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Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn: Title V Reports

Director of the Air Division, USEPA Region IX
75 Hawthorne Street
San Francisco, CA 94105
Attn: Air-3

TV Tracking #: 788

1. ☐ RECEIVED IN ENFORCEMENT: 08/31/2023

Subject: Combined NESHAP Semi-Annual Report, Bay Area Air Quality Management District Regulation 8, Rule 34, 40 Code of Federal Regulations (CFR) Subpart AAA Semi-Annual Report, and Title V Semi-Annual Monitoring Report
Vasco Road Landfill, Livermore, California (Title V Facility No. A5095)

Dear Sir or Madam:

Vasco Road, LLC is pleased to submit the enclosed combined Bay Area Air Quality Management District (BAAQMD), Regulation 8, Rule 34 (8-34) Semi-Annual Report; Semi-Annual Startup, Shutdown and Malfunction (SSM) Plan Report, National Emissions Standards for Hazardous Air Pollutants (NESHAP) Semi- Annual Report, Title V Semi-Annual Monitoring Report, and the Title V Annual Compliance Certification (ACC) Report to the BAAQMD and the U.S. Environmental Protection Agency (USEPA) Region IX for the Vasco Road Landfill (Vasco).

The Title V Semi-Annual Monitoring Report, the BAAQMD Rule 8-34 Semi-Annual Report and the SSM Plan Report, and NESHAP cover the period from February 1, 2023 through July 31, 2023.

The Title V report meets the requirements specified in the Title V Permit, BAAQMD guidance on Title V report submittals, and BAAQMD Regulation 2, Rule 6. The Rule 8-34 report includes the information required by BAAQMD Rule 8-34-411, it satisfies the requirements under the New Source Performance Standards (NSPS) for municipal solid waste landfills (40 Code of Federal Regulations [CFR], Part 60, Subpart WWW), including 40 CFR 60.757(f) and also includes the NESHAP subpart AAAA reporting requirements. The Semi-Annual SSM Plan Report satisfies the requirements under the NESHAP rule for semi-annual reporting of SSM Plan implementation including 40 CFR 63.10(d)(S). The NESHAP reports need the requirement under 40 CFR 63.1981(h). The Title V reports and the SSM Plan report each includes a certification by the responsible official for Vasco.

If you have any questions regarding this submittal, please do not hesitate to reach Antonia Gunner at (619) 201-3764 or agunner@republicservices.com or Maria Bowen at (619) 455-9518 or mbowen@scsengineers.com.

If you have any questions regarding this submittal, please do not hesitate to reach Antonia Gunner at (619) 201-3764 or agunner@republicservices.com or Maria Bowen at (619) 455-9518 or mbowen@scsengineers.com.

Sincerely,

Josh Mills
General Manager
Vasco Road Landfill

cc: Antonia Gunner, Vasco
Maria Bowen, SCS Engineers
Meghan Caesar, SCS Engineers

NESHAP/NSPS/BAAQMD Rule 8-34 Semi-Annual Report, SSM Plan Semi-Annual Report, and Title V Semi-Annual Report
Vasco Road Landfill
Livermore, California (Title V Facility No. 5095)

Prepared for:

Republic Services Vasco Road, LLC
4001 N. Vasco Road
Livermore, CA 94551

For Submittal to:

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

SCS ENGINEERS

01204082.06 Task 5 | August 2023

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This submittal consisting of the New Source Performance Standards (NSPS)/Bay Area Air Quality Management District (BAAQMD) Rule 8-34 Semi-Annual/National Emission Standards for Hazardous Air Pollutants (NESHAP) Report, the Semi-Annual Startup, Shutdown, and Malfunction (SSM) Plan Report, and the Title V Semi-Annual Monitoring Report for the Vasco Road Landfill in Livermore, California, dated August 2023, was prepared and reviewed by the following:

Meghan Caesar
Project Professional
SCS ENGINEERS

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SECTION I. NSPS/BAAQMD RULE 8-34 SEMI-ANNUAL REPORT

1.0 INTRODUCTION

On behalf of Republic Services Vasco Road, LLC, SCS Engineers (SCS) hereby submits this New Source Performance Standard (NSPS)/National Emission Standards for Hazardous Air Pollutants (NESHAP) Semi-Annual Report of information, Bay Area Air Quality Management District (BAAQMD or District) Rule 8-34 Semi-Annual Report, and Semi-Annual Start-up, Shutdown, and Malfunction (SSM) Plan Report for Vasco Road Landfill (Vasco Road or Landfill) for the period of February 1, 2023 through July 31, 2023 to the BAAQMD.

1.1 UPDATED NESHAP 40 CFR 63, SUBPART AAAA

As of June 21, 2021, the facility complies with the new Emission Guidelines (EG) requirements in California. The approved state plan for the EG includes compliance with Title 17 California Code of Regulations (CCR) Sections 95460 to 95476, known as AB 32 Landfill Methane Rule (LMR) and specific portions of 40 CFR Part 62 Subpart OOO.

Due to the site's permitted design capacity being over the 2.5 million Megagram/2.5 million cubic meter limits and having an uncontrolled non-methane organic compound (NMOC) content exceeding 50 Megagrams per year (mg/year), as of September 27, 2021, Vasco Road became subject to the updated landfill NESHAP under 40 CFR 63, Subpart AAAA requirements. The NESHAP implements and enhances provisions of 40 CFR 60, Subparts XXX (which were updated NSPS for Municipal Solid Waste (MSW) landfills promulgated in 2016) as well as removes the SSM Plan requirements. However, because the Title V Permit references Subpart WWW and SSM, this semi-annual report will continue to include Subpart WWW and SSM requirements. References to Subpart WWW and SSM will be removed from all reports after a new Title V Permit is issued removing references to Subpart WWW and updating applicable regulations, or we otherwise obtain approval from the BAAQMD to only comply with the new requirements. Vasco Road has chosen to comply with equivalent provisions of Subpart AAAA in lieu of Subpart OOO, as allowed by the regulations.

For the reporting period from February 1, 2023 through July 31, 2023, this Semi-Annual Report complies with the sections specified in Subpart WWW, 40 CFR 60.757(f), and Subpart AAAA, 40 CFR 63.1981(h), which describes the items to be submitted in an annual report for landfills using an active collection system. Moreover, this report also includes SSM reporting as it is listed in the Title V Permit, even though it is no longer contained in NESHAP Subpart AAAA. In accordance with NESHAP 40 CFR 63, Subpart AAAA, this report is submitted semi-annually. This report includes a certification signed by a Responsible Official which is provided in **Appendix A**.

2.0 SITE BACKGROUND INFORMATION

Vasco Road is located in Livermore, California and is owned and operated by Republic Services Vasco Road, LLC. The MSW landfill is located on Vasco Road about three miles north of Interstate 580 in an unincorporated portion of eastern Alameda County north of the City of Livermore. The Landfill lies within the Northern Diablo Range along the Altamont Anticline. The Landfill was permitted in 1962 and began accepting waste circa 1963. The 323-acre site is currently in operation, accepting nonhazardous solid waste and inert waste.

2.1 EXISTING AIR PERMITS

Vasco Road maintains a BAAQMD permit to operate (PTO) (Plant No. 5095), which includes conditions for the wellfield, collection system, and flare station (Condition No. 818). Permit Condition 818 incorporates all applicable requirements from NSPS Subpart WWW and BAAQMD Rule 8-34, which are addressed in this report. Vasco Road also maintains a Title V Permit (Facility No. A5059); the current permit is a Title V revision permit issued on November 6, 2019, expiring on February 3, 2024. An application to renew the Title V Permit was submitted to the BAAQMD on August 3, 2023.

As discussed above, the permit does not yet incorporate the EG requirements and specific parts of Subpart OOO, which became effective June 21, 2021 or the updated NESHAP, which became effective September 27, 2021. As the new rules are in effect, they are being implemented by the Landfill, and an application to modify the Title V Permit to add the new rule elements and remove the old NSPS Subpart WWW provisions was submitted with the Title V Permit Renewal Application on August 3, 2023.

A Gas Collection and Control System (GCCS) Design Plan was prepared for the site to review and determine the adequacy of the existing landfill gas (LFG) system. The current design of the system was determined to be adequate to comply with both NSPS and BAAQMD Rule 8-34 requirements. The system design is based on the density of wells calculated to sufficiently extract the maximum flow of LFG generated during the life of the landfill and GCCS equipment, according to the USEPA LFG emissions model (LandGEM). The GCCS is designed to control surface emissions, as well as to minimize subsurface lateral migration of LFG. Both the perimeter of the landfill and the landfill surface are monitored on a quarterly basis. Additional details regarding the GCCS are in the GCCS Design Plan that was previously submitted to the BAAQMD. A drawing showing the existing GCCS is provided in **Appendix B**.

2.2 EXISTING LANDFILL GAS COLLECTION AND CONTROL SYSTEM

The GCCS at Vasco Road consists of extraction wells used to collect the LFG from within the landfill (the "wellfield") and a piping system (the "collection system") used to convey the collected LFG to the control systems for destruction. The LFG is extracted from the landfill through a combination of vertical gas extraction wells and horizontal gas extraction trenches/pipes, as well as leachate from collection system components.

A LFG to energy (LFGTE) facility, which is permitted by the BAAQMD separately from Vasco Road as Facility No. 20432, has been the primary control system for Vasco Road's collected LFG since it began commercial operation in 2012. The LFGTE facility is owned and operated by Ameresco Vasco Road, LLC (Ameresco). The flare station, which is operated and maintained by Republic Services Vasco Road, LLC, consists of one enclosed flare (A-4) which acts as a supplementary emission control and/or backup control devices in the event that the LFGTE facility goes offline.

In the event the LFGTE facility and the LFG flare go off-line concurrently, an automatic valve is actuated that prevents LFG flow to the control systems. As a result, LFG flow from the collection system ceases entirely, such that there is no free-venting of uncombusted LFG to the atmosphere.

A diagram of the GCCS displaying system component locations is shown in the site plan(s) provided in **Appendix B**.

3.0 REPORTING REQUIREMENTS

The following information is required to be reported in a semi-annual report:

Table 1. Reporting Requirements, Corresponding Regulatory References

NSPS Subpart WWW	Updated NESHAP Subpart AAAA
40 CFR 60.757(f), (g)	**40 CFR 63.1981(h), (i), (j), (k), (l)**
Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (b), (c), and (d).	Number of times that applicable parameters monitored under 40 CFR 63.1958(b), (c), and (d) were exceeded and when the gas collection and control system was not operating under 40 CFR 63.1958(e), including periods of SSM.
Description and duration of all periods when the gas stream is diverted from the control device.	Description and duration of all periods when the gas stream was diverted from the control device or treatment system through a bypass line or the indication of bypass flow as specified under 40 CFR 63.1961.
Description and duration of all periods when the control device was not operating for more than 1 hour.	Description and duration of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating.
All periods when the collection system was not operating in excess of 5 days.	All periods when the collection system was not operating.
The location of each 500 ppmv methane exceedance, and the concentration recorded at each location for which an exceedance was recorded in the previous month.	The location of each exceedance of the 500-ppm methane concentration as provided in 40 CFR 63.1958(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
The date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.755 paragraphs (a)(3), (b), and (c)(4).	The date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 63.1960(a)(3) and (4), (b), and (c)(4).
Required information of the initial performance source test report pursuant to 40 CFR 60.757(g).	Required information of the initial performance source test report pursuant to 40 CFR 63.1981(i).
–	For any corrective action analysis for which corrective actions are required in 40 CFR 63.1960(a)(3)(i) or (a)(5) and that take more than 60 days to correct the exceedance, the root cause analysis conducted.

NSPS Subpart WWW	Updated NESHAP Subpart AAAA
40 CFR 60.757(f), (g)	**40 CFR 63.1981(h), (i), (j), (k), (l)**
--	Each owner or operator required to conduct enhanced monitoring in 40 CFR 63.1961(a)(5) and (6) must include the results of all monitoring activities conducted during the period.
--	Where an owner or operator subject to the provisions of subpart 40 CFR 63.1981(k) seeks to demonstrate compliance with the operational standard for temperature in § 63.1958(c)(1) and a landfill gas temperature measured at either the wellhead or at any point in the well is greater than or equal to 76.7 degrees Celsius (170 degrees Fahrenheit) and the carbon monoxide concentration measured is greater than or equal to 1,000 ppmv, then you must report the date, time, well identifier, temperature and carbon monoxide reading via email to the Administrator within 24 hours of the measurement.
--	Beginning no later than September 27, 2021, the owner or operator must submit reports electronically according to paragraphs 40 CFR 63.1981(l)(1) and (2) of this section.
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--	Submit semi-annual CMS summary reports including required items listed in 40 CFR 63.10(e)(3)(vi)

3.1 MONITORED PARAMETERS

The following information is required to be monitored:

Table 2. Monitored Parameters, Corresponding Regulatory References

NSPS Subpart WWW	Updated NESHAP Subpart AAAA
40 CFR 60.756(a), (b), (c), (d)	**40 CFR 63.1961(a), (b), (f)**
Vacuum applied to the extraction wells via the gas collection header is monitored on a monthly basis. A vacuum must be maintained at each wellhead to be in compliance with 40 CFR 60.753 (b).	Vacuum applied to the extraction wells via the gas collection header is monitored on a monthly basis. A vacuum must be maintained at each wellhead to be in compliance with 40 CFR 63.1961 (a)(1).

NSPS Subpart WWW	Updated NESHAP Subpart AAAA
40 CFR 60.756(a), (b), (c), (d)	**40 CFR 63.1961(a), (b), (f)**
Nitrogen or oxygen content of LFG at the wellheads is monitored on a monthly basis. Nitrogen must be less than 20 percent (%) or oxygen less than five (5) % to comply with 40 CFR 60.753 (c).	Nitrogen or oxygen content of LFG at the wellheads is monitored on a monthly basis.
Temperature of the LFG at the wellheads is monitored on a monthly basis. Temperature must be maintained below 55 degrees C (131 degrees F) to comply with 40 CFR 60.753 (c).	Temperature of the LFG at the wellheads is monitored on a monthly basis. Temperature must be maintained below 62.8 degrees C (145 degrees F) to comply with 40 CFR 63.1961(a)(3).
A temperature or flame presence monitoring device with a continuous recorder, and a gas flow rate measuring device, which records flow at least once every 15 minutes, must be installed at the flare station. The temperature/flame presence and LFG flow rate monitoring data are used to determine the amount of time the LFG collection and control systems are on-line and to ensure compliance with the minimum temperature requirement for enclosed flares. The flare monitoring devices must be operating continuously to comply with 40 CFR 60.756 (b) and to show that the flare is on-line at any time that the collection system is operating (in compliance with 40 CFR 60.753 (e) and (f)).	A temperature or flame presence monitoring device with a continuous recorder, and a gas flow rate measuring device, which records flow at least once every 15 minutes, must be installed at the flare station. The temperature/flame presence and LFG flow rate monitoring data are used to determine the amount of time the LFG collection and control systems are on-line and to ensure compliance with the minimum temperature requirement for enclosed flares. The flare monitoring devices must be operating continuously to comply with 40 CFR 63.1961(b) and to show that the flare is on-line at any time that the collection system is operating (in compliance with 40 CFR 63.1958 (e) and (f)).
Landfill surface emissions monitoring was performed on a quarterly basis to measure concentrations of total organic carbon (TOC) as methane. A portable flame ionization detector (FID) organic vapor analyzer, which meets NSPS specifications, was used to measure concentrations of TOC as methane (in compliance with 40 CFR 60.756(f).	Landfill surface emissions monitoring was performed on a quarterly basis to measure concentrations of TOC as methane. A portable FID organic vapor analyzer, which meets NSPS specifications, was used to measure concentrations of TOC as methane (in compliance with 40 CFR 63.1961(f)).
The landfill surface was inspected at least monthly for evidence of cracks or other surface integrity issues, in accordance with 40 CFR 60.755(c)(5).	The landfill surface was inspected at least monthly for evidence of cracks or other surface integrity issues, in accordance with 40 CFR 63.1960(c)(5).
Per 40 CFR 60 758(c)(1)(i), the average temperature of the flare	Per 40 CFR 63.1983(c)(1)(i), the average temperature of the flare for a

NSPS Subpart WWW	Updated NESHAP Subpart AAAA
40 CFR 60.756(a), (b), (c), (d)	**40 CFR 63.1961(a), (b), (f)**
for a 3-hour time period cannot fall below 28°C (50°F) less than the average operation temperature based on the most recent source test except during periods of SSM.	3-hour time period cannot fall below 28°C (50°F) less than the average operation temperature based on the most recent source test. Please note, continuous monitoring of temperature monitoring is required at all times except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (in compliance with 40 CFR 63.1961(h)).

3.1.1 Gas Extraction System Downtime

During the reporting period, the LFG extraction system was off-line on multiple occasions for a total of 30.88 hours. All shutdowns involved pre-programmed or manual system shutdowns for inspection, maintenance and/or repair of the GCCS, and thus meet the criteria for allowed GCCS downtime, as specified in Rule 8-34-113 and in accordance with the BAAQMD November 5, 2018 Compliance Advisory, except as noted.

The typical operating scenario involves the LFGTE facility acting as the primary control device and the A-4 Flare acting as backup or supplemental control. In addition, if the LFGTE facility goes offline unexpectedly in the middle of the night, LFGTE facility staff must drive to the site and perform inspection and maintenance of their system prior to the LFGTE facility and/or LFG flare re-starting, as re-starting these control systems without someone first inspecting or conducting maintenance on these systems could cause damage to the systems. Republic staff are alerted each time the LFGTE facility goes offline, and during each shutdown, Republic staff are in close communications with LFGTE facility staff regarding their inspections and maintenance of the LFGTE facility system and their estimates on when the GCCS can be brought back online. During the reporting period, there were two shutdown events reported to the BAAQMD as combined Reportable Compliance Activity (RCA) Notifications and Requests for Breakdown Relief. Subsequent BAAQMD and Title V reporting submittals were completed within the required timeframes.

A summary of the GCCS downtime for this reporting period is provided in **Table 3a**, including the date, reason for the downtime, description of the corrective measure(s) implemented to resume GCCS operation, and the total elapsed time for each event. Gas extraction system downtime records are available for review at the site.

3.1.2 Emission Control System Downtime

A-4 Flare

During the reporting period, the flare was off-line on several occasions. A summary of A-4 Flare downtime is provided in **Table 3b**, including the date, reason for the downtime, and the total elapsed time for each event. Note that the LFGTE facility acts as the primary control device and the majority of collected LFG is sent to this facility. As a result, the flare has been offline on a regular basis. In

the event the LFGTE facility shuts down, or additional control is required, the flare acts as a backup control device. In the event the LFGTE facility and the flare go offline concurrently, the collection system will automatically shut down resulting in the entire GCCS going offline. During the reporting period, the flare was offline for approximately 2,665.83 hours. Emission control system downtime records are available for review at the site.

As previously noted, whenever the LFGTE facility and the flare are offline concurrently, LFG flow to the control systems is automatically stopped. Therefore, during this reporting period, there were no instances during which LFG flow passed through the control devices uncontrolled (i.e., free venting), and the collected LFG stream was never diverted from the control devices. This meets the NESHAP work practice standard, and during such downtime events, emissions were minimized.

LFGTE Facility

During the reporting period, individual IC engines were offline on several occasions. In addition, there were several periods when the entire LFGTE facility was offline (both engines were offline concurrently). Downtime logs, which include individual IC engine shut downs, are included in Appendix C.

3.1.3 Individual Well Downtime

In some instances, the entire GCCS may not go off-line, but individual extraction wells may be taken off-line for inspection, maintenance, and/or repair, as well as for other unforeseen circumstances. These are generally planned events, although such events can occur without notice. Six (6) wells were unable to be read intermittently during the reporting period due to active fill. One (1) well was abandoned and no new wells were started up during the reporting period.

Pursuant to permit condition No. 818, Part 2b, the owner/operator must notify the District of expected installation or decommissioning dates prior to commencing any component alterations. On June 4, 2023, a Well Decommissioning Notification Letter was submitted to the BAAQMD for the decommissioning of the well.

Details of individual well shutdown and well startups occurring during the reporting period are provided in Table 4. Please see the Semi-Annual SSM Report included as Section II of this report for additional details.

3.1.4 Flow Meter and Temperature Gauge Downtime

The continuous operation of the GCCS is measured through the continuous measurement of LFG flow to the flare and the flare combustion temperature. As required by Rule 8-34, the A-4 Flare is equipped with a flow measuring device and a temperature gauge that provide continuous readout displays using digital chart recorders. During the reporting period, the flow meter and temperature gauge/recorder at the flare station did not go out of operation due to malfunction or other breakdown conditions. Continuous monitoring and calibration information are available for review at the site.

3.1.5 Flare Combustion Zone Temperature

Vasco Road is required by permit condition No. 818, Part 5 to operate the flare (A-4) in such a manner that the combustion zone temperature within the flare does not drop below the permitted

limit of 1,402 degrees Fahrenheit (°F) (averaged over a 3-hour period) or a higher or lower temperature based on the most recent source test. From February 1, 2023 through February 28, 2023, the minimum temperature above which the flare was required to operate was 1,426°F (source test results of 1,476°F minus 50°F), based on the source test (conducted on March 29, 2022) results in the test report dated May 12, 2022. From March 1, 2023 through July 31, 2023, the minimum temperature above which the flare was required to operate was 1,466°F (source test results of 1,516°F minus 50°F), based on the source test (conducted on February 28, 2023) resulted in the test report dated April 5, 2023.

During the reporting period, the average temperature for the A-4 Flare did not drop below the established minimum temperatures. From February 1, 2023 through July 31, 2023, there were zero (0) missing data events for the flare during the reporting period, except for periods excluded per 40 CFR 63.1961.

Please note the new NESHAP minimum temperature requirement is 82°F below the most recent source test. Due to Vasco's Title V permit still including the WWW requirement of 50°F below the most recent source test, the most stringent requirement was used for this report.

Flare temperature records are available for review at the site. Excerpts from the April 5, 2023 source test report, summarizing the test results for the flare are provided as **Appendix D**.

3.2 COMPONENT LEAK QUARTERLY MONITORING

During the reporting period, quarterly testing of the GCCS components for any leaks with a methane concentration of greater than 1,000 parts per million by volume (ppm_v), as required by BAAQMD Rule 8-34-503, was conducted. Testing in the wellfield and at the flare station was performed using an organic vapor analyzer (OVA), which was calibrated on the same day as the testing. Monitoring results and calibration records are provided in **Appendix E** and are available for review at the site.

3.2.1 First Quarter 2023 Monitoring

SCS Field Services (SCSFS) conducted the component leak testing of the wellfield and flare station on January 25, 2023. No component leaks above 1,000 ppm_v were detected in the wellfield or at the flare station during the First Quarter 2023 monitoring events.

3.2.2 Second Quarter 2023 Monitoring

SCSFS conducted the component leak testing of the wellfield and flare station on April 6, 2023. No component leaks above 1,000 ppm_v were detected in the wellfield or at the flare station during the Second Quarter 2023 monitoring events.

3.3 CONTROL EFFICIENCY

LFG Flare A-4 was also tested on February 28, 2023 to demonstrate compliance with the control efficiency standard of 98 percent NMOC destruction efficiency or outlet concentration of 30 ppm_v of NMOC as methane (for flares) as required by BAAQMD Rules 8-34-301.3, 8-34-412, 8-34-501.4, and Condition Number 818, Part 20. The NMOC destruction efficiency for the February 2023 source test was measured to be >96.36 percent by weight and the NMOC as methane concentration in the flare

outlet was <6.9 ppmv. As such, the A-4 Flare is in compliance with the aforementioned rules and permit condition by meeting the exhaust ppmv limit.

Excerpts from the February 2023 source test report dated April 5, 2023, summarizing the test results, are provided in **Appendix D**.

3.4 LANDFILL SURFACE EMISSIONS MONITORING

Surface emissions monitoring (SEM) was conducted at Vasco Road on a quarterly basis during the reporting period, in accordance with BAAQMD Rule 8-34-303 and 8-34-506. The SEM events were conducted in accordance with the SEM plan in the landfill's GCCS Design Plan. Testing was performed using a Trimble SiteFID Landfill Gas Monitor Portable Flame Ionization Detector (FID), which was calibrated the same day as the testing. The results of this monitoring are summarized below. Reports for each quarterly monitoring event are provided in **Appendix E**. Records of SEM are available for review at the site.

3.4.1 First Quarter 2023 Monitoring

SCSFS technicians monitored the landfill surface for leaks with a methane concentration of greater than 500 ppm_v above background on January 23, 24, and 25, 2023. There were no surface emissions monitoring results which exceeded the threshold of 500 ppm_v detected during the First Quarter 2023 monitoring event. Therefore, additional follow-up monitoring was not required. The monitoring results are provided in the First Quarter 2023 SEM report included in **Appendix E**.

3.4.1 Second Quarter 2023 Monitoring

SCSFS technicians monitored the landfill surface for leaks with a methane concentration of greater than 500 ppm_v above background on April 6, 11, and 12, 2023. There were no surface emissions monitoring results which exceeded the threshold of 500 ppm_v detected during the Second Quarter 2023 monitoring event. Therefore, additional follow-up monitoring was not required. The monitoring results are provided in the Second Quarter 2023 SEM report included in **Appendix E**.

3.5 WELLHEAD MONTHLY MONITORING

Monthly wellhead monitoring for pressure, temperature, and oxygen content was conducted by SCSFS from February 2023 through July 2023 to comply with BAAQMD Rules 8-34-305 and 8-34-414. The results of this monitoring are summarized below. Wellhead exceedances are provided in **Table 5, 6, and 7.**

Please note that during the reporting period, all wells were monitored that were safely accessible.

3.5.1 Pressure

The majority of the operational extraction wells were under negative pressure during the monitoring events conducted during the reporting period, in accordance with BAAQMD Rules 8-34-305 and 8-34-414. The dates when wells were operating with positive pressure, and the well identification number, corrective actions, and re-monitoring results for these wells are provided in **Table 5**. Corrective action and re-monitoring were performed in accordance with the 5- and 15-day requirements specified in the NSPS/NESHAP regulations and in Rule 8-34.

Three (3) wells demonstrated positive pressure readings beyond 15 days and therefore required additional corrective actions and recordkeeping.

Per 40 CFR 63.1960(a)(3)(i), a "root cause analysis" (RCA) is required if pressure exceedances cannot be corrected in 15 days. An additional "corrective action analysis" (CAA) and notification is required for corrective actions that require more than 60 days to complete. At the end of the reporting period, all wells with positive pressure were corrected within the 120-day timeframe. No wells were operating with positive pressure at the end of the reporting period. See **Appendix G** for RCA forms, CAA forms, and 75-day notifications.

As of the end of this reporting period, all wells were operating with negative pressure in accordance with 8-34-305 and 8-34-414.

3.5.2 Oxygen

Vasco Road has elected to use oxygen as its compliance standard under Rule 8-34-305, rather than nitrogen. Per Vasco Road's PTO Condition No. 818, Part 3b(ii), the oxygen concentration limit does not apply to the wells listed below, provided that the oxygen concentration in the LFG at the main header does not exceed five percent oxygen by volume (dry basis) and the methane concentration in the LFG at the main header is greater than 35 percent by volume (dry basis). The oxygen Higher Operating Value (HOV) is approved for wells: EW-9 (VRLFEW09), EW-27 (VRLFEW27), EW-31A (VRLFEW31A), EW- 33A (VRLEW33A), and EW- 41R (VRLFEW41).

Pursuant to Title V Permit Condition 818, Part 3c(i-iv) the four vertical leachate recirculation wells (VRLRW001, VRLRW002, VRLRW003, and VRLRW004), and two vertical LFG extraction wells (VR12GT4R and VR12GT05) operate on a non-continuous basis and are subject to an alternative oxygen wellhead standard. Oxygen concentrations in these wells may not exceed 15 percent by volume. The wells may be disconnected from the vacuum system if the oxygen concentration is above 15 percent or the temperature is greater than 131°F.

The majority of the wells were operating within the regulatory limit of five (5) percent oxygen during the monitoring events conducted during the reporting period. The dates when wells were operating with excessive oxygen, and the well identification number, corrective actions, and re-monitoring results for these wells are provided in **Table 6**.

As of the end of this reporting period, all of the operating wells were operating with an oxygen concentration below the 5 or 15 percent limit except for wells VRLEW136, VRLEW154, VRLFEW19, and VR12GT03. These wells will be returned to below the 5 percent limit as specified in BAAQMD Rule 8-34-414, and compliance will be documented in the next semi-annual report. Note under Subpart AAAA, which took effect September 27, 2021, oxygen above 5 percent is no longer an exceedance, but under BAAQMD Rule 8-34-414 and Subpart WWW it still is, and the Landfill will continue to follow these requirements until a revised Title V Permit is issued or approval is otherwise granted from the BAAQMD.

3.5.3 Temperature

BAAQMD Rule 8-34-305 requires the landfill gas temperature in each wellhead to measure less than 55 degrees Celsius (°C) or 131°F. However, Condition No. 818, Part 3b(i) in Vasco Road's BAAQMD PTO allows Vasco Road to operate wells EW- 9 (VRLFEW09), EW- 33A (VRLEW33A), and EW-44

(VRLFEW44) at an alternative temperature of 140°F. Subpart AAAA allows wellhead temperatures up to 145°F.

The majority of wells were operating within their respective limits of 131°F or 140°F during the monitoring events conducted during the reporting period. The dates when wells were operating above their respective temperature limits, and the well identification number, corrective actions, and re-monitoring results for these wells are provided in **Table 7.**

As of the end of the reporting period, all the active wells were operating with temperature limits below their respective limits.

As of the end of the previous reporting period, well VREW2104 was operating with a temperature higher than 131 °F. The well was returned to compliance during this reporting period. A higher operating value request of 150°F was submitted on September 1, 2021 for wells VREW2103, VREW2104, VREW2106, VREW2107, VREW2108, and VREW2109. Vasco Road is currently awaiting a response from the USEPA on the request as of the submittal of this report.

Per 40 CFR 63.1960(a)(4)(i), an RCA is required if temperature exceedances cannot be corrected in 15 days. An additional CAA and notification is required for corrective actions that require more than 60 days to complete. At the end of the reporting period, wells VREW2103, VREW2104, and VREW2107 could not be corrected within 15 days and RCAs were required. Moreover, wells VREW2104 and VREW2107 could not be corrected within 60 days and CAA and 75-day notifications were required. See **Appendix G** for RCA forms, CAA forms, and 75-day notifications.

Moreover, please note that there were no wells with temperature readings over 145°F, so no enhanced monitoring was required under Subpart AAAA.

3.6 COVER INTEGRITY MONITORING

Under BAAQMD Rule 8-34-510 and the NSPS/NESHAP, the landfill surface must be monitored at least monthly for evidence of cracks or other surface integrity issues, which could allow for surface emissions. During the reporting period, cover integrity monitoring was conducted by SCSFS in conjunction with the wellhead monitoring on February 22, March 12 and 24, April 11 and 24, May 1, June 25, and July 28, 2023 using procedures specified in the GCCS Design Plan. The observations during these monitoring events indicated the landfill surface was in good condition. In the event visual evidence suggested otherwise, the surface will be promptly repaired. Records of cover integrity monitoring are available for review upon request.

3.7 GAS GENERATION ESTIMATE AND MONTHLY LANDFILL GAS FLOW RATES

The Vasco Road GCCS has been operating under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) as of November 19, 2014.

Pursuant to Application Number (A/N) 26049 Condition 818 Part 1 (b), the owner/operator may operate the A-4 Flare on a less than continuous basis. If the three-month rolling average of LFG methane content exceeds 50 percent, the owner/operator shall attempt to restart the A-4 Flare within one week of discovery of this excess. If the restart is successful, the A-4 Flare shall operate continuously until the remaining amount of LFG available for flaring is less than 800 standard cubic feet per minute (scfm) or the equivalent heat input rate for this excess LFG is less than 24 million

British thermal units per hour (MMBTU/hour). The rolling average methane content is currently being calculated using the average of the inlet readings collected onsite.

3.8 ANNUAL WASTE ACCEPTANCE RATE AND REFUSE IN PLACE

Vasco Road is an active landfill that continues to accept refuse for disposal. From February 1, 2023 through July 31, 2023, the site accepted 210,261.08 tons of decomposable waste and cover material, resulting in a cumulative waste-in-place total of 19,106,463.44 tons as of July 31, 2023.

3.8.1 Non-Degradable Waste Areas

No areas of non-degradable waste deposition are known to exist. There are no landfill areas that are excluded from the collection system requirements.

3.9 24 HOUR HIGH TEMPERATURE

40 CFR 63.1981(k) and 40 CFR 62.16724(q) require the reporting of any landfill gas temperature measurements greater than or equal to 170°F. During the reporting period, there were no readings greater or equal to 170°F.

3.10 TREATMENT SYSTEM MONITORING PLAN

There are no vents within the treatment system, which allow venting of gas to the atmosphere, and the treatment system is not designed nor equipped to bypass a control device and vent directly to the atmosphere. A calibrated flow meter is installed to measure flow to the treatment system. Treated landfill gas, which cannot be routed for sale or beneficial use, is routed to a control system. Ameresco maintains and operates all monitoring systems associated with the treatment system in accordance with the site-specific treatment system monitoring plan required by §62.16726(b)(5)(ii) and §63.1983(b)(5)(ii). During this reporting period, per Ameresco there were no parameter exceedances of the Treatment Monitoring Plan.

SECTION II. SSM PLAN REPORT

As mentioned previously, Vasco Road is subject to 40 CFR Part 63, Subpart AAAA, the NESHAPS for MSW Landfills. Vasco Road maintains a SSM Plan which documents the procedures for operating and maintaining the affected elements of the GCCS during startup, shutdown, and malfunction (SSM). The SSM events that occurred during the reporting period of February 1, 2023 through July 31, 2023 are documented in this section.

During the reporting period, there were thirteen (13) SSM events involving shutdown of the entire GCCS. All of these startup/shutdown events were associated with a malfunction of the GCCS.

During the reporting period, there were three (3) SSM events involving the wellfield as three (3) wells were permanently abandoned due to poor gas quality and zero (0) new wells were started up. Note there were four (4) wells that were intermittently monitored due to active fill operations. There were no malfunctions of any of the wellfield components during the reporting period.

During the reporting period, there were no planned startups/shutdowns or malfunctions of LFG monitoring equipment (e.g. flow measuring/recording device, temperature measuring/recording device).

In each case described above, the SSM Plan was successfully implemented. Specific information regarding these SSMs are included in **Tables 3a (GCCS Downtime), 3b (A-4 Flare Downtime), and 4 (Individual Well Startup, Shutdown, and Decommissions)**.

No revisions were made to the SSM Plan during this reporting period. A copy of the SSM Plan and all revisions/addenda are kept on file at the facility for at least five (5) years and are available to appropriate regulatory agency personnel for inspection.

SECTION III. TITLE V SEMI-ANNUAL REPORT

As specified in 40 Code of Federal Regulation (CFR) Part 70, reports of any required monitoring must be submitted at least every 6 months. All instances of deviations from permit requirements for the semi-annual reporting period, specified in the Landfill's Initial Title V Permit as August 1 through January 31 and February 1 through July 31, must be clearly identified in each report. This Title V Report covers the February 1, 2023 through July 31, 2023 reporting period.

This report has been prepared based on Table VII (Applicable Limits and Compliance Monitoring Requirements) of the Landfill's MFR Permit. The report includes a certification by a responsible official, consistent with §70.5(d).

The full Title V Semi-Annual Report, including certification by a responsible official, is provided as Appendix E.

Tables

Table 3a. GCCS Downtime
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

GCCS Shutdown	Restarted	Downtime Hours	Reason for Downtime	Corrective Actions Taken
2/7/2023 10:33	2/7/2023 10:38	0.08	Unplanned shutdown due to low flow, parametric monitor (flow meter)	Flare restarted
2/13/2023 8:12	2/13/2023 11:30	3.30	Unplanned shutdown due to low flow, parametric monitor (flow meter)	Flare restarted
2/16/2023 4:18	2/16/2023 11:08	6.83	Unplanned shutdown of flare while operating as backup to engine plant	Flare restarted
2/17/2023 11:30	2/17/2023 13:44	2.23	Unplanned shutdown of flare while operating as backup to engine plant	Flare restarted
2/21/2023 8:14	2/21/2023 8:26	0.20	Unplanned shutdown due to low flow, parametric monitor (flow meter)	Flare restarted
3/3/2023 9:02	3/3/2023 9:08	0.10	Planned shutdown of flare to restart engines	Flare restarted
3/31/2023 9:15	3/31/2023 9:18	0.05	Planned shutdown of flare to restart engines	Flare restarted
4/19/23 13:00	4/19/23 13:06	0.10	Planned shutdown of flare to restart engines	Flare restarted
5/8/23 9:56	5/8/23 9:58	0.03	Planned shutdown of flare to restart engines	Flare restarted
5/30/23 8:26	5/30/23 8:48	0.37	Planned shutdown of flare to restart engines	Flare restarted
6/7/23 6:56	6/7/23 8:02	1.10	Automatic shutdown due to unscheduled and unplanned power outage, RCA ID 08T00-08T01 submitted to request breakdown relief.	Flare restarted
6/12/23 8:33	6/12/23 9:20	0.78	Unplanned shutdown due to low flow, parametric monitor (flow meter)	Engines restarted
7/15/23 17:26	7/16/23 9:02	15.60	Automatic shutdown due to unscheduled and unplanned power outage, RCA ID 08T62-08T63 submitted to request breakdown relief.	Flare restarted
7/31/23 18:22	7/31/23 18:28	0.10	Unplanned shutdown due to engine TSA/H2S/Siloxane removal	Flare started
	Total:	**30.88**		

Notes:
Downtimes listed represent periods when all landfill gas combustion devices were offline concurrently (no gas flow from the collection system).
All events listed involved GCCS inspection and/or maintenance activities prior to start up (or as soon as feasible following programmed startups) in accordance with Rule 8-34-113 requirements and the BAAQMD Compliance Advisory for Municipal Solid Waste Landfills, dated November 5, 2018. Requests for breakdown relief were submitted for Reportable Compliance Activity (RCA) events during unplanned shutdowns. All subsequent reporting was completed within the required timeframes.

Table 3b. Flare (A-4) Downtime
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

Shutdown	Startup	Downtime Hours	Reason for Downtime*
2/1/23 0:00	2/3/23 8:34	56.57	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/4/23 11:52	2/4/23 12:00	0.13	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/6/23 10:52	2/7/23 10:38	23.77	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/7/23 13:26	2/8/23 9:22	19.93	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/9/23 12:28	2/13/23 11:30	95.03	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/13/23 12:52	2/13/23 14:26	1.57	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/13/23 21:52	2/14/23 10:40	12.80	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/14/23 13:24	2/15/23 10:16	20.87	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/15/23 17:58	2/15/23 20:22	2.40	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/16/23 4:18	2/16/23 11:08	6.83	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/17/23 11:30	2/17/23 13:44	2.23	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/17/23 14:58	2/17/23 15:20	0.37	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/17/23 15:34	2/21/23 8:26	88.87	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/21/23 20:00	2/22/23 8:24	12.40	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/22/23 8:26	2/22/23 8:28	0.03	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/22/23 18:28	2/23/23 7:46	13.30	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/23/23 10:38	2/27/23 10:30	95.87	Automatic shutdown due to flame failure, preventative parametric shutdown.
2/27/23 12:48	2/28/23 7:22	18.57	Manual shutdown to complete maintenance prior to source testing.
2/28/23 17:20	3/1/23 10:24	17.07	Manual shutdown of flare following completion of annual source testing.
3/1/23 13:14	3/1/23 22:44	9.50	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/2/23 1:20	3/3/23 9:08	31.80	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/4/23 5:44	3/14/23 8:52	243.13	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/17/23 12:14	3/22/23 8:14	116.00	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/22/23 17:38	3/27/23 9:20	111.70	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/28/23 13:26	3/28/23 13:44	0.30	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/29/23 2:24	3/29/23 7:16	4.87	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/29/23 14:18	3/30/23 12:04	21.77	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/30/23 12:06	3/30/23 12:10	0.07	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/30/23 14:54	3/31/23 9:18	18.40	Automatic shutdown due to flame failure, preventative parametric shutdown.
3/31/23 12:12	4/4/23 8:28	92.27	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/4/23 9:54	4/5/23 12:44	26.83	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/10/23 9:40	4/10/23 9:46	0.10	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/12/23 14:26	4/16/23 11:20	92.90	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/16/23 11:26	4/19/23 12:44	73.30	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/19/23 13:00	4/19/23 13:06	0.10	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/21/23 18:44	4/24/23 9:06	62.37	Automatic shutdown due to flame failure, preventative parametric shutdown.

Table 3b. Flare (A-4) Downtime
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

Shutdown	Startup	Downtime Hours	Reason for Downtime*
4/24/23 11:30	4/27/23 9:12	69.70	Automatic shutdown due to flame failure, preventative parametric shutdown.
4/27/23 10:14	4/28/23 19:28	33.23	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/4/23 11:26	5/8/23 9:58	94.53	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/8/23 10:58	5/9/23 8:52	21.90	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/15/23 7:34	5/17/23 9:46	50.20	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/21/23 15:58	5/22/23 9:14	17.27	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/24/23 9:50	5/25/23 9:00	23.17	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/28/23 17:28	5/29/23 9:22	15.90	Automatic shutdown due to flame failure, preventative parametric shutdown.
5/30/23 8:48	5/30/23 10:48	2.00	Automatic shutdown due to flame failure, preventative parametric shutdown.
6/1/23 21:12	6/3/23 4:36	31.40	Automatic shutdown due to flame failure, preventative parametric shutdown.
6/3/23 21:20	6/5/23 8:30	35.17	Automatic shutdown due to flame failure, preventative parametric shutdown.
6/7/23 6:56	6/7/23 8:02	1.10	Automatic shutdown due to unscheduled and unplanned power outage, RCA ID 08T00-08T01 submitted to request breakdown relief.
6/7/23 14:10	6/21/23 13:34	335.40	Automatic shutdown due to flame failure, preventative parametric shutdown.
6/23/23 13:58	6/30/23 7:54	161.93	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/1/23 22:56	7/6/23 8:30	105.57	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/7/23 6:56	7/7/23 8:00	1.07	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/12/23 14:50	7/16/23 9:02	90.20	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/16/23 19:54	7/17/23 7:28	11.57	Automatic shutdown due to unscheduled and unplanned power outage, RCA ID 08T62-08T63 submitted to request breakdown relief.
7/18/23 9:44	7/20/23 8:36	46.87	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/24/23 7:20	7/26/23 6:46	47.43	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/26/23 20:16	7/27/23 9:44	13.47	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/27/23 11:14	7/29/23 19:56	56.70	Automatic shutdown due to flame failure, preventative parametric shutdown.
7/31/23 12:24	7/31/23 18:28	6.07	Automatic shutdown due to flame failure, preventative parametric shutdown.
Total		**2,665.83**	

Notes:

[1]The A-4 flare was offline at the beginning of the reporting period. For reporting purposes, downtime is calculated as of February 1, 2023 at 0:00.

*Per the Startup, Shutdown, and Malfunction (SSM) forms, a flare flame failure shutdown is due to limited gas available while acting as a back-up device to the engine plant. In these instances, the flare cannot maintain the proper temperature to comply with the temperature limit, so a shutdown is activated to avoid non-compliance. Per BAAQMD 8-34-113, shutdown of air pollution control equipment prior to any non-compliance is allowable, given parametric indicators of the system (temperature or flow indicators) are predictive of a pending equipment failure and shutdown.

A-4 flare operated during all instances when the flow rate to the power generating facility was less than 1,200 scfm, in accordance with PTO Condition 818 Part 1(a). In addition, the A-4 flare only operated intermittently when the conditions in Part 1(b) were met.

All events where the entire GCCS was offline listed involved GCCS inspection and/or maintenance activities prior to start up (or as soon as feasible following programmed startups) in accordance with Rule 8-34-113 requirements and the BAAQMD Compliance Advisory for Municipal Solid Waste Landfills, dated November 5, 2018. Requests for breakdown relief were submitted for Reportable Compliance Activity (RCA) events during unplanned shutdowns.

Table 4. Individual Well Startups, Shutdowns and Decommissions
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

Well ID	Shutdown	Start-up	Days Offline	Reason for Shutdown
VREW2105	N/A	N/A	N/A	Well not read in February due to safety/accessibility concerns in active filling area.
VRLFEW92	N/A	N/A	N/A	Well not read in February - March due to safety/accessibility concerns in active filling area.
VRLFEW94	N/A	N/A	N/A	Well not read in February - April and June - July due to safety/accessibility concerns in active filling area.
VEW2204B	N/A	N/A	N/A	Well not read in April - July due to safety/accessibility concerns in active filling area.
VRLEW152	N/A	N/A	N/A	Well not read in April - July due to safety/accessibility concerns in active filling area.
VRLEW153	N/A	N/A	N/A	Well not read in April - July due to safety/accessibility concerns in active filling area.
VRLEW110	6/5/2023	N/A	N/A	Well abandoned.

Note: All well downtime events listed are consistent with applicable Rule 8-34 provisions and BAAQMD permit conditions.

Table 5. Wells with Positive Pressure
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

Well ID	Date	Initial Static Pressure ("H_2O)	Adjusted Static Pressure ("H_2O)	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Pressure ["H2O]	15-Day Follow-Up Date	Comments	Additional Corrective Action
VRLEW103	3/14/2023	1.86	1.92	3/14/2023	Adjusted Valve	-2.61	3/24/2023	Cleared 3/14/23	N/A
VRLEW107	5/9/2023	-0.38	0.04	5/9/2023	N/A	-1.2	5/17/2023	Cleared 5/9/23	N/A
VRLEW134	3/14/2023	0.94	0.94	3/14/2023	Adjusted Valve	-2.92	3/24/2023	Cleared 3/14/23	N/A
VRLEW145*	4/5/2023	0.31	0.3	4/5/2023	Adjusted Valve	0.31	4/18/2023	Header vacuum loss, cleared 5/1/23	RCA
VRLEW145	5/18/2023	0.46	0.46	5/18/2023	Adjusted Valve	-16.68	5/25/2023	Header vacuum loss, cleared 5/25/23	N/A
VRLEW147	6/29/2023	2.96	-6.58	6/29/2023	Adjusted Valve	1.08	7/12/2023	Cleared 6/29/23	N/A
VRLEW147	7/12/2023	1.08	-2.88	7/12/2023	Adjusted Valve	-4.4	7/24/2023	Cleared 7/12/23	N/A
VREW2004	6/21/2023	0.69	-0.26	6/21/2023	Adjusted Valve	-1.09	6/29/2023	Cleared 6/21/23	N/A
VRLFEW23	3/14/2023	-1.72	0.17	3/14/2023	Adjusted Valve	-4.4	3/24/2023	Cleared 3/14/23	N/A
VRLFEW41	6/13/2023	0.72	0.73	6/13/2023	Adjusted Valve	-0.9	6/21/2023	Cleared 6/21/23	N/A
VRLFEW63	6/13/2023	-0.02	0.08	6/15/2023	N/A	-0.77	6/30/2023	Cleared 6/15/23	N/A
VRLFEW64	6/13/2023	0.54	0.55	6/15/2023	N/A	-0.36	6/30/2023	Cleared 6/15/23	N/A
VRLEW71B	3/14/2023	1.6	1.59	3/14/2023	Adjusted Valve	-2.44	3/24/2023	Cleared 3/14/23	N/A
VRLFEW80	3/14/2023	1.93	1.93	3/14/2023	Adjusted Valve	-3.45	3/24/2023	Cleared 3/14/23	N/A
VRLFEW81	3/14/2023	1.13	1.14	3/14/2023	Adjusted Valve	-3.22	3/24/2023	Cleared 3/14/23	N/A
VRLFEW83	3/14/2023	1.21	1.22	3/14/2023	Adjusted Valve	-0.86	3/24/2023	Cleared 3/14/23	N/A
VRLFEW85	6/21/2023	0.25	-0.12	6/21/2023	Adjusted Valve	-0.31	6/29/2023	Cleared 6/21/23	N/A
VREW0911	3/14/2023	2	1.99	3/14/2023	Adjusted Valve	-3.06	3/24/2023	Cleared 3/14/23	N/A
VREW0912	3/14/2023	1.99	2.01	3/14/2023	Adjusted Valve	-2.77	3/24/2023	Cleared 3/14/23	N/A
VREW2104	5/9/2023	0.28	0.29	5/9/2023	N/A	-0.4	5/17/2023	Cleared 5/17/23	N/A
VREW2109*	5/9/2023	0.88	0.33	5/9/2023	Adjusted Valve	0.83	5/18/2023	Cleared 5/25/23	RCA
VREW2109	7/21/2023	1.06	1.06	7/25/2023	Adjusted Valve	-6.41	7/25/2023	Cleared 7/25/23	N/A
VREW2112	2/23/2023	0.36	0.37	2/23/2023	Adjusted Valve	-0.44	3/8/2023	Cleared 3/8/23	N/A
VREW2112*	5/9/2023	0.04	0.05	5/17/2023	N/A	-15.4	5/25/2023	Cleared 5/25/23	RCA
VREW2113	4/5/2023	0.13	0.13	4/5/2023	N/A	-0.17	4/18/2023	Header vacuum loss, cleared 4/18/23	N/A
VREW2113	6/13/2023	0.26	0.26	6/15/2023	Adjusted Valve	-0.16	6/29/2023	Header vacuum loss, cleared 6/15/23	N/A
VREW2113	6/29/2023	0.11	0.11	6/30/2023	Adjusted Valve	-0.42	7/8/2023	Cleared 6/30/23	N/A
VREW2120	3/14/2023	1.62	1.62	3/14/2023	Adjusted Valve	-0.56	3/24/2023	Cleared 3/14/23	N/A
VREW2120	6/29/2023	0.14	0.13	6/29/2023	Adjusted Valve	-1.28	6/30/2023	Header vacuum loss, cleared 6/30/23	N/A

Note: All required corrective action and remonitoring was completed in accordance with Rule 8-34 and NSPS/NESHAP timelines.

*Exceedance was not corrected in 15 days. Compliance was achieved by the dates specified above.

RCA = Root Cause Analysis, CAA = Corrective Action Analysis, 75-day = 75-Day Notification or request for additional time.

Table 6. Wells with Oxygen Exceedance
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

Well ID	Date	Initial O2 [%]	5-Day Corrective Action Date	Corrective Action	Adjusted O2 [%]	15-Day Follow-Up Date	Comments
VREW1005	7/8/2023	13.1	7/12/2023	Valve adjusted	4.1	7/21/2023	Cleared 7/12/23
VRLEW110	2/10/2023	21.3	2/10/2023	Valve adjusted	22	2/23/2023	Surging in header, vacuum loss, well abandoned 6/5/23
VRLEW111	6/29/2023	6.3	6/30/2023	N/A	1.9	7/7/2023	Cleared 6/30/23
VRLEW136	3/23/2023	6.1	3/23/2023	Valve adjusted	6.4	4/6/2023	Cleared 4/21/23
VRLEW136*	6/29/2023	15.7	6/29/2023	Replace valve	16.5	7/12/2023	Remains in exceedance, 120-day 10/27/23
VRLEW139	6/29/2023	6.8	6/29/2023	Valve adjusted	7.3	7/12/2023	Cleared 7/12/23
VRLEW147	5/9/2023	7.6	5/9/2023	Valve adjusted	16.6	5/18/2023	Cleared 5/18/23
VRLEW151	4/21/2023	6.7	4/21/2023	Valve adjusted	6.6	5/1/2023	Surging in header, cleared 6/13/23
VRLEW151	6/29/2023	6.1	6/29/2023	N/A	4.8	7/12/2023	Cleared 6/29/23
VRLEW151	7/12/2023	8.3	7/12/2023	Valve adjusted	11.3	7/21/2023	Cleared 7/21/23
VRLEW154*	7/24/2023	16.6	7/24/2023	Valve adjusted	16.4	TBD	Remains in exceedance, 120-day 11/21/23
VRLFEW19	6/15/2023	11.5	6/15/2023	Valve adjusted	11.3	6/21/2023	Cleared 6/21/23
VRLFEW19*	6/29/2023	13.1	6/29/2023	Valve adjusted	12.2	7/11/2023	Remains in exceedance, 120-day 10/27/23
VREW2004	6/13/2023	10.9	6/13/2023	Valve adjusted	14.3	6/21/2023	Cleared 6/21/23
VRLFEW30	7/10/2023	15.4	7/10/2023	Replace valve	17.4	7/21/2023	Cleared 7/21/23
VRLEW38A	7/11/2023	6.7	7/11/2023	Valve adjusted	7.2	7/21/2023	Cleared 7/21/23
VR12GT03*	7/24/2023	5.4	7/24/2023	N/A	5.4	TBD	Remains in exceedance, 120-day 11/21/23
VREW2112	4/5/2023	18.8	4/5/2023	Valve adjusted	18.6	4/18/2023	Cleared 4/18/23
VREW2112	5/1/2023	12.3	5/9/2023	N/A	17.9	5/17/2023	Cleared 6/13/23
VREW2113	6/30/2023	11.5	7/8/2023	Valve adjusted	11.2	7/8/2023	Cleared 7/24/23
VREW2205	5/18/2023	10	5/18/2023	N/A	0.2	6/13/2023	Cleared 5/18/23

Note: All required corrective action and remonitoring was completed in accordance with Rule 8-34 and NSPS/NESHAP timelines.
*Exceedance remains at end of reporting period. Compliance will be achieved by the 120-day compliance dates specified above.

Table 7. Wells with Temperature Exceedance
Vasco Road Landfill, Livermore, California
(February 1, 2023 through July 31, 2023)

Well ID	Date	Initial Temperature [°F]	Adjusted Temperature [°F]	5-Day Corrective Action Date	Corrective Action	15-Day Follow-Up Temperature [°F]	15-Day Follow-Up Date	Comments	Additional Corrective Action
VREW2103*	5/9/2023	136.9	136.9	5/18/2023	Valve adjusted	134.5	5/18/2023	Cleared 7/11/23, HOV request resubmitted	RCA, 75-day
VREW2104	2/10/2023	139.8	139.8	2/10/2023	N/A	117.7	2/24/2023	Cleared 2/24/23, HOV request resubmitted	N/A
VREW2104	3/28/2023	138.0	138.1	3/28/2023	N/A	128.2	4/6/2023	Cleared 4/6/23	N/A
VREW2104*	5/9/2023	141.4	141.4	5/9/2023	N/A	142.1	5/17/2023	Cleared 6/13/23, HOV request resubmitted	RCA
VREW2104*	6/29/2023	142.0	142.0	7/7/2023	N/A	97.9	7/24/2023	Cleared 7/24/23, HOV request resubmitted	RCA
VREW2107	4/21/2023	137.7	118.8	4/21/2023	Valve adjusted	114.6	5/9/2023	Cleared 4/21/23, HOV request resubmitted	N/A
VREW2107*	5/18/2023	143.9	144.0	5/18/2023	Valve adjusted	140.6	5/25/2023	Cleared 7/24/23, HOV request resubmitted	RCA, 75-day
VREW2107	7/25/2023	147.2	147.0	7/25/2023	N/A	TBD	TBD	HOV request resubmitted, remains in exceedance	N/A
VREW2109	5/9/2023	137.6	159.0	5/9/2023	Valve adjusted	86.6	5/18/2023	Header vacuum loss, cleared 5/18/23	N/A
VREW2109	7/21/2023	140.6	140.3	7/25/2023	Valve adjusted	TBD	TBD	Cleared 7/25/23	N/A

Note: All required corrective action and remonitoring was completed in accordance with Rule 8-34 and NSPS/NESHAP timelines.

*Exceedance not corrected within 15 days. Compliance will be achieved by the 60 or 120-day compliance dates specified above.

RCA = Root Cause Analysis, CAA = Corrective Action Analysis, 75-day = 75-Day Notification or request for additional time. HOV = Higher Operating Value.

Appendix A – Responsible Official Certification Form

Certification of Truth and Accuracy and Completeness:

I certify the following:

Based on the information and belief formed after reasonable inquiry, the information in this document are true, accurate and complete:

08/11/2023

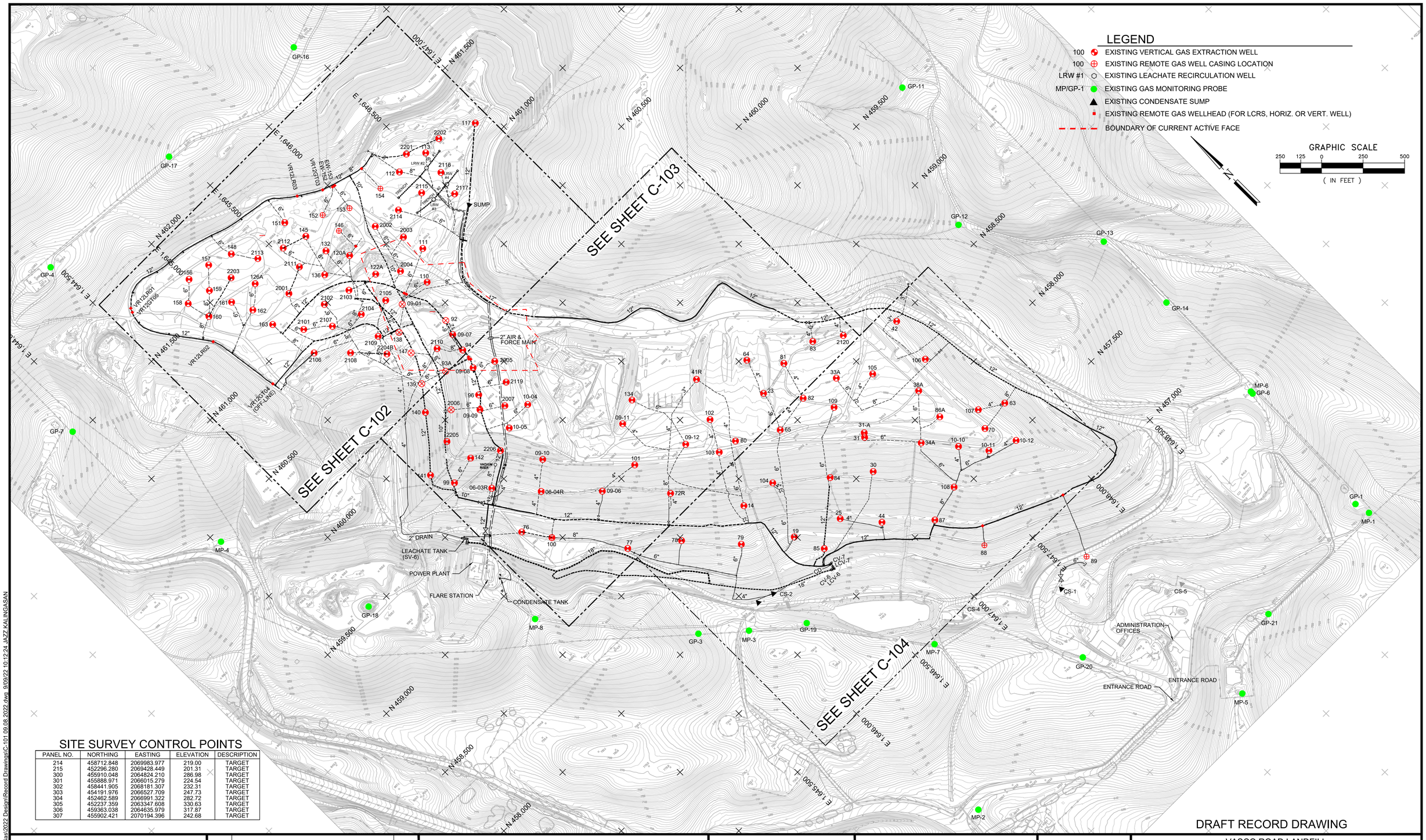
Signature of Responsible Official

Date

Josh Mills

Name of Responsible Official

Appendix B – Existing GCCS Layout



SITE SURVEY CONTROL POINTS

PANEL NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
214	458712.848	2069983.977	219.00	TARGET
215	452296.280	2069428.449	201.31	TARGET
300	455910.048	2064824.210	286.98	TARGET
301	455888.971	2066015.279	224.54	TARGET
302	458441.905	2068181.307	232.31	TARGET
303	454191.976	2066527.709	247.73	TARGET
304	452462.589	2066991.322	282.72	TARGET
305	452237.359	2063347.608	330.63	TARGET
306	459363.038	2064635.979	317.87	TARGET
307	455902.421	2070194.396	242.68	TARGET

DRAFT RECORD DRAWING

NO.	REVISION DESCRIPTION	BY:

REPUBLIC SERVICES, INC.
WASTE COLLECTION • RECYCLING • TRANSFER • DISPOSAL

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

VASCO ROAD LANDFILL
2022 GCCS IMPROVEMENTS
SITE PLAN, SURVEY CONTROL, AND INDEX TO PLAN SHEETS

DESIGNED BY :	CME	SCALE : AS SHOWN	
DRAWN BY :	JJK	DATE : 9/9/2022	FILE NO. C-101:
CHECKED BY :	AMN/SHA	DATE : 9/9/2022	
APPROVED BY :	PJS	DATE : 9/9/2022	SHEET C-101

I:\dwg\Republic\Vasco Road\Gas\2022 Design\Record Drawings\C-101 09.08.2022.dwg, 9/09/22 10:12:24, JAZZ.KALINGASAN

Appendix C – LFGTE Facility Downtime Logs

AMERESCO
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Vasco
Monthly SSM Report

Lead Operator : Mike Rogers
Month : February 2023

Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
1	2/4/23 16:38	2/6/23 10:05	41:27	44962	Mike Rogers	Unplanned	Ameresco	Engine	Reconfigure, and Restart
2	2/6/23 8:49	2/6/23 9:42	0:53	44963	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
1	2/7/23 10:33	2/7/23 13:09	2:36	44964	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/7/23 10:33	2/7/23 13:05	2:32	44964	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/13/23 8:12	2/13/23 12:13	4:01	44970	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	2/13/23 8:12	2/13/23 12:27	4:15	44970	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/14/23 10:45	2/14/23 11:01	0:16	44971	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	2/14/23 10:45	2/14/23 11:09	0:24	44971	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/14/23 12:36	2/14/23 12:53	0:17	44972	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	2/14/23 12:36	2/14/23 13:13	0:37	44972	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	2/15/23 10:08	2/15/23 19:31	9:23	44972	Mike Rogers	Planned	Ameresco	Engine	Replace, and Restart
2	2/15/23 13:45	2/15/23 14:02	0:17	44973	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Reconfigure, and Restart
2	2/15/23 16:35	2/15/23 16:51	0:16	44973	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Reconfigure, and Restart
2	2/15/23 17:00	2/15/23 17:48	0:48	44973	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/15/23 17:51	2/15/23 18:06	0:15	44973	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/15/23 19:47	2/17/23 14:51	43:04	44973	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Repair, and Restart
1	2/15/23 20:23	2/17/23 14:42	42:19	44973	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Repair, and Restart
1	2/21/23 8:14	2/21/23 12:26	4:12	44978	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/21/23 8:14	2/21/23 12:05	3:51	44978	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	2/28/23 8:57	2/28/23 17:09	8:12	44985	Mike Rogers	Planned	Ameresco	Engine	Replace, and Restart

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Monthly SSM Report

Lead Operator : Mike Rogers

Month : March 2023

Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
2	3/1/23 10:19	3/1/23 13:05	2:46	44986	Mike Rogers	Proactive	Ameresco	Engine	Repair, Replace, and
2	3/1/23 21:33	3/2/23 0:45	3:12	44987	Mike Rogers	Unplanned	Ameresco	Other	Restart Only
1	3/3/23 9:02	3/3/23 11:42	2:40	44988	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	3/3/23 9:02	3/3/23 11:25	2:23	44988	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	3/14/23 14:17	3/14/23 17:27	3:10	45000	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
1	3/14/23 17:34	3/14/23 17:54	0:20	45000	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
1	3/15/23 9:06	3/15/23 10:03	0:57	45000	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
2	3/15/23 10:11	3/15/23 11:49	1:38	45000	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
1	3/15/23 12:06	3/15/23 12:54	0:48	45001	Mike Rogers	Proactive	Ameresco	Engine	Repair, and Restart
1	3/15/23 15:30	3/15/23 16:12	0:42	45001	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
2	3/15/23 16:16	3/15/23 16:41	0:25	45001	Mike Rogers	Proactive	Ameresco	Engine	Reconfigure, and Restart
1	3/31/23 9:15	3/31/23 12:03	2:48	45016	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	3/31/23 9:15	3/31/23 11:53	2:38	45016	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only

Vasco

Monthly SSM Report

Lead Operator : Mike Rogers

Month : April 2023

Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
2	4/4/23 6:24	4/4/23 9:45	3:21	45020	Mike Rogers	Unplanned	Electrical Utility	Power Surge	Restart Only
1	4/4/23 6:24	4/4/23 9:53	3:29	45020	Mike Rogers	Unplanned	Electrical Utility	Power Surge	Restart Only
1	4/5/23 13:38	4/6/23 10:01	20:23	45022	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	4/5/23 13:38	4/6/23 10:00	20:22	45022	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	4/12/23 14:00	4/12/23 14:23	0:23	45029	Michael Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	4/12/23 14:00	4/12/23 14:13	0:13	45029	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	4/19/23 12:36	4/20/23 9:32	20:56	45036	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	4/19/23 12:43	4/20/23 10:12	21:29	45036	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	4/21/23 0:21	4/21/23 17:20	16:59	45037	Mike Rogers	Unplanned	Ameresco	Engine	Replace, and Restart
2	4/28/23 18:05			45045					

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Vasco
Monthly SSM Report

Lead Operator : Mike Rogers

Month : May 2023

Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
2	4/28/23 18:05	5/4/23 10:42	136:37	45045	Mike Rogers	Unplanned	Ameresco	Generator	Replace, and Restart
1	5/3/23 10:23	5/3/23 14:10	3:47	45050	Mike Rogers	Unplanned	Ameresco	Gas Chromatograph	Repair, Reconfigure, and Restart
1	5/8/23 9:56	5/8/23 10:49	0:53	45054	Mike Rogers	Unplanned	Electrical Utility	Other	Restart Only
2	5/8/23 9:56	5/8/23 10:37	0:41	45054	Mike Rogers	Unplanned	Electrical Utility	Other	Restart Only
1	5/18/23 8:02	5/18/23 19:06	11:04	45064	Mike Rogers	Planned	Ameresco	Engine	Replace, and Restart
1	5/22/23 9:18	5/22/23 10:47	1:29	45068	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	5/22/23 9:18	5/22/23 10:40	1:22	45068	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
1	5/30/23 8:26	5/30/23 13:06	4:40	45076	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	5/30/23 8:26	5/30/23 13:03	4:37	45076	Mike Rogers	Unplanned	Landfill / Digester	Landfill Vacuum / Gas Limited	Restart Only
2	5/31/23 8:18	5/31/23 21:34	13:16	45077	Mike Rogers	Planned	Ameresco	Engine	Replace, and Restart

Vasco

Monthly SSM Report

Lead Operator : Mike Rogers

Month : June 2023

Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
1	6/3/23 4:30	6/3/23 21:12	16:42	45080	Mike Rogers	Unplanned	Electrical Utility	Line / Substation Maintenance	Restart Only
2	6/3/23 4:30	6/3/23 21:12	16:42	45080	Mike Rogers	Unplanned	Electrical Utility	Line / Substation Maintenance	Restart Only
1	6/7/23 6:50	6/7/23 8:47	1:57	45084	Mike Rogers	Unplanned	Electrical Utility	Other	Restart Only
2	6/7/23 6:50	6/7/23 8:32	1:42	45084	Mike Rogers	Unplanned	Electrical Utility	Other	Restart Only
2	6/12/23 8:33	6/12/23 9:20	0:47	45089	Mike Rogers	Unplanned	Landfill / Digester	Oxygen Levels	Restart Only

Vasco

Monthly SSM Report

Lead Operator : Mike Rogers

Month : July 2023

Eng	Start Time	End Time	Duration (HH:MM)	Eng Hours	Operator	Type	Cause	Reason	Maintenance
1	7/11/23 7:13	7/11/23 18:56	11:43	45118	Mike Rogers	Proactive	Ameresco	Engine	Repair, and Restart
2	7/12/23 11:03	7/12/23 11:14	0:11	45119	Mike Rogers	Unplanned	Ameresco	Engine	Repair, and Restart
1	7/15/23 17:26	7/16/23 11:20	17:54	45126	Mike Rogers	Unplanned	Electrical Utility	Other	Restart Only
2	7/15/23 17:26	7/16/23 12:50	19:24	45126	Mike Rogers	Unplanned	Electrical Utility	Other	Restart Only
1	7/26/23 6:40	7/26/23 19:52	13:12	45133	Mike Rogers	Planned	Ameresco	Engine	Replace, and Restart
1	7/26/23 19:54	7/26/23 20:07	0:13	45134	Mike Rogers	Unplanned	Ameresco	Engine	Restart Only
1	7/27/23 8:04	7/27/23 11:00	2:56	45134	Mike Rogers	Planned	Ameresco	Engine	Reconfigure, and Restart
2	7/31/23 18:22			45139	Mike Rogers	Unplanned	Ameresco	TSA / H2S / Siloxane Removal	
1	7/31/23 18:22			45139	Mike Rogers	Unplanned	Ameresco	TSA / H2S / Siloxane Removal	

Appendix D – Source Test Results

Republic Services

BAAQMD Plant # 5095

Annual Compliance Test Report #23064
Landfill Gas Flare A-4

Located at:
Vasco Road Landfill
4001 N Vasco Road
Livermore, CA 94550

Prepared for:
Republic Services
901 Bailey Road
Pittsburg, CA 94565

Attn: Antonia Gunner
agunner@republicservices.com

For Submittal to:
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Attn: Gloria Espena and Marco Hernandez
gespena@baaqmd.gov/mhernandez@baaqmd.gov
sourcetest@baaqmd.gov

Testing Performed on:
February 28, 2023

Final Report Submitted on:
April 5, 2023

Performed and Reported by:
Blue Sky Environmental, Inc.
2273 Lobert Street
Castro Valley, CA 94546

Office (510) 508-3469/Mobile (810) 923-3181
bluesky@blueskyenvironmental.com

SECTION 1. INTRODUCTION

1.1. Summary

Blue Sky Environmental, Inc. was contracted by Republic Services to perform emissions testing at the Vasco Road Landfill in Livermore, California. This compliance source test was conducted to demonstrate that Landfill Gas Flare A-4 is operating in compliance with condition 818 of the Bay Area Air Quality Management District (BAAQMD) permit to operate for Plant 5095.

Results of the test program are presented in this report. The source test information is summarized in Table 1-1. Test results derived from the source test are summarized in Table 1-2. Results for individual test runs are provided in Appendix A. The flare met all compliance emission criteria.

Table 1-1. Source Test Information

Test Location:	Vasco Road Landfill 4001 N. Vasco Road, Livermore, CA 94550
Source Contact:	Antonia Gunner, Republic Services (619) 201-3764
Source Tested:	Flare A-4 – 120 MMBtu/hr LFG Industrial Landfill Gas Flare
Source Test Date:	February 28, 2023
Test Objective:	Determine compliance with condition 818 of the Bay Area Air Quality Management District (BAAQMD) permit to operate for Plant 5095; BAAQMD Regulation 8, Rule 34; and the State Landfill Methane Gas Rule under AB32 for flare performance
Test Performed by:	Blue Sky Environmental, Inc 2273 Lobert Street, Castro Valley, CA 94546 Finnegan Schall (913) 530-4713 fschall@blueskyenvironmental.com
Test Parameters:	<u>Landfill Gas</u> O_2, CO_2, BTU, THC, CH_4, NMOC, HHV, F-factor, sulfur species, volumetric flow rate <u>Flare Emissions</u> THC, CH_4, NMOC, NO_X, CO, O_2, moisture, volumetric flow rate

Table 1-2. Compliance Summary

Emission Parameter	Average Results (Flare A-4)	Permit Limit	Compliance Status
NO_X, ppmvd @ 15% O_2	10.7	11	In Compliance
NO_X, lb/day	52.8	141.1	In Compliance
NO_X, lb/MMBtu	0.0423	0.049	In Compliance
CO, ppmvd @ 15% O_2	13.8	73	In Compliance
CO, lb/MMBtu	0.0333	0.19	In Compliance
Total Reduced Sulfurs in Fuel as H_2S, ppmvd	390	320	Exceeds Permit
SO_2, ppmvd *(Reg 9-1-302)*	20.9	300	In Compliance
NMOC as CH_4, ppmvd @ 3% O_2	<6.9	30 or >98 %	In Compliance
NMOC Destruction Efficiency, %	>96.36 %		
CH_4 Destruction Efficiency, % *(AB32)*	>99.99 %	>99 %	In Compliance
THC (TOC) Destruction Efficiency, %	>99.99 %	>98 %	In Compliance

TABLE #1

Republic Services - Vasco Road Landfill
Flare A-4
1,516°F

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	2/28/23	2/28/23	2/28/23		
Test Time	0846-0926	0941-1015	1028-1103		
Standard Temperature, °F	70	70	70		
Fuel:					
Flare Temperature, °F	1,516	1,516	1,516	1,516	
Fuel Flow Rate, DSCFM	1,612	1,642	1,645	1,633	
Fuel Heat Input, MMBtu/hr	51.8	52.9	51.6	52.1	
Inlet Hydrogen Sulfide (H_2S), ppmvd *(ASTM D5504)*	325	396	422	381	
Inlet Total Reduced Sulfurs, ppmvd as H_2S *(ASTM D5504)*	333	405	431	390	320
Stack Gas:					
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	30,002	31,139	30,300	30,480	
Oxygen (O_2), % volume dry	15.3	15.4	15.3	15.3	
Carbon Dioxide (CO_2), % volume dry	4.6	4.7	4.7	4.7	
Water Vapor (H_2O), % volume *(EPA Method 4)*	7.8	6.3	7.1	7.1	
SO_2, ppmvd *(calculated)*	17.9	21.4	23.4	20.9	300
NO_X Emissions (reported as NO_2):					
NOx, ppmvd	11.8	9.2	9.4	10.1	
NOx, ppmvd @ 15% O_2	12.3	9.8	10.0	10.7	11
NOx, lb/hr	2.52	2.04	2.04	2.20	
NOx, lb/day	60.4	49.0	49.0	52.8	141.1
NOx, lb/MMBtu	0.0486	0.0386	0.0396	0.0423	0.049
CO Emissions:					
CO, ppmvd	11.2	14.0	14.1	13.1	
CO, ppmvd @ 15% O_2	11.7	14.9	15.0	13.8	73
CO, lb/hr	1.46	1.89	1.86	1.74	
CO, lb/day	35.0	45.4	44.6	41.6	
CO, lb/MMBtu	0.0281	0.0357	0.0360	0.0333	0.19
THC Emissions (reported as CH_4):					
THC, ppmv wet *(EPA Method 25A)*	<2.0	<2.0	<2.0	<2.0	
THC, ppmvd	<2.2	<2.1	<2.2	<2.2	
THC, lb/hr	<0.16	<0.17	<0.16	<0.16	
Methane (CH_4) Emissions:					
CH_4, ppmv wet *(EPA Method 25A)*	<2.0	<2.0	<2.0	<2.0	
CH_4, ppmvd	<2.2	<2.1	<2.2	<2.2	
CH_4, lb/hr	<0.16	<0.17	<0.16	<0.16	
NMOC Emissions (reported as CH_4):					
NMOC, ppmvd *(EPA Method 25A)*	<2.0	<2.0	<2.0	<2.0	
NMOC, ppmvd	<2.2	<2.1	<2.2	<2.2	
NMOC, ppmvd @ 3% O_2	<6.9	<6.9	<6.9	<6.9	30
NMOC, lb/hr	<0.16	<0.17	<0.16	<0.16	

Inlet Hydrocarbons:					
Inlet NMOC, ppmvd *(EPA Method 25C)*	1,128	1,129	1,054	1,104	
Inlet NMOC, lb/hr	4.51	4.60	4.30	4.47	
NMOC Destruction Efficiency, %	>96.42%	>96.41%	>96.24%	>96.36%	>98%
Inlet CH_4, ppmvd *(ASTM D-1945)*	532,000	534,000	520,000	528,667	
Inlet CH_4, lb/hr	2,129	2,176	2,124	2,143	
CH_4 Destruction Efficiency, %	>99.99%	>99.99%	>99.99%	>99.99%	>99%
Inlet THC (TOC), ppmvd	533,128	535,129	521,054	529,770	
Inlet THC (TOC), lb/hr	2,134	2,181	2,128	2,148	
THC (TOC) Destruction Efficiency, %	>99.99%	>99.99%	>99.99%	>99.99%	>98%

DEFINITIONS:

ppmvd = parts per million concentration by volume expressed on a dry gas basis
lb/hr = pound per hour emission rate
Tstd. = standard temperature (°R = °F+460)
MW = molecular weight
DSCFM = dry standard cubic feet per minute
NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)
CO = carbon monoxide (MW = 28)
CH_4 = methane (MW = 16)
THC = total hydrocarbons, reported as CH_4 (MW = 16)
NMOC = non-methane organic compounds, reported as CH_4 (MW = 16)
SO_2 = sulfur dioxide

CALCULATIONS:

15% O_2 Correction = ppm · 5.9 / (20.9 - %O_2)
3% O_2 Correction = ppm · 17.9 / (20.9 - %O_2)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
lb/day = lb/hr · 24
lb/MMBtu = Fd · MW · ppm · 2.59E-9 · 20.9/(20.9 - %O_2)
Destruction Efficiency = (inlet, lb/hr - outlet, lb/hr) / inlet, lb/hr

<value = 2% of analyzer range

TABLE #2
AP42 2.4-1 - Landfill Gas Samples

Republic Services - Vasco Road Landfill
Flare A-4

Compound	Method	Run 1 (ppb)	Run 2 (ppb)	Run 3 (ppb)	Average Results (ppb)
Acrylonitrile	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
Benzene	*EPA TO-15*	**1,670**	**1,880**	**1,650**	**1,733**
Benzyl Chloride (a-Chlorotoluene)	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
Carbon Tetrachloride	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
Chlorobenzene	*EPA TO-15*	<36.9	<39.8	<37.8	<38.17
Chloroethane (Ethyl Chloride)	*EPA TO-15*	**75.9**	**84.3**	**65.8**	**75.3**
Chloroform (Trichloromethane)	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
1,1-Dichloroethane (Ethylidene Dichloride)	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
1,2-Dichloroethane (Ethylene Dichloride)	*EPA TO-15*	**86.3**	<39.8	**79.4**	<68.5
1,4-Dichlorobenzene	*EPA TO-15*	**140**	**215**	**135**	**163**
Ethylbenzene	*EPA TO-15*	**3,390**	**3,850**	**3,330**	**3,523**
1,2-Dibromoethane (Ethylene dibromide)	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
n-Hexane	*EPA TO-15*	**910**	**1,020**	**956**	**962**
2-Propanol (Isopropyl alcohol)	*EPA TO-15*	**6,620**	**7,850**	**6,500**	**6,990**
Dichloromethane (Methylene Chloride)	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
2-Butanone (Methyl Ethyl Ketone)	*EPA TO-15*	**10,900**	**11,700**	**11,000**	**11,200**
Perchloroethylene (Tetrachloroethene) PCE	*EPA TO-15*	**88.5**	**100**	**84.7**	**91.1**
Toluene	*EPA TO-15*	**5,490**	**6,180**	**5,400**	**5,690**
1,1,1-Trichloroethane	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
1,1,2,2-Tetrachloroethane	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
Trichloroethene (TCE)	*EPA TO-15*	**73.0**	**81.1**	**71.0**	**75.0**
Vinyl Chloride (Chloroethene)	*EPA TO-15*	**62.7**	<39.8	**62.0**	<54.8
1,1-Dichloroethene (Vinylidene Chloride)	*EPA TO-15*	<36.9	<39.8	<37.8	<38.2
m/p-Xylenes	*EPA TO-15*	**5,560**	**6,580**	**5,470**	**5,870**
o-Xylene	*EPA TO-15*	**2,060**	**2,460**	**1,990**	**2,170**

Compound	Method	Run 1 (ppm)	Run 2 (ppm)	Run 3 (ppm)	Average Results (ppm)
Hydrogen Sulfide	*ASTM D-5504*	**325**	**396**	**422**	**381**
Carbon Disulfide	*ASTM D-5504*	<0.074	<0.080	<0.076	<0.077
Carbonyl Sulfide (COS)	*ASTM D-5504*	<0.074	<0.080	<0.076	<0.077
Dimethyl Sulfide	*ASTM D-5504*	**3.82**	**3.73**	**4.13**	**3.89**
Ethyl Mercaptan	*ASTM D-5504*	<0.074	<0.080	<0.076	<0.077
Methyl Mercaptan	*ASTM D-5504*	**1.78**	**2.21**	**1.87**	**1.95**

Appendix E – Surface Emission and GCCS Component Leak Monitoring Results

February 13, 2023
File No. 07221004.01

Ms. Antonia Gunner
Republic Services – Vasco Road Landfill
4001 N. Vasco Road
Livermore, California 94551

Subject: Vasco Road Landfill - Livermore, California

Landfill Methane Rule (LMR) and New Source Performance Standards (NSPS) Surface Emissions Monitoring for First Quarter 2023.

Dear Ms. Gunner:

SCS Field Services (SCS-FS) is pleased to provide the Republic Services, with the enclosed report summarizing the surface emissions monitoring services provided at the Vasco Road Landfill (Site) during the first quarter 2023. This report includes the results of surface scan, component emissions and blower/flare station emissions monitoring for the Site for this monitoring period.

SCS-FS appreciates the opportunity to be of assistance to Republic Services on this project. As you review the enclosed information, please contact Max Polkaba (5100 277-5122, Art Jones (209) 345-2062 or Whitney Stackhouse at (209) 338-7990 if you have any questions or comments.

Sincerely,

Whitney Stackhouse
Project Manager
SCS Field Services

Arthur E. Jones Jr.
DSW Region Manager/VP
SCS Field Services

Encl.

cc: Max Polkabla, SCS Field Services

Vasco Road Landfill

Landfill Methane Rule (LMR) and New Source Performance Standards (NSPS) Surface Emissions Monitoring

First Quarter 2023

Presented to:

Ms. Antonia Gunner
Republic Services – Vasco Road
4001 N. Vasco Road
Livermore, California 94551

SCS FIELD SERVICES

File No. 07221004.01 | February 13, 2023

SCS FIELD SERVICES
4730 Enterprise Way Suite A
Modesto, CA 95356

Vasco Road Landfill

Landfill Methane Rule (LMR) and New Source Performance Standards (NSPS) Surface Emissions Monitoring Fourth Quarter 2023

INTRODUCTION

This letter provides results of the January 23, 24 and 25, 2023, LMR and NSPS landfill surface emissions monitoring (SEM) performed by SCS Field Services (SCS) at the subject site. All work was performed in accordance with our approved Work Scope dated December 23, 2020, and the LMR requirements.

SUMMARY AND CONCLUSIONS

As stipulated in LMR, if uncorrectable exceedances within the 10-day limitation are detected or emissions are discovered during an inspection by Regulatory Agencies, the landfill must perform monitoring on a 25-foot pathway on a quarterly basis for active disposal sites. Upon completion of four consecutive SEM events without an uncorrectable exceedance of the 25 ppmv or 500 ppmv standards, other than non-repeatable momentary readings, the landfill may perform the monitoring on a 100-foot spacing on an annual basis for closed landfills or quarterly for active disposal sites. Therefore, based on the previous monitoring events, in which exceedances were observed by a regulatory agency, the monitoring at the Vasco Road Landfill was performed on 25-foot pathways in accordance with the LMR.

On, January 23, 24 and 25, 2023, SCS performed first quarter 2023 surface emissions monitoring testing as required by the Bay Area Air Quality Management District (BAAQMD). Instantaneous surface emissions monitoring results indicated that no locations exceeded the 500 ppmv maximum concentration during our monitoring (Table 1 in Attachment 3). Based on these monitoring results no additional follow up testing was required.

Also, during the instantaneous monitoring event, SCS performed concurrent integrated monitoring of the landfill surface. As required by the LMR, the landfill was divided into 50,000 square foot grid areas. The Vasco Road Landfill surface area was therefore divided into 233 grids, as shown on Figure 1 in Attachment 1. During this monitoring event, several grids were not monitored, in accordance with the regulations, due to ongoing active landfilling activities, unsafe conditions, or there was no waste in place prior to the monitoring event.

During the monitoring event, there were no grid areas observed to exceed the 25 ppmv LMR integrated average threshold (Table 2 in Attachment 4). Based on these monitoring results, no follow up monitoring is required. These results are discussed in a subsequent section of this report.

In addition, quarterly monitoring of the pressurized piping or components of the Gas Collection and Control System (GCCS) that are under positive pressure must be performed quarterly. Results of the

testing of the landfill gas (LFG) Blower Flare Station (BFS) pressurized piping and components indicated that all test locations were in compliance with the 500 ppmv requirement.

Further, as required under the LMR, any location on the landfill that has an observed instantaneous methane concentration above 200 ppmv, must be stake-marked and Global Positioning System (GPS) located on a site figure. During this reporting period, no locations were observed to exceed the 200 ppmv, reporting threshold. When readings are observed, the locations will be reported to site personnel for tracking and/or remediation and will be reported in the next submittal of the annual LMR report.

Finally, to help prevent potential future exceedances, SCS recommends that the landfill surface be routinely inspected and any observed surface erosion be routinely repaired.

BACKGROUND

The Vasco Road Landfill is an active organic refuse disposal site. By way of background, organic materials buried in a landfill decompose anaerobically (in the absence of oxygen) producing a combustible gas which contains approximately 50 to 60 percent methane gas, 40 to 50 percent carbon dioxide, and trace amount of various other gases, some of which are odorous. The Vasco Road property contains a system to control the combustible gases generated in the landfill.

SURFACE EMISSIONS MONITORING

On January 23, 24 and 25, 2023, the instantaneous and integrated SEM was performed over the surface of the subject site. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the LMR threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring in the 50,000 square foot grids as required under the LMR. During this event, SCS performed the monitoring on a 25-foot pathway in accordance with the rules as required.

EMISSIONS TESTING INSTRUMENTATION/CALIBRATION

Instruments used to perform the landfill surface emission testing consisted of the following:

- Thermo Scientific TVA 2020 portable Flame Ionization Detector (FID). This instrument measures methane in air over a range of 1 to 50,000 ppmv. The TVA 2020 meets the State of California Air Resources Board (CARB) requirements for combined instantaneous and integrated monitoring and was calibrated in accordance with United States Environmental Protection Agency (US EPA) Method 21.

- Weather Anemometer with continuous recorder for meteorological conditions in accordance with the LMR.

Instrument calibration logs and weather information are shown in Attachments 5 and 6.

SURFACE EMISSIONS MONITORING PROCEDURES

Surface emissions monitoring was conducted in accordance with the LMR and NSPS requirements. Monitoring was performed with the FID inlet held within 3-inches of the landfill surface while a technician walked a grid in parallel paths not more than 25 -feet apart over the surface of the landfill. Cracks, holes and other cover penetrations in the surface were also tested. Surface emissions readings were monitored continuously and recorded every 5 seconds. Any areas in exceedance of the 200 or 500 ppmv standards (reporting and compliance levels, respectively) would be GPS tagged and stake-marked for on-site personnel to perform remediation or repairs.

The integrated average is based on the readings stored on the instrument, which are recorded every 5 seconds. The readings are then downloaded and the averages are calculated for each grid using SCS eTools®. All readings are maintained in this secure SCS Database. The readings are not provided in the report due to the volume of readings, but can be furnished upon request.

Recorded wind speed results are shown in Attachment 6. Wind speed averages were observed to remain below the alternative threshold of 10 miles per hour, and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within 72 hours of the monitoring events. Therefore, site meteorological conditions were within the alternatives of the LMR requirements on the above mentioned dates.

TESTING RESULTS

During this event, SCS performed the monitoring on a 25-foot pathway in accordance with the rule as required under the LMR and NSPS. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the LMR or NSPS threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring (LMR).

On January 23, 24 and 25, 2023 SCS performed first quarter 2023 instantaneous emissions monitoring testing as required by the BAAQMD. During this monitoring, surface emissions results indicated that no locations exceeded the 500 ppmv maximum concentration. Based on these monitoring results no additional follow up testing was required. Results of the monitoring are shown in Attachments 2 and 3 (Table 1).

Additionally, no integrated exceedances (the calculated average of the instantaneous monitoring results) of the 25 ppmv requirement on January 23, 24 and 25, 2023, were observed, therefore no further testing was required. Results of the monitoring are shown in Attachment 4 (Table 2). Calibration logs for the monitoring equipment are provided in Attachment 5.

During this monitoring event, several grids were not monitored, in accordance with the LMR, due to active landfilling activities, unsafe conditions or no waste in place. SCS will continue to monitor all accessible locations during the second quarter 2023.

PRESSURIZED PIPE AND COMPONENT LEAK MONITORING

On January 25, 2023, quarterly leak monitoring was performed in accordance with the LMR. SCS performed LFG pressurized pipe and component leak monitoring at the BFS and power generation facility (reported separately). Monitoring was performed with the detector inlet held one-half of an inch from pressurized piping and associated components. No locations exceeding the 500 ppmv threshold were observed during our monitoring event. The maximum reading, which was 1.70 ppmv,

was well below the maximum threshold (see Table 1 for component results). Therefore, all pressurized piping and components located at the LFG BFS were in compliance at the time of our testing. Note that the LFGTE plant was also tested and shown to be in compliance, however, those results are submitted directly to Ameresco.

PROJECT SCHEDULE

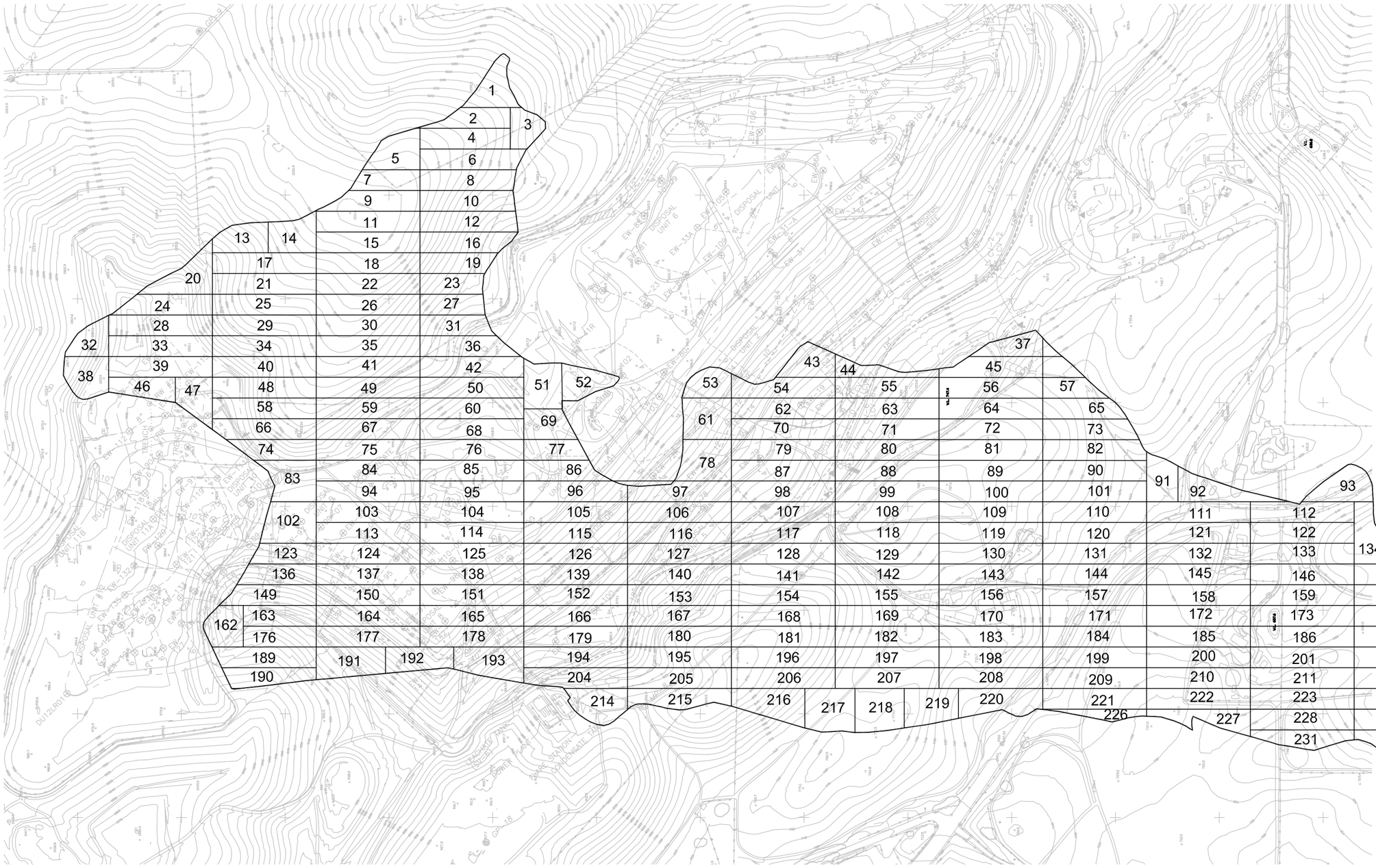
According to the LMR and NSPS, surface emissions monitoring at active landfills is required to be performed on a quarterly basis. Therefore, in accordance with our approved Work Scope, the second quarter 2023 (April through June) surface emissions testing event is scheduled to be performed by the end of June 2023 in accordance with the Republic SOP unless an alternative timeline is requested by site personnel.

STANDARD PROVISIONS

This report addresses conditions of the subject site during the testing dates only. Accordingly, we assume no responsibility for any changes that may occur subsequent to our testing which could affect the surface emissions at the subject site or adjacent properties.

Attachment 1

Landfill Grid



SCALE IN FEET

500 0 500

(DRAWING SIZE IN 11"X17")

SCS ENGINEERS

ENVIRONMENTAL CONSULTANTS

3117 FITE CIRCLE, SUITE 108
SACRAMENTO, CALIFORNIA 95827
PH. (916) 361-1297 FAX. (916) 361-1299

PROJ. NO.	DWN. BY:	ACAD FILE:
07217028.00	ATV	FIGURE 1.DWG
DSN. BY:	CHK. BY:	APP. BY:
ATV	WBS	AJ

SHEET TITLE:
SURFACE EMISSIONS MONITORING GRID MAP

PROJECT TITLE:
VASCO ROAD LANDFILL
ALAMEDA COUNTY, CALIFORNIA

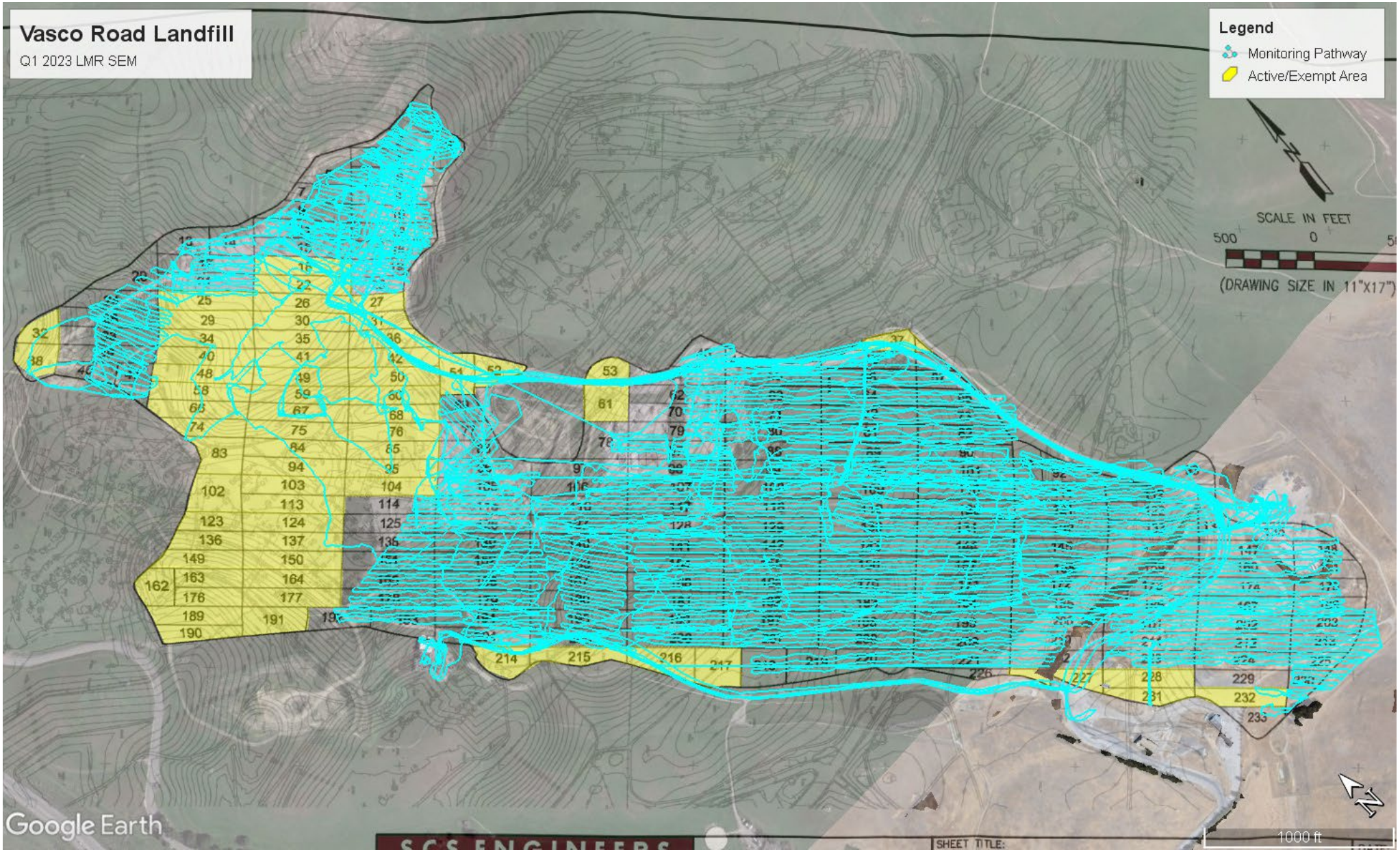
DATE: 3/14/17

SCALE: AS SHOWN

FIGURE: 1 – A

Attachment 2

Surface Pathway



First Quarter 2023
Initial LMR Surface Emissions Monitoring Pathway
Vasco Road Landfill, Livermore, California

Attachment 3

Instantaneous and Component Emissions Monitoring Results

First Quarter 2023

Table 1. Instantaneous Surface and Component Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Instantaneous Data Report for January 23, 24 and 25, 2023

Location (Surface)	Initial Monitoring Results (ppmv) 1/23/2023	Latitude	Longitude
VRLFEW94	108	37.7575423	-121.726044

Pressurized Pipe and Component Results

Route	Date	Concentration (ppmv)
FLARE STATION	1/25/2022	1.70

No exceedances of the 200 or 500 ppmv threshold were observed during the first quarter 2023 monitoring.

Attachment 4

Integrated Monitoring Results

First Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 001	1/24/2023 08:57	3.52	
VR 002	1/24/2023 09:11	1.81	
VR 003	1/24/2023 09:06	3.76	
VR 004	1/24/2023 09:18	3.03	
VR 005	1/24/2023 14:18	2.92	
VR 006	1/24/2023 09:26	2.25	
VR 007	1/24/2023 14:27	4.18	
VR 008	1/24/2023 09:33	2.17	
VR 009	1/24/2023 14:38	5.91	
VR 010	1/24/2023 09:41	2.31	
VR 011	1/25/2023 09:08	5.37	
VR 012	1/24/2023 09:49	2.28	
VR 013	1/25/2023 09:49	2.98	
VR 014	1/25/2023 09:47	2.15	
VR 015	1/25/2023 09:18	3.01	
VR 016	1/24/2023 10:42	2.15	
VR 017	1/24/2023 15:01	3.15	
VR 018	--	--	Active Grid
VR 019	1/24/2023 12:24	13.80	
VR 020	1/25/2023 10:03	1.20	
VR 021	1/24/2023 14:36	2.25	
VR 022	--	--	Active Grid
VR 023	1/24/2023 12:33	9.20	
VR 024	1/25/2023 10:12	1.15	
VR 025	--	--	Active Grid
VR 026	--	--	Active Grid
VR 027	--	--	Active Grid
VR 028	1/25/2023 10:22	1.11	
VR 029	--	--	Active Grid
VR 030	--	--	Active Grid
VR 031	--	--	Active Grid
VR 032	--	--	Exempted for Flooded Area
VR 033	1/25/2023 10:32	1.02	
VR 034	--	--	Active Grid
VR 035	--	--	Active Grid
VR 036	--	--	Active Grid
VR 037	--	--	Exempted for Flooded Area
VR 038	--	--	Exempted for Flooded Area
VR 039	1/25/2023 10:40	0.99	
VR 040	--	--	Active Grid
VR 041	--	--	Active Grid
VR 042	--	--	Active Grid
VR 043	1/25/2023 14:14	0.22	

First Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 044	1/25/2023 14:24	0.16	
VR 045	1/25/2023 14:37	0.37	
VR 046	1/25/2023 10:47	0.95	
VR 047	1/25/2023 10:54	0.89	
VR 048	--	--	Active Grid
VR 049	--	--	Active Grid
VR 050	--	--	Active Grid
VR 051	--	--	Active Grid
VR 052	--	--	Active Grid
VR 053	--	--	Exempted for Compost Area
VR 054	1/24/2023 11:05	1.89	
VR 055	1/24/2023 11:14	1.90	
VR 056	1/24/2023 11:11	1.91	
VR 057	1/24/2023 11:23	1.85	
VR 058	--	--	Active Grid
VR 059	--	--	Active Grid
VR 060	--	--	Active Grid
VR 061	--	--	Exempted for Compost Area
VR 062	1/24/2023 12:06	1.51	
VR 063	1/24/2023 12:07	1.50	
VR 064	1/24/2023 12:11	1.50	
VR 065	1/24/2023 12:11	1.49	
VR 066	--	--	Active Grid
VR 067	--	--	Active Grid
VR 068	--	--	Active Grid
VR 069	1/25/2023 15:12	9.63	
VR 070	1/24/2023 13:02	1.17	
VR 071	1/24/2023 13:01	1.16	
VR 072	1/24/2023 13:11	1.13	
VR 073	1/24/2023 12:57	1.20	
VR 074	--	--	Active Grid
VR 075	--	--	Active Grid
VR 076	--	--	Active Grid
VR 077	1/25/2023 15:24	8.76	
VR 078	1/25/2023 12:41	1.08	
VR 079	1/24/2023 15:07	2.41	
VR 080	1/24/2023 14:52	2.32	
VR 081	1/24/2023 14:51	2.41	
VR 082	1/24/2023 14:52	2.55	
VR 083	--	--	Active Grid
VR 084	--	--	Active Grid
VR 085	--	--	Active Grid
VR 086	1/25/2023 15:39	5.54	

First Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 087	1/25/2023 12:57	0.83	
VR 088	1/25/2023 13:30	0.63	
VR 089	1/25/2023 13:28	0.70	
VR 090	1/25/2023 13:31	0.66	
VR 091	1/25/2023 12:04	1.61	
VR 092	1/25/2023 12:07	1.53	
VR 093	1/24/2023 12:16	0.54	
VR 094	--	--	Active Grid
VR 095	--	--	Active Grid
VR 096	1/25/2023 12:27	4.23	
VR 097	1/25/2023 12:44	4.80	
VR 098	1/24/2023 09:06	5.70	
VR 099	1/24/2023 10:54	5.70	
VR 100	1/24/2023 13:41	0.78	
VR 101	1/24/2023 13:34	0.74	
VR 102	--	--	Active Grid
VR 103	--	--	Active Grid
VR 104	--	--	Active Grid
VR 105	1/25/2023 12:27	4.80	
VR 106	1/24/2023 09:01	5.71	
VR 107	1/24/2023 09:03	5.70	
VR 108	1/24/2023 10:30	5.70	
VR 109	1/24/2023 12:36	1.12	
VR 110	1/24/2023 12:36	1.08	
VR 111	1/24/2023 12:31	1.06	
VR 112	1/24/2023 12:35	1.03	
VR 113	--	--	Active Grid
VR 114	1/24/2023 12:24	8.85	
VR 115	1/24/2023 12:24	3.42	
VR 116	1/24/2023 09:36	5.83	
VR 117	1/24/2023 09:39	5.72	
VR 118	1/24/2023 10:06	5.71	
VR 119	1/24/2023 10:46	1.29	
VR 120	1/24/2023 10:24	1.24	
VR 121	1/24/2023 10:27	1.32	
VR 122	1/24/2023 10:40	1.37	
VR 123	--	--	Active Grid
VR 124	--	--	Active Grid
VR 125	1/24/2023 12:41	5.77	
VR 126	1/24/2023 12:38	6.05	
VR 127	1/24/2023 10:15	5.75	
VR 128	1/24/2023 10:14	5.73	
VR 129	1/24/2023 10:16	5.71	

First Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 130	1/24/2023 09:00	1.32	
VR 131	1/24/2023 08:59	1.34	
VR 132	1/24/2023 09:04	1.28	
VR 133	1/24/2023 09:02	1.34	
VR 134	1/24/2023 09:04	1.46	
VR 135	1/25/2023 11:33	2.53	
VR 136	--	--	Active Grid
VR 137	--	--	Active Grid
VR 138	1/24/2023 12:47	5.02	
VR 139	1/24/2023 13:13	2.61	
VR 140	1/25/2023 08:43	1.18	
VR 141	1/24/2023 09:03	0.80	
VR 142	1/24/2023 09:07	0.71	
VR 143	1/24/2023 09:07	0.73	
VR 144	1/24/2023 09:11	0.80	
VR 145	1/24/2023 08:14	1.73	
VR 146	1/24/2023 08:19	1.77	
VR 147	1/24/2023 08:17	2.01	
VR 148	1/24/2023 08:20	2.23	
VR 149	--	--	Active Grid
VR 150	--	--	Active Grid
VR 151	1/24/2023 13:35	5.52	
VR 152	1/24/2023 13:37	2.54	
VR 153	1/25/2023 09:01	3.78	
VR 154	1/24/2023 10:10	0.68	
VR 155	1/24/2023 10:12	0.64	
VR 156	1/24/2023 10:11	0.60	
VR 157	1/24/2023 10:15	0.55	
VR 158	1/24/2023 09:05	1.17	
VR 159	1/24/2023 09:00	1.26	
VR 160	1/24/2023 09:03	1.26	
VR 161	1/24/2023 09:02	1.25	
VR 162	--	--	Active Grid
VR 163	--	--	Active Grid
VR 164	--	--	Active Grid
VR 165	1/24/2023 14:11	4.11	
VR 166	1/24/2023 14:11	2.45	
VR 167	1/25/2023 09:17	3.18	
VR 168	1/24/2023 12:09	1.86	
VR 169	1/24/2023 12:09	1.89	
VR 170	1/24/2023 11:55	1.62	
VR 171	1/24/2023 12:09	1.95	
VR 172	1/24/2023 09:57	1.06	

First Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 173	1/24/2023 09:54	1.14	
VR 174	1/24/2023 09:52	1.10	
VR 175	1/24/2023 09:47	1.23	
VR 176	--	--	Active Grid
VR 177	--	--	Active Grid
VR 178	1/24/2023 14:41	3.28	
VR 179	1/24/2023 14:41	2.11	
VR 180	1/25/2023 09:32	2.47	
VR 181	1/24/2023 13:20	2.17	
VR 182	1/24/2023 13:24	2.12	
VR 183	1/24/2023 13:22	2.18	
VR 184	1/24/2023 13:51	2.96	
VR 185	1/24/2023 11:47	2.20	
VR 186	1/24/2023 11:54	2.69	
VR 187	1/24/2023 11:43	3.25	
VR 188	1/24/2023 12:12	3.05	
VR 189	--	--	Active Grid
VR 190	--	--	Active Grid
VR 191	--	--	Active Grid
VR 192	1/25/2023 10:53	0.89	
VR 193	1/25/2023 10:53	1.25	
VR 194	1/25/2023 10:36	1.74	
VR 195	1/25/2023 09:49	2.10	
VR 196	1/24/2023 14:16	0.70	
VR 197	1/25/2023 09:06	2.07	
VR 198	1/25/2023 09:04	1.67	
VR 199	1/25/2023 09:02	1.62	
VR 200	1/25/2023 09:00	1.64	
VR 201	1/25/2023 11:40	0.93	
VR 202	1/25/2023 11:37	7.11	
VR 203	1/25/2023 11:40	1.98	
VR 204	1/25/2023 10:22	1.40	
VR 205	1/25/2023 10:05	1.96	
VR 206	1/25/2023 11:19	0.76	
VR 207	1/25/2023 09:56	1.21	
VR 208	1/25/2023 09:55	1.03	
VR 209	1/25/2023 09:55	1.00	
VR 210	1/25/2023 09:59	0.98	
VR 211	1/25/2023 12:49	1.12	
VR 212	1/25/2023 12:52	2.07	
VR 213	1/25/2023 12:55	1.80	
VR 214	--	--	Exempted for Flooded Area
VR 215	--	--	Exempted for Flooded Area

First Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 216	--	--	Exempted for Flooded Area
VR 217	--	--	Exempted for Flooded Area
VR 218	1/25/2023 10:40	1.08	
VR 219	1/25/2023 10:40	1.03	
VR 220	1/25/2023 10:40	0.80	
VR 221	1/25/2023 10:37	0.75	
VR 222	1/25/2023 10:37	0.74	
VR 223	1/25/2023 13:52	1.37	
VR 224	1/25/2023 13:52	1.80	
VR 225	1/25/2023 13:52	2.05	
VR 226	--	--	Exempted for Flooded Area
VR 227	--	--	Exempted for Flooded Area
VR 228	--	--	Expemt Area (Office & Parking Lot)
VR 229	1/25/2023 14:51	1.75	
VR 230	1/25/2023 14:30	2.18	
VR 231	--	--	Expemt Area (Office & Parking Lot)
VR 232	--	--	Expemt Area (Office & Parking Lot)
VR 233	1/25/2023 14:57	1.52	

Attachment 5

Calibration Logs

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1/24/23 Site Name: VASCO

Inspector(s): Bryan Ochoa Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 2 MPH Wind Direction: S.W Barometric Pressure: 30.34 "Hg

Air Temperature: 39 °F General Weather Conditions: clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5419 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	505	5	2
2	0	495	5	1
3	-0.1	500	0	1

Average Difference: 3.3

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 3.3 /500 x 100%

= 99.34 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 183776
Counters Observed for the Zero= 5172

Trial 2:
Counts Observed for the Span= 179504
Counters Observed for the Zero= 5099

Trial 3:
Counts Observed for the Span= 179220
Counters Observed for the Zero= 5051

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 487 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Park Reading: 2.1 ppm

Downwind Location Description: G 75 Reading: 1.6 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1/24/23 Site Name: Vasco

Inspector(s): Andrew Stone Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 2 MPH Wind Direction: S.W Barometric Pressure: 30.34 "Hg

Air Temperature: 39 °F General Weather Conditions: clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5420 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	504	4	2
2	0	500	0	1
3	-0.1	510	10	3

Average Difference: 4.6

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 4.6 /500 x 100%

= 99.08 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 128144
Counters Observed for the Zero= 3825

Trial 2:
Counts Observed for the Span= 130380
Counters Observed for the Zero= 3755

Trial 3:
Counts Observed for the Span= 132404
Counters Observed for the Zero= 3732

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 502 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Plant Reading: 2.1 ppm

Downwind Location Description: GM5 Reading: 1.6 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1/24/23 Site Name: VASCO

Inspector(s): R. Yepez Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 2 MPH Wind Direction: SW Barometric Pressure: 30.34 "Hg

Air Temperature: 39 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 1223 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	-0.2	508	8	3
2	0	500	0	1
3	-0.1	499	1	2

Average Difference: 3

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 3 /500 x 100%

= 99.4 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 161904
Counters Observed for the Zero= 4785

Trial 2:
Counts Observed for the Span= 163196
Counters Observed for the Zero= 4683

Trial 3:
Counts Observed for the Span= 167000
Counters Observed for the Zero= 4669

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 497 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 2.4 ppm

Downwind Location Description: G75 Reading: 1.6 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1-24-23 Site Name: VASCO

Inspector(s): B. Warren Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 2 MPH Wind Direction: S.W Barometric Pressure: 30.34 "Hg

Air Temperature: 37 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 2367 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.0	502	2	1
2	0.1	501	1	1
3	0.0	500	0	1/2

Average Difference: 1

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1 /500 x 100%

= 99.8 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 173364
Counters Observed for the Zero= 5138

Trial 2:
Counts Observed for the Span= 177660
Counters Observed for the Zero= 5083

Trial 3:
Counts Observed for the Span= 179216
Counters Observed for the Zero= 5058

Post Monitoring Calibration Check

Zero Air Reading: 1.1 ppm Cal Gas Reading: 510 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 2.1 ppm

Downwind Location Description: G.75 Reading: 1.6 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1-24-23 Site Name: VASCO

Inspector(s): D. Gibson Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 2 MPH Wind Direction: SW Barometric Pressure: 30.34 "Hg

Air Temperature: 39 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5421 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	-0.1	500	0	1
2	0.0	499	1	3
3	0.0	502	2	2

Average Difference: 1

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1 /500 x 100%

= 99.8%

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 148160
Counters Observed for the Zero= 4266

Trial 2:
Counts Observed for the Span= 150604
Counters Observed for the Zero= 4230

Trial 3:
Counts Observed for the Span= 152780
Counters Observed for the Zero= 4208

Post Monitoring Calibration Check

Zero Air Reading: 0.9 ppm Cal Gas Reading: 502 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 2.2 ppm

Downwind Location Description: 6 - 75 Reading: 1.7 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1-24-23 Site Name: V 9500

Inspector(s): Alfredo Gomez Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 2 MPH Wind Direction: SW Barometric Pressure: 30.24 "Hg

Air Temperature: 38 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 2364 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	-0.1	503	3	1
2	0.0	500	0	1
3	-0.1	502	2	2

Average Difference: 1.6

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1.6 /500 x 100%

= 99.6%

Span Sensitivity:

Trial 1:

Counts Observed for the Span= 179692

Counters Observed for the Zero= 5059

Trial 2:

Counts Observed for the Span= 183596

Counters Observed for the Zero= 5016

Trial 3:

Counts Observed for the Span= 182640

Counters Observed for the Zero= 4405

Post Monitoring Calibration Check

Zero Air Reading: 0.9 ppm Cal Gas Reading: 507 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 2.0 ppm

Downwind Location Description: G-75 Reading: 1.8 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1/23/23 Site Name: Vasco

Inspector(s): Rashad Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 5 MPH Wind Direction: S Barometric Pressure: 30.14 "Hg

Air Temperature: 40 °F General Weather Conditions: Sunny

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5419 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	-0.1	500	0	3
2	0	500	0	1
3	0	500	0	2

Average Difference: 100

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 100 /500 x 100%

= 100 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 185708
Counters Observed for the Zero= 5152

Trial 2:
Counts Observed for the Span= 182580
Counters Observed for the Zero= 5124

Trial 3:
Counts Observed for the Span= 180328
Counters Observed for the Zero= 5080

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 496 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Rose Reading: 1.6 ppm

Downwind Location Description: G4 Reading: 2.0 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1/23/23 Site Name: Vasco

Inspector(s): Ricardo Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 5 MPH Wind Direction: S Barometric Pressure: 30.14 "Hg

Air Temperature: 40 °F General Weather Conditions: Sunny

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 4348 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	503	3	
2	-0.1	500	0	
3	0	500	0	

Average Difference: 1

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1 /500 x 100%

= 99.8 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 126364
Counters Observed for the Zero= 3796

Trial 2:
Counts Observed for the Span= 127764
Counters Observed for the Zero= 3784

Trial 3:
Counts Observed for the Span= 126200
Counters Observed for the Zero= 3775

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 496 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: flare Reading: 1.8 ppm

Downwind Location Description: GH Reading: 2.0 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 1/23/23 Site Name: Vasco

Inspector(s): Alfredo G. Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 5 MPH Wind Direction: S Barometric Pressure: 30.14 "Hg

Air Temperature: 40 °F General Weather Conditions: sunny

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 2367 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	502	2	1
2	0	497	3	2
3	0	500	0	1

Average Difference: 1.6

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1.6 /500 x 100%

= 99.7 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 168820
Counters Observed for the Zero= 4812

Trial 2:
Counts Observed for the Span= 173388
Counters Observed for the Zero= 4836

Trial 3:
Counts Observed for the Span= 173704
Counters Observed for the Zero= 4819

Post Monitoring Calibration Check

Zero Air Reading: 1 ppm Cal Gas Reading: 502 ppm

BACKGROUND CONCENTRATIONS CHECKS

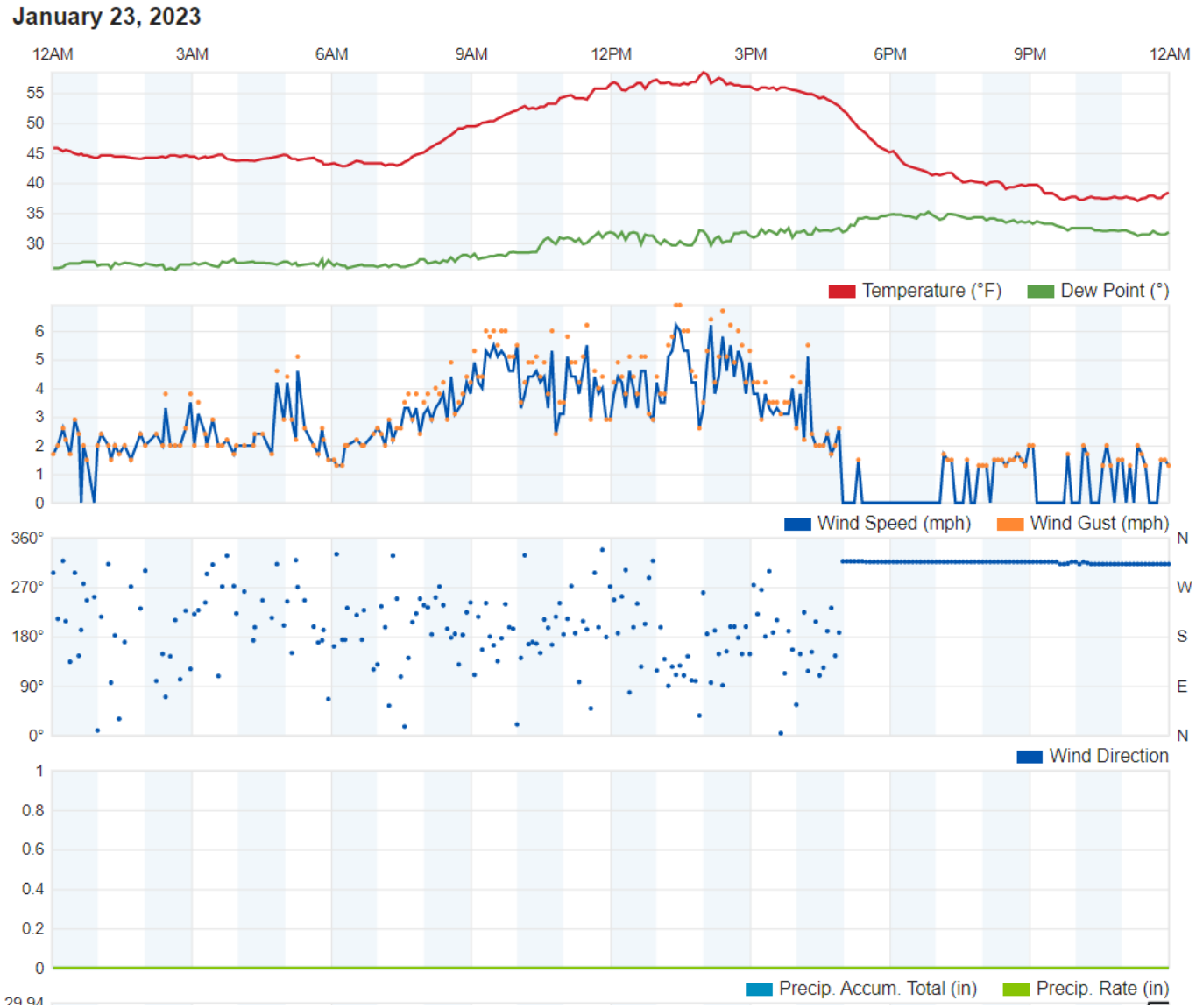
Upwind Location Description: flare Reading: 1.8 ppm

Downwind Location Description: G4 Reading: 2.0 ppm

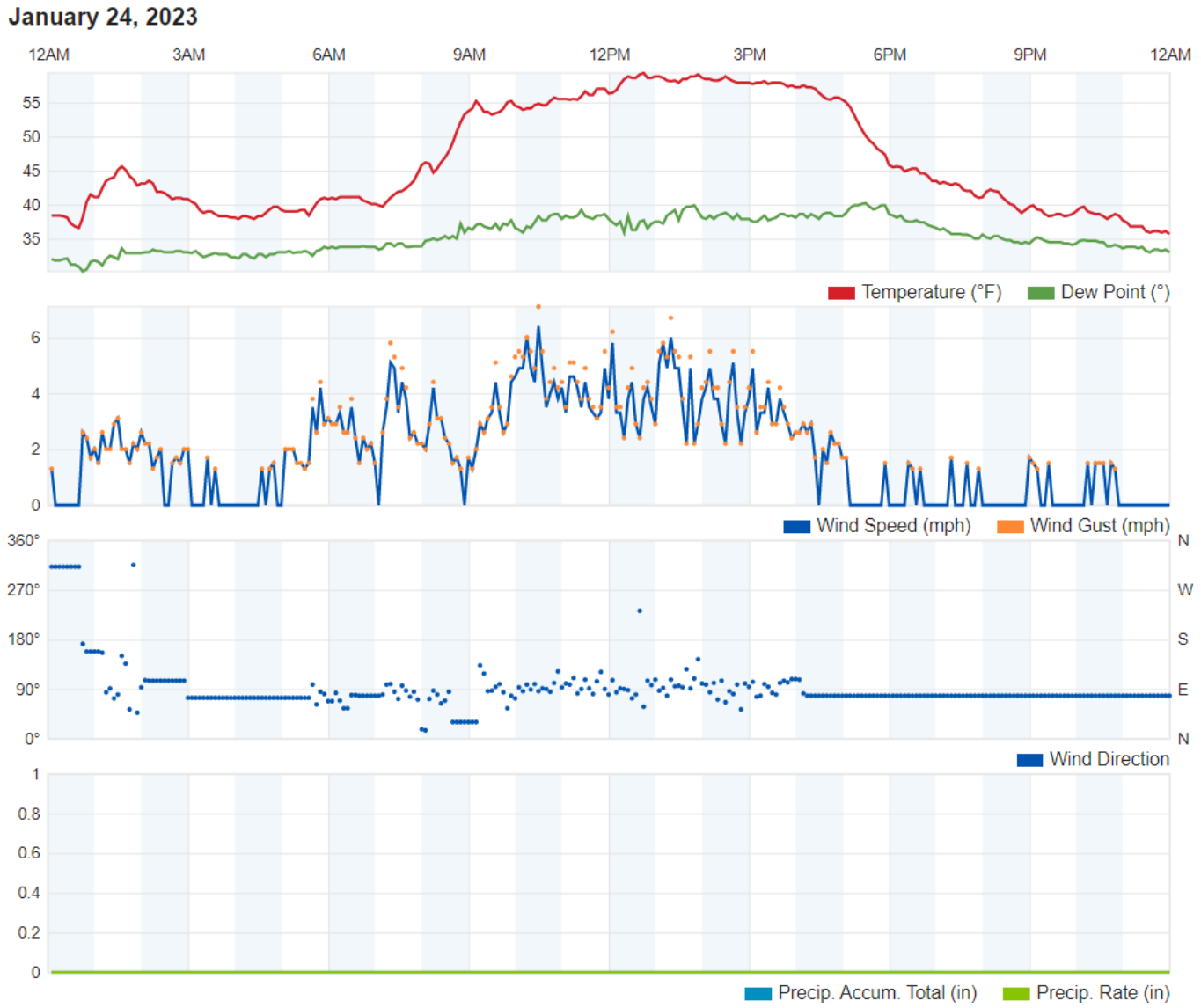
Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

Attachment 6

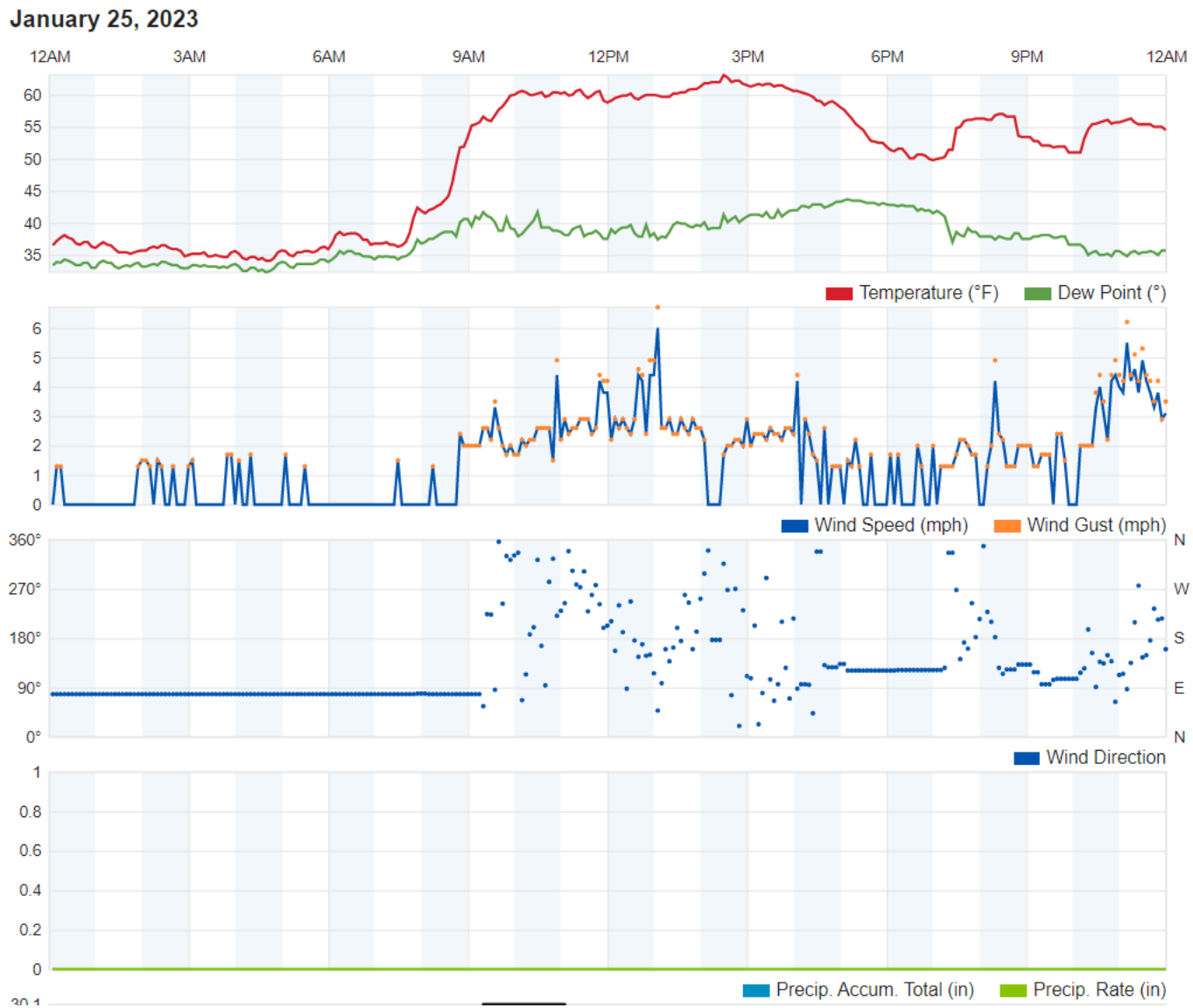
Weather Data



First Quarter 2023
LMR Surface Emissions Monitoring Weather Data
January 23, 2023
Vasco Road Landfill, Livermore, California



First Quarter 2023
LMR Surface Emissions Monitoring Weather Data
January 24, 2023
Vasco Road Landfill, Livermore, California



First Quarter 2023
LMR Surface Emissions Monitoring Weather Data
January 25, 2023
Vasco Road Landfill, Livermore, California

June 20, 2023
File No. 07221004.01

Ms. Antonia Gunner
Republic Services – Vasco Road Landfill
4001 N. Vasco Road
Livermore, California 94551

Subject: Vasco Road Landfill - Livermore, California

Landfill Methane Rule (LMR) and New Source Performance Standards (NSPS) Surface Emissions Monitoring for Second Quarter 2023.

Dear Ms. Gunner:

SCS Field Services (SCS-FS) is pleased to provide the Republic Services, with the enclosed report summarizing the surface emissions monitoring services provided at the Vasco Road Landfill (Site) during the second quarter 2023. This report includes the results of surface scan, component emissions and blower/flare station emissions monitoring for the Site for this monitoring period.

SCS-FS appreciates the opportunity to be of assistance to Republic Services on this project. As you review the enclosed information, please contact Max Polkabla (510) 277-5122, Art Jones (209) 345-2062 or Whitney Stackhouse at (209) 338-7990 if you have any questions or comments.

Sincerely,

Max Polkabla

Max Polkabla
Project Manager
SCS Field Services

Arthur E. Jones Jr.
DSW Region Manager/VP
SCS Field Services

Encl.

cc: Whitney Stackhouse, SCS Field Services

Vasco Road Landfill

Landfill Methane Rule (LMR) and New Source Performance Standards (NSPS) Surface Emissions Monitoring

Second Quarter 2023

Presented to:

Ms. Antonia Gunner
Republic Services – Vasco Road
4001 N. Vasco Road
Livermore, California 94551

SCS FIELD SERVICES

File No. 07221004.01 | June 20, 2023

SCS FIELD SERVICES
4730 Enterprise Way Suite A
Modesto, CA 95356

Vasco Road Landfill

Landfill Methane Rule (LMR) and New Source Performance Standards (NSPS) Surface Emissions Monitoring Second Quarter 2023

INTRODUCTION

This letter provides results of the April 6, 11 and 12, 2023, LMR and NSPS landfill surface emissions monitoring (SEM) performed by SCS Field Services (SCS) at the subject site. All work was performed in accordance with our approved Work Scope dated December 23, 2020, and the LMR requirements.

SUMMARY AND CONCLUSIONS

As stipulated in LMR, if uncorrectable exceedances within the 10-day limitation are detected or emissions are discovered during an inspection by Regulatory Agencies, the landfill must perform monitoring on a 25-foot pathway on a quarterly basis for active disposal sites. Upon completion of four consecutive SEM events without an uncorrectable exceedance of the 25 ppmv or 500 ppmv standards, other than non-repeatable momentary readings, the landfill may perform the monitoring on a 100-foot spacing on an annual basis for closed landfills or quarterly for active disposal sites. Therefore, based on the previous monitoring events, in which exceedances were observed by a regulatory agency, the monitoring at the Vasco Road Landfill was performed on 25-foot pathways in accordance with the LMR.

On April 6, 11 and 12, 2023, SCS performed second quarter 2023 surface emissions monitoring testing as required by the Bay Area Air Quality Management District (BAAQMD). Instantaneous surface emissions monitoring results indicated that no locations exceeded the 500 ppmv maximum concentration during our monitoring (Table 1 in Attachment 3). Based on these monitoring results no additional follow up testing was required.

Also, during the instantaneous monitoring event, SCS performed concurrent integrated monitoring of the landfill surface. As required by the LMR, the landfill was divided into 50,000 square foot grid areas. The Vasco Road Landfill surface area was therefore divided into 233 grids, as shown on Figure 1 in Attachment 1. During this monitoring event, several grids were not monitored, in accordance with the regulations, due to ongoing active landfilling activities, unsafe conditions, or there was no waste in place prior to the monitoring event.

During the monitoring event, there were no grid areas observed to exceed the 25 ppmv LMR integrated average threshold (Table 2 in Attachment 4). Based on these monitoring results, no follow up monitoring is required. These results are discussed in a subsequent section of this report.

In addition, quarterly monitoring of the pressurized piping or components of the Gas Collection and Control System (GCCS) that are under positive pressure must be performed quarterly. Results of the

testing of the landfill gas (LFG) Blower Flare Station (BFS) pressurized piping and components indicated that all test locations were in compliance with the 500 ppmv requirement.

Further, as required under the LMR, any location on the landfill that has an observed instantaneous methane concentration above 200 ppmv, must be stake-marked and Global Positioning System (GPS) located on a site figure. During this reporting period, six (6) locations were observed to exceed the 200 ppmv, reporting threshold as shown on the attached table and map. These locations were reported to site personnel for tracking and/or remediation and will also be reported in the next submittal of the annual LMR report.

Finally, to help prevent potential future exceedances, SCS recommends that the landfill surface be routinely inspected and any observed surface erosion be routinely repaired.

BACKGROUND

The Vasco Road Landfill is an active organic refuse disposal site. By way of background, organic materials buried in a landfill decompose anaerobically (in the absence of oxygen) producing a combustible gas which contains approximately 50 to 60 percent methane gas, 40 to 50 percent carbon dioxide, and trace amount of various other gases, some of which are odorous. The Vasco Road property contains a system to control the combustible gases generated in the landfill.

SURFACE EMISSIONS MONITORING

On April 6, 11 and 12, 2023, the instantaneous and integrated SEM was performed over the surface of the subject site. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the LMR threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring in the 50,000 square foot grids as required under the LMR. During this event, SCS performed the monitoring on a 25-foot pathway in accordance with the rules as required.

EMISSIONS TESTING INSTRUMENTATION/CALIBRATION

Instruments used to perform the landfill surface emission testing consisted of the following:

- Thermo Scientific TVA 2020 portable Flame Ionization Detector (FID). This instrument measures methane in air over a range of 1 to 50,000 ppmv. The TVA 2020 meets the State of California Air Resources Board (CARB) requirements for combined instantaneous and integrated monitoring and was calibrated in accordance with United States Environmental Protection Agency (US EPA) Method 21.

- Weather Anemometer with continuous recorder for meteorological conditions in accordance with the LMR.

Instrument calibration logs and weather information are shown in Attachments 5 and 6.

SURFACE EMISSIONS MONITORING PROCEDURES

Surface emissions monitoring was conducted in accordance with the LMR and NSPS requirements. Monitoring was performed with the FID inlet held within 3-inches of the landfill surface while a technician walked a grid in parallel paths not more than 25 -feet apart over the surface of the landfill. Cracks, holes and other cover penetrations in the surface were also tested. Surface emissions readings were monitored continuously and recorded every 5 seconds. Any areas in exceedance of the 200 or 500 ppmv standards (reporting and compliance levels, respectively) would be GPS tagged and stake-marked for on-site personnel to perform remediation or repairs.

The integrated average is based on the readings stored on the instrument, which are recorded every 5 seconds. The readings are then downloaded and the averages are calculated for each grid using SCS eTools®. All readings are maintained in this secure SCS Database. The readings are not provided in the report due to the volume of readings, but can be furnished upon request.

Recorded wind speed results are shown in Attachment 6. Wind speed averages were observed to remain below the alternative threshold of 10 miles per hour, and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within 72 hours of the monitoring events. Therefore, site meteorological conditions were within the alternatives of the LMR requirements on the above mentioned dates.

TESTING RESULTS

During this event, SCS performed the monitoring on a 25-foot pathway in accordance with the rule as required under the LMR and NSPS. The intent of the monitoring was to identify any specific locations or areas of the landfill surface with organic compound concentrations exceeding the LMR or NSPS threshold limit values of 500 ppmv measured as methane for instantaneous monitoring, or an average methane concentration of 25 ppmv for the integrated monitoring (LMR).

On April 6, 11 and 12, 2023 SCS performed second quarter 2023 instantaneous emissions monitoring testing as required by the BAAQMD. During this monitoring, surface emissions results indicated that no locations exceeded the 500 ppmv maximum concentration. Based on these monitoring results no additional follow up testing was required. Results of the monitoring are shown in Attachments 2 and 3 (Table 1).

Additionally, no integrated exceedances (the calculated average of the instantaneous monitoring results) of the 25 ppmv requirement on April 6, 11 and 12,, 2023, were observed, therefore no further testing was required. Results of the monitoring are shown in Attachment 4 (Table 2). Calibration logs for the monitoring equipment are provided in Attachment 5.

During this monitoring event, several grids were not monitored, in accordance with the LMR, due to active landfilling activities, unsafe conditions or no waste in place. SCS will continue to monitor all accessible locations during the third quarter 2023.

PRESSURIZED PIPE AND COMPONENT LEAK MONITORING

On April 6, 2023, quarterly leak monitoring was performed in accordance with the LMR. SCS performed LFG pressurized pipe and component leak monitoring at the BFS and power generation facility (reported separately). Monitoring was performed with the detector inlet held one-half of an inch from pressurized piping and associated components. No locations exceeding the 500 ppmv threshold were observed during our monitoring event. The maximum reading, which was 4.60 ppmv,

was well below the maximum threshold (see Table 1 for component results). Therefore, all pressurized piping and components located at the LFG BFS were in compliance at the time of our testing. Note that the LFGTE plant was also tested and shown to be in compliance, however, those results are submitted directly to Ameresco.

PROJECT SCHEDULE

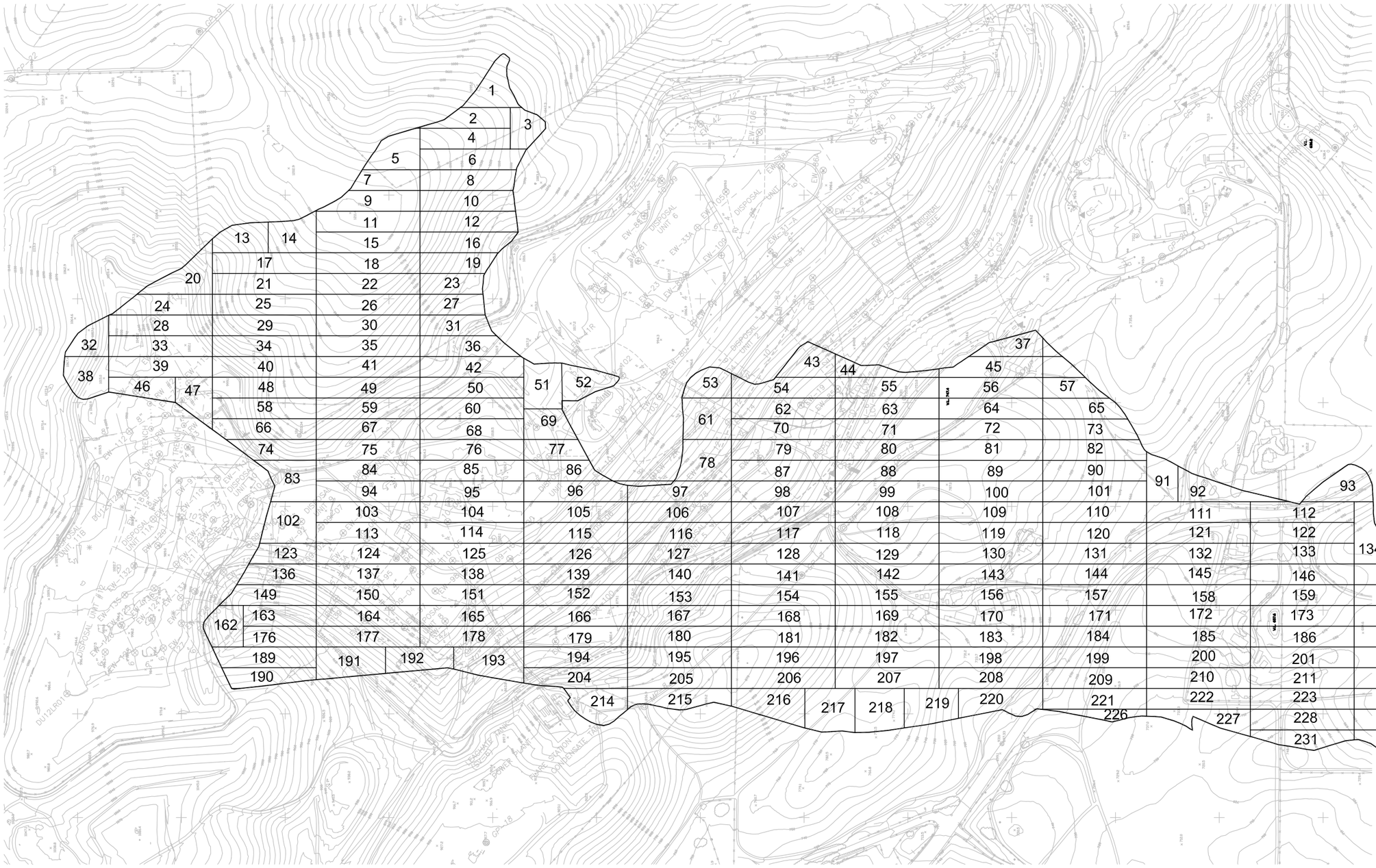
According to the LMR and NSPS, surface emissions monitoring at active landfills is required to be performed on a quarterly basis. Therefore, in accordance with our approved Work Scope, the third quarter 2023 (July through September) surface emissions testing event is scheduled to be performed by the end of September 2023 in accordance with the Republic SOP unless an alternative timeline is requested by site personnel.

STANDARD PROVISIONS

This report addresses conditions of the subject site during the testing dates only. Accordingly, we assume no responsibility for any changes that may occur subsequent to our testing which could affect the surface emissions at the subject site or adjacent properties.

Attachment 1

Landfill Grid



SCALE IN FEET

500 0 500

(DRAWING SIZE IN 11"X17")

SCS ENGINEERS

ENVIRONMENTAL CONSULTANTS

3117 FITE CIRCLE, SUITE 108
SACRAMENTO, CALIFORNIA 95827
PH. (916) 361-1297 FAX. (916) 361-1299

PROJ. NO.	DWN. BY:	ACAD FILE:
07217028.00	ATV	FIGURE 1.DWG
DSN. BY:	CHK. BY:	APP. BY:
ATV	WBS	AJ

SHEET TITLE:
SURFACE EMISSIONS MONITORING GRID MAP

PROJECT TITLE:
VASCO ROAD LANDFILL
ALAMEDA COUNTY, CALIFORNIA

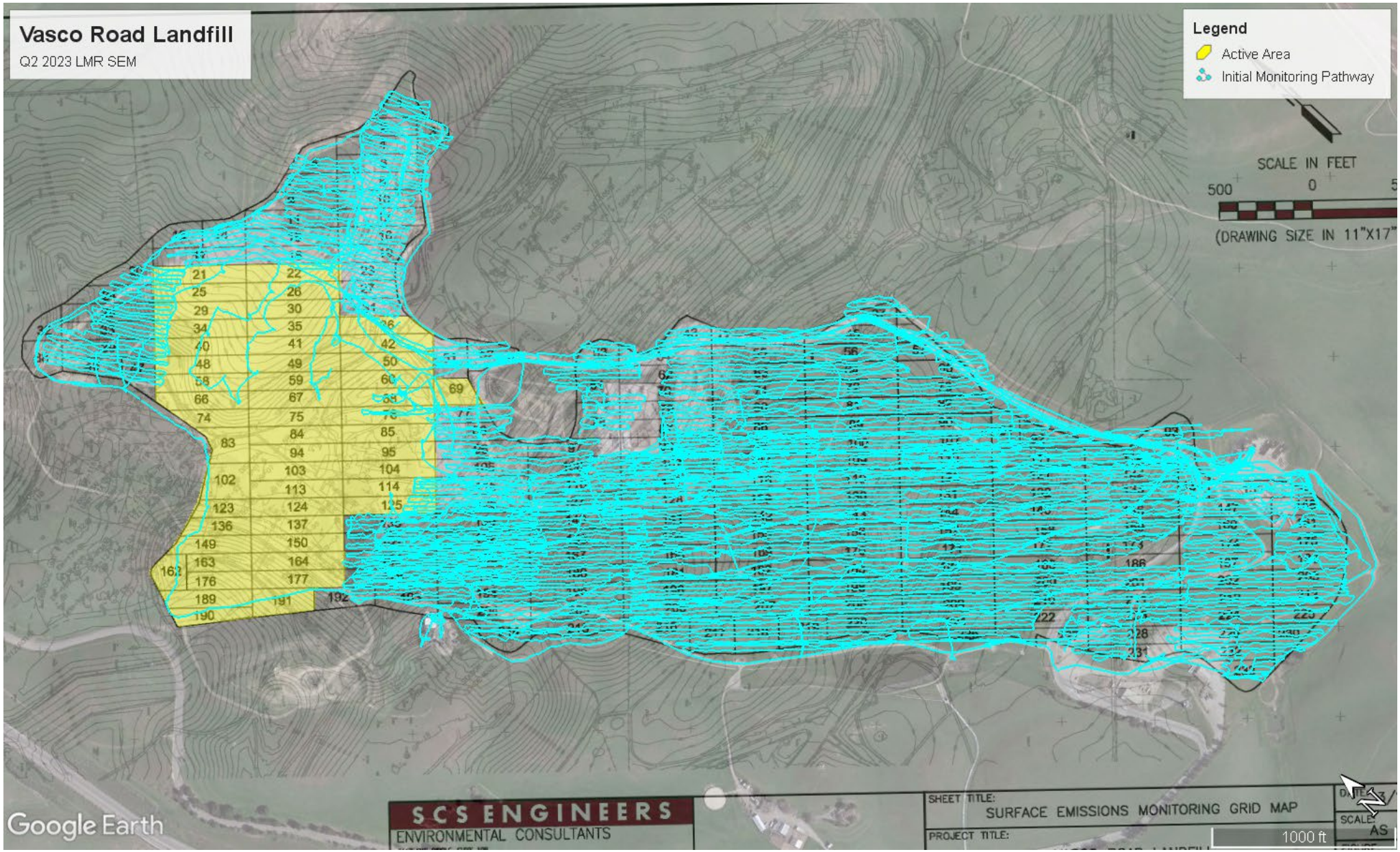
DATE: 3/14/17

SCALE: AS SHOWN

FIGURE: 1 – A

Attachment 2

Surface Pathway



Second Quarter 2023
Initial LMR Surface Emissions Monitoring Pathway
Vasco Road Landfill, Livermore, California

Attachment 3

Instantaneous and Component Emissions Monitoring Results

Second Quarter 2023

Table 1. Instantaneous Surface and Component Emissions Monitoring Results Vasco Road Landfill, Livermore, California

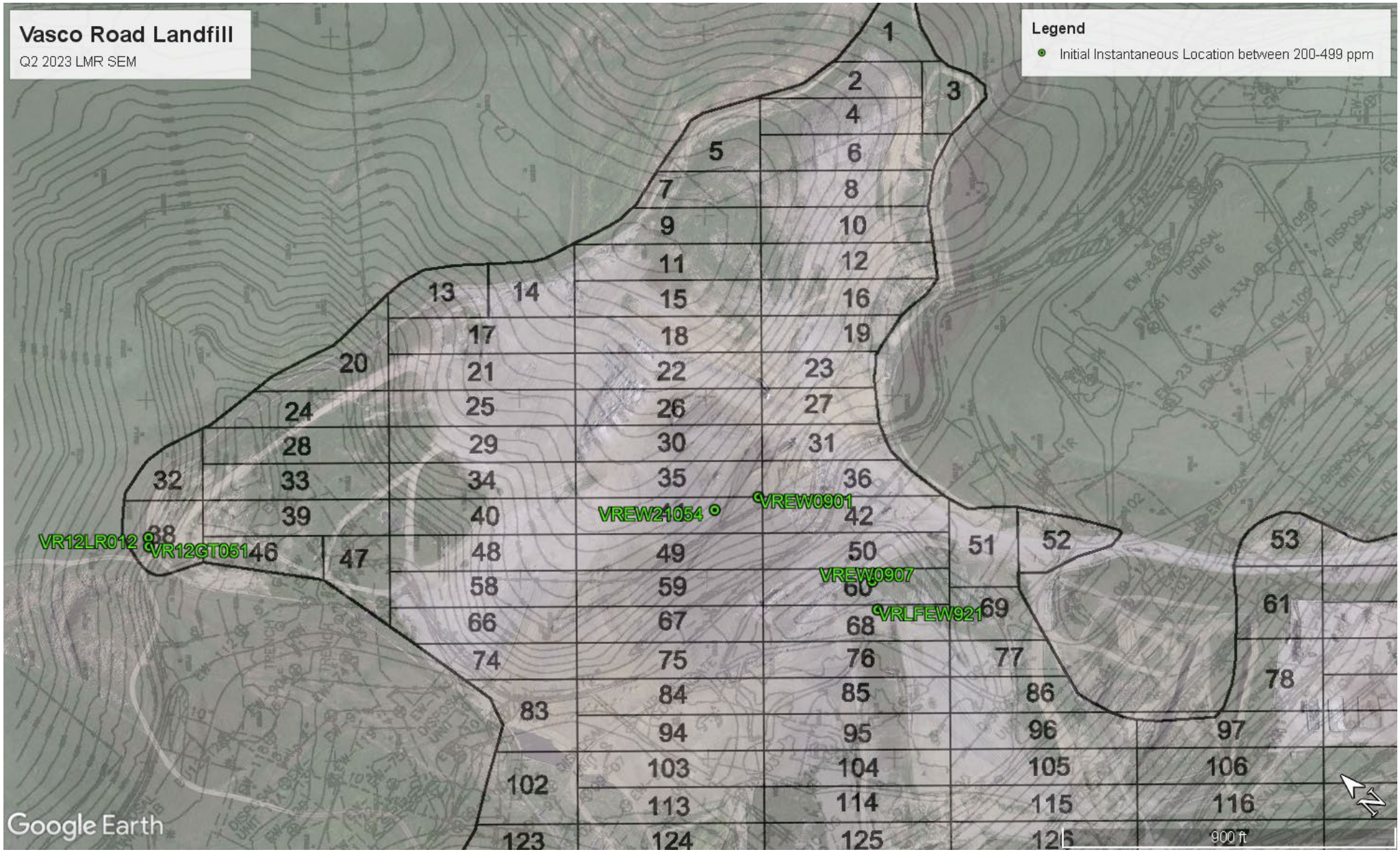
Instantaneous Data Report for April 6, 11, and 12, 2023

Location (Surface)	Initial Monitoring Results (ppmv) 4/6/2023	Latitude	Longitude
VR12GT05	350	37.76182897	-121.7304350
VR12LR012	361	37.76187700	-121.7303770
VREW0901	340	37.75886019	-121.7261277
VREW0907	321	37.75782234	-121.7259502
VREW2105	285	37.75902498	-121.7264990
VRLFEW92	421	37.75764900	-121.7261030

Pressurized Pipe and Component Results

Route	Date	Concentration (ppmv)
FLARE STATION	4/6/2023	4.60

No exceedances of the 500 ppmv threshold were observed during the second quarter 2023 monitoring.



Second Quarter 2023

Initial Instantaneous Emissions Monitoring Location

Between 200 ppm and 499 ppmv

Vasco Road Landfill, Livermore, California

Attachment 4

Integrated Monitoring Results

Second Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 001	4/11/2023	9.85	
VR 002	4/11/2023	6.73	
VR 003	4/11/2023	5.05	
VR 004	4/11/2023	5.56	
VR 005	4/11/2023	4.48	
VR 006	4/11/2023	5.27	
VR 007	4/11/2023	2.76	
VR 008	4/11/2023	4.98	
VR 009	4/11/2023	3.26	
VR 010	4/11/2023	5.32	
VR 011	4/11/2023	4.16	
VR 012	4/11/2023	6.81	
VR 013	4/11/2023	3.52	
VR 014	4/11/2023	2.10	
VR 015	4/11/2023	3.46	
VR 016	4/11/2023	6.84	
VR 017	4/11/2023	1.52	
VR 018	4/11/2023	4.69	
VR 019	4/11/2023	8.27	
VR 020	4/12/2023	1.04	
VR 021	--	--	Active Area
VR 022	--	--	Active Area
VR 023	4/11/2023	10.41	
VR 024	4/12/2023	0.73	
VR 025	--	--	Active Area
VR 026	--	--	Active Area
VR 027	4/11/2023	13.37	
VR 028	4/12/2023	0.76	
VR 029	--	--	Active Area
VR 030	--	--	Active Area
VR 031	4/11/2023	20.51	
VR 032	4/12/2023	1.02	
VR 033	4/12/2023	0.87	
VR 034	--	--	Active Area
VR 035	--	--	Active Area
VR 036	--	--	Active Area
VR 037	4/6/2023	3.51	
VR 038	4/12/2023	1.53	
VR 039	4/12/2023	1.01	
VR 040	--	--	Active Area
VR 041	--	--	Active Area
VR 042	--	--	Active Area
VR 043	4/6/2023	1.07	

Second Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 044	4/6/2023	3.20	
VR 045	4/6/2023	7.87	
VR 046	4/12/2023	1.31	
VR 047	4/12/2023	1.25	
VR 048	--	--	Active Area
VR 049	--	--	Active Area
VR 050	--	--	Active Area
VR 051	4/12/2023	3.85	
VR 052	4/12/2023	2.06	
VR 053	4/12/2023	1.74	
VR 054	4/6/2023	0.98	
VR 055	4/6/2023	1.37	
VR 056	4/6/2023	4.76	
VR 057	4/6/2023	3.67	
VR 058	--	--	Active Area
VR 059	--	--	Active Area
VR 060	--	--	Active Area
VR 061	4/12/2023	1.59	
VR 062	4/6/2023	1.59	
VR 063	4/6/2023	2.36	
VR 064	4/6/2023	3.10	
VR 065	4/6/2023	2.62	
VR 066	--	--	Active Area
VR 067	--	--	Active Area
VR 068	--	--	Active Area
VR 069	--	--	Active Area
VR 070	4/6/2023	1.61	
VR 071	4/6/2023	1.70	
VR 072	4/6/2023	2.61	
VR 073	4/6/2023	5.81	
VR 074	--	--	Active Area
VR 075	--	--	Active Area
VR 076	--	--	Active Area
VR 077	4/12/2023	3.97	
VR 078	4/12/2023	1.47	
VR 079	4/6/2023	0.99	
VR 080	4/6/2023	1.55	
VR 081	4/6/2023	12.79	
VR 082	4/6/2023	13.76	
VR 083	--	--	Active Area
VR 084	--	--	Active Area
VR 085	--	--	Active Area
VR 086	4/12/2023	2.06	

Second Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 087	4/6/2023	1.89	
VR 088	4/6/2023	1.12	
VR 089	4/6/2023	2.10	
VR 090	4/6/2023	1.72	
VR 091	4/6/2023	1.54	
VR 092	4/6/2023	0.99	
VR 093	4/11/2023	2.82	
VR 094	--	--	Active Area
VR 095	--	--	Active Area
VR 096	4/12/2023	1.73	
VR 097	4/12/2023	1.55	
VR 098	4/6/2023	1.61	
VR 099	4/6/2023	1.43	
VR 100	4/6/2023	2.01	
VR 101	4/6/2023	1.92	
VR 102	--	--	Active Area
VR 103	--	--	Active Area
VR 104	--	--	Active Area
VR 105	4/12/2023	2.59	
VR 106	4/12/2023	1.35	
VR 107	4/6/2023	0.63	
VR 108	4/6/2023	0.68	
VR 109	4/6/2023	2.79	
VR 110	4/6/2023	3.54	
VR 111	4/11/2023	10.05	
VR 112	4/6/2023	7.50	
VR 113	--	--	Active Area
VR 114	--	--	Active Area
VR 115	4/12/2023	1.40	
VR 116	4/12/2023	1.86	
VR 117	4/6/2023	1.34	
VR 118	4/6/2023	3.65	
VR 119	4/6/2023	7.86	
VR 120	4/6/2023	8.98	
VR 121	4/6/2023	10.79	
VR 122	4/6/2023	14.21	
VR 123	--	--	Active Area
VR 124	--	--	Active Area
VR 125	--	--	Active Area
VR 126	4/12/2023	1.49	
VR 127	4/12/2023	1.34	
VR 128	4/6/2023	1.14	
VR 129	4/6/2023	2.10	

Second Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 130	4/6/2023	3.65	
VR 131	4/6/2023	5.76	
VR 132	4/6/2023	3.61	
VR 133	4/6/2023	3.55	
VR 134	4/12/2023	2.66	
VR 135	4/11/2023	1.56	
VR 136	--	--	Active Area
VR 137	--	--	Active Area
VR 138	4/11/2023	2.23	
VR 139	4/11/2023	1.83	
VR 140	4/11/2023	1.57	
VR 141	4/6/2023	0.62	
VR 142	4/6/2023	0.99	
VR 143	4/6/2023	1.13	
VR 144	4/6/2023	2.92	
VR 145	4/6/2023	2.37	
VR 146	4/6/2023	2.20	
VR 147	4/11/2023	1.37	
VR 148	4/11/2023	1.13	
VR 149	--	--	Active Area
VR 150	--	--	Active Area
VR 151	4/11/2023	1.84	
VR 152	4/11/2023	1.50	
VR 153	4/11/2023	1.21	
VR 154	4/6/2023	1.05	
VR 155	4/6/2023	1.16	
VR 156	4/6/2023	1.36	
VR 157	4/6/2023	2.59	
VR 158	4/6/2023	1.87	
VR 159	4/6/2023	2.23	
VR 160	4/11/2023	4.52	
VR 161	4/11/2023	1.75	
VR 162	--	--	Active Area
VR 163	--	--	Active Area
VR 164	--	--	Active Area
VR 165	4/11/2023	1.77	
VR 166	4/11/2023	1.53	
VR 167	4/11/2023	1.06	
VR 168	4/6/2023	2.28	
VR 169	4/6/2023	1.75	
VR 170	4/6/2023	2.18	
VR 171	4/6/2023	4.70	
VR 172	4/6/2023	3.91	

Second Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 173	4/6/2023	2.36	
VR 174	4/11/2023	6.65	
VR 175	4/11/2023	3.99	
VR 176	--	--	Active Area
VR 177	--	--	Active Area
VR 178	4/11/2023	1.54	
VR 179	4/11/2023	1.82	
VR 180	4/11/2023	1.21	
VR 181	4/6/2023	1.60	
VR 182	4/6/2023	1.70	
VR 183	4/6/2023	3.23	
VR 184	4/6/2023	5.60	
VR 185	4/6/2023	3.46	
VR 186	4/6/2023	3.51	
VR 187	4/11/2023	5.25	
VR 188	4/11/2023	5.10	
VR 189	--	--	Active Area
VR 190	--	--	Active Area
VR 191	--	--	Active Area
VR 192	4/11/2023	2.27	
VR 193	4/11/2023	4.35	
VR 194	4/11/2023	1.94	
VR 195	4/11/2023	1.63	
VR 196	4/6/2023	1.38	
VR 197	4/6/2023	1.38	
VR 198	4/6/2023	1.82	
VR 199	4/6/2023	2.98	
VR 200	4/6/2023	2.33	
VR 201	4/6/2023	4.28	
VR 202	4/11/2023	6.68	
VR 203	4/11/2023	3.35	
VR 204	4/11/2023	1.87	
VR 205	4/11/2023	1.76	
VR 206	4/6/2023	0.98	
VR 207	4/6/2023	0.99	
VR 208	4/6/2023	2.12	
VR 209	4/6/2023	2.52	
VR 210	4/6/2023	3.55	
VR 211	4/6/2023	3.62	
VR 212	4/11/2023	2.78	
VR 213	4/11/2023	2.05	
VR 214	4/11/2023	1.69	
VR 215	4/11/2023	1.71	

Second Quarter 2023
Table 2. Integrated Surface Emissions Monitoring Results
Vasco Road Landfill, Livermore, California

Point Name	Record Date	FID Concentration (ppm)	Comments
VR 216	4/11/2023	1.21	
VR 217	4/11/2023	0.89	
VR 218	4/11/2023	0.89	
VR 219	4/11/2023	0.83	
VR 220	4/11/2023	0.96	
VR 221	4/11/2023	1.56	
VR 222	4/11/2023	1.82	
VR 223	4/11/2023	1.85	
VR 224	4/11/2023	1.57	
VR 225	4/11/2023	1.59	
VR 226	4/11/2023	0.58	
VR 227	4/11/2023	2.28	
VR 228	4/11/2023	2.11	
VR 229	4/12/2023	2.04	
VR 230	4/12/2023	2.45	
VR 231	4/11/2023	3.30	
VR 232	4/12/2023	2.20	
VR 233	4/12/2023	2.02	

Attachment 5

Calibration Logs

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: Vasco

Inspector(s): Alfredo Gomez Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: NE Barometric Pressure: 30.16 "Hg

Air Temperature: 39 °F General Weather Conditions: Cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5419 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	501	1	5
2	0	502	2	3
3	0	502	2	4

Average Difference: 2

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 2 /500 x 100%

= 99.6 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 230328
Counters Observed for the Zero= 5399

Trial 2:
Counts Observed for the Span= 222464
Counters Observed for the Zero= 5784

Trial 3:
Counts Observed for the Span= 223364
Counters Observed for the Zero= 5015

Post Monitoring Calibration Check

Zero Air Reading: 3.5 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance Reading: 1.9 ppm

Downwind Location Description: Flare Reading: 2.8 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: Vasco

Inspector(s): Andrew S. Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: N Barometric Pressure: 30.16 "Hg

Air Temperature: 42 °F General Weather Conditions: Mostly Sunny

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 1220 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.0	500	0	4
2	-0.1	501	1	5
3	-0.1	502	2	4

Average Difference: 1

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1 /500 x 100%

= 99.8 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 127948
Counters Observed for the Zero= 3776

Trial 2:
Counts Observed for the Span= 129236
Counters Observed for the Zero= 3769

Trial 3:
Counts Observed for the Span= 128880
Counters Observed for the Zero= 3707

Post Monitoring Calibration Check

Zero Air Reading: 2.6 ppm Cal Gas Reading: 511 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: ~~Grid 5~~ Entrance Reading: 3.4 ppm

Downwind Location Description: Grid 5 Reading: 6.7 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: Vasco

Inspector(s): Ricardo Yelez Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: NE Barometric Pressure: 30.16 "Hg

Air Temperature: 39 °F General Weather Conditions: Cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5421 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	502	2	3
2	-0.2	499	1	5
3	0	503	3	2

Average Difference: 6 2

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 2 /500 x 100%

= 99.6 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 158704
Counters Observed for the Zero= 4226

Trial 2:
Counts Observed for the Span= 161582
Counters Observed for the Zero= 4965

Trial 3:
Counts Observed for the Span= 155664
Counters Observed for the Zero= 4090

Post Monitoring Calibration Check

Zero Air Reading: 4.5 ppm Cal Gas Reading: 510 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance Reading: 1.9 ppm

Downwind Location Description: Flare Reading: 2.8 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: VASCO

Inspector(s): Jonathan Sepulveda Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: NE Barometric Pressure: 30.16 "Hg

Air Temperature: 39 °F General Weather Conditions: Cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 1215 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	500	0	2
2	0	500	0	5
3	0	500	0	3

Average Difference: 0

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 0 /500 x 100%

= 100 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 165168
Counters Observed for the Zero= 3103

Trial 2:
Counts Observed for the Span= 172992
Counters Observed for the Zero= 3074

Trial 3:
Counts Observed for the Span= 166128
Counters Observed for the Zero= 3017

Post Monitoring Calibration Check

Zero Air Reading: 2.3 ppm Cal Gas Reading: 495 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance Reading: 1.9 ppm

Downwind Location Description: Flare Reading: 2.8 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23

Site Name: vasco

Inspector(s): Arturo O

Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH

Wind Direction: N

Barometric Pressure: 30.16 "Hg

Air Temperature: 42 °F

General Weather Conditions: mostly Sunny

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 4106

Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.0	503	3	5
2	0.0	504	4	4
3	0.0	499	1	5

Average Difference: 2.6

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 2.6 /500 x 100%

= 99.48 %

Span Sensitivity:

Trial 1:

Counts Observed for the Span= 152856

Counters Observed for the Zero= 5490

Trial 2:

Counts Observed for the Span= 154108

Counters Observed for the Zero= 5467

Trial 3:

Counts Observed for the Span= 155308

Counters Observed for the Zero= 5403

Post Monitoring Calibration Check

Zero Air Reading: -1.4 ppm

Cal Gas Reading: 496 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance

Reading: 3.4 ppm

Downwind Location Description: Grid 5

Reading: 6.7 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous spe exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore meteorological conditions were within the requested alternatives of the LMR requirements on the above mentior

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: VASCO

Inspector(s): Emmanuel Diaz Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 5 MPH Wind Direction: SW Barometric Pressure: 30.2 "Hg

Air Temperature: 39 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5420 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.0	505	5	3
2	-0.1	500	0	3
3	0.0	499	1	2

Average Difference: 2

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 2 /500 x 100%

= 99.6 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 130748
Counters Observed for the Zero= 3784

Trial 2:
Counts Observed for the Span= 136572
Counters Observed for the Zero= 3741

Trial 3:
Counts Observed for the Span= 136780
Counters Observed for the Zero= 3725

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 501 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 2.1 ppm

Downwind Location Description: G135 Reading: 2.4 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4.6.23 Site Name: VASCO

Inspector(s): Rashad Warren Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 5 MPH Wind Direction: SW Barometric Pressure: 30.2 "Hg

Air Temperature: 39 °F General Weather Conditions: clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 1211 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.0	501	1	2
2	0.1	500	0	3
3	0.0	499	1	3

Average Difference: .6

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- .6 /500 x 100%

= 99.8 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 137016
Counters Observed for the Zero= 4001

Trial 2:
Counts Observed for the Span= 137076
Counters Observed for the Zero= 4022

Trial 3:
Counts Observed for the Span= 138164
Counters Observed for the Zero= 4010

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 501 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 2.1 ppm

Downwind Location Description: G135 Reading: 2.4 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: Valco

Inspector(s): Donal d Gibson Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 5 MPH Wind Direction: SW Barometric Pressure: 30.2 "Hg

Air Temperature: 39 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 4388 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.0	502	2	2
2	0.0	500	0	2
3	0.0	501	1	3

Average Difference: 1

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1 /500 x 100%

= 99.8 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 134460
Counters Observed for the Zero= 3944

Trial 2:
Counts Observed for the Span= 136378
Counters Observed for the Zero= 3882

Trial 3:
Counts Observed for the Span= 137104
Counters Observed for the Zero= 3869

Post Monitoring Calibration Check

Zero Air Reading: -0.1 ppm Cal Gas Reading: 502 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Plant Reading: 2.1 ppm

Downwind Location Description: G 135 Reading: 2.4 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-6-23 Site Name: Vasco

Inspector(s): Bryan Ochoa Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: NE Barometric Pressure: 30.16 "Hg

Air Temperature: 39 °F General Weather Conditions: Cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 1223 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.1	500	0	2
2	0	502	2	5
3	0	499	1	4

Average Difference: 1

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1 /500 x 100%

= 99.8 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 191344
Counters Observed for the Zero= 4699

Trial 2:
Counts Observed for the Span= 197784
Counters Observed for the Zero= 4590

Trial 3:
Counts Observed for the Span= 199584
Counters Observed for the Zero= 4555

Post Monitoring Calibration Check

Zero Air Reading: 3.8 ppm Cal Gas Reading: 505 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance Reading: 1.9 ppm

Downwind Location Description: Flare Reading: 2.8 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4-11-23 Site Name: Vasco

Inspector(s): Bryan ochoa Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 8 MPH Wind Direction: NE Barometric Pressure: 30.08 "Hg

Air Temperature: 54 °F General Weather Conditions: Cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 1215 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	500	0	4
2	0	500	0	4
3	-0.1	500	0	5

Average Difference: 0

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 0 /500 x 100%

= 100 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 169296
Counters Observed for the Zero= 2867

Trial 2:
Counts Observed for the Span= 155376
Counters Observed for the Zero= 2927

Trial 3:
Counts Observed for the Span= 144156
Counters Observed for the Zero= 2907

Post Monitoring Calibration Check

Zero Air Reading: 1.4 ppm Cal Gas Reading: 502 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance Reading: 3.1 ppm

Downwind Location Description: Grid 93 Reading: 4.2 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4/11/23 Site Name: Vasco

Inspector(s): Emmanuel . Paz Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 7 MPH Wind Direction: SW Barometric Pressure: 30.08 "Hg

Air Temperature: 54 °F General Weather Conditions: cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 2367 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.1	497	3	3
2	0.0	498	2	2
3	-0.1	496	4	1

Average Difference: 3

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 3 /500 x 100%

= 99.4 %

Span Sensitivity:

Trial 1:

Counts Observed for the Span= 163724

Counters Observed for the Zero= 4711

Trial 2:

Counts Observed for the Span= 169500

Counters Observed for the Zero= 4708

Trial 3:

Counts Observed for the Span= 169072

Counters Observed for the Zero= 4696

Post Monitoring Calibration Check

Zero Air Reading: 1.6 ppm Cal Gas Reading: 501 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Enterance Reading: 3.1 ppm

Downwind Location Description: Grid 93 Reading: 4.2 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 4/11/23 Site Name: VASCO

Inspector(s): Alfredo Gomez Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 7 MPH Wind Direction: SW Barometric Pressure: 30.08 "Hg

Air Temperature: 54 °F General Weather Conditions: cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5421 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0.1	498	2	1
2	-0.1	500	0	3
3	0.0	503	3	2

Average Difference: 1.6

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 1.6 /500 x 100%

= 99.68 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 131752
Counters Observed for the Zero= 4838

Trial 2:
Counts Observed for the Span= 131264
Counters Observed for the Zero= 3997

Trial 3:
Counts Observed for the Span= 132468
Counters Observed for the Zero= 3980

Post Monitoring Calibration Check

Zero Air Reading: 1.9 ppm Cal Gas Reading: 504 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Entrance Reading: 3.1 ppm

Downwind Location Description: Grid 93 Reading: 4.2 ppm

Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: ~~3~~ 4-11-23 Site Name: Vasco

Inspector(s): Andrew Stone Instrument: TVA 2020

WEATHER OBSERVATIONS

Wind Speed: 8 MPH Wind Direction: NE Barometric Pressure: 30.08 "Hg

Air Temperature: 54 °F General Weather Conditions: Cloudy

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

Procedure: Calibrate the instrument. Make a total of three measurements by alternating zero air and the calibration gas. Record the readings and calculate the average algebraic difference between the instrument reading and the calibration gas as a percentage. The calibration precision must be less than or equal to 10% of the calibration gas value.

Instrument Serial Number: 5419 Cal Gas Concentration: 500ppm

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	0	500	0	2
2	0	500	0	3
3	0	500	0	2

Average Difference: 0

*Perform recalibration if average difference is greater than 10

Calibration Precision= Average Difference/Cal Gas Conc. X 100%

= 100%- 0 /500 x 100%

= 100 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 220182
Counters Observed for the Zero= 4913

Trial 2:
Counts Observed for the Span= 219588
Counters Observed for the Zero= 4918

Trial 3:
Counts Observed for the Span= 180504
Counters Observed for the Zero= 4911

Post Monitoring Calibration Check

Zero Air Reading: -2.6 ppm Cal Gas Reading: 499 ppm

BACKGROUND CONCENTRATIONS CHECKS

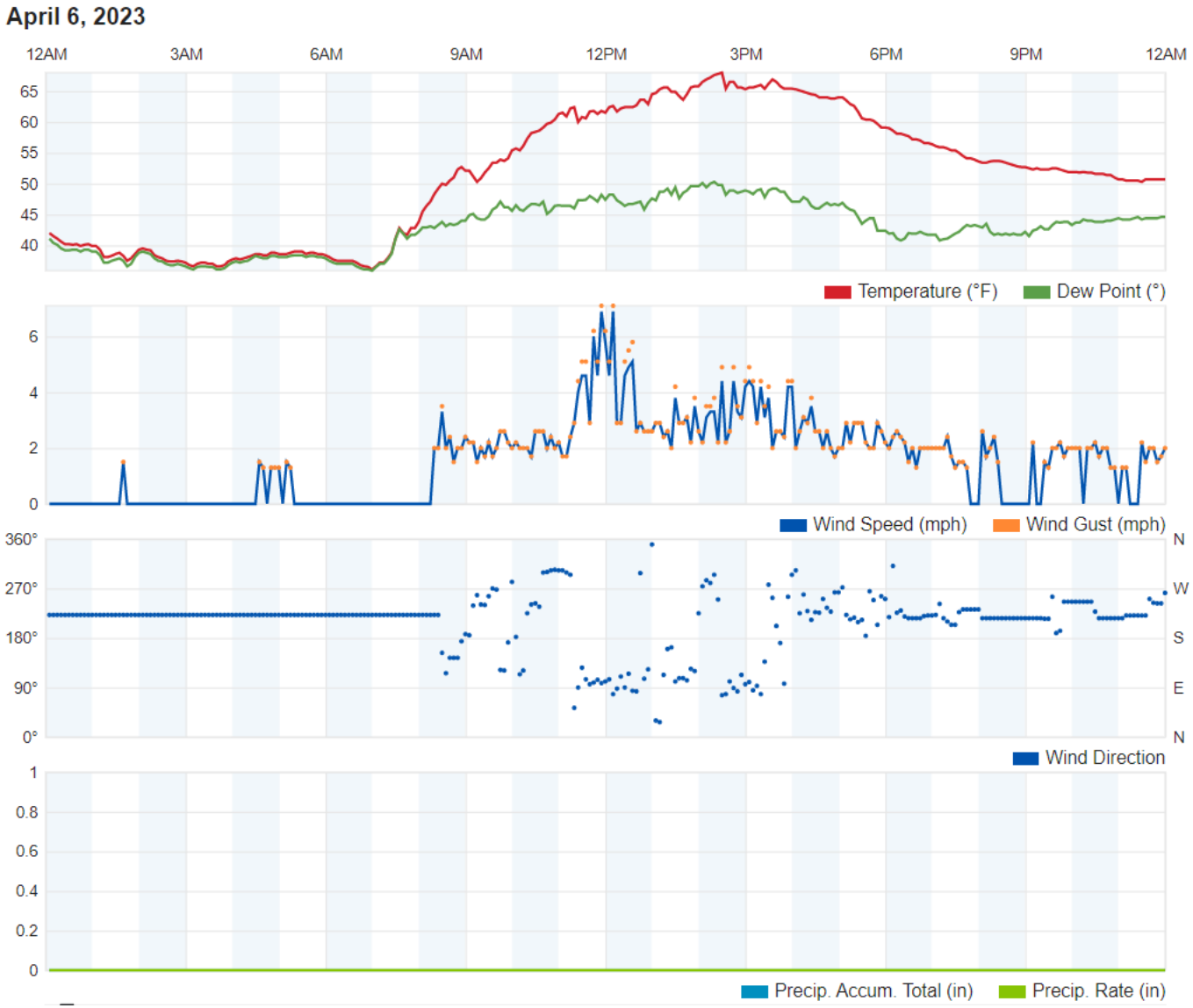
Upwind Location Description: Entrance Reading: 3.1 ppm

Downwind Location Description: Grid 93 Reading: 4.2 ppm

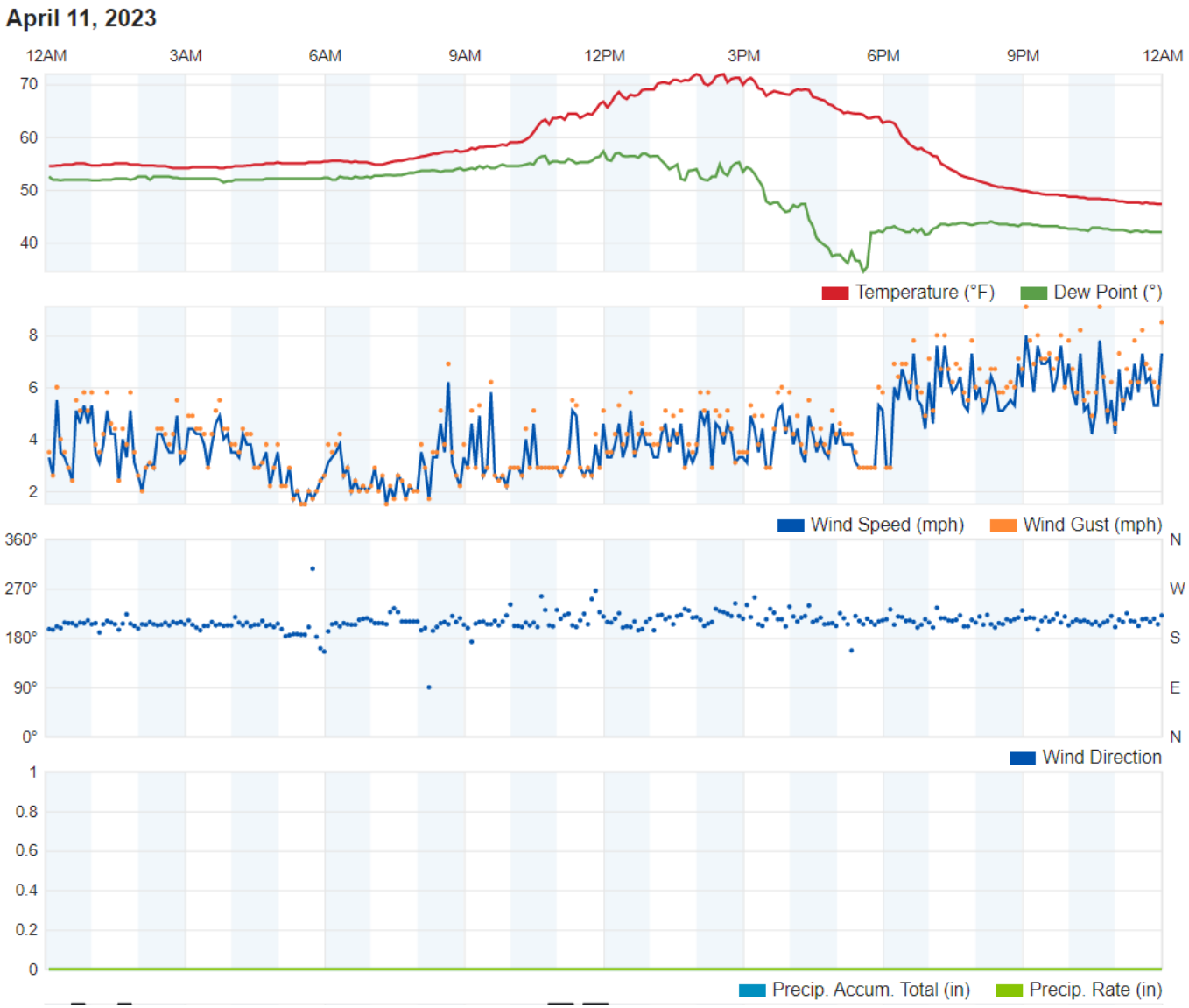
Notes: Wind speed averages were observed to remain below the alternative requested 10 miles per hour and no instantaneous speeds exceeded 20 miles per hour. No rainfall had occurred within the previous 24 hours of the monitoring event. Therefore, site meteorological conditions were within the requested alternatives of the LMR requirements on the above mentioned date.

Attachment 6

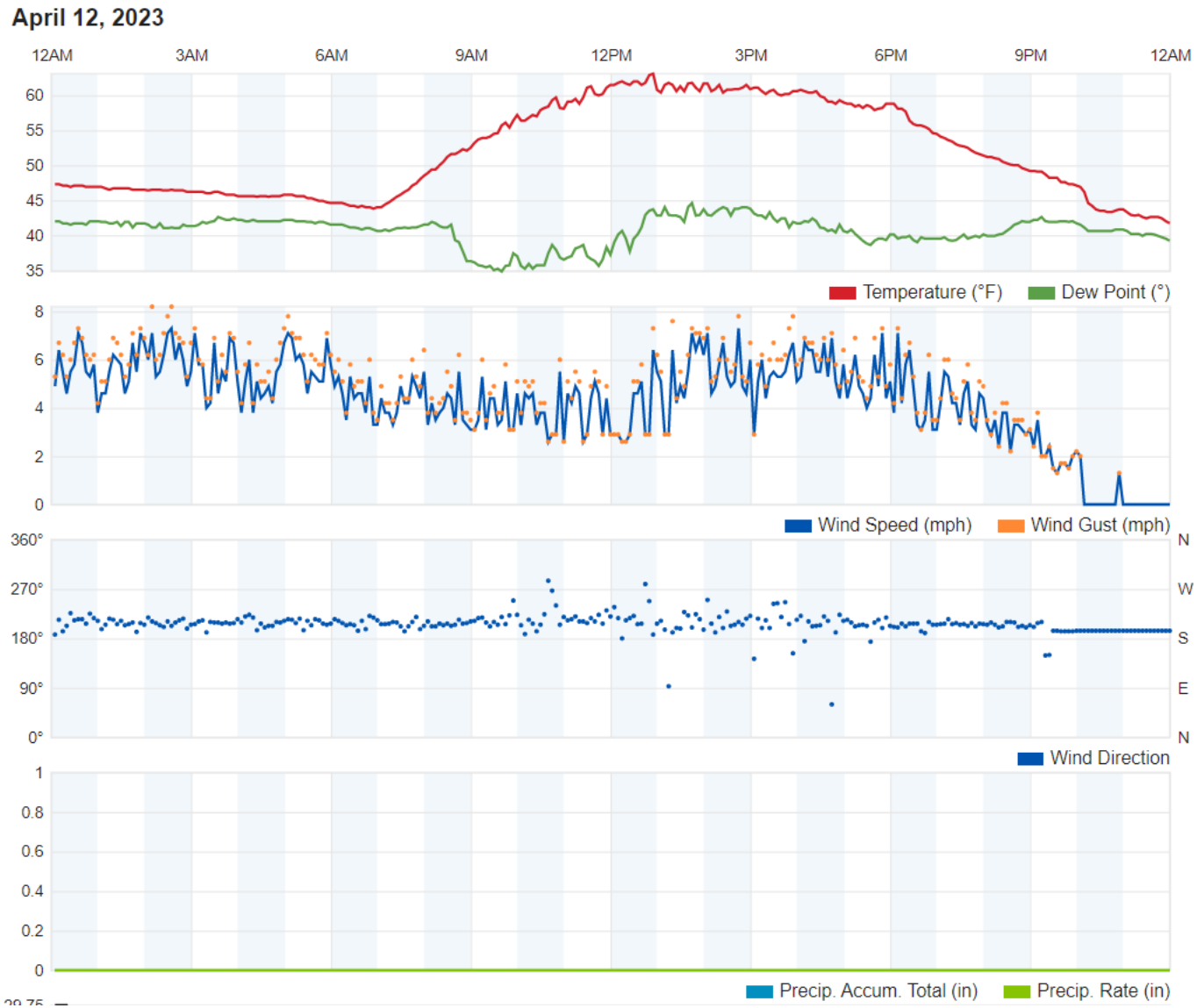
Weather Data



Second Quarter 2023
LMR Surface Emissions Monitoring Weather Data
April 6, 2023
Vasco Road Landfill, Livermore, California



Second Quarter 2023
LMR Surface Emissions Monitoring Weather Data
April 11, 2023
Vasco Road Landfill, Livermore, California



Second Quarter 2023
LMR Surface Emissions Monitoring Weather Data
April 12, 2023
Vasco Road Landfill, Livermore, California

Appendix F – Title V Semi-Annual Report

VASCO ROAD LANDIFLL

TITLE V SEMI-ANNUAL MONITORING REPORT

SITE: VASCO ROAD LANDFILL	**FACILITY ID#:** A5095
REPORTING PERIOD: *from* 02/01/2023	*through* 07/31/2023

CERTIFICATION:

I declare, under penalty of perjury under the laws of the state of California, that, based on information and belief formed after reasonable inquiry, all information provided in this reporting package is true, accurate, and addresses all deviations during the reporting period:

Signature of Responsible Official

08/11/2023

Date

Josh Mills

Name of Responsible Official (please print)

General Manager

Title of Responsible Official (please print)

Mail to:

Director of Compliance and Enforcement
BAAQMD
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn: Title V reports

VASCO ROAD LANDIFLL

TITLE V SEMI-ANNUAL MONITORING REPORT

SITE: VASCO ROAD LANDFILL	**FACILITY ID#:** A5095
REPORTING PERIOD: *from* 02/01/2023	*through* 07/31/2023

List of Permitted Sources and Abatement Device

Permit Unit Number	**Equipment Description**
S-#	**Description**
S-1	Vasco Road Landfill – Waste Decomposition Process; Equipped with Gas Collection System; Abated by A-4 Landfill Gas Flare
S-12	Vasco Road Landfill – Waste and Cover Material Dumping
S-13	Vasco Road Landfill – Excavating, Bulldozing and Compacting Activities
S-7	Non-retail Gasoline Dispensing Facility
S-14	Green Waste Processing Operation; A-14 Water Sprayer
S-15	Wood Waste Processing Operation; A-15 Water Sprayer
A-4	Landfill Gas Flare

Notes:

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 818, Parts 22b-c and 22e-g	Records	Periodic / On event basis	BAAQMD 8-34-304.1	For Inactive/Closed Areas: collection system components must be installed and operating by 2 years + 60 days after initial waste placement	Continuous	N/A
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 818, Parts 22a-c and 22e-g	Records	Periodic / On event basis	BAAQMD 8-34-304.2	For Active Areas: Collection system components must be installed and operating by 5 years + 60 days after initial waste placement	Continuous	N/A
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 818, Parts 22a-c and 22e-g	Records	Periodic / On event basis	BAAQMD 8-34-304.3	For Any Uncontrolled Areas or Cells: collection system components must be installed and operating within 60 days after the uncontrolled area or cell accumulates 1,000,000 tons of decomposable waste	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gas Flow	BAAQMD 8-34-501.10	Gas Flow Meter and Recorder (every 15 minutes)	Continuous	BAAQMD 8-34-301 and 301.1	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	Intermittent	Reportable Compliance Activity (RCA) IDs 08T00-08T01 and 08T62-08T63 were submitted to BAAQMD to request breakdown relief for GCCS shutdown events that occurred due to utility outages on June 7 and July 16, 2023, respectively. A total of 12.67 hours of GCCS downtime were accrued during these events.

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gas Flow	BAAQMD 8-34-404, 8-34-501.1, 8-34-501.2, 8-34-501.5, 8-34-501.10, 8-34-508, and BAAQMD Condition # 818, Part 22g	Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components	Periodic / Daily	BAAQMD Condition # 818, Parts 1-3	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system; Except That Flare A-4 May Operate Less Than Continuously If: LFG Flow to Energy Plant is > 1200 scfm AND Remaining LFG Flow Available for A-4 is < 800 scfm (< 24 MM BTU/hour)	Continuous	N/A
Collection and Control Systems Shutdown Time	BAAQMD 8-34-501.1	Operating Records	Periodic / Daily	BAAQMD 8-34-113.2	$\leq$ 240 hours per year and $\leq$ 5 consecutive days	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Periods of Inoperation for Parametric Monitors	BAAQMD 1-523.4	Operating Records for All Parametric Monitors	Periodic / Daily	BAAQMD 1-523.2	≤ 15 consecutive days per incident and ≤ 30 calendar days per 12-month period	Continuous	N/A
Continuous Monitors	40 CFR 60.7(b)	Operating Records for All Continuous Monitors	Periodic / Daily	40 CFR 60.13(e)	Requires Continuous Operation except for breakdowns, repairs, calibration, and required span adjustments	Continuous	N/A
Wellhead Pressure	BAAQMD 8-34-414, 501.9 and 505.1	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.1	< 0 psig	Continuous	N/A
Temperature of Gas at Wellhead	BAAQMD 8-34-414, 501.9 and 505.2	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.2	< 55 ^{o}C (< 131 ^{o}F), except for components identified in Condition # 818, Part 3b(i)	Continuous	N/A
Temperature of Gas at Specified Well-heads	BAAQMD 8-34-414, 501.9 and 505.2	Monthly Inspection and Records	Periodic / Monthly	BAAQMD Condition # 818, Part 3b(i)	< 140 ^{o}F	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gas Concentrations in LFG at Wellhead	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.3 or 305.4	N_2 < 20% (by volume, dry basis) **OR** O_2 < 5% (by volume, dry basis), except for components identified in Condition # 818, Part 3b(ii)	Continuous	N/A
Gas Concentrations in LFG at Header	BAAQMD 8-34-414 and 8-34-501.4 and BAAQMD Condition # 818, Part 3b(ii)	Monthly Inspection and Records	Periodic / Monthly	BAAQMD Condition # 818, Part 3b(ii)	O2 < 5% (by volume, dry basis) and CH4 > 35% (by volume, dry basis)	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-116.5 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-116.2	< 5 wells at a time or < 10% of total collection system, whichever is less	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-116.5 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-116.3	< 24 hours per well	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Well Shutdown Limits	BAAQMD 8-34-117.6 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.4	< 5 wells at a time or < 10% of total collection system, whichever is less	Continuous	N/A
Well Shutdown Limits	BAAQMD 8-34-117.6 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.5	< 24 hours per well	Continuous	N/A
TOC (Total Organic Compounds Plus Methane)	BAAQMD 8-34-501.6 and 503 and BAAQMD Condition # 818, Part 3b(iii)	Quarterly Inspection of collection and control system components with OVA and Records	Periodic / Quarterly	BAAQMD 8-34-301.2	Component Leak Limit: < 1000 ppmv as methane	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
TOC	BAAQMD 8-34-415, 416, 501.6, 506 and 510 and BAAQMD Condition # 818, Part 3b(iii)	Monthly Visual Inspection of Cover, Quarterly Inspection with OVA of Surface, Various Re-inspection Times for Leaking Areas, and Records	Periodic / Monthly, Quarterly, and on an Event Basis	TOC BAAQMD 8-34-303	Surface Leak Limit: < 500 ppmv as methane at 2 inches above surface	Continuous	N/A
Non-Methane Organic Com-pounds (NMOC)	BAAQMD 8-34-412 and 8-34-501.4 and BAAQMD Condition # 818, Part 20	Annual Source Tests and Records	Periodic / Annual	BAAQMD 8-34-301.3	NMOC Destruction Efficiency: > 98% removal by weight OR NMOC Outlet Concentration: < 30 ppmv, dry basis @ 3% O2, expressed as methane (applies to flare only)	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Temperature of Combustion Zone (CT)	BAAQMD 8-34-501.3, and 507, and BAAQMD Condition # 818, Part 4	Temperature Sensor and Recorder (continuous)	Continuous	BAAQMD Condition # 818, Part 5	Flare CT > 1402 ºF, averaged over any 3-hour period	Continuous	N/A
Opacity	BAAQMD Condition # 818, Part 22d	Records of all site watering and road cleaning events	Periodic / On event basis, Monthly	BAAQMD 6-1-301 and SIP 6-301	Ringelmann No. 1 for ≤ 3 minutes/hr (applies to active landfill operations)	Continuous	N/A
Opacity	None	N/A	None	BAAQMD 6-1-301 and SIP 6-301	Ringelmann No. 1 for < 3 minutes/hr (applies to flare)	Continuous	N/A
TSP	None	N/A	None	BAAQMD 6-1-310.1 and SIP 6-310	< 0.15 grains/dscf (applies to flare only)	Continuous	N/A
NO_x	BAAQMD Condition # 818, Part 20	Annual Source Test	Periodic / Annual	BAAQMD Condition # 818, Part 8	Flare Outlet Concentration: < 11 ppmv of NOx @ 15% O2, dry basis OR Flare Outlet Emission Rate: < 0.049 pounds of NO2 per MM BTU	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
CO	BAAQMD Condition # 818, Part 20	Annual Source Test	Periodic / Annual	BAAQMD Condition # 818, Part 10	Flare Outlet Concentration: < 73 ppmv of CO @ 15% O2, dry basis OR Flare Outlet Emission Rate: < 0.19 pounds of CO per MM BTU	Continuous	N/A
SO_2	None	N/A	None	BAAQMD 9-1-301	Property Line Ground Level Limits: < 0.5 ppm for 3 minutes and < 0.25 ppm for 60 min. and <0.05 ppm for 24 hours (applies to flare only)	Continuous	N/A
SO_2	None	N/A	None	BAAQMD Regulation 9-1-302	≤ 300 ppm, (dry basis) (applies to flare only)	Continuous	N/A
Sulfur Content in Landfill Gas	BAAQMD Condition # 818, Parts 12, 21	Sulfur analysis of landfill gas	Periodic / Quarterly	BAAQMD Condition # 818, Part 12	Annual Average TRS < 320 ppmv, expressed as H2S (dry basis)	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
H_2S	None	N/A	None	BAAQMD 9-2-301	Property Line Ground Level Limits: < 0.06 ppm, averaged over 3 minutes and < 0.03 ppm, averaged over 60 minutes	Continuous	N/A
Heat Input	BAAQMD 8-34-501.10 and 508 and BAAQMD Condition # 818, Parts 3b(ii), 13 and 22g	Gas Flow Rate Meter, LFG Methane Analyses, Calculations and Records	Continuous, Periodic / Daily, and Periodic / Monthly	BAAQMD Condition # 818, Part 13	< 2880 MM BTU per day and < 1,051,200 MM BTU per 12-month period	Continuous	N/A
Vehicle Traffic	BAAQMD Condition # 818, Part 22a	Records	Periodic / Daily	BAAQMD Condition # 818, Part 14a	< 625 vehicles per day	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Amount of Material Accepted	BAAQMD Condition # 818, Part 22a	Records	Periodic / Daily	BAAQMD Condition # 818, Part 14	< 2518 tons per day of solid waste and < 23,800,000 tons (cumulative) of decomposable materials and < 31,650,000 yd3 (cumulative) amount of all wastes and cover materials	Continuous	N/A
Total Carbon Emissions	BAAQMD Condition # 818, Part 18	Records	Periodic / Daily	BAAQMD 8-2-301	< 15 pounds per day Or < 300 ppmv, dry basis (applies only to aeration of or use as cover soil of soil containing < 50 ppmw of volatile organic compounds)	Continuous	N/A
Organic Content of Soil	BAAQMD Condition # 818, Part 18	Records	Periodic / Daily	BAAQMD Condition # 818, Part 15	< 50 ppmw of VOC in soil or < 50 ppmv of VOC, expressed as C1, measured 3 inches above soil	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Amount of VOC Laden Soil Accepted	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16a-b	< 10,000 tons per consecutive 12-month period for soil with high chlorinated compound concentration and < 170,000 tons per consecutive 12-month period for other VOC laden soil	Continuous	N/A
TAC Concentration Limits for VOC-laden Soil	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16a-b	Compound < ppmw Benzene 0.50 Carbon Tetrachloride 0.50 Chloroform 6.00 1,4 Dichlorobenzene 7.50 1,2 Dichloroethane 0.50 Tetrachloroethylene 0.70 Trichloroethylene 0.50 Vinyl Chloride 0.20	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Amount of Metal Laden Soil Accepted	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16	< 180,000 tons per consecutive 12-month period	Continuous	N/A
TAC Concen-tration Limits for Metal-Laden Soil	BAAQMD Condition # 818, Part 18	Records	Periodic / On event basis	BAAQMD Condition # 818, Part 16	Arsenic < 130 ppmw Beryllium < 75 ppmw Cadmium < 100 ppmw Chromium VI < 7 ppmw Copper < 2500 ppmw Lead < 1000 ppmw Mercury < 20 ppmw Nickel < 2000 ppmw Selenium < 100ppmw Zinc < 5000 ppmw	Continuous	N/A
Startup Shutdown or Malfunction Procedures	40 CFR 63.1980(a-b)	Records (all occurrences, duration of each, corrective actions)	Periodic / On event basis	40 CFR 63.6(e)	Minimize Emissions by Implementing SSM Plan	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-1 VASCO ROAD LANDFILL, A-4 LANDFILL GAS FLARE; S-12 WASTE AND COVER MATERIAL DUMPING; S-13 EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Trackout onto Paved Roadways	BAAQMD 6-6-501	Records	Periodic / Daily	BAAQMD 6-6-301	Trackout causing visible emissions: < 25 linear feet for no more than 4 hours; and Trackout remaining on adjacent paved public roadway or paved shoulder: < 1 quart at end of each workday	Continuous	N/A
Visible Emissions from Cleaning Trackout	BAAQMD 6-6-501	Records	Periodic / Daily	BAAQMD 6-6-302	< Ringelmann No. 1 Limitation for no more than 3 minutes in any 60-minute period	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-7 NON-RETAIL GASOLINE DISPENSING FACILITY #9551	**Reporting Period:** *from* 2/1/2023 *through* 7/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Gasoline Throughput	BAAQMD 8-7-503.1	Records	Periodic / Annual	BAAQMD Condition # 7523	< 400,000 gallons per 12-month period	Continuous	N/A
Exempt Throughput	BAAQMD 8-7-501 and 8-7-503.2	Records	Periodic / On event basis	BAAQMD 6-1-310	< 1000 gallons per facility for tank integrity leak checking	Continuous	N/A
Organic Compounds	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	BAAQMD 8-7-301.6	All Phase I Equipment (except components with allowable leak rates) shall be leak free (<3 drops/minute) and vapor tight	Continuous	N/A
Organic Compounds	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	BAAQMD 8-7-302.5	All Phase II Equipment (except components with allowable leak rates or at the nozzle/fill-pipe interface) Shall Be: leak free (<3 drops/minute) and vapor tight	Continuous	N/A
Organic Compounds	SIP 8-5-403 and 8-5-503	Annual Inspection with Portable Hydro-carbon Detector	Periodic / On event basis	SIP 8-5-303.2	Tank Pressure Vacuum Valve Shall Be: Gas Tight or < 500 ppmv (expressed as	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-7 NON-RETAIL GASOLINE DISPENSING FACILITY #9551	**Reporting Period:** *from* 2/1/2023 *through* 7/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
					methane) above background for PRVs (as defined in SIP 8-5-206)		
Organic Compounds	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	CARB EO G-70-116-F, paragraph 10	Any Emergency Vent or Manway Shall Be: leak free	Continuous	N/A
Defective Component Repair/ Replacement Time Limit	BAAQMD 8-7-503.2	Records	Periodic / On event basis	BAAQMD 8-7-302.4	≤ 7 days	Continuous	N/A
Liquid Removal Rate	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-302.8	> 5 ml per gallon dispensed, when dispensing rate > 5 gallons/minute	Continuous	N/A
Liquid Retain from Nozzles	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-302.12	≤ 100 ml per 1000 gallons dispensed	Continuous	N/A
Nozzle Spitting	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-302.13	≤ 1.0 ml per nozzle per test	Continuous	N/A
Pressure-Vacuum Valve Settings	CARB EO G-70-116-F	CARB Certification Procedures	Periodic / On event basis	BAAQMD 8-7-316 and CARB EO G-70-116-F, paragraph 14	Pressure Setting: > 2.5 inches of water, gauge	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-7 NON-RETAIL GASOLINE DISPENSING FACILITY #9551	**Reporting Period:** *from* 2/1/2023 *through* 7/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Pressure-Vacuum Valve Settings	SIP 8-5-403 and CARB EO G-70-116-	Semi-Annual Inspection and CARB Certification Procedures	Periodic / On event basis	SIP 8-5-303.1	Pressure Setting: > 10% of maximum working pressure or > 0.5 psig	Continuous	N/A
Disconnection Liquid Leaks	CARB EO G-70-116-F, paragraph 19 and BAAQMD 8-7-301.13 and 8-7-407	Annual Check for Vapor Tightness and Proper Operation of Vapor Recovery System	Periodic / Annual	CARB EO G-70-116-F, paragraph 12	≤ 10 ml per disconnect, averaged over 3 disconnect operations	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-14 GREENWASTE PROCESSING OPERATION, A-14 WATER SPRAYER	**Reporting Period:** *from* 08/01/2022 *through* 01/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Waste Processing Limit	BAAQMD Condition # 25515 Part 1	Records	Periodic / Annual	BAAQMD Condition # 25515 Part 1	≤ 16,000 tons of green waste per 12-month period	Continuous	N/A
Opacity	BAAQMD Condition # 25515, Part 2	Observation of Source in Operation	Periodic / On event basis	BAAQMD 6-1-301 and SIP 6-301	< Ringelmann 1.0 for 3 minutes in any hour	Continuous	N/A
TSP	None	N/A	None	BAAQMD 6-1-311.1 and SIP 6-311	$E = 4.10(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr) Maximum Allowable Emission Rate = 40 lb/hr For P >55,116 lb/hr	Continuous	N/A
Total Carbon Emissions	None	N/A	None	BAAQMD 8-2-301	≤ 15 pounds/day or ≤ 300 ppm, dry basis and vapor tight	Continuous	N/A

VASCO ROAD LANDFILL

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Vasco Road Landfill	**Facility ID#:** A5095
Permitted Unit: S-15 WOODWASTE PROCESSING OPERATION, A-15 WATER SPRAYER	**Reporting Period:** *from* 02/01/2023 *through* 07/31/2023

Type of Limit or Criteria	Monitoring Requirement Citation	Monitoring Type	Monitoring Frequency	Citation of Limit	Limit	Compliance	Corrective Actions Taken
Waste Processing Limit	BAAQMD Condition # 25516 Part 1	Records	Periodic / Annual	BAAQMD Condition # 25516 Part 1	≤ 5,000 tons of wood waste per 12-month period	Continuous	N/A
Opacity	BAAQMD Condition # 25516, Part 2	Observation of Source in Operation	Periodic / On event basis	BAAQMD 6-1-301 and SIP 6-301	< Ringelmann 1.0 for 3 minutes in any hour	Continuous	N/A
TSP	None	N/A	None	BAAQMD 6-1-311.1 and SIP 6-311	$E = 4.10(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr) Maximum Allowable Emission Rate = 40 lb/hr For P >55,116 lb/hr	Continuous	N/A

Appendix G – Well Exceedance Documentation

Root Cause Analysis and Corrective Analysis Forms

PRESSURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	4/5/2023
Collection Device ID:	VRLEW145
Pressure Reading:	0.31

Root Cause Analysis		
Was the reason for the positive pressure due to one of the following:		
A fire or increased well temperature.	☐ Yes	☒ No
Use of a geomembrane or synthetic cover.	☐ Yes	☒ No
A decommissioned well.	☐ Yes	☒ No
• If YES to **ANY** of the above, exempt as per 40 CFR 62.16720(a)(3)(iii)/ 40 CFR §63.1958(b). • If NO to **ALL** of the above, continue the form.		
Describe what was inspected.		
Wellhead, well casing, and vacuum lateral source.		
Describe what was determined to be the root cause of the exceedance.		
The Wellhead valve needs adjustment to create negative pressure on the well.		
Determine the required next steps.		
Was the positive pressure remediated within 60 days since the initial exceedance?	☒ Yes	☐ No
• If YES, keep records of Root Cause Analysis. No reporting is required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to the state agency within 75 days of initial exceedance.		

TEMPERATURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2103
Temperature Reading:	136.9

Root Cause Analysis		
Has the owner/operator received approval from the state agency to operate at a temperature higher than 55°C (131°F) for this well?	☐ Yes	☒ No
• If YES, exempt as per 40 CFR 62.16720(a)(4)(iii)/ 40 CFR 63.1958(c). • If NO, continue the form.		
Describe what was inspected.		
Gas Sample and de-watering system.		
Describe what was determined to be the root cause of the exceedance.		
Elevated microbial activity		
Determine the required next steps.		
HOV submitted to air board. Waiting approval.		
Was the temperature exceedance remediated within 60 days since the initial exceedance?	☐ Yes	☒ No
• If YES, keep records of Root Cause Analysis. No reporting required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to state agency within 75 days of initial exceedance.		

TEMPERATURE EXCEEDANCE

Corrective Action Analysis and Implementation Schedule

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2103
Temperature Reading:	136.9

Corrective Action Analysis
Describe the corrective actions taken to remediate exceedance.
O&M to reduced applied vacuum to well
HOV letter sent to air district. Awaiting approval.

Implementation Schedule	
Expected Start Date:	5/31/2023
Expected Completion Date:	8/15/2022
Provide a description of proposed repairs and/or remedial action required and supporting information for implementation timeframe.	
Reduce vacuum/gas extraction. Application for temperature HOV pending approval	

Final Steps		
Determine the required next steps.		
Is the remediation expected to take **<u>less than 120 days</u>** since initial exceedance per implementation schedule?	☒ Yes	☐ No

- If YES, send notification to state agency within 75 days of initial exceedance. Include Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule in the next Annual Report.
- If NO, send Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule to state agency within 75 days for approval and include in next Annual Report.

TEMPERATURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2104
Temperature Reading:	141.4

Root Cause Analysis		
Has the owner/operator received approval from the state agency to operate at a temperature higher than 55°C (131°F) for this well?	☐ Yes	☒ No
• If YES, exempt as per 40 CFR 62.16720(a)(4)(iii)/ 40 CFR 63.1958(c). • If NO, continue the form.		
Describe what was inspected.		
Gas Sample and de-watering system.		
Describe what was determined to be the root cause of the exceedance.		
Elevated microbial activity		
Determine the required next steps.		
HOV submitted to air board. Waiting approval.		
Was the temperature exceedance remediated within 60 days since the initial exceedance?	☒ Yes	☐ No
• If YES, keep records of Root Cause Analysis. No reporting required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to state agency within 75 days of initial exceedance.		

PRESSURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2109
Pressure Reading:	0.88

Root Cause Analysis		
Was the reason for the positive pressure due to one of the following:		
A fire or increased well temperature.	☐ Yes	☒ No
Use of a geomembrane or synthetic cover.	☐ Yes	☒ No
A decommissioned well.	☐ Yes	☒ No
• If YES to **ANY** of the above, exempt as per 40 CFR 62.16720(a)(3)(iii)/ 40 CFR §63.1958(b). • If NO to **ALL** of the above, continue the form.		
Describe what was inspected.		
Wellhead, well casing, and vacuum lateral source.		
Describe what was determined to be the root cause of the exceedance.		
The Wellhead valve needs adjustment to create negative pressure on the well.		
Determine the required next steps.		
Was the positive pressure remediated within 60 days since the initial exceedance?	☒ Yes	☐ No
• If YES, keep records of Root Cause Analysis. No reporting is required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to the state agency within 75 days of initial exceedance.		

PRESSURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2112
Pressure Reading:	0.04

Root Cause Analysis		
Was the reason for the positive pressure due to one of the following:		
A fire or increased well temperature.	☐ Yes	☒ No
Use of a geomembrane or synthetic cover.	☐ Yes	☒ No
A decommissioned well.	☐ Yes	☒ No
• If YES to **ANY** of the above, exempt as per 40 CFR 62.16720(a)(3)(iii)/ 40 CFR §63.1958(b). • If NO to **ALL** of the above, continue the form.		
Describe what was inspected.		
Wellhead, well casing, and vacuum lateral source.		
Describe what was determined to be the root cause of the exceedance.		
The Wellhead valve needs adjustment to create negative pressure on the well.		
Determine the required next steps.		
Was the positive pressure remediated within 60 days since the initial exceedance?	☒ Yes	☐ No
• If YES, keep records of Root Cause Analysis. No reporting is required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to the state agency within 75 days of initial exceedance.		

TEMPERATURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/18/2023
Collection Device ID:	VREW2107
Temperature Reading:	143.9

Root Cause Analysis		
Has the owner/operator received approval from the state agency to operate at a temperature higher than 55°C (131°F) for this well?	☐ Yes	☒ No
• If YES, exempt as per 40 CFR 62.16720(a)(4)(iii)/ 40 CFR 63.1958(c). • If NO, continue the form.		
Describe what was inspected.		
Gas Sample and de-watering system.		
Describe what was determined to be the root cause of the exceedance.		
Elevated microbial activity		
Determine the required next steps.		
HOV submitted to air board. Waiting approval.		
Was the temperature exceedance remediated within 60 days since the initial exceedance?	☐ Yes	☒ No
• If YES, keep records of Root Cause Analysis. No reporting required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to state agency within 75 days of initial exceedance.		

TEMPERATURE EXCEEDANCE

Corrective Action Analysis and Implementation Schedule

Date of Initial Exceedance:	5/18/2023
Collection Device ID:	VREW2107
Temperature Reading:	143.9

Corrective Action Analysis
Describe the corrective actions taken to remediate exceedance.
O&M to reduced applied vacuum to well
HOV letter sent to air district. Awaiting approval.

Implementation Schedule	
Expected Start Date:	5/31/2023
Expected Completion Date:	8/15/2022
Provide a description of proposed repairs and/or remedial action required and supporting information for implementation timeframe.	
Reduce vacuum/gas extraction. Application for temperature HOV pending approval	

Final Steps		
Determine the required next steps.		
Is the remediation expected to take **<u>less than 120 days</u>** since initial exceedance per implementation schedule?	☒ Yes	☐ No

- If YES, send notification to state agency within 75 days of initial exceedance. Include Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule in the next Annual Report.
- If NO, send Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule to state agency within 75 days for approval and include in next Annual Report.

TEMPERATURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	6/29/2023
Collection Device ID:	VREW2104
Temperature Reading:	142.0

Root Cause Analysis	
Has the owner/operator received approval from the state agency to operate at a temperature higher than 55°C (131°F) for this well?	☐ Yes ☒ No
• If YES, exempt as per 40 CFR 62.16720(a)(4)(iii)/ 40 CFR 63.1958(c). • If NO, continue the form.	
Describe what was inspected.	
Gas Sample and de-watering system.	
Describe what was determined to be the root cause of the exceedance.	
Elevated microbial activity	
Determine the required next steps.	
HOV submitted to air board. Waiting approval.	
Was the temperature exceedance remediated within 60 days since the initial exceedance?	☐ Yes TBD ☐ No
• If YES, keep records of Root Cause Analysis. No reporting required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to state agency within 75 days of initial exceedance.	

75-Day Notifications

August 31, 2023

Perry Ng
Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Re: 75-Day Notification of Temperature Exceedance
Vasco Road Landfill, Livermore, California
Facility Number A5095

Dear Mr. Ng,

On behalf of Vasco Road Landfill (Vasco), SCS Engineers (SCS) hereby provides the Bay Area Air Quality Management District (BAAQMD) with a 75-day notification pursuant to the compliance provisions identified in 40 Code of Federal Regulations (CFR) 63.1981(j)(1) for temperature exceedance. On June 21, 2021, Vasco became subject to the California Emissions Guidelines (EG) Rule, which includes compliance with Title 17 California Code of Regulations (CCR) Sections 95460 to 95476, known as AB 32 Landfill Methane Rule (LMR), and specific portions of 40 CFR Part 62 Subpart OOO. The federal National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63, Subpart AAAA rule came into effect on September 27, 2021, allowing Vasco to comply with subpart AAAA in lieu of compliance with the major provisions of the California EG Rule, including the wellhead temperature requirements of Sub[art OOO. However, because Vasco is still subject to BAAQMD Regulation 8, Rule 34 as well as the site's permit to operate (PTO) which includes the outdated New Source Performance Standards (NSPS) wellhead requirements, the site must still operate wells below 131°F, and we are providing this notification out of an abundance of caution until the outdated requirements can be removed from the PTO.

Well VREW2103 had an initial temperature exceedance reading of 136.9°F on May 9, 2023. Corrective actions were initiated within 5 days; however, the well could not be brought back into compliance within 15 days. As required under 40 CFR 62.16724(k)(1) and 63.1960(a)(4), a root cause analysis was completed within 60 days from the original exceedance. In addition, a corrective action analysis was conducted as required for wells that could not be remediated in 60 days. All the steps for compliance were conducted, and the well is expected to be able to come back into compliance within the 120-day timeframe from the original exceedance (by September 6, 2023). Additionally, a Higher Operating Value (HOV) request was submitted to the BAAQMD and USEPA on September 1, 2021 for this well. Carbon monoxide (CO) samples have been collected at VREW2103 previously and have been consistently low, which showed normal landfill decomposition at the well and no indication of subsurface reaction risk. This notification is being submitted due to the 131°F wellhead temperature limit in the BAAQMD rules and PTO. As the wellhead temperature is under 145°F, Vasco is in compliance with the federal NESHAP Subpart AAAA rule, which allows for wellhead temperatures of up to 145°F. As required under 40 CFR 62.16724(k)(1) and 63.1960(a)(4), this submittal contains the root cause analysis and corrective action analysis (see attached).

If you have any questions, please contact Maria Bowen of SCS at (619) 455-9518.

Sincerely,

Meghan Caesar
Project Professional
SCS Engineers

Maria Bowen
Project Manager
SCS Engineers

cc: Antonia Gunner, Vasco Road
Joshua Mills, Vasco Road
Sean Bass, SCSFS
Administrator, U.S. EPA Region 9

Attachments Root Cause Analysis
Corrective Action Analysis

TEMPERATURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2103
Temperature Reading:	136.9

Root Cause Analysis		
Has the owner/operator received approval from the state agency to operate at a temperature higher than 55°C (131°F) for this well?	☐ Yes	☒ No
• If YES, exempt as per 40 CFR 62.16720(a)(4)(iii)/ 40 CFR 63.1958(c). • If NO, continue the form.		
Describe what was inspected.		
Gas Sample and de-watering system.		
Describe what was determined to be the root cause of the exceedance.		
Elevated microbial activity		
Determine the required next steps.		
HOV submitted to air board. Waiting approval.		
Was the temperature exceedance remediated within 60 days since the initial exceedance?	☐ Yes	☒ No
• If YES, keep records of Root Cause Analysis. No reporting required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to state agency within 75 days of initial exceedance.		

TEMPERATURE EXCEEDANCE

Corrective Action Analysis and Implementation Schedule

Date of Initial Exceedance:	5/9/2023
Collection Device ID:	VREW2103
Temperature Reading:	136.9

Corrective Action Analysis
Describe the corrective actions taken to remediate exceedance.
O&M to reduced applied vacuum to well
HOV letter sent to air district. Awaiting approval.

Implementation Schedule	
Expected Start Date:	5/31/2023
Expected Completion Date:	8/15/2023
Provide a description of proposed repairs and/or remedial action required and supporting information for implementation timeframe.	
Reduce vacuum/gas extraction. Application for temperature HOV pending approval	

Final Steps		
Determine the required next steps.		
Is the remediation expected to take **less than 120 days** since initial exceedance per implementation schedule?	☒ Yes	☐ No

- If YES, send notification to state agency within 75 days of initial exceedance. Include Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule in the next Annual Report.
- If NO, send Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule to state agency within 75 days for approval and include in next Annual Report.

August 31, 2023

Perry Ng
Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Re: 75-Day Notification of Temperature Exceedance
Vasco Road Landfill, Livermore, California
Facility Number A5095

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Well VREW2107 had an initial temperature exceedance reading of 143.9°F on May 18, 2023. Corrective actions were initiated within 5 days; however, the well could not be brought back into compliance within 15 days. As required under 40 CFR 62.16724(k)(1) and 63.1960(a)(4), a root cause analysis was completed within 60 days from the original exceedance. In addition, a corrective action analysis was conducted as required for wells that could not be remediated in 60 days. All the steps for compliance were conducted, and the well is expected to be able to come back into compliance within the 120-day timeframe from the original exceedance (by September 15, 2023). Additionally, a Higher Operating Value (HOV) request was submitted to the BAAQMD and USEPA on September 1, 2021 for this well. Carbon monoxide (CO) samples have been collected at VREW2107 previously and have been consistently low, which showed normal landfill decomposition at the well and no indication of subsurface reaction risk. This notification is being submitted due to the 131°F wellhead temperature limit in the BAAQMD rules and PTO. As the wellhead temperature is under 145°F, Vasco is in compliance with the federal NESHAP Subpart AAAA rule, which allows for wellhead temperatures of up to 145°F. As required under 40 CFR 62.16724(k)(1) and 63.1960(a)(4), this submittal contains the root cause analysis and corrective action analysis (see attached).

If you have any questions, please contact Maria Bowen of SCS at (619) 455-9518.

Sincerely,

Meghan Caesar
Project Professional
SCS Engineers

Maria Bowen
Project Manager
SCS Engineers

cc: Antonia Gunner, Vasco Road
Joshua Mills, Vasco Road
Sean Bass, SCSFS
Administrator, U.S. EPA Region 9

Attachments Root Cause Analysis
Corrective Action Analysis

TEMPERATURE EXCEEDANCE

Root Cause Analysis

Date of Initial Exceedance:	5/18/2023
Collection Device ID:	VREW2107
Temperature Reading:	143.9

Root Cause Analysis		
Has the owner/operator received approval from the state agency to operate at a temperature higher than 55°C (131°F) for this well?	☐ Yes	☒ No
• If YES, exempt as per 40 CFR 62.16720(a)(4)(iii)/ 40 CFR 63.1958(c). • If NO, continue the form.		
Describe what was inspected.		
Gas Sample and de-watering system.		
Describe what was determined to be the root cause of the exceedance.		
Elevated microbial activity		
Determine the required next steps.		
HOV submitted to air board. Waiting approval.		
Was the temperature exceedance remediated within 60 days since the initial exceedance?	☐ Yes	☒ No
• If YES, keep records of Root Cause Analysis. No reporting required. • If NO, continue with Corrective Action Analysis and Implementation Plan and submit Notification to state agency within 75 days of initial exceedance.		

TEMPERATURE EXCEEDANCE

Corrective Action Analysis and Implementation Schedule

Date of Initial Exceedance:	5/18/2023
Collection Device ID:	VREW2107
Temperature Reading:	143.9

Corrective Action Analysis
Describe the corrective actions taken to remediate exceedance.
O&M to reduced applied vacuum to well
HOV letter sent to air district. Awaiting approval.

Implementation Schedule	
Expected Start Date:	5/31/2023
Expected Completion Date:	8/15/2023
Provide a description of proposed repairs and/or remedial action required and supporting information for implementation timeframe.	
Reduce vacuum/gas extraction. Application for temperature HOV pending approval	

Final Steps		
Determine the required next steps.		
Is the remediation expected to take **less than 120 days** since initial exceedance per implementation schedule?	☒ Yes	☐ No

- If YES, send notification to state agency within 75 days of initial exceedance. Include Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule in the next Annual Report.
- If NO, send Root Cause Analysis, Corrective Action Analysis, and Implementation Schedule to state agency within 75 days for approval and include in next Annual Report.