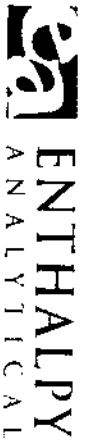
Chain of Custody
Effective: 11-22-20

CHAIN OF CUSTODY

COMPANY NAME: SCS Engineering		INVOICE TO: Jon Hayes		PROJECT NAME/Quote #: 25F2356	
CONTACT: Jon Hayes		INVOICE CONTACT: Jon Hayes		SITE NAME: 25F2356	
ADDRESS: 296 Victory Road, Winton, VA		INVOICE ADDRESS: 2655 Valley Drive, Bristol, VA 24201		PROJECT NUMBER: 001020015	
PHONE #: 703-471-6150		INVOICE PHONE #: 276-645-3788		P.O. #:	
EMAIL: jrobbs@scsengineers.com		EMAIL: jon.hayes@bristolva.org		Pretreatment Program:	
Is sample for compliance reporting? YES		Regulatory State: VA		Is sample from a chlorinated supply? YES	
SAMPLER NAME (PRINT): M. Hayes, CK-10		SAMPLER SIGNATURE: [Signature]		PWS ID #: 10	
Matrix Codes: WW=Waste Water/Sewer Water GW=Ground Water DW=Drinking Water S=Soil/Solids OR=Organic A=Air WP=Wipe OT=Other		Time Around Time: 10 Days(s)		COMMENTS: Preservative Codes: N=Nitric Acid C=Hydrochloric Acid S=Sulfuric Acid H=Hydrofluoric Acid A=Ascorbic Acid Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol	
CLIENT SAMPLE I.D.		ANALYSIS / (PRESERVATIVE)		Note VOC 8260 no HCl	
1) EW-78		☒ Grab		PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (l/min)	
2) EW-78		☒ Composite			
3) EW-78		☒ Field Filtered (Dissolved Metals)			
4) EW-78		☒ Composite Start Date			
5) EW-78		☒ Composite Start Time			
6) EW-78		☒ Grab Date or Composite Stop Date			
7) EW-78		☒ Grab Time or Composite Stop Time			
8) EW-78		☒ Time Preserved			
9) EW-78		☒ Matrix (See Codes)			
10) EW-78		☒ Number of Containers			
11) EW-78		☒ VOCs (Acetone, Benzene, EB, MEK, THF, Toluene, Xylene) Custom List			
12) EW-78		☒ Mercury Method 6020			
13) EW-78		☒ Metals 6010 (Ag, As, Ba, Cd, Cr, Cu, Ni, Pb, Se, Zn)			
14) EW-78		☒ Phenolics			
15) EW-78		☒ TKN, Nitrate (Cd), Nitrite			
16) EW-78		☒ SVOC (Anthracene only)			
17) EW-78		☒ COD, Ammonia			
18) EW-78		☒ BOD			
19) EW-78		☒ VFAS			
20) EW-78		☒ Other			
21) EW-78		☒ Other			
22) EW-78		☒ Other			
23) EW-78		☒ Other			
24) EW-78		☒ Other			
25) EW-78		☒ Other			
26) EW-78		☒ Other			
27) EW-78		☒ Other			
28) EW-78		☒ Other			
29) EW-78		☒ Other			
30) EW-78		☒ Other			
31) EW-78		☒ Other			
32) EW-78		☒ Other			
33) EW-78		☒ Other			
34) EW-78		☒ Other			
35) EW-78		☒ Other			
36) EW-78		☒ Other			
37) EW-78		☒ Other			
38) EW-78		☒ Other			
39) EW-78		☒ Other			
40) EW-78		☒ Other			
41) EW-78		☒ Other			
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46) EW-78		☒ Other			
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48) EW-78		☒ Other			
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66) EW-78		☒ Other			
67) EW-78		☒ Other			
68) EW-78		☒ Other			
69) EW-78		☒ Other			
70) EW-78		☒ Other		</	

Unless otherwise agreed in writing, any and all products and/or services provided by Enthalpy are pursuant to the terms and conditions as set forth at <https://enthalpy.com/terms>.

V130325002 L09



Sample Preservation Log

Order ID: 25F 2356

Date Performed: 6/25/25

Analyst Performing Check: ATC

Sample Preservation Log
Form #: F-1301
Rev #: 15.0
Effective: July 13, 2023
Page 1 of 1

Sample ID	Container ID	Metals		Cyanide		Sulfide		Ammonia		TKN		Phos, Tot		NO3+NO2		DRO		Pesticide (408/1408/508) PCB DW only		SVOC (525/625/7025)		CIV + **		Pesticide (508/1 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	Final pH	Received	Final pH	Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	pH as Received	Final pH	
01 A	6		6						7	6	7				7															
01 D																														
01 G																														
01 F																														

NaOH ID: HNO3 ID: 5F04159

H2SO4 ID: 5F04572

Na2S2O3 ID:

HCL ID: Na2SO3 ID:

CIV preserved date/time: * pH must be adjusted between 8.3 - 8.7

Ammonia Buffer Sol'n ID:

5N NaOH ID:

Analyst Initials:

Metals were received with pH = 7
HNO3 was added at 1235 on June 25th
2025 by ATG in the Log-In room to bring
pH = <2.

**V: Va only certifies DISS CIV and not T CIV as an approved analyte under 40CFR136 for waste water.



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

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM
Work Order: 25F2356

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

Laboratory Order ID: 25F2356

Sample Conditions Checklist

Samples Received at:	1.80°C
How were samples received?	Logistics Courier
Were Custody Seals used?	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? Metals (except Hg, B) do not require field preservation, but lab preservation may delay analysis. Field parameters performed by the lab are always received past holding time and will be noted as such.	No

Work Order Comments

All sample bottles preserved with H2SO4 were pH corrected in the lab to a pH of <2.
This is a deviation for the analysis of Nitrite-Nitrate SM4500, COD, Phenolics, Ammonia, and TKN. Sample bottle preserved with HN03 were received requiring adjustment for Hg, this is also a deviation. Jennifer Robb notified via email. JNH



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

Certificate of Analysis

Client Name: SCS Engineers - Winchester
Client Site I.D.: Bristol LFG-EW Monthly Monitoring
Submitted To: Jennifer Robb
7/2/25 1700

Date Issued: 7/9/2025 6:24:27PM

Work Order: 25F2356

[illegible]

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	EW-36A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	Concentration				EW-64	EW-65	EW-67	EW-68	EW-69	EW-74	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94	EW-98	LOD	LOQ
Chemical Oxygen Demand (mg/L)		November-2022										23500			9790				10800													1000	1000
		December-2022		7440								13200	8000								20300	14100										2000	2000
		January-2023																														1000	1000
		February-2023																														2000	2000
		March-2023																														2000	2000
		April-2023																														2000	2000
		May-2023		7590																												2000	2000
		June-2023																														4000	4000
		July-2023																														5000	5000
		August-2023																														10000	10000
		September-2023																														500	500
		October-2023																														1000	1000
		November-2023																														500	500
		December-2023																														2000	2000
		January-2024																														5000	5000
		February-2024																														1000	1000
		March-2024																														5000	5000
		April-2024																														1000	1000
		May-2024																														5000	5000
		June-2024																														1000	1000
		July-2024																														5000	5000
		August-2024																														10000	10000
		September-2024																														5000	5000
		October-2024	951																													10000	10000
		November-2024	9540																													2000	2000
		December-2024																														1000	1000
		January-2025																														5000	5000
		February-2025																														10000	10000
		March-2025																														5000	5000
		April-2025																														10000	10000
		May-2025																														6300	6300
		June-2025																														1000	1000

Historical LFG-EW Leachate Monitoring Results Summary

[illegible]

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	EW-36A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	EW-62	Concentration										LOD	LOQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Historical LFG-EW Leachate Monitoring Results Summary

Well ID	Parameter	Concentration																								LOD	LOQ		
		EW-34A	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-69	EW-78	EW-82	EW-85	EW-87	EW-88	EW-89			EW-94	EW-98
Anthracene	SEMI-VOLATILE ORGANIC COMPOUND (ug/l)																												
	November-2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46.7	93.5
	December-2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.35	9.35
	January-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.7	23.4
	February-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	485	971
	March-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	243	485
	April-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	253	505
	May-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	490	980
	June-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500	1000
	July-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	187	374
	August-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51	102
	September-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	117	234
	October-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37.4	74.8
	November-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	38.8	77.7
	December-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	93.5	187
	January-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	467	935
	February-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	485	971
	March-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	490	980
	April-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500	1000
	May-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	187	374
	June-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51	102
	July-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	117	234
	August-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37.4	74.8
	September-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	38.8	77.7
	October-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	93.5	187
	November-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	467	935
	December-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	485	971
	January-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	490	980
	February-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	500	1000
	March-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	187	374
	April-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51	102
	May-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	117	234
June-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37.4	74.8	

Anthracene

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event																LOD	LOQ
		EW-34A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	Concentration				EW-68	EW-98
TOTAL METALS (mg/l)	November-2022										0.863		0.464						
	December-2022		1.02		0.406				0.174		1.67	0.49							
	January-2023		0.285							0.576	0.225								
	February-2023																		
	March-2023									1.07	1	0.11							
	April-2023																		
	May-2023		0.26							0.36	0.27								
	June-2023		0.23							0.3	0.26		0.5						
	July-2023																		
	August-2023																		
	September-2023				0.42		0.32		0.43										
	October-2023																		
	November-2023		0.23		0.33	0.53		0.34	0.43		0.35			0.78					
	December-2023				0.4														
	January-2024			0.47							0.23								
	February-2024			0.68		0.42													
	March-2024																		
	April-2024																		
	May-2024				0.31						0.33								
	June-2024																		
	July-2024										300	0.095							
	August-2024																		
	September-2024				0.27		0.18												
	October-2024		0.26		0.24		0.15												
	November-2024	0.1																	
	December-2024	0.18																	
	January-2025				0.28														
	February-2025																		
	March-2025		0.17																
	April-2025											0.344	0.774 J						
	May-2025		0.158									0.246							
	June-2025																		

Arsenic

Historical LFG-EW Leachate Monitoring Results Summary

Well ID	Parameter	Monitoring Event	Concentration														EW-98	LOD	LOQ										
			EW-3&A	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-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94
Ba10m		November-2022																										0.01	0.02
		December-2022		0.566								0.871	0.214	0.485														0.01	0.02
		January-2023		0.643							0.483	1.92						0.856	0.793									0.005	0.01
		February-2023																										0.01	0.05
		March-2023									0.406	0.483							1.04									0.005	0.01
		April-2023											0.326															0.01	0.05
		May-2023		0.636																								0.005	0.025
		June-2023										1.2	1.83															0.01	0.05
		July-2023										1.69		3.01														0.005	0.025
		August-2023		0.542																0.558							0.217	0.001	0.005
		September-2023																							1.02	0.218	0.005	0.025	
		October-2023																							1.48		0.01	0.05	
		November-2023																		0.449								0.005	0.025
		December-2023		0.572																0.644								0.002	0.01
		January-2024										1.96			0.418				1.36		0.67		1.93	2.06			2.84	0.01	0.05
		February-2024										1.92								0.672							1.91	0.005	0.025
		March-2024																										0.01	0.05
		April-2024																										0.005	0.025
		May-2024																										0.002	0.01
		June-2024																										0.005	0.025
		July-2024																										0.001	0.005
		August-2024																		0.634								0.001	0.005
		September-2024																										0.01	0.05
		October-2024																										0.005	0.025
		November-2024		0.26	0.548																							0.01	0.05
		December-2024		0.242	0.49																							0.01	0.05
	January-2025																										0.01	0.05	
	February-2025			0.633																							0.01	0.05	
	March-2025												ND														0.465	0.5	
	April-2025			0.516								1.05							2.93								0.005	0.01	
	May-2025																										0.005	0.025	
	June-2025																										0.001	0.01	

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	Concentration																			EW-98	LOD	LOQ					
			EW-3&A	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-76	EW-82				EW-85	EW-87	EW-88	EW-89	EW-94
Cadmium		November-2022	ND	ND	ND	0.0104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004	0.008	
		December-2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004	0.008	
		January-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.004	
		February-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0001	0.001	
		March-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.004	
		April-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0001	0.001	
		May-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0005	0.005	
		June-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0005	0.005	
		July-2023	0.000219 J	ND	ND	ND	ND	ND	0.000156 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000186 J	ND	ND	ND	ND	ND	ND	ND	0.0001	0.001	
		August-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0005	0.005	
		September-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000171 J	ND	ND	ND	ND	ND	ND	0.001	0.01	
		October-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0001	0.001	
		November-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0002	0.002	
		December-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000404 J	ND	ND	ND	ND	ND	ND	ND	0.001	0.003	
		January-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0005	0.0015	
		February-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0175	ND	ND	ND	ND	ND	ND	0.0005	0.005
		March-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0002	0.002	
		April-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000195 J	ND	ND	ND	ND	ND	ND	ND	0.0005	0.005	
		May-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0483	ND	ND	ND	ND	ND	0.001	0.004	
		June-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0175	ND	ND	ND	ND	ND	0.001	0.01	
		July-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00508 J	ND	ND	ND	ND	ND	0.0005	0.005	
		August-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.01	
		September-2024	0.00117 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.01	
		October-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.01	
		November-2024	ND	ND	ND	0.00461 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0005	0.005	
		December-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.01	
		January-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.198	ND	ND	ND	ND	ND	0.001	0.01	
		February-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0101	ND	ND	ND	ND	ND	0.004	0.01	
		March-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0119	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.186	0.2	
		April-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0284	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.004	
		May-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0005	0.005	
		June-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0004	0.004	

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	EW-3&A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	Concentration										EW-64	EW-65	EW-67	EW-68	EW-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94	EW-98	LOD	LOQ
Chromium	November-2022											0.208	0.319	0.112			0.354																0.016	0.02				
	December-2022		0.503			1.08				1.76		0.488	0.178					0.499	0.822														0.016	0.02				
	January-2023		0.31														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																															0.004	0.01					
	May-2023		0.422									0.306	0.237																			0.002	0.005					
	June-2023											0.381	0.251																			0.002	0.005					
	July-2023		0.308							0.555				0.191											0.231				0.215	0.0265	0.0004	0.001						
	August-2023									0.449														0.234					0.359	0.0276	0.002	0.005						
	September-2023					1.17		0.606															0.144								0.004	0.01						
	October-2023								0.273																							0.0004	0.01					
	November-2023		0.391																												0	0.003	0.003					
	December-2023					1.04	0.51		0.402			0.246			0.343				0.259		0.219									0.222	0.004	0.01						
	January-2024					1.34																										0.002	0.005					
	February-2024		0.17		0.23		0.272					0.193																		0.128	0.008	0.002	0.005					
	March-2024																											0.336		0.0759	0.0008	0.002	0.005					
	April-2024																											0.414			0.0004	0.001	0.004	0.01				
	May-2024					0.836							0.268						0.228		0.226	0.352								0.11	0.004	0.01	0.01					
	June-2024																			0.188	0.186									0.16	0.004	0.01	0.01					
	July-2024												0.352	0.246								0.185									0.233	0.004	0.01					
	August-2024								0.549											0.228												0.004	0.01					
	September-2024		0.0873	0.246		0.948			0.541																							0.004	0.01	0.01				
	October-2024		0.0797	0.237		0.929																										0.004	0.01	0.01				
	November-2024					0.773																										0.004	0.01	0.01				
	December-2024																																0.004	0.01				
	January-2025																																0.004	0.01				
	February-2025			0.21																													0.004	0.01				
	March-2025																																0.004	0.01				
	April-2025			0.248										0.199	0.0992																	0.0645	0.05	0.05				
	May-2025													0.248						0.155												0.008	0.01	0.01				
	June-2025																		0.143									0.371	0.342			0.002	0.005	0.01				

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	Concentration																EW-98	LOD	LOQ							
			EW-3&A	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-82	EW-85	EW-87	EW-88	EW-89
Copper		November-2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.016	0.02
		December-2022	ND	ND	ND	ND	ND	ND	ND	0.0127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.016	0.02
		January-2023	ND	ND	ND	ND	ND	ND	ND	ND	0.0256	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.008	0.01
		February-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00345	ND	ND	ND	ND	ND	ND	ND	0.0003	0.001
		March-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.008	0.01
		April-2023	ND	ND	ND	ND	ND	ND	ND	0.00664	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.001
		May-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00747	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.001
		June-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0015	0.005
		July-2023	0.00124	ND	ND	ND	ND	ND	0.00143	ND	0.00154 J	ND	0.00342 J	ND	0.00269 J	ND	ND	ND	0.00811	ND	ND	ND	ND	ND	ND	ND	0.0027	0.001
		August-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0015	0.005
		September-2023	ND	ND	ND	ND	ND	ND	0.00343 J	ND	0.0176	ND	ND	ND	ND	ND	ND	ND	0.00407 J	ND	ND	ND	ND	ND	ND	ND	0.003	0.01
		October-2023	ND	ND	ND	ND	ND	ND	ND	0.00806	ND	ND	ND	ND	ND	ND	ND	ND	0.00361	ND	ND	0.000409 J	ND	ND	ND	ND	0.0003	0.001
		November-2023	0.00607	ND	ND	0.00352	0.0212	ND	0.00806	ND	ND	ND	ND	0.00341	ND	ND	ND	ND	0.00387	ND	ND	ND	ND	ND	ND	ND	0.003	0.002
		December-2023	ND	ND	0.00184	ND	ND	0.00756	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00387	ND	ND	ND	ND	ND	ND	ND	0.0015	0.0015
		January-2024	ND	ND	ND	ND	ND	ND	ND	ND	0.019	ND	ND	ND	ND	ND	ND	ND	0.0034	ND	ND	ND	ND	ND	ND	ND	0.0006	0.005
		February-2024	ND	ND	ND	ND	0.00201	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0015	0.002
		March-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0015 J	0.002
		April-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00443	ND	ND	ND	ND	0.004	ND	ND	0.00184 J	ND	ND	ND	ND	0.0015	0.005
		May-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.001
		June-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00486 J	ND	0.00488 J	ND	ND	ND	ND	ND	0.003	0.004
		July-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00409 J	ND	ND	ND	ND	ND	ND	ND	0.003	0.01
		August-2024	ND	ND	ND	ND	ND	ND	ND	ND	0.398	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0015	0.005
		September-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.01
		October-2024	0.00612 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00306 J	ND	ND	ND	ND	ND	0.003	0.01
		November-2024	0.00569 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.01
		December-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.01
		January-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003581 J	ND	ND	ND	ND	ND	0.003	0.01
		February-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.035 J	ND	ND	ND	ND	ND	0.003	0.01
		March-2025	0.0087 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0142	ND	0.00381 J	ND	ND	ND	ND	ND	0.001	0.01
		April-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.009 J	ND	ND	ND	ND	ND	ND	ND	0.0465	0.05
		May-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.008	0.01
		June-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0082 J	ND	ND	ND	ND	ND	ND	ND	0.0015	0.005
																		0.0082 J								0.002	0.01	

Historical LFG-EW Leachate Monitoring Results Summary

Well ID	Parameter	Monitoring Event	Concentration																EW-98	LOO	LOQ										
			EW-34A	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-69	EW-74	EW-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94
Lead	November-2022	ND	ND	ND	0.0381	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.017 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	0.02	
	December-2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012	0.02	
	January-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.006	0.01		
	February-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.001	
	March-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.006	0.01	
	April-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.001	
	May-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.005	
	June-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.005	
	July-2023	0.0014	ND	ND	ND	ND	ND	ND	0.019	ND	ND	ND	ND	ND	ND	0.0049	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0017	0.001	
	August-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.005	
	September-2023	ND	ND	ND	0.12	ND	0.014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	0.01	0.01	
	October-2023	ND	ND	ND	0.13	0.0046	0.0077	0.014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0034	ND	ND	0.001	0.001	
	November-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0043	ND	ND	0.003	0.003	
	December-2023	ND	ND	ND	0.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.002	
	January-2024	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0015	0.0015
	February-2024	0.0045	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.001	
	March-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.002
	April-2024	ND	ND	ND	ND	ND	ND	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001	0.001
	May-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	June-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	July-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.005
	August-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.031	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	September-2024	ND	ND	ND	0.098	ND	ND	0.057	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	October-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	November-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	December-2024	ND	ND	ND	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	January-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	February-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.002
	March-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.01
	April-2025	0.0113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.015	0.015
	May-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.006	0.01
	June-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.005

Historical LFG-EW Leachate Monitoring Results Summary

Well ID	Monitoring Event	EW-34A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-40	EW-41	EW-42	EW-44	EW-45	EW-47	EW-48	EW-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94	EW-98	LOD	LOQ
Parameter														Concentration														
Mercury	November-2022										ND		0.00149			0.00053											0.0004	0.0004
	December-2022	0.00051							0.00118		ND	0.00588					0.0046										0.0004	0.0008
	January-2023		ND							ND						ND											0.0004	0.0004
	February-2023									ND																	0.0004	0.0004
	March-2023									ND																	0.0004	0.0004
	April-2023										ND	0.00128															0.0004	0.0004
	May-2023		ND							ND																	0.0002	0.0002
	June-2023									ND																	0.0004	0.0004
	July-2023	0.000306									ND									ND					ND		0.0002	0.0002
	August-2023								0.0107																		0.0004	0.0004
	September-2023						0.00312																				0.0002	0.0002
	October-2023							0.00503												ND							0.0002	0.0002
	November-2023		ND					0.00165												ND							0.0002	0.0002
	December-2023										ND																0.0002	0.0002
	January-2024			ND																							0.0004	0.0004
	February-2024			0.00376																							0.0004	0.0004
	March-2024					0.0115															0.00238		0.00284			0.00124	0.0004	0.0004
	April-2024													0.000201													0.0002	0.0002
	May-2024																										0.0008	0.0008
	June-2024																				0.0119						0.0002	0.0002
	July-2024										ND											ND					0.0002	0.0002
	August-2024										ND	0.00104															0.0001	0.0001
	September-2024	ND	ND				ND																				0.0002	0.0002
	October-2024	ND	ND				ND														0.00671						0.0002	0.0002
	November-2024	ND	ND																								0.0002	0.0002
	December-2024																										0.0002	0.0002
	January-2025																										0.0002	0.0002
	February-2025												0.00011														0.01	0.01
	March-2025	ND	ND																								0.00009	0.00009
	April-2025		ND									0.0146									ND						0.0002	0.0002
	May-2025											0.00149															0.0001	0.0001
	June-2025																										0.0001	0.0001
																											0.0002	0.0002

Historical LFG-EW Leachate Monitoring Results Summary

Well ID	Parameter	Monitoring Event	Concentration																				EW-98	LOD	LOQ					
			EW-36A	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-76	EW-82	EW-85				EW-87	EW-88	EW-89	EW-94	
Nickel	November-2022																											0.014	0.02	
	December-2022		0.1722																									0.014	0.02	
	January-2023		0.1074																									0.007	0.01	
	February-2023																											0.007	0.01	
	March-2023																											0.007	0.01	
	April-2023																											0.001	0.01	
	May-2023		0.113																									0.001	0.01	
	June-2023																											0.005	0.005	
	July-2023		0.09872																										0.005	0.005
	August-2023																											0.01403	0.001	
	September-2023																											0.02029	0.001	
	October-2023																											0.01	0.01	
	November-2023		0.1178																									0.001	0.01	
	December-2023																											0.05277	0.001	
	January-2024																											0.005	0.005	
	February-2024																											0.002	0.002	
	March-2024																											0.0326	0.005	
	April-2024																											0.005	0.005	
	May-2024																											0.002	0.002	
	June-2024																											0.005	0.005	
July-2024																											0.001	0.001		
August-2024																											0.001	0.01		
September-2024																											0.02984	0.001		
October-2024																											0.03166	0.001		
November-2024																											0.001	0.001		
December-2024																											0.001	0.01		
Selenium	January-2025																											0.03528	0.001	
	February-2025		0.09275																									0.0085	0.01	
	March-2025		0.0933																									0.0465	0.05	
	April-2025																										0.007	0.01		
	May-2025																										0.005	0.005		
	June-2025																										0.001	0.01		
	November-2022																										0.08	0.1		
	December-2022																										0.08	0.1		
	January-2023																										0.00085	0.001		
	February-2023																										0.04	0.05		
	March-2023																										0.00085	0.001		
	April-2023																										0.00425	0.001		
	May-2023																										0.00425	0.005		
	June-2023																										ND	0.00085	0.001	
	July-2023		0.00101																									ND	0.00085	0.001
	August-2023																										ND	0.00425	0.005	
	September-2023																										ND	0.0085	0.01	
	October-2023																										0.00085	0.001	0.001	
	November-2023																										0.0017	0.002	0.003	
	December-2023																										0.0015	0.0015	0.0015	
January-2024																										ND	0.00425	0.002	0.002	
February-2024																										ND	0.00425	0.005	0.005	
March-2024																										ND	0.0017	0.002	0.002	
April-2024																										0.00425	0.005	0.005	0.005	
May-2024																										0.0085	0.001	0.001	0.001	
June-2024																										ND	0.0085	0.01	0.001	
July-2024																										ND	0.0085	0.01	0.001	
August-2024																										0.00425	0.005	0.005	0.005	
September-2024																										0.0085	0.001	0.001	0.001	
October-2024																										0.0085	0.01	0.001	0.001	
November-2024																										0.0085	0.01	0.001	0.001	
December-2024																										0.0085	0.01	0.001	0.001	
January-2025																										0.0085	0.01	0.001	0.001	
February-2025																										2.32	2.5	0.04	0.05	
March-2025																										0.04	0.05	0.04	0.05	
April-2025																										0.00425	0.005	0.005	0.005	
May-2025																										0.0085	0.001	0.001	0.001	
June-2025																										0.0085	0.01	0.001	0.001	

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	Concentration																				LOD	LOQ					
			EW-34A	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-76	EW-82	EW-85			EW-87	EW-88	EW-89	EW-94	EW-98
Silver		November-2022	ND	ND	ND	0.0187 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.02	
		December-2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.02	
		January-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.01	
		February-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.001	
		March-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.01	
		April-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00011 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.001	
		May-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.001	
		June-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.005	
		July-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.005	
		August-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.005	
		September-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		October-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.001	
		November-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		December-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0025	0.001
		January-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012	0.002
		February-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.005
		March-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.005
		April-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0004	0.001
		May-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		June-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		July-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.0005
		August-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		September-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		October-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		November-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		December-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		January-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.01
		February-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.025	0.05
		March-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0006	0.0005
		April-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	0.0025
		May-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.007 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	0.01
		June-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0003	0.005
																										0.002	0.01		

Historical LFG-EW Leachate Monitoring Results Summary

[illegible]

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	Concentration																				EW-94	EW-98	LOD	LOQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			EW-3&A	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-78	EW-82	EW-85	EW-87	EW-88	EW-89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
VOLATILE FATTY ACIDS (mg/L)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	EW-36A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	Concentration										EW-64	EW-65	EW-67	EW-68	EW-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94	EW-98	LOD	LOQ
Butyric Acid		November-2022													430																		12	100				
		December-2022		ND								830																					29	250				
		January-2023		ND								1800																					29	250				
		February-2023																																500				
		March-2023																																500				
		April-2023																																500				
		May-2023		ND																													330					
		June-2023																																1000				
		July-2023		ND																														330				
		August-2023																																500				
		September-2023																																500				
		October-2023																																1000				
		November-2023																																594				
		December-2023																																500				
		January-2024																																200				
	Lactic Acid		February-2024																																200			
		March-2024																																200				
		April-2024																																100				
		May-2024																																250				
		June-2024																																250				
		July-2024																																100				
		August-2024																																250				
		September-2024																																500				
		October-2024		ND																														100				
		November-2024																																1250				
		December-2024																																200				
		January-2025																																400				
		February-2025																																100				
		March-2025																																5				
		April-2025																																100				
		May-2025																																27				
	June-2025																																250					
	July-2025																																500					
	August-2025																																100					
	September-2025																																500					
	October-2025																																1250					
	November-2025																																200					
	December-2025																																400					
	January-2026																																100					
	February-2026																																500					
	March-2026																																5					
	April-2026																																100					
	May-2026																																27					
	June-2026																																250					
	July-2026																																500					
	August-2026																																100					
	September-2026																																500					
	October-2026																																1250					
	November-2026																																200					
	December-2026																																400					
	January-2027																																100					
	February-2027																																500					
	March-2027																																5					
	April-2027																																100					
	May-2027																																27					
	June-2027																																250					
	July-2027																																500					
	August-2027																																100					
	September-2027																																500					
	October-2027																																1250					
	November-2027																																					

[illegible]

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Concentration																				EW-98	LOD	LOQ		
		Monitoring Event	EW-3&A	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-88	EW-89				EW-94	
VOLATILE ORGANIC COMPOUNDS (ug/l)																										
2-Butanone (MEK)		November-2022																						30	100	
		December-2022		3140		24800						3390	15600											300	1000	
		January-2023		3480																				300	1000	
		February-2023									632													300	1000	
		March-2023																						300	1000	
		April-2023																						300	1000	
		May-2023		5360							257	2770												30	100	
		June-2023									3420	5530												750	2500	
		July-2023		5860							38400														150	500
												5970													750	2500
		August-2023									3000														1500	5000
																								60	200	
		September-2023																							750	2500
		October-2023									17500														13500	3000
																									60	200
		November-2023		3990		25700					17700														31600	5950
		December-2023				13700																			7350	2500
		January-2024			34700																				1500	5000
		February-2024				30500																			28900	1500
		March-2024																							150	500
																									150	500
		April-2024																							1500	5000
		May-2024																							60	200
																									150	500
	June-2024																							1500	5000	
	July-2024																							60	200	
	August-2024																							1500	5000	
	September-2024																							1500	5000	
	October-2024	28.2	2770			13000																		8	10	
																								60	200	
	November-2024		28800	4140																				40	200	
	December-2024																							150	500	
	January-2025																							1500	5000	
	February-2025			6930																				60	200	
	March-2025			2540																				150	500	
	April-2025																							1500	5000	
	May-2025																							150	500	
	June-2025																							1500	5000	
																								60	200	

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	Concentration																EW-98	LOD	LOQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			EW-3&A	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-63	EW-64	EW-65				EW-66	EW-67	EW-68	EW-69	EW-70	EW-71	EW-72	EW-73	EW-74	EW-75	EW-76	EW-77	EW-78	EW-79	EW-80	EW-81	EW-82	EW-83	EW-84	EW-85	EW-86	EW-87	EW-88	EW-89	EW-90	EW-91	EW-92	EW-93	EW-94	EW-95	EW-96	EW-97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Acetone		November-2022																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</

Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	Concentration												EW-98	LOD	LOQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			EW-34A	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-63	EW-64	EW-65	EW-66	EW-67	EW-68	EW-69	EW-70	EW-71	EW-72	EW-73	EW-74	EW-75	EW-76	EW-77	EW-78	EW-79	EW-80	EW-81	EW-82	EW-83	EW-84	EW-85	EW-86	EW-87	EW-88	EW-89	EW-90	EW-91	EW-92	EW-93	EW-94	EW-95	EW-96	EW-97																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Benzene		November-2022																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</

Historical LFG-EW Leachate Monitoring Results Summary

Well ID	Monitoring Event	EW-34A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	Concentration				EW-64	EW-65	EW-67	EW-68	EW-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94	EW-98	LOD	LOQ
Ethylbenzene	December-2022	ND	67.3	ND	172	ND	ND	ND	287	ND	ND	48.5	ND	ND	194	ND	108	27.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	November-2022	ND	65.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	January-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	February-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	151	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	March-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	April-2023	ND	124	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	May-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	20
	June-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	July-2023	ND	128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	August-2023	ND	ND	ND	ND	ND	ND	ND	224	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	82	ND	ND	ND	ND	ND	87.5	ND	ND	8	20
	September-2023	ND	ND	ND	ND	ND	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	October-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	November-2023	ND	26.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	5
	December-2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	January-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	February-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	250
	March-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	20
	April-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	May-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	10
	June-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	July-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	20
	August-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	September-2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	October-2024	ND	59.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	November-2024	ND	112	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	1
	December-2024	ND	135	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	5
	January-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	February-2025	ND	164	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	20
	March-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	April-2025	ND	61.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24500	24500
	May-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	June-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	50
	July-2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	20

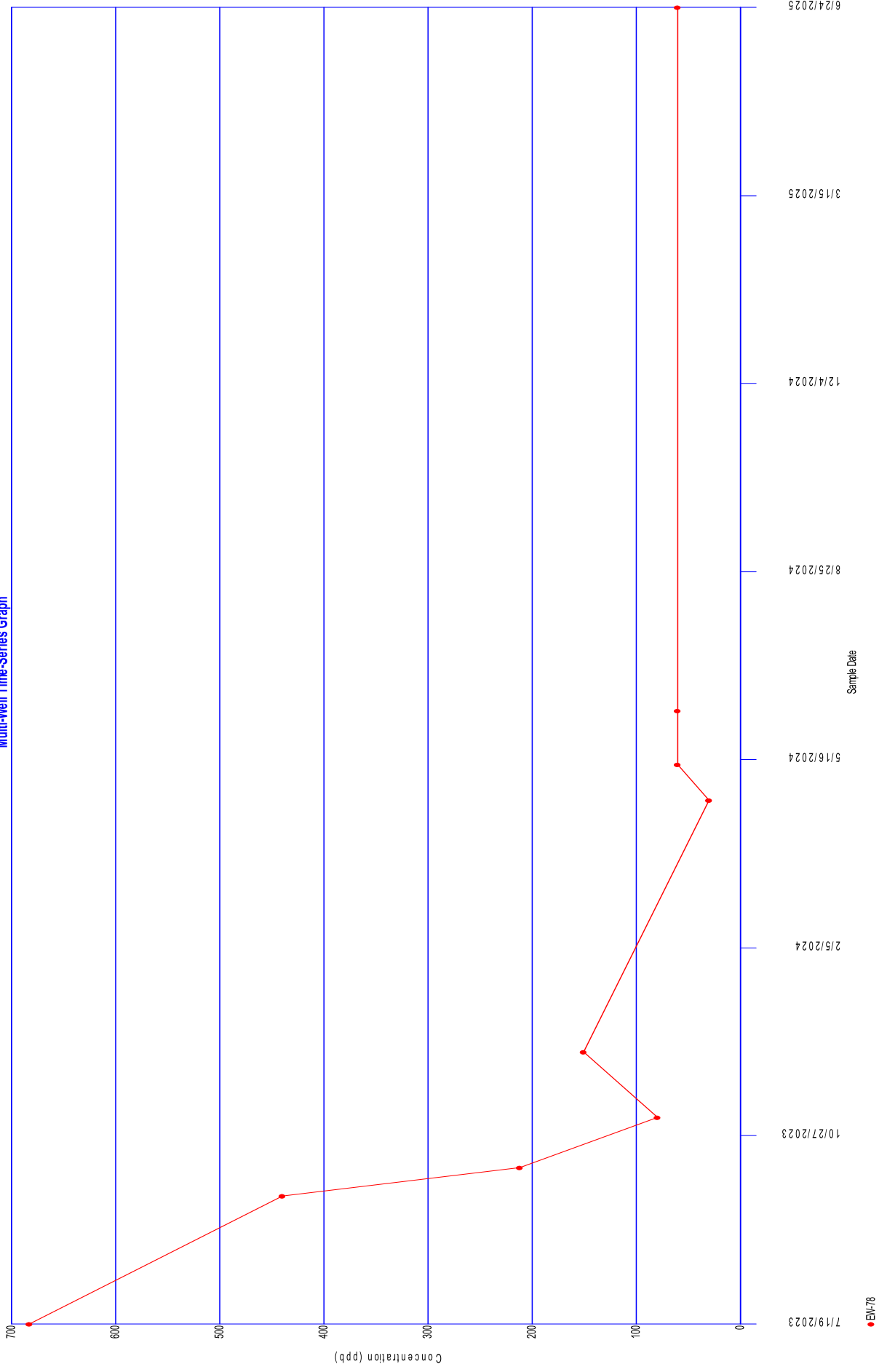
Historical LFG-EW Leachate Monitoring Results Summary

Parameter	Well ID	Monitoring Event	EW-36A	EW-50	EW-51	EW-52	EW-53	EW-54	EW-55	EW-57	EW-58	EW-59	EW-60	EW-61	Concentration				EW-64	EW-65	EW-67	EW-68	EW-76	EW-82	EW-85	EW-87	EW-88	EW-89	EW-94	EW-98	LOD	LOQ			
Toluene		November-2022												214	32.8	113	48.3														5	10			
		December-2022	122			175			195			ND	113																		5	10			
		January-2023	122								8 J	139				35.3		224													5	10			
		February-2023																													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			67	212															10	20			
		July-2023		248																										965	5	10			
		August-2023								218																						10	20		
		September-2023							105		ND																				36.6	25	50		
		October-2023					ND																							ND		25	50		
		November-2023		47.3						37 J																						125	250		
		December-2023																													2.5	5			
		January-2024								51.5		114																			25	50			
		February-2024																														5	10		
		March-2024																														114	25	50	
		April-2024																														125	250		
		May-2024																														10	20		
		June-2024																														284	25	50	
		July-2024																														10	20		
		August-2024																														228	25	50	
		September-2024																														25	50		
		October-2024	55.7	173		80		35 J	63.5																						25 J	25	50		
		November-2024																														0.5	1		
		December-2024	44.6	245		65.5																										2.5	5		
		January-2025				42 J																										72	25	50	
		February-2025		271																												288	25	50	
		March-2025																														36 J	25	50	
		April-2025		90.5																													54.5	10	20
		May-2025																															25	50	
		June-2025																														260	25	50	
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																															40.2	10	20		

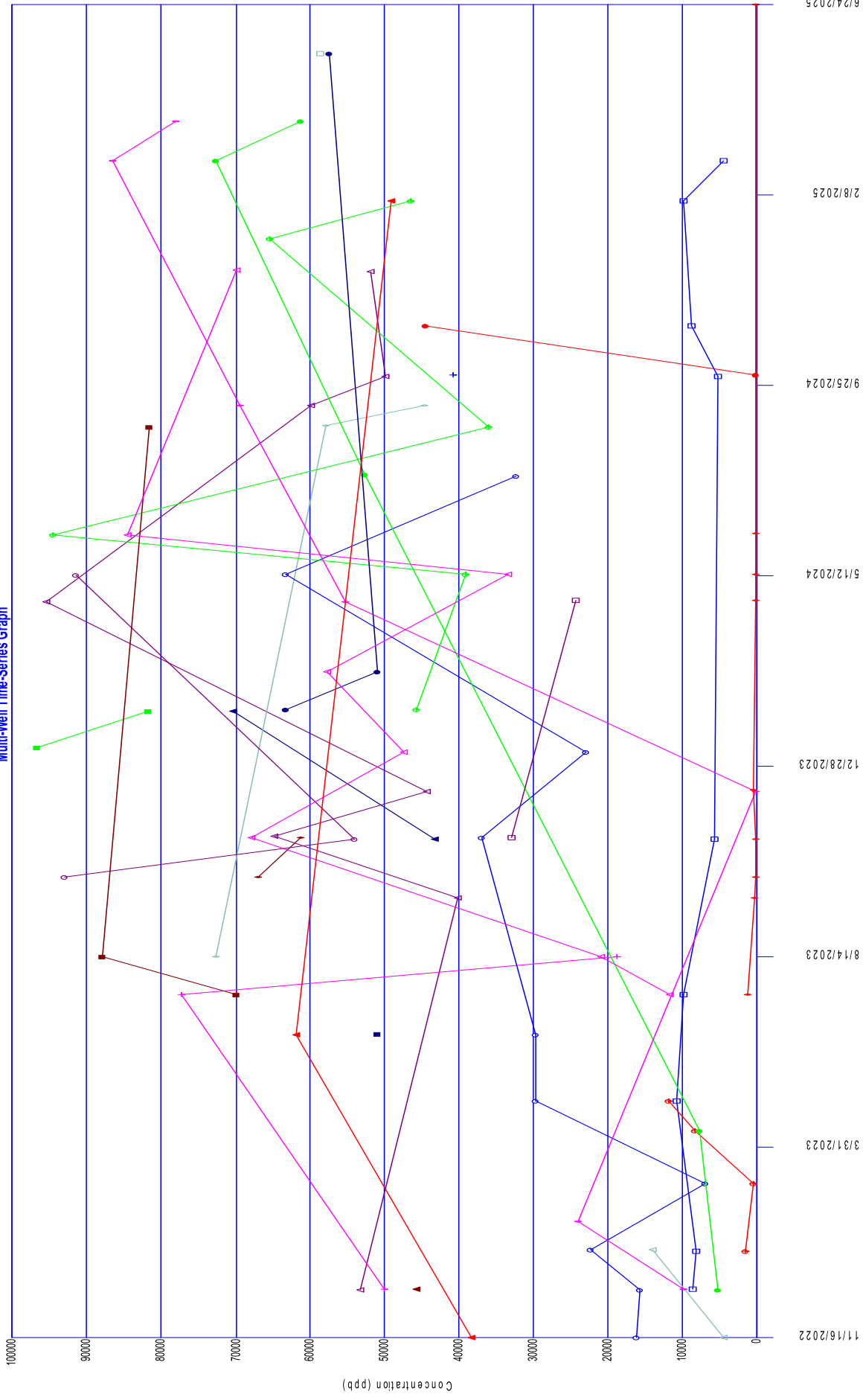
2-Butanone
Multi-Well Time-Series Graph



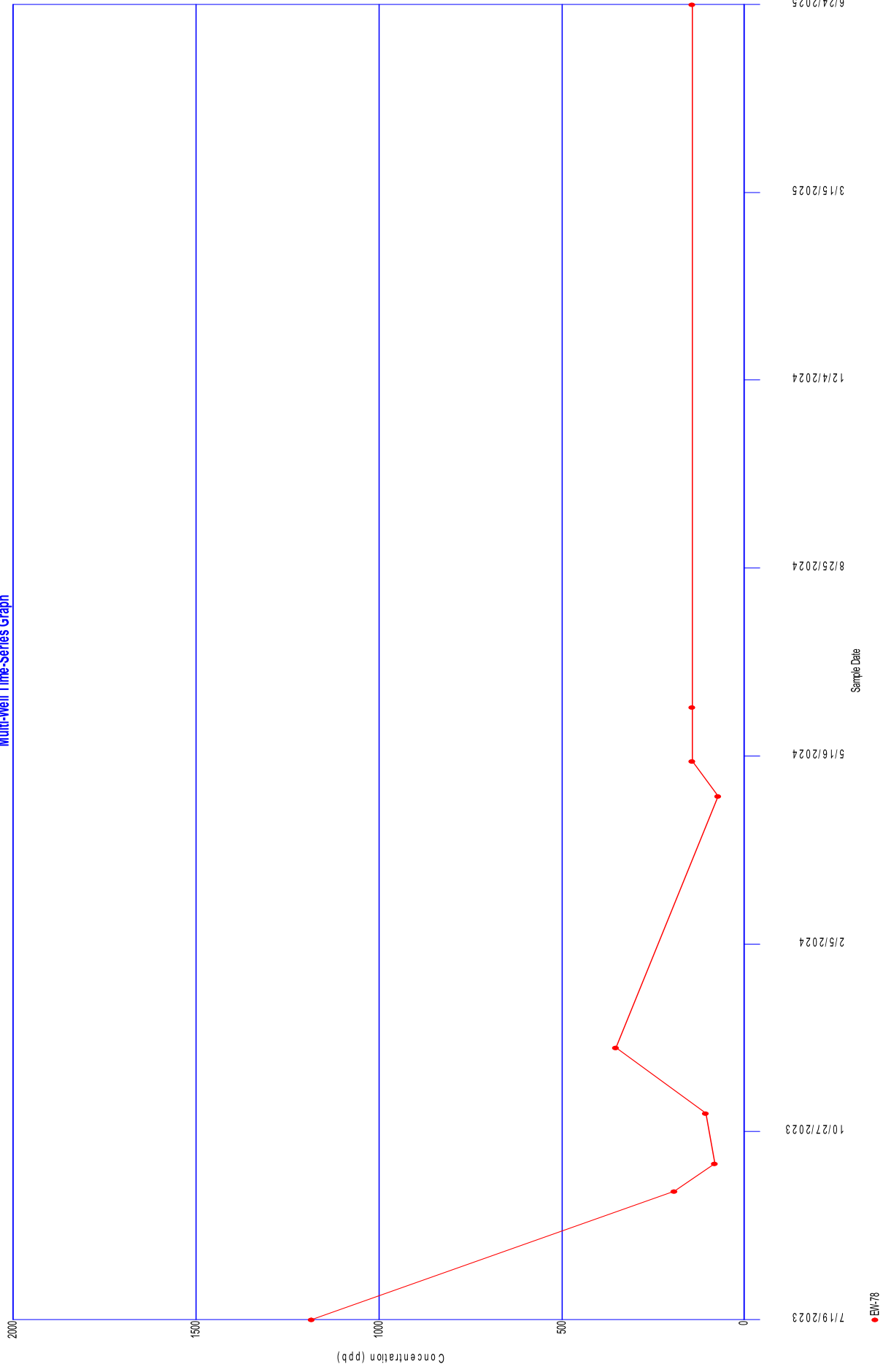
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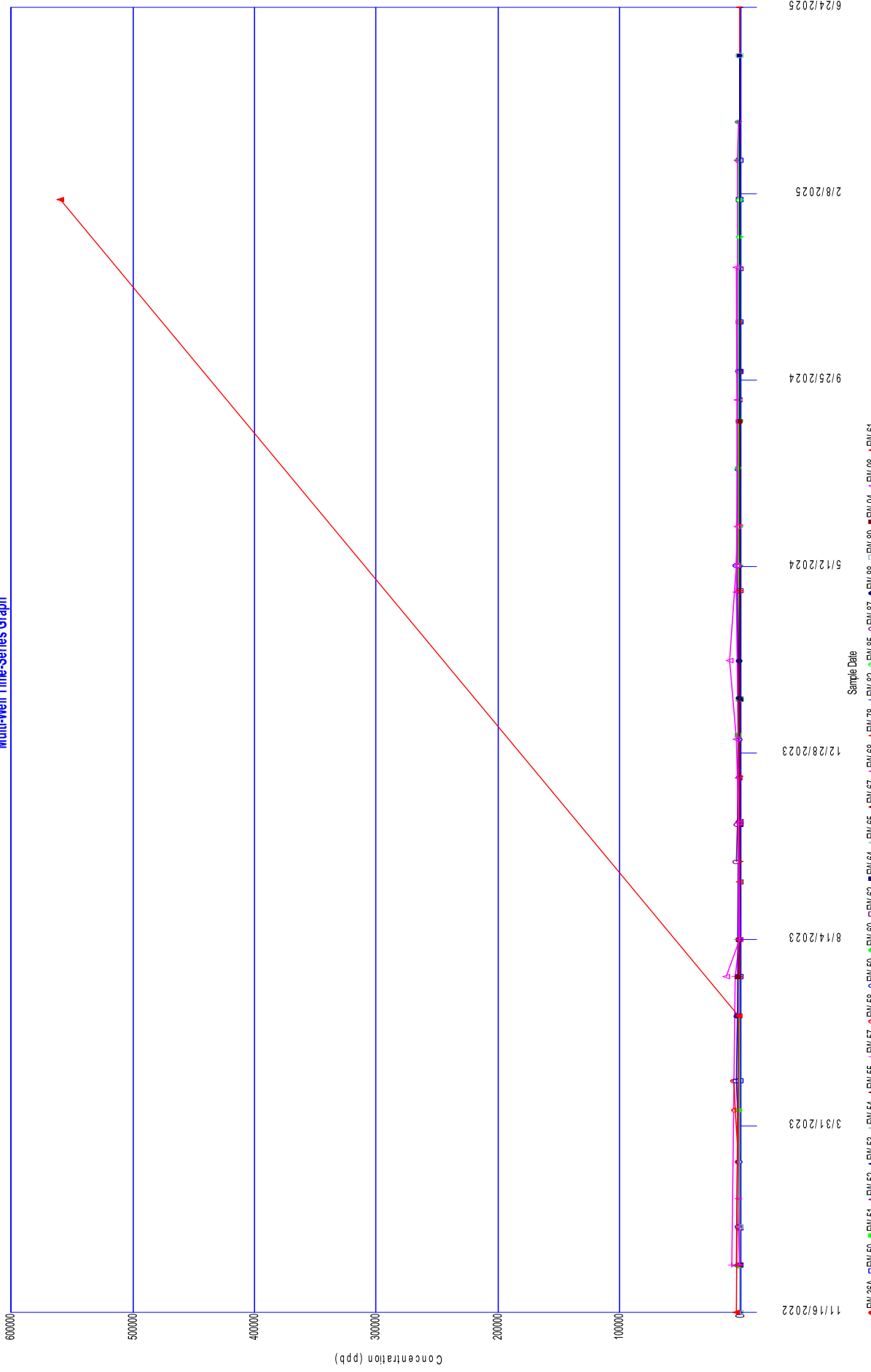
Acetone
Multi-Well Time-Series Graph



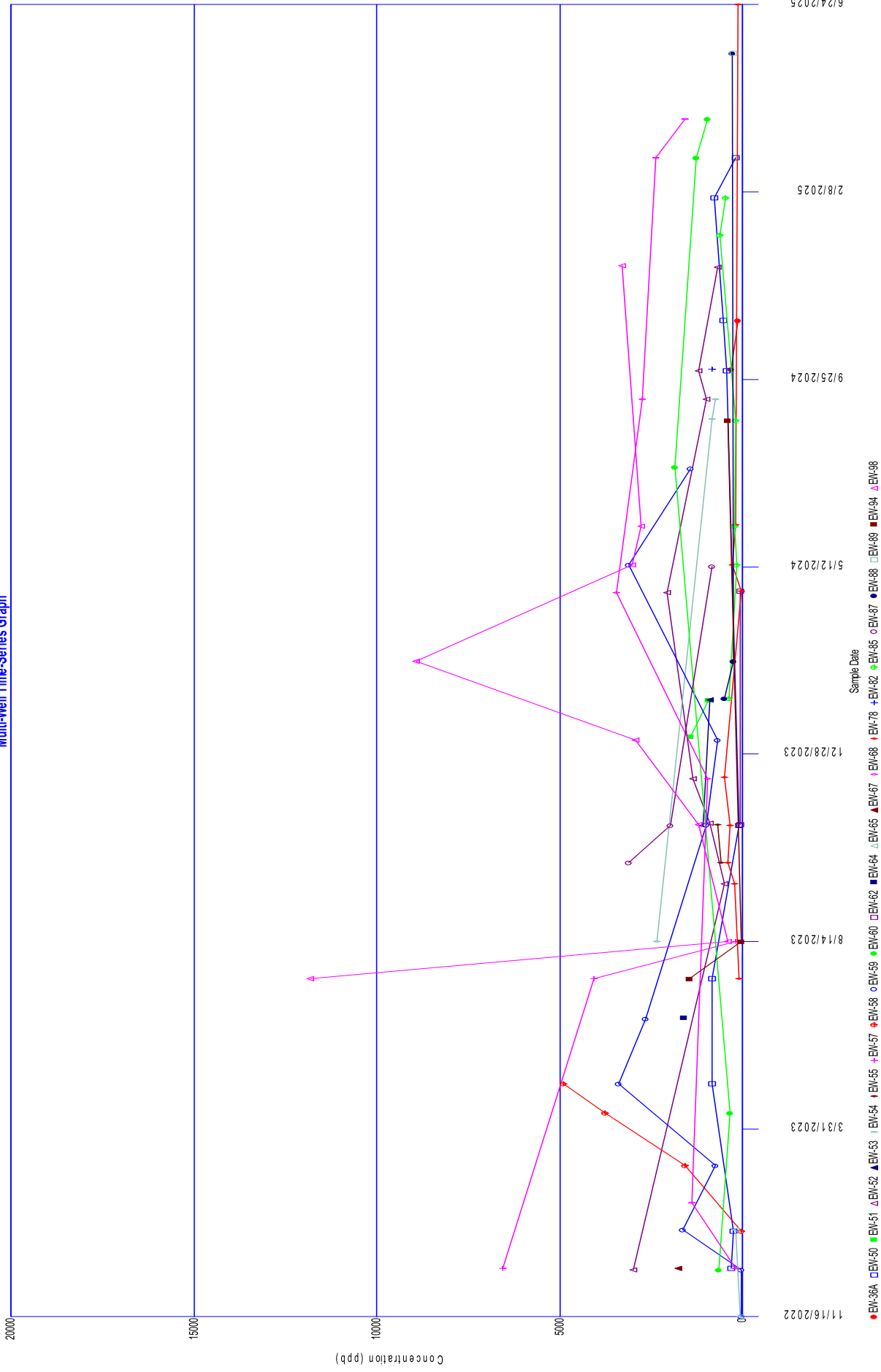
Acetone
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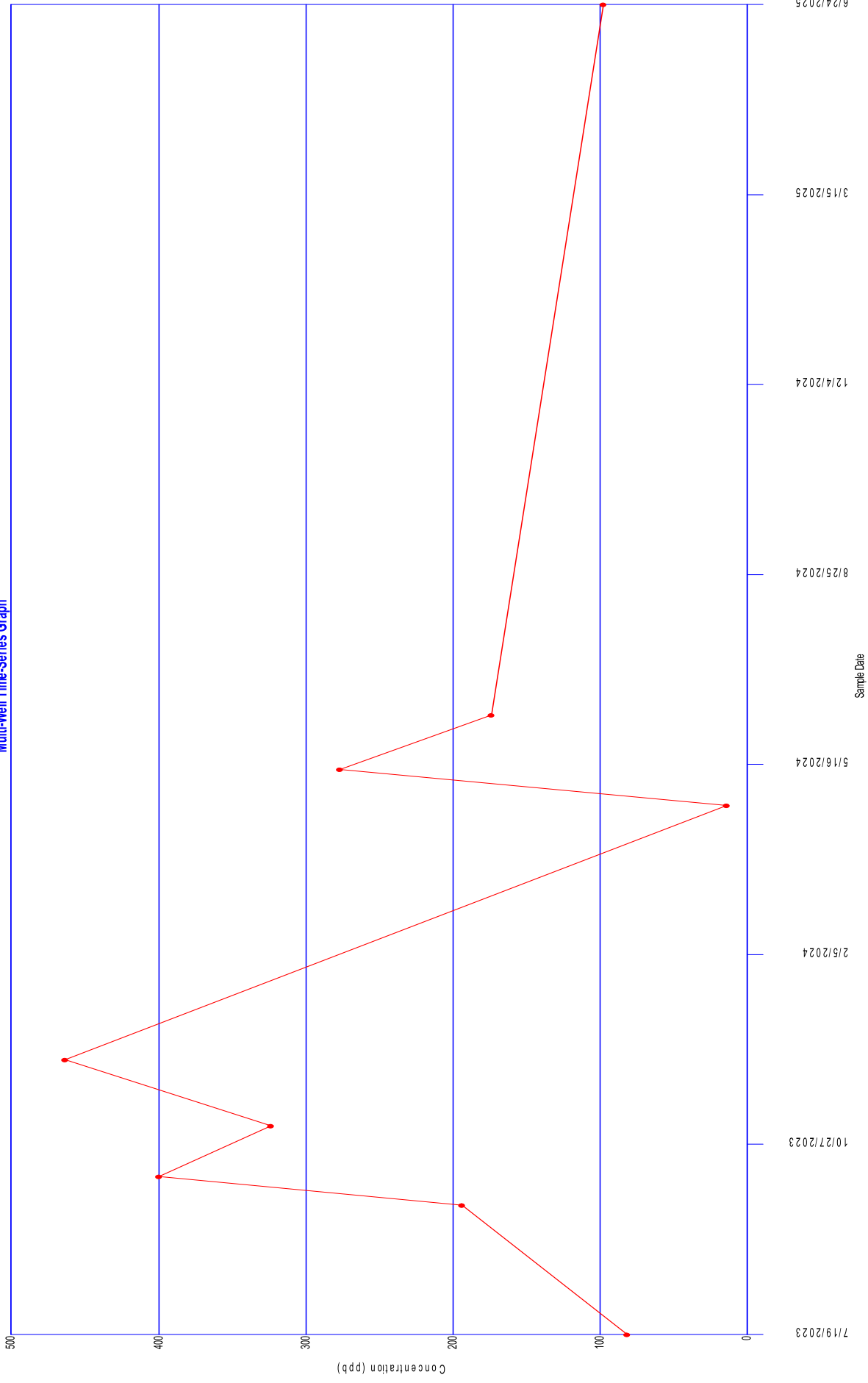
Benzene
Multi-Well Time-Series Graph



Benzene
Multi-Well Time-Series Graph

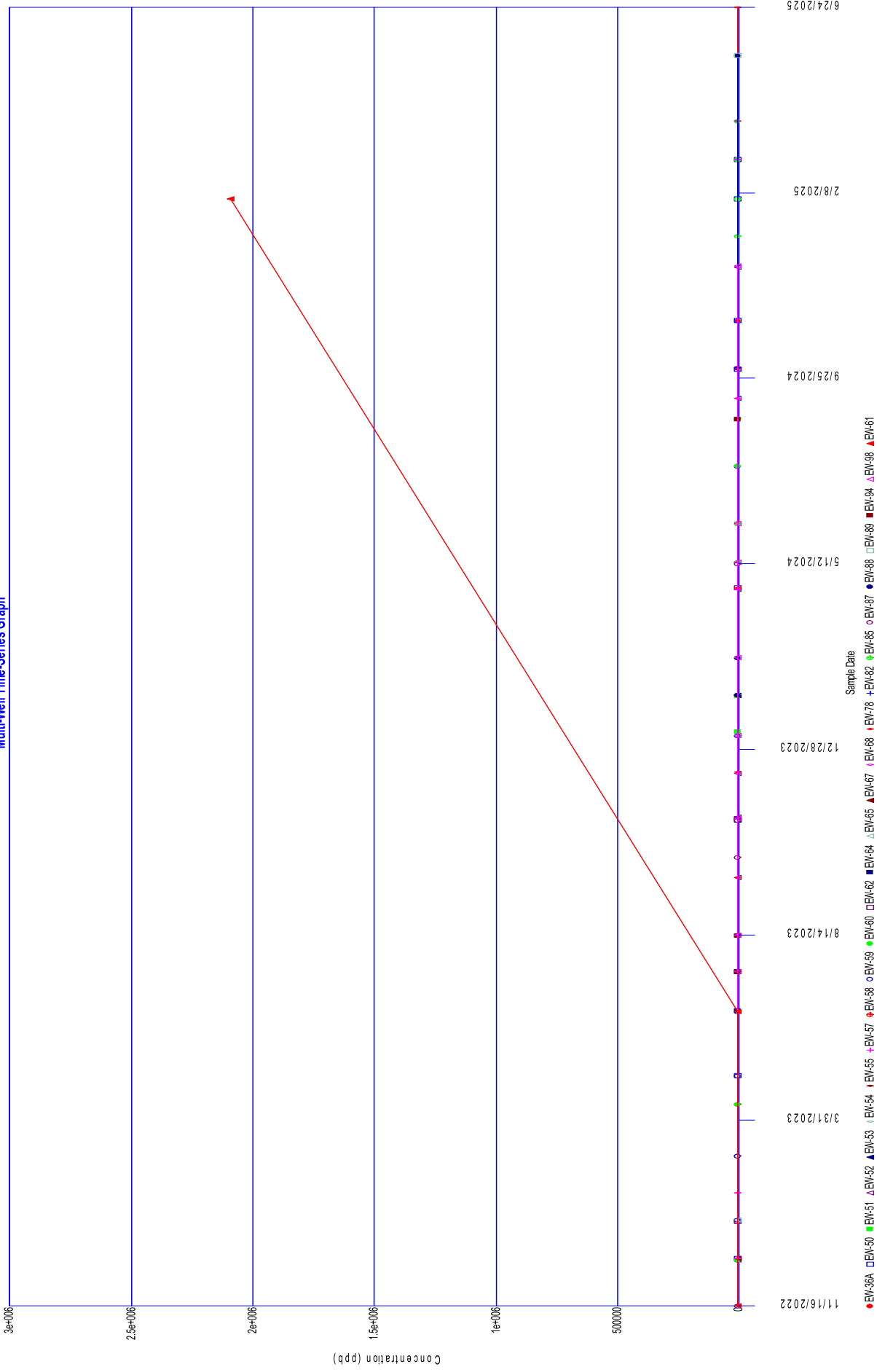


Benzene
Multi-Well Time-Series Graph

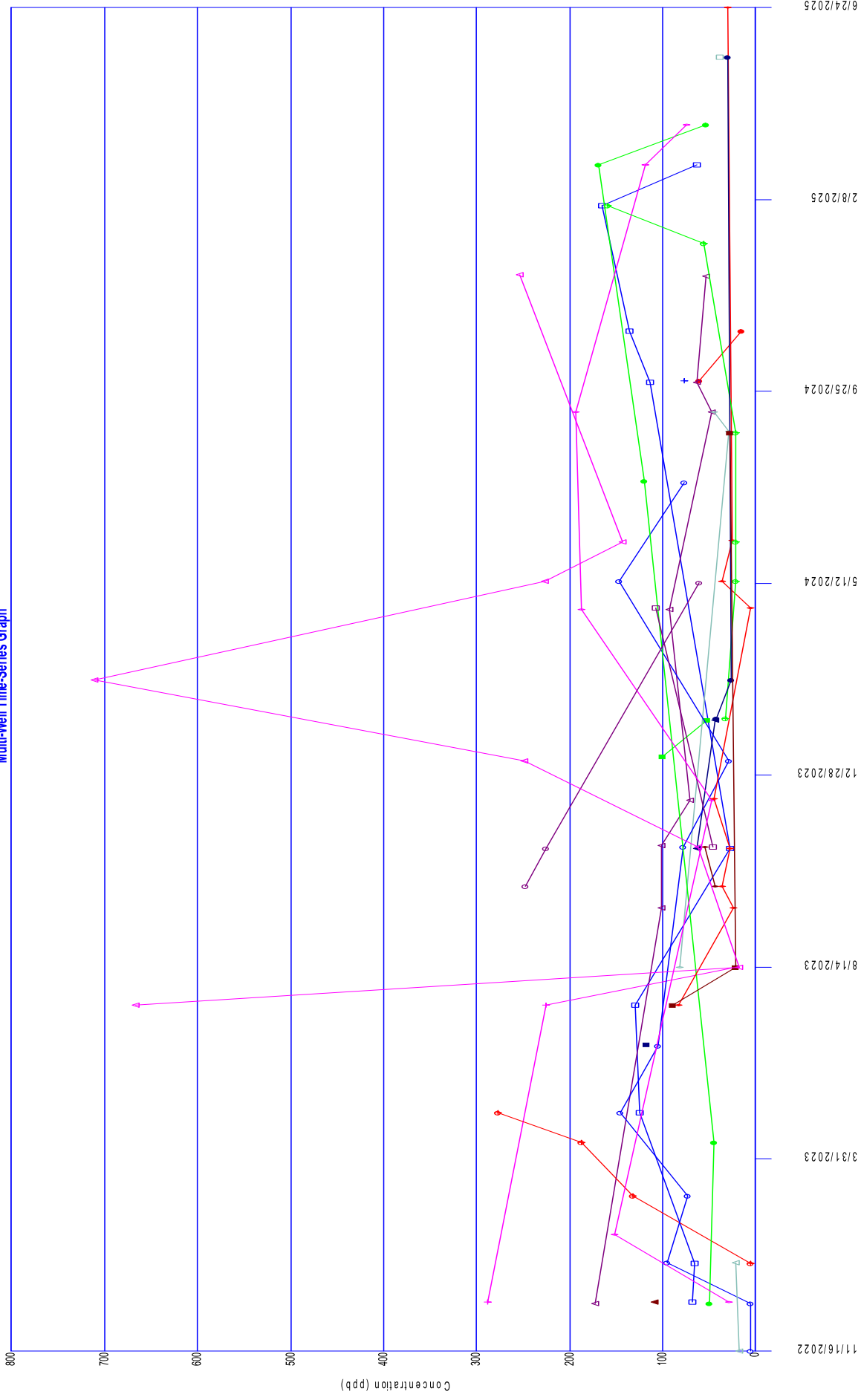


EW-78

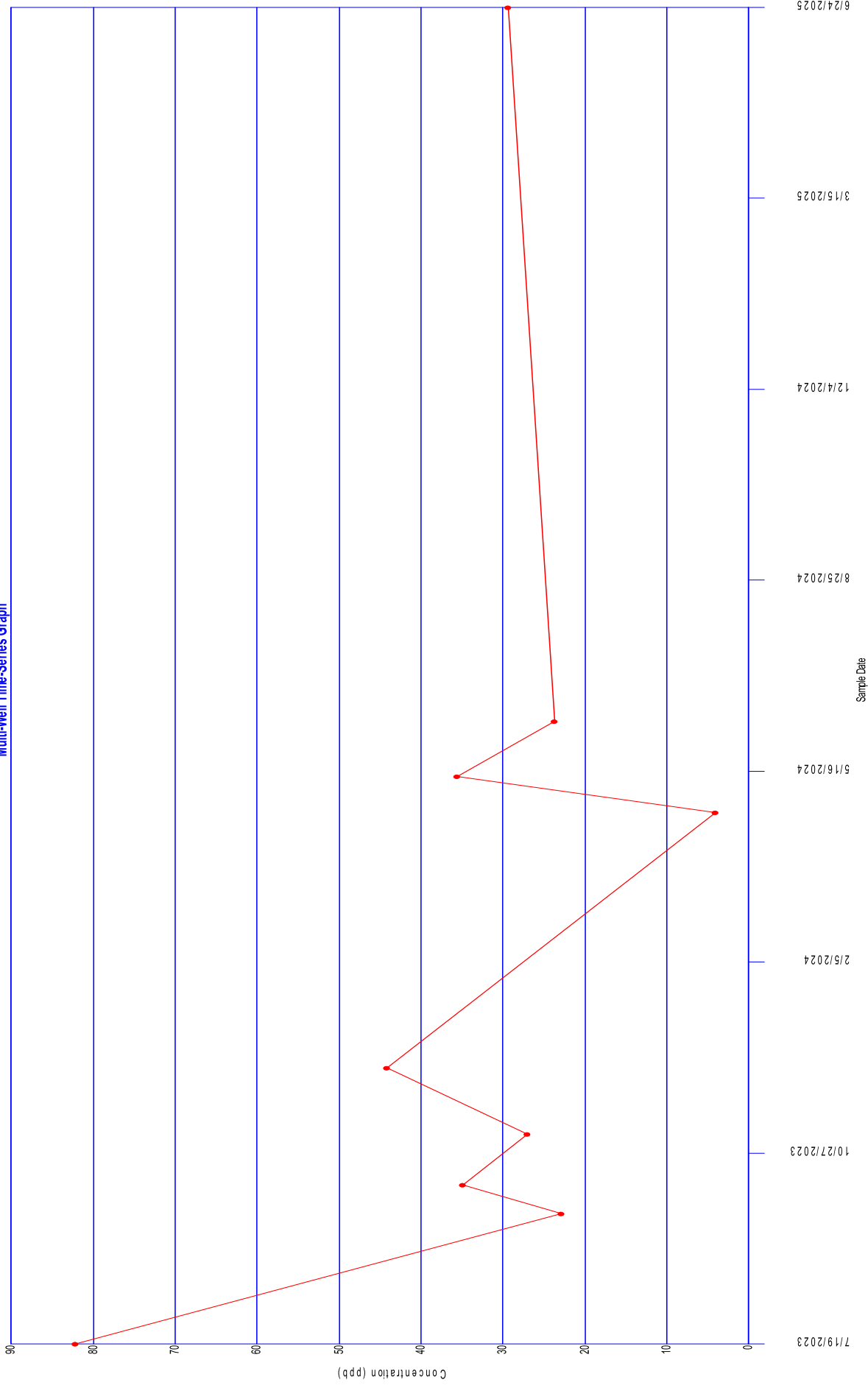
Ethylbenzene
Multi-Well Time-Series Graph



Ethylbenzene
Multi-Well Time-Series Graph

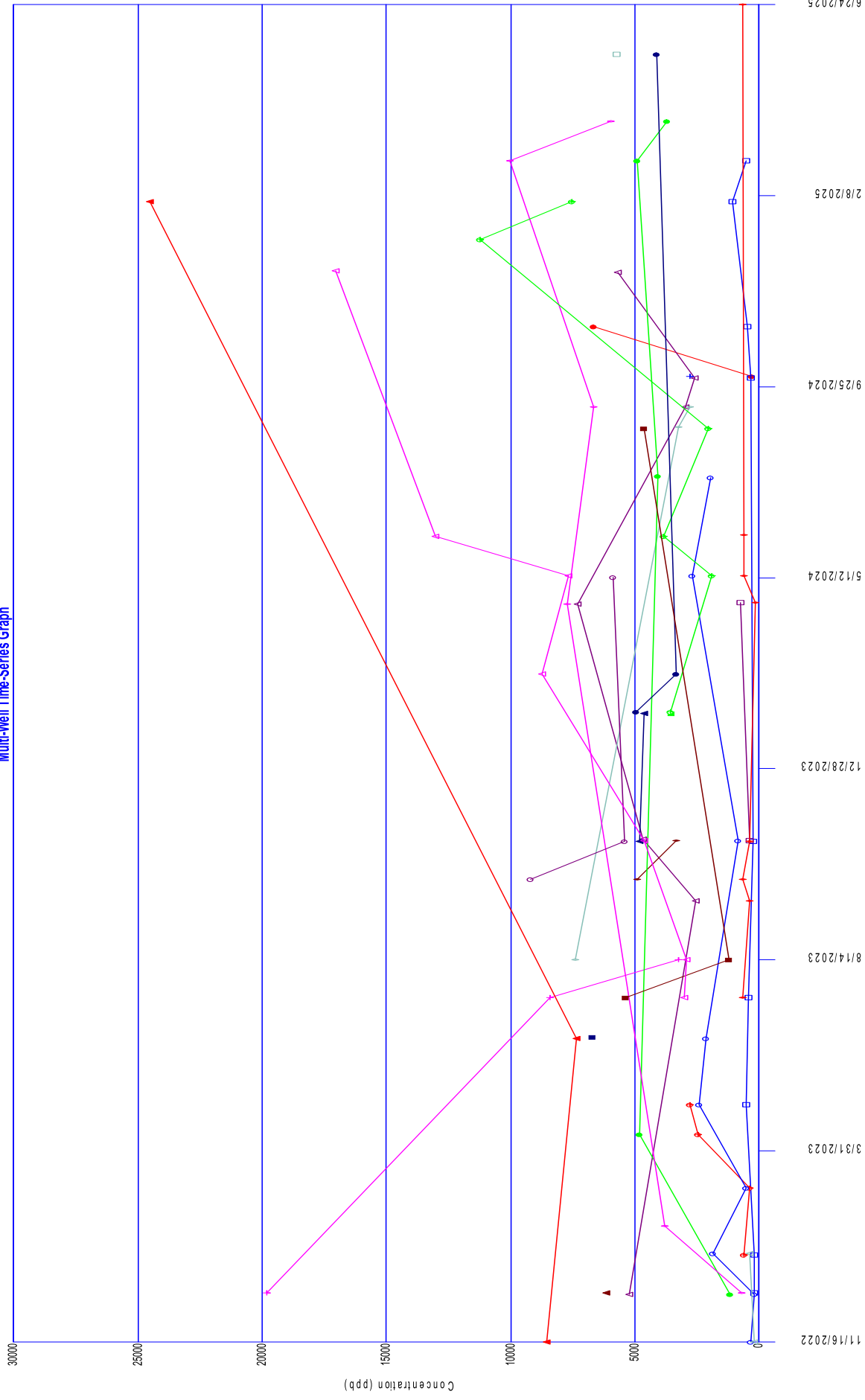


Ethylbenzene
Multi-Well Time-Series Graph

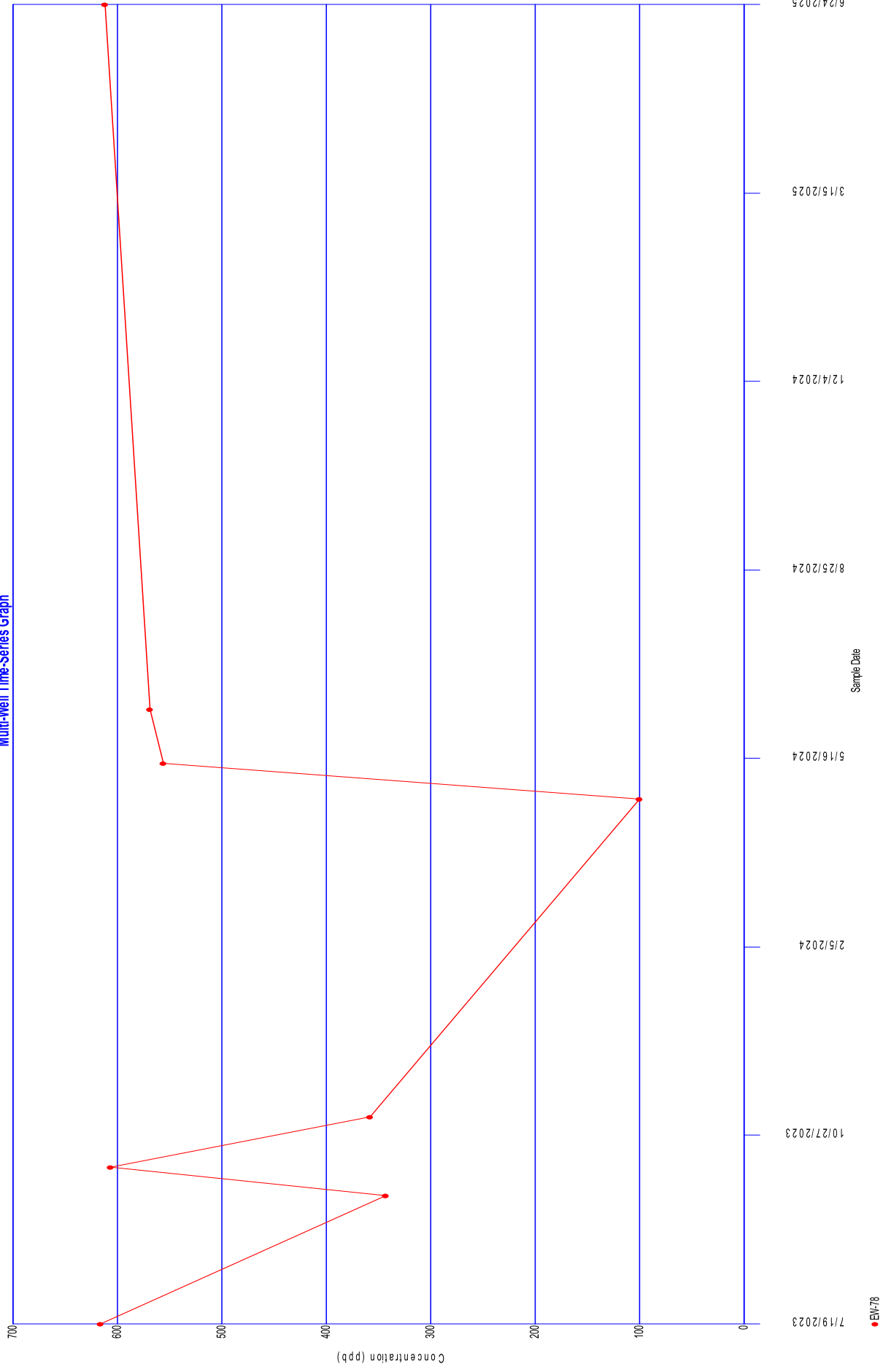


● B1-78

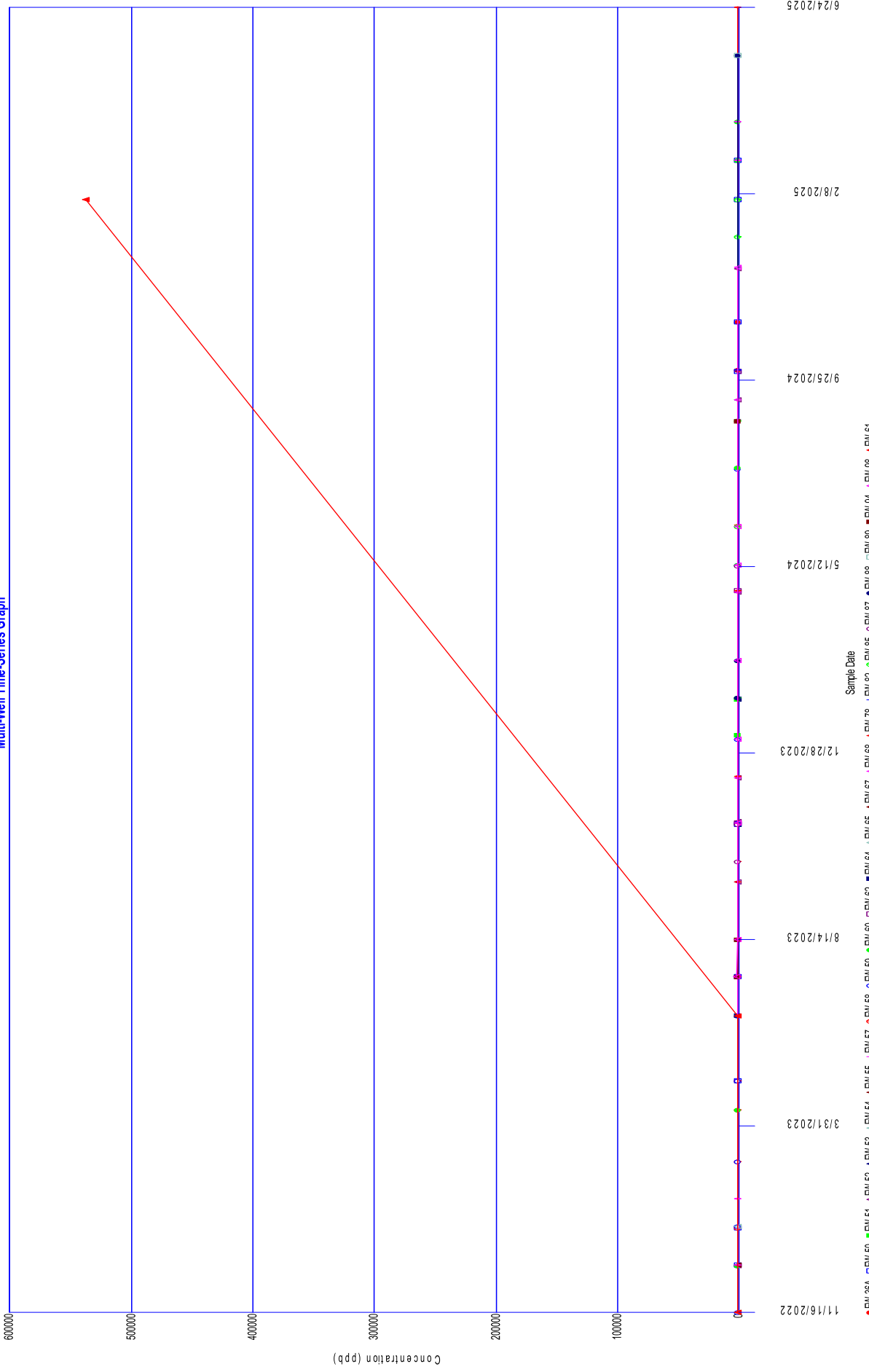
Tetrahydrofuran
Multi-Well Time-Series Graph



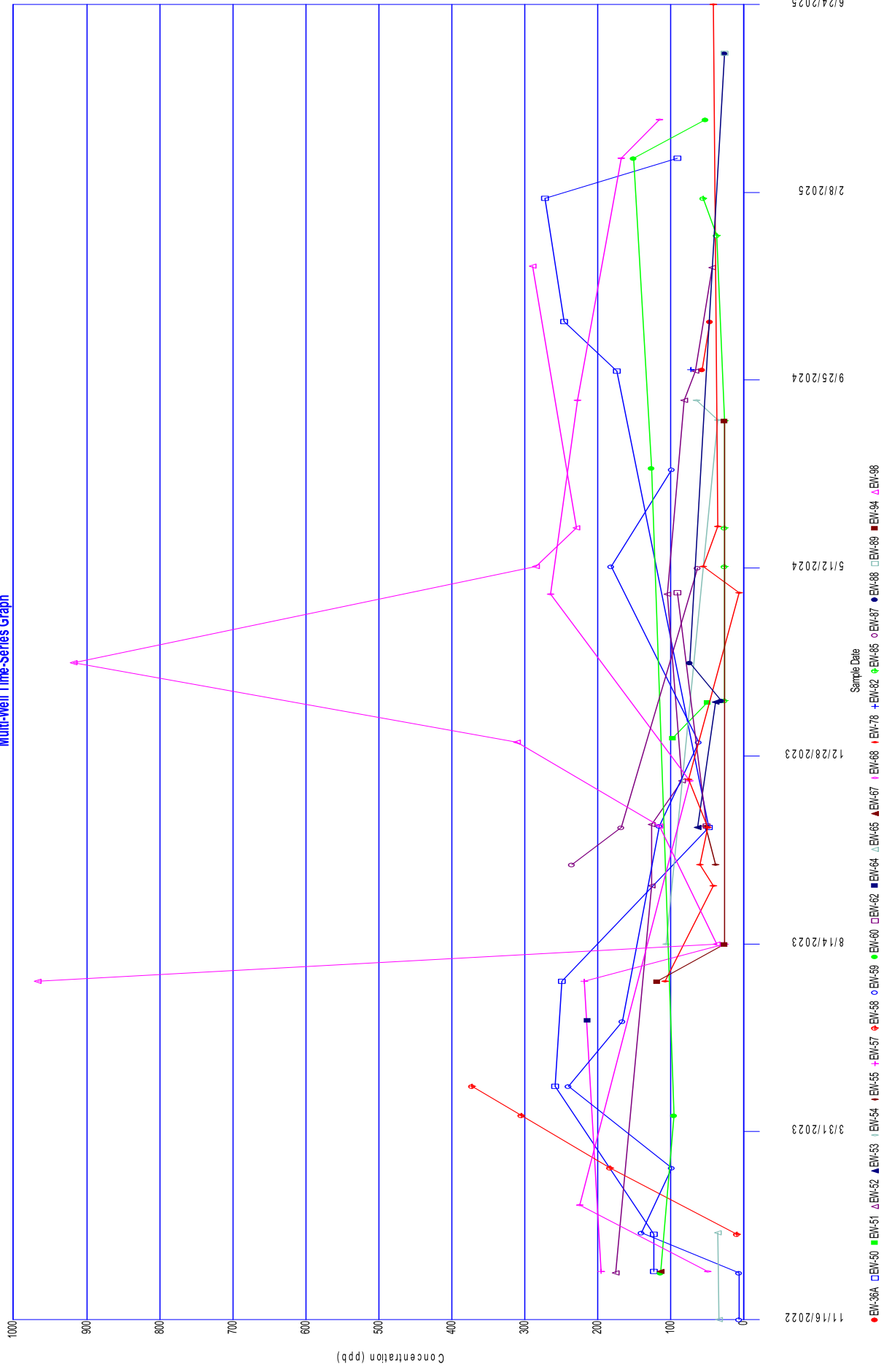
Tetrahydrofuran
Multi-Well Time-Series Graph



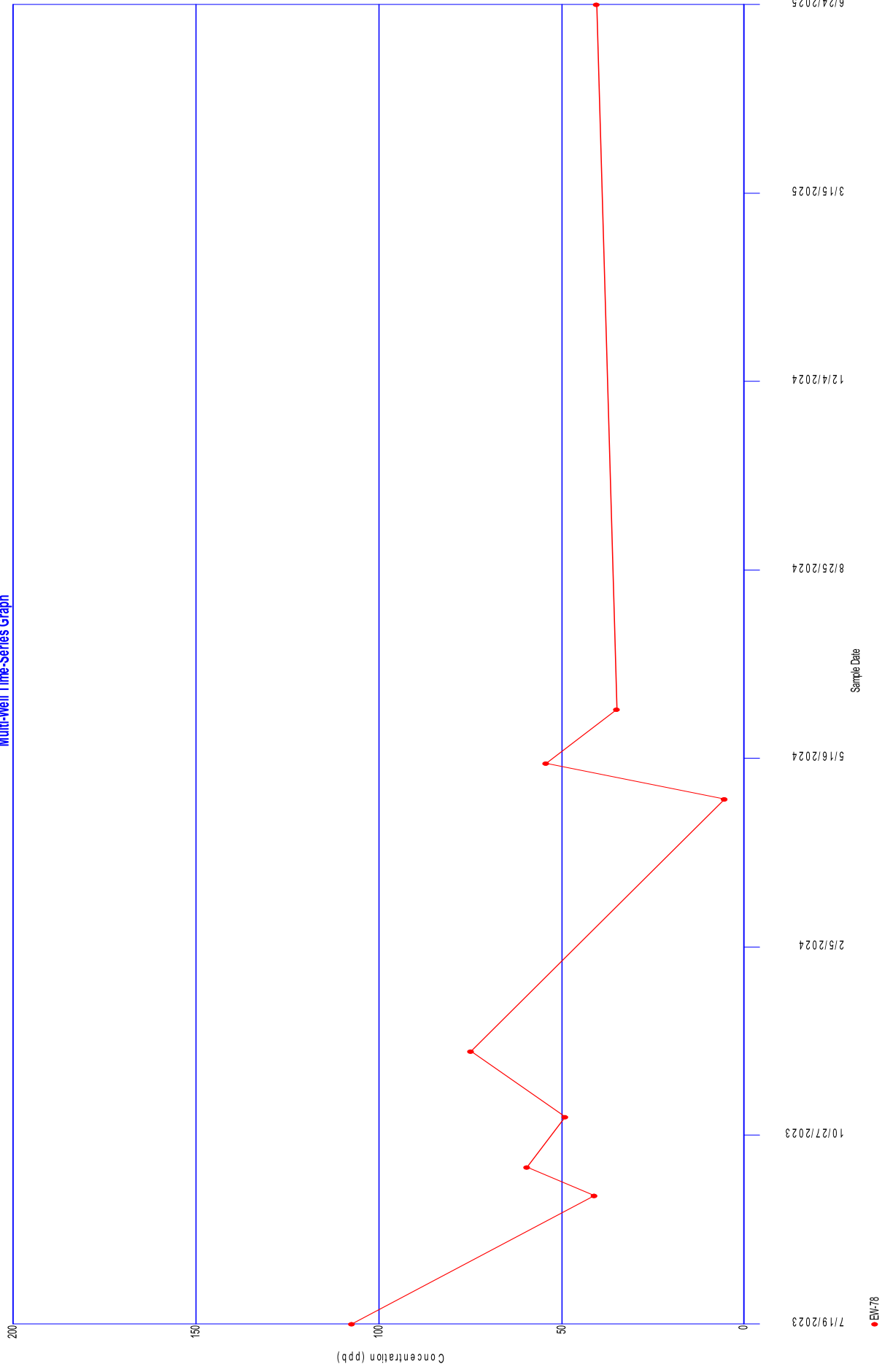
Toluene
Multi-Well Time-Series Graph



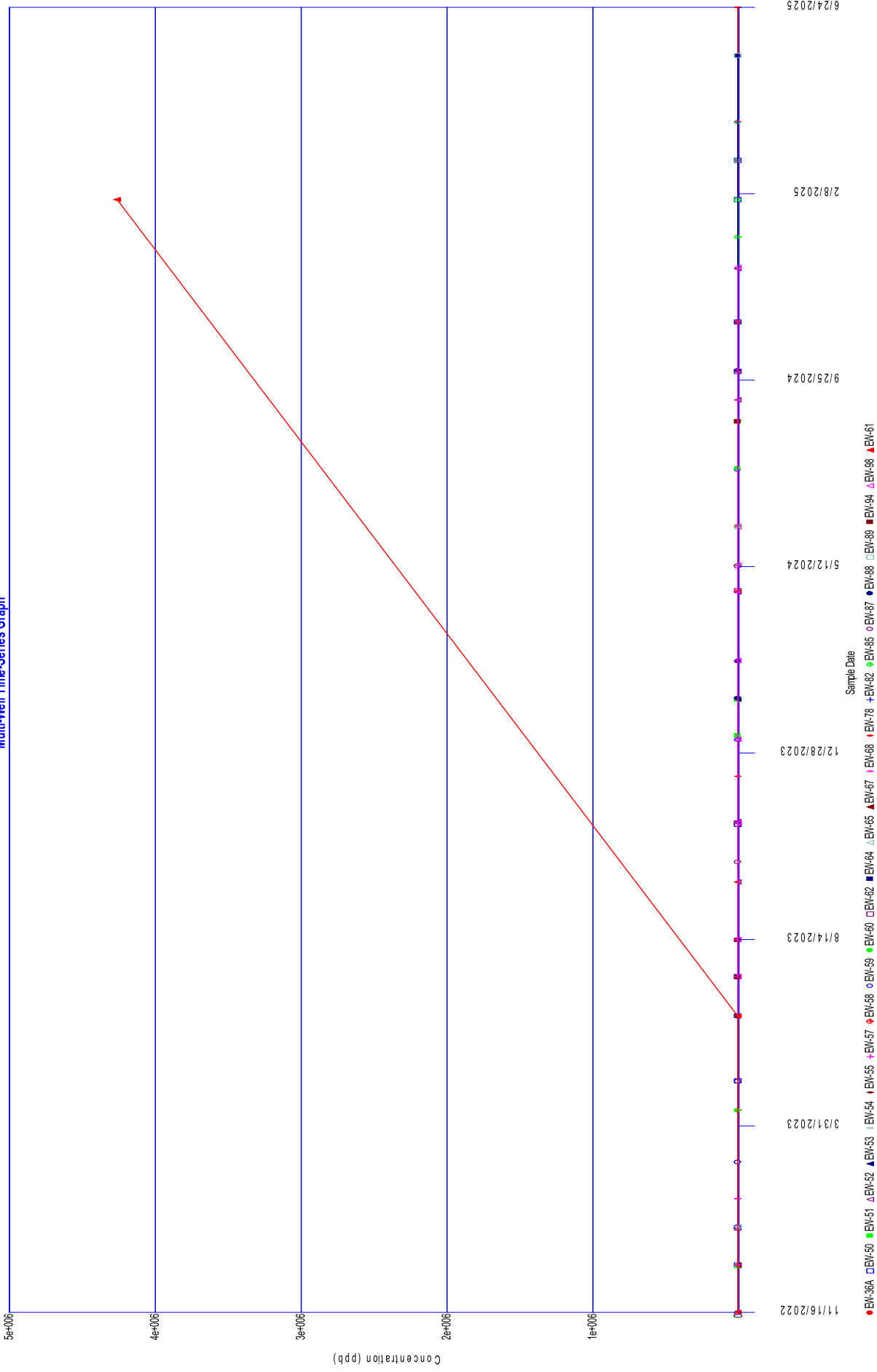
Toluene
Multi-Well Time-Series Graph



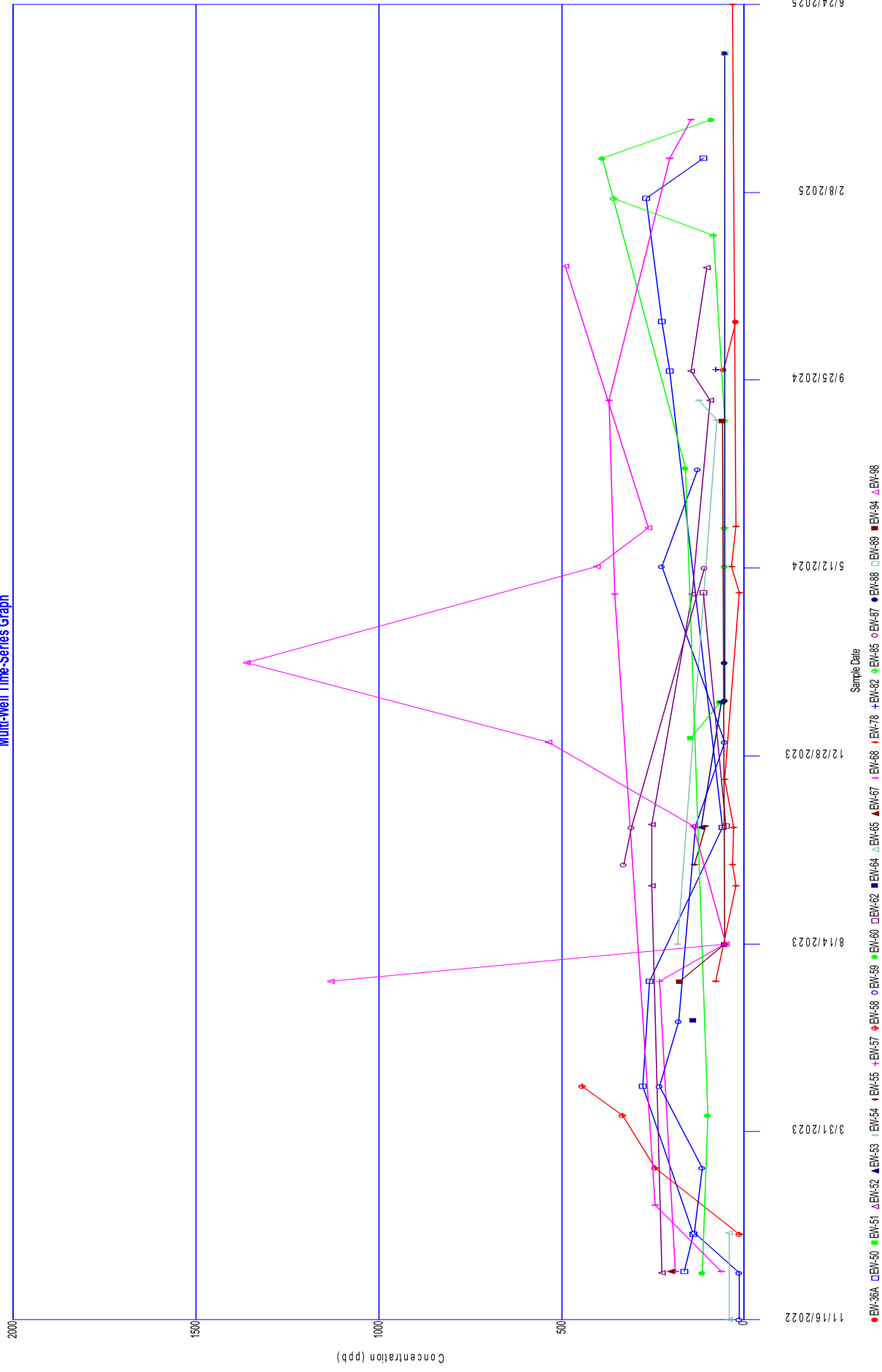
Toluene
Multi-Well Time-Series Graph



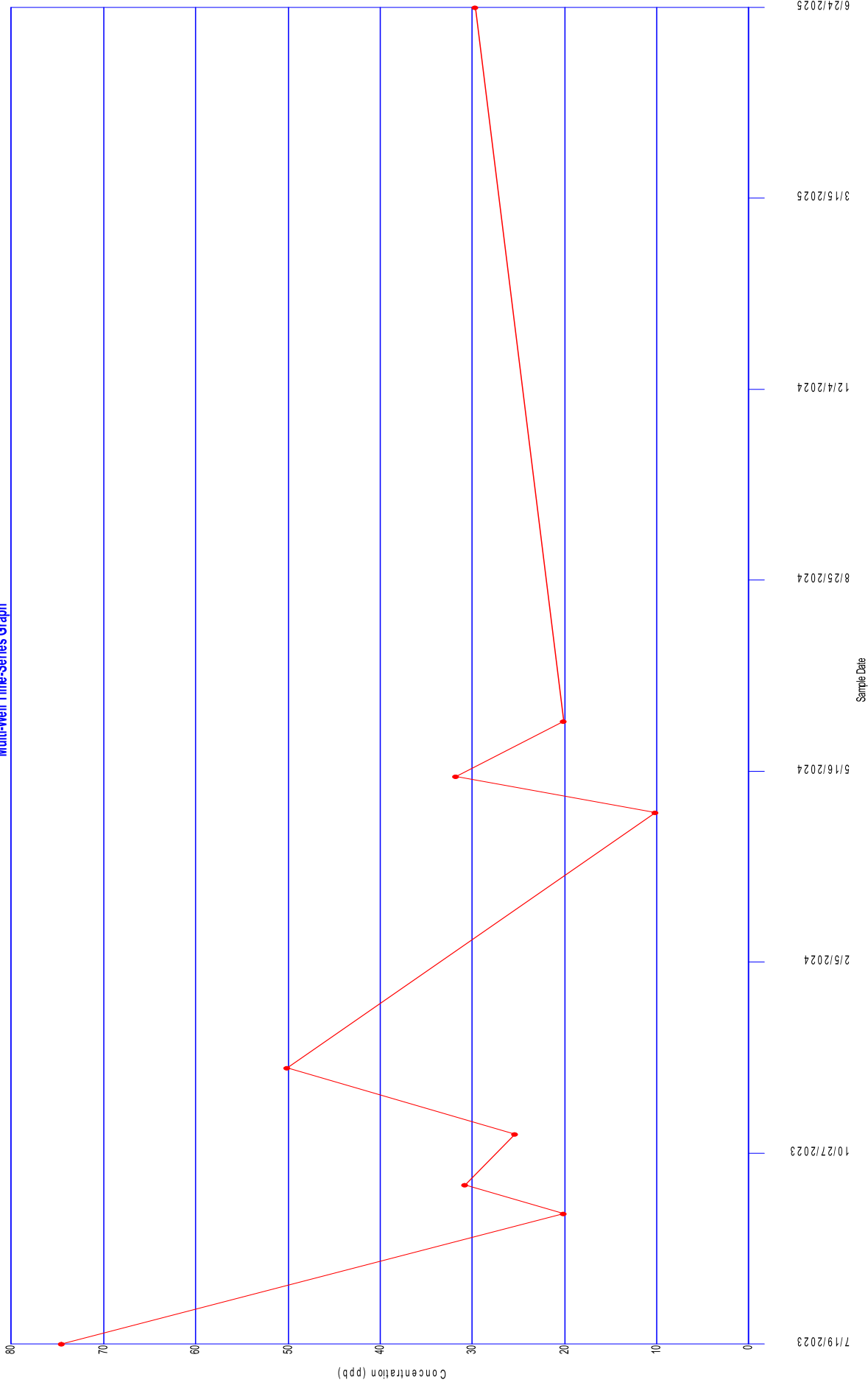
Xylenes
Multi-Well Time-Series Graph



Xylenes
Multi-Well Time-Series Graph



Xylenes
Multi-Well Time-Series Graph



Appendix G

LFG Dewatering Pump Stroke Counter Data Analysis

Stroke Counter Data Analysis

During the monthly liquid depth measurement event and during LFG monitoring, SCS collected stroke counter data from the pumps installed in the GCCS extraction wells. These stroke counts were collected from 25 wells from June 24, 2025 to July 22, 2025. The recorded stroke count data from each well during April are included in Table G-1.

Based on the number of strokes in each well, SCS can estimate the number of gallons of liquid pumped from each well to assess pump performance. SCS assumed that each stroke from a float-style pneumatic pump correlates to approximately 0.3 gallons of liquid removed from the well. Blackhawk piston-style pumps remove approximately 0.11 gallons per stroke.

Table G - 1 Summary of Dual Extraction Well Pump Stroke Counter Data

Well	6/24/2025	7/17/2025	7/22/25	# of strokes between measurements	Estimated liquid removed (gallons)
EW33B				-	0
EW36A	459999		459999	-	0
EW49	79565	79565	79565	-	0
EW50	1577970		1604584	26,614	7984
EW52	1239186	1239186	1239186	-	0
EW53	3294540		3294540	-	0
EW55	73387	73387	73387	-	0
EW59	3679152	3681007	3681145	1,993	598
EW60	245163	1271369	272869	27,706	8312
EW61	103848		135257	31,409	9423
EW62	214599		214599	-	0
EW65	111452	117944	119158	7,706	2312
EW66	38790		39018	228	68
EW67	288744	39014			0
EW68	2662091	2662098	2662098	7	2
EW76				-	0
EW78	77174	112505	119520	42,346	4743
EW82	631288		632188	900	101
EW85	312919	333650	334195	21,276	2383
EW87	340749	340749	346749	6,000	1800
EW88	365317		438820	73,503	8232
EW89	229976	317018	317018	87,042	26113
EW93	1408232	1409960	1409960	1,728	194
EW94	1642543			-	0
EW98	1886306	2091570	1886306	-	0
Total Estimated Liquid Removal					72,264