December 28, 2021
File No. 01202092.00, Task 8

Mr. Jeffrey Gove
Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105

Subject: **SEMI-ANNUAL RULE 8-34/NSPS, SSM, AND TITLE V REPORTS, SHORELINE AMPHITHEATRE, MOUNTAIN VIEW, CALIFORNIA (FACILITY NO. A2561)**

Dear Mr. Gove:

On behalf of the Shoreline Amphitheatre, SCS Engineers (SCS) is submitting the Rule 8-34/New Source Performance Standards (NSPS) Semi-Annual, Start-up, Shutdown, and Malfunction (SSM) Plan Semi-Annual, and Title V Semi-Annual Reports for the Shoreline Amphitheatre, Mountain View, California.

The attached documents satisfy the sections within 40 Code of Federal Regulations (CFR) 63, Subpart AAAA (National Emissions Standards for Hazardous Air Pollutants [NESHAPs] for Landfills) and 40 CFR Subpart WWW (New Source Performance Standards [NSPS]), including 40 CFR 60.757(f) and 40 CFR 62.16724(f) requirements, which describe the items to be submitted in semi-annual reports for landfills seeking to comply with NSPS using an active collection system. Please note that from June 21, 2021 through September 26, 2021, the Shoreline Amphitheatre was required to comply with 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), and specific portions of 40 CFR Part 62 Subpart OOO. The NESHAP 40 CFR Part 63, Subpart AAAA rule came into effect on September 27, 2021, superseding the major compliance provisions of the Subpart OOO provisions of the California EG Rule. The reports also satisfy Bay Area Air Quality Management District (BAAQMD) requirements under Rule 8-34 and the facility's Title V permit for semi-annual Rule 8-34 and Title V semi-annual reports. The semi-annual reports cover the reporting period of June 1, 2021 through November 30, 2021 and is a close-out SSM report for 40 CFR 63, Subpart AAAA.

Please contact the undersigned at (562) 637-4486 if you have any questions or require any additional information.

Sincerely,

Meng Yuan
Staff Professional
SCS ENGINEERS

Cassandra Drotman
Project Manager
SCS ENGINEERS

cc: Brian Rutkowski, Shoreline Amphitheatre
Administrator, Air Division U.S. EPA Region IX
Pat Sullivan, SCS
Art Jones, SCSFS

Enclosures: NSPS/BAAQMD Rule 8-34 Semi-Annual Report
SSM Plan Semi-Annual Report (with Certification)
Semi-Annual Title V Report of Required Monitoring (with Certification)

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

SITE: SHORELINE AMPHITHEATRE	**FACILITY ID#:** A2561
REPORTING PERIOD: *from* 6/01/2021	*through* 11/30/2021

List of Permitted Sources and Abatement Device

Permit Unit Number	Equipment Description
S-1	Landfill and Gas Collection System
S-3	Diesel Engine for Emergency Standby Generator
A-1	Carbon Adsorption System
A-2	Landfill Gas Flare

The Bay Area Air Quality Management District (BAAQMD or District) issued Notices of Violation (NOVs) Nos. A53663 and A53664 on December 10, 2014.

- NOV No. A53663 references Rule 2-6-307 for not venting landfill gas (LFG) to a flare.
- NOV No. A53664 references the Title 17 California Code of Regulations (CCR) (Landfill Methane Rule [LMR]) Sections 95464(b)(3)(A)(1) and 95464(b)(4) for no LFG control and no source test, respectively

On behalf of Live Nation, SCS Engineers (SCS) submitted a 10-day NOV response letter to the BAAQMD on December 19, 2014.

The BAAQMD also issued NOV No. A56519 on March 1, 2018.

- NOV No. A56519 references the Title 17 CCR Section 95470(b)(3) for an incomplete annual LMR report for 2016.

SCS submitted a 10-day NOV response letter for this violation on March 9, 2018 and a revised 2016 LMR annual report was delivered to the BAAQMD office via FedEx on March 15, 2018.

Per the Notice to Comply (NTC) issued by the BAAQMD on September 6, 2018, Shoreline was required to submit an addendum to the June 2019 Title V Semi-Annual Monitoring Report referencing the three above-mentioned NOVs. Live Nation is working to resolve these issues with the BAAQMD and the City of Mountain View since Shoreline is unable to maintain combustion of the A-2 flare due to low gas quality. A Compliance and Enforcement Agreement, dated September 29, 2019, between Live Nation, the BAAQMD, and the City of Mountain View requires the landfill gas (LFG) collection and control system (GCCS) to be reconfigured to transport LFG from the Shoreline Amphitheatre collection system directly to the City of Mountain

View's flare station instead of directing the LFG to the CAS. As required by the September 2019 Compliance and Enforcement Agreement, SCS submitted a proposed plan for implementing the project on November 27, 2019. Brenda Cabral of the BAAQMD provided notification of District approval of the Plan via email on March 24, 2020. On May 5, 2020, SCS submitted a permit application on behalf of Live Nation to the BAAQMD to apply for the necessary permits to reconfigure the GCCS to the City of Mountain View's flare station. The Authority to Construct (ATC) permit was issued by the BAAQMD on February 1, 2021. The City of Mountain View required Live Nation to obtain a building permit prior to commencing construction. The building permit was received on June 17, 2021. GCCS construction activities are scheduled to occur summer through fall of 2021

These NOVs were not issued during the reporting period; however, these violations will continue to be noted in the Title V reports until the project is complete and compliance is achieved by destroying the LFG in the City of Mountain View's flares.

Please note that NOV No. A53664 and No. A56519 both reference sections of the LMR, and these citations are not federally enforceable, and not required by Rule 8-34 or the NSPS, but have been referenced herein, per directive from the BAAQMD inspector. Additionally, the LMR sections referenced in NOV Nos. A53664 and A56519 are not included in Shoreline's current Major Facility Review (MFR, Title V) permit.

NOV No. A53663 references BAAQMD Regulation 2-6-307 and Condition No. 876, Part 4, which requires LFG to be vented to the flare. Please note that Part 4 also allows the use of the A-1 carbon adsorption system (CAS). The CAS has been acting as the main control device due to insufficient landfill gas (LFG) generation to sustain flare operation.

On November 30, 2021, modification of the GCCS was completed per the Authority to Construct (ATC) issued by the BAAQMD on February 1, 2021, which resulted in Shoreline's LFG being combusted in the City's flares, bringing Shoreline Amphitheatre into full compliance with the LMR.

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: S-1 – Landfill Gas Collection System	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
Collection System Installation Dates	BAAQMD 8-34-501.7 and 501.8	Records	Periodic / 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 placement	Continuous	N/A
Gas Flow	BAAQMD 8-34-501.10 and 508	Gas Flow Meter and Recorder (every 15 minutes)	Continuous	BAAQMD 8-34-301.1	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	Continuous	N/A
Gas Flow	BAAQMD Condition # 876, Parts 10,11, and 18b-e and BAAQMD Regulation 8-34-501.1 and 8-34-501.2	Gas Flow Meter, Flare Alarms, and Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components	Periodic / Daily	BAAQMD Condition # 876, Parts 3 and 4	Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	Continuous	N/A
Collection and Control Systems Shutdown Time	BAAQMD Condition # 876, Parts 18b, 18d, and 18e and BAAQMD 8-34-501.1	Operating Records	Periodic / Daily	BAAQMD 8-34-113.2	≤240 hours/year and 5 consecutive days	Continuous	N/A

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: S-1 – Landfill Gas Collection System	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
Periods of In-operation for Parametric Monitors	BAAQMD 1-523.4	Operating Records for All Parametric Monitors	Periodic / Daily	BAAQMD 1-523.2	≤15 consecutive days/incident and ≤30 days/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 and BAAQMD Condition # 876, Part 18i	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.1 and BAAQMD Condition #876, Part 3b	< 0 psig (applies to each well or collector connected to vacuum)	Continuous	N/A
Temperature of Gas at Wellhead	BAAQMD 8-34-414, 501.9 and 505.2 and BAAQMD Condition # 876, Part 18i	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-305.2 and BAAQMD Condition #876, Part 3b	<55°C (131°F) (applies to each well or collector connected to vacuum)	Continuous	N/A
Gas Concentrations at Wellhead	BAAQMD Condition # 876, Part 3d –e and 18i	Monthly Inspection and Records	Periodic / Monthly	BAAQMD Condition #876, Part 3c(i)	O_2 ≤ 15% by volume (applies to all wells and collectors connected to vacuum, except as described in Part 3c (ii-iii))	Continuous	N/A
Collection System Component	BAAQMD Condition # 876, Parts 3d-e and	Monthly Inspection and Records	Periodic / Monthly	BAAQMD 8-34-404 and BAAQMD Condition # 876, Part	≥20 wells and collectors operating continuously at any one time and re-	Continuous	Note: from August 1, 2021 through

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: S-1 – Landfill Gas Collection System	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
Operating Requirements	18i			3a(i & iii)	connect wells and collectors to vacuum when wellhead CH_4 > 20% by volume		November 30, 2021, all wells that were connected to the GCCS were decommissioned per the ATC that was issued by the BAAQMD on February 1, 2021.
Well Shutdown Limits	BAAQMD 8-34-117.6 and 501.1	Records	Periodic / Daily	BAAQMD 8-34-117.4	No more than 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 # 876, Part 18i	Quarterly Inspection of Collection and Control System Components with Portable Analyzer and Records	Periodic / Quarterly	BAAQMD 8-34-301.2	≤1000 ppmv as methane (component leak limit)	Continuous	N/A
Surface emission monitoring (TOC)	BAAQMD 8-34-415, 416, 501.6, 506 and 510 and BAAQMD	Monthly cover visual inspection of Cover; Quarterly Inspection with Portable Analyzer of	Periodic / Monthly, Quarterly, and Event	BAAQMD 8-34-303	≤500 ppmv as methane at 2 inches above surface (surface leak limit)	Continuous	N/A

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: S-1 – Landfill Gas Collection System	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
	Condition # 876, Part 18i	Surface, Various Reinspection Times for Leaking Areas and Records	Basis				
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
Amount of Waste Accepted	BAAQMD Regulation 8-34-501.7	Records	Periodic / Annual	BAAQMD Condition # 876, Part 1	0 tons/day and ≤366,000 tons (cumulative amount of all wastes) and ≤542,000 yd^3 (cumulative amount of all wastes and cover materials)	Continuous	N/A
Startup Shutdown or Malfunction Procedures	40 CFR 63.1980(a-b)	Records (all occurrences, duration of each, corrective actions)	Periodic/Event Basis	40 CFR 63.6(e)	Minimize Emissions by Implementing SSM Plan	Continuous	N/A

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: A-2 – Landfill Gas Flare	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
Non-Methane Organic Compounds (NMOC)	BAAQMD 8-34-412 and 501.4 and BAAQMD Condition # 876, Parts 16 and 18i	Source Tests and Records	Periodic / Annual	BAAQMD 8-34-301.3	≥98% removal by weight OR < 30 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-2 Landfill Gas Flare only)	Continuous	Flare A-2 did not operate during the reporting period.
Temperature of Combustion Zone (CT)	BAAQMD 8-34-501.3 and 507 and SIP 8-34-501.3 and BAAQMD Condition # 876, Part 9	Temperature Sensor and Recorder (continuous)	Continuous	BAAQMD Condition # 876, Part 8a	CT ≥1400°F, averaged over any 3-hour period (applies to A-2 Landfill Gas Flare when A-2 is operated alone)	Continuous	Flare A-2 did not operate during the reporting period.
Temperature of Combustion Zone (CT)	BAAQMD 8-34-501.3 and 507 and SIP 8-34-501.3 and BAAQMD Condition # 876, Part 9	Temperature Sensor and Recorder (continuous)	Continuous	BAAQMD Condition # 876, Part 8b	CT ≥1200°F, averaged over any 3-hour period (applies to A-2 Landfill Gas Flare when A-2 is down stream of A-1)	Continuous	Flare A-2 did not operate during the reporting period.
Opacity	None	N/A	None	BAAQMD 6-1-301	Ringlemann No. 1 for <3 minutes/hour (applies to A-1 Carbon Adsorption System and A-2 Landfill Gas Flare)	Continuous	Flare A-2 did not operate during the reporting period.
FP	None	N/A	None	BAAQMD 6-1-310	≤0.15 grains/dscf (applies to A-1 Carbon Adsorption System and A-2 Landfill Gas Flare)	Continuous	Flare A-2 did not operate during the reporting period.

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: A-2 – Landfill Gas Flare	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
SO_2	None	N/A	None	BAAQMD 9-1-301	Property Line Ground Level Limits: ≤0.5 ppmb for 3 minutes and ≤0.25 ppm for 60 min. and ≤0.05 ppm for 24 hours (applies to A-2 Landfill Gas Flare only)	Continuous	Flare A-2 did not operate during the reporting period.
SO_2	BAAQMD Condition # 876, Parts 16g, or 17 and 18h-i	Annual TRS Analysis of Landfill Gas, or Annual SO_2 Test at Flare, and Records	Periodic/ Annual	BAAQMD Regulation 9-1-302	≤ 300 ppm (dry basis) (applies to A-2 Landfill Gas Flare only)	Continuous	Flare A-2 did not operate during the reporting period.
Total Sulfur Content in Landfill Gas	BAAQMD Condition # 876, Parts 17 and 18h-i	Annual TRS Analysis of Landfill Gas and Records	Periodic/ Annual	BAAQMD Condition # 876, Part 15	≤1300 ppmv, express as H_2S	Continuous	Flare A-2 did not operate during the reporting period.
Heat Input	BAAQMD Condition # 876, Parts 11, 18c, 18e, and 18f	Gas Flow Meter and Records	Periodic / Continuous, Monthly	BAAQMD Condition # 876, Parts 5	≤86.4 MM BTU per day and ≤31,536 MM BTU per year (applies to A-2 landfill Gas Flare only)	Continuous	Flare A-2 did not operate during the reporting period.
NO_x	BAAQMD Condition # 876, Parts 16d and 18i	Source Tests and Records	Annual	BAAQMD Condition # 876, Parts 6	≤30 ppmv of NO_x, corrected to 15% O_2, dry (applies to A-2 Landfill Gas Flare only)	Continuous	Flare A-2 did not operate during the reporting period.
CO	BAAQMD Condition # 876, Parts 16d and 18i	Source Tests and Records	Annual	BAAQMD Condition # 876, Parts 7	≤ 83 ppmv of CO, corrected to 15% O_2, dry (applies to A-2 Landfill Gas Flare only)	Continuous	Flare A-2 did not operate during the reporting period.

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: A-1 – Carbon Adsorption System	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
NMOC	BAAQMD 8-34-501.11 and 8-34-509 and BAAQMD Condition # 876, Parts 14 and 18g	Periodic Monitoring of A-1 Exhaust with a Portable Analyzer and Records	Periodic / Event Basis (at least once for every 16 hours of A-1 operation; after conc. Is > 90 ppm, at least once for every 8 hours of A-1 operation)	BAAQMD 8-34-301.4	98% removal by weight OR < 120 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-1 Carbon Adsorption System only)	Continuous	Note: the A-1 Carbon Adsorption system was permanently decommissioned on November 30, 2021 per the ATC that was issued by the BAAQMD on February 1, 2021.
NMOC	BAAQMD Condition # 876, Parts 14 and 18g	Periodic Monitoring of A-1 Exhaust with a Portable Analyzer and Records	Periodic / Event Basis (at least once for every 16 hours of A-1 operation; after conc. Is > 90 ppm, at least once for every 8 hours of A-1 operation)	BAAQMD Condition # 876, Parts 13	Replace carbon when exhaust concentration exceeds 108 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-1 Carbon Adsorption System only)	Continuous	BAAQMD inspector approved weekly sampling of carbon adsorption system due to consistently low NMOC concentrations.

SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

Site: Shoreline Amphitheatre	**Facility ID#:** A2561
Permitted Unit: S-3 – Diesel Engine	**Reporting Period:** *from* 6/01/2021 *through* 11/30/2021

Type of Limit or Criteria	Monitoring Requirement Citation	Parameters Monitored	Monitoring Frequency	Citation of Limit	Limit	Compliance Summary	Corrective Actions Taken
Opacity	None	N/A	No monitoring requirement	BAAQMD 6-1-303	Ringelmann No.2 for <3 minutes/hour	Continuous	N/A
FP	None	N/A	No monitoring requirement	BAAQMD 6-1-310	≤0.15 grains/dscf	Continuous	N/A
SO^2	None	N/A	No monitoring requirement	BAAQMD 9-1-301	Property Line Ground Level Limits: ≤0.5 ppm for 3 minutes and ≤0.25 ppm for 60 minn and ≤0.05 ppm for 24 hours	Continuous	N/A
Liquid Fuel Sulfur Content	BAAQMD Condition # 19912, Part 4f	Vendor certification	Periodic / Event Basis	BAAQMD Regulation 9-1-304	Fuel Sulfur Limit: 0.5% by weight	Continuous	N/A
Liquid Fuel Sulfur Content	BAAMQD Condition # 19912, Part 4f	Vendor certification	Periodic / Event Basis	CCR Title 17, Section 93115.5 9b) and CCR Title 13, Section 2281 (a)(1-5)	Standby Engines must use CARB Diesel Fuel or other CARB Approved Alternative Fuel, which has Fuel Sulfur Limits of: ≤500 ppmw of S (≤0.05% S, by weight) or ≤15 ppmw of S (for fuel sold after 6/1/06)	Continuous	N/A
Operating Hours	BAAQMD Regulation 9-8-502.1 and 9-8-530 and BAAQMD Condition # 19912, Parts 3 and 4a-d and CCR Title 17, Section 93115.10(e)(1) & (g)(1)	Meter to record either operating hours or fuel usage and records	Periodic / Continuous, Monthly	BAAQMD Condition # 19912, Part 1 and CCR Title 17, Section 93115.6(b)(3)(A)(1)(a)	Operating Hours for Reliability-Related Activities: ≤20 hours in a calendar year	Continuous	N/A

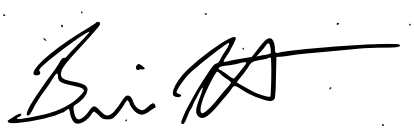
SHORELINE AMPHITHEATRE

TITLE V SEMI-ANNUAL MONITORING REPORT

SITE: SHORELINE AMPHITHEATRE	**FACILITY ID#:** A2561
REPORTING PERIOD: *from* 6/01/2021	*through* 11/30/2021

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

December 21, 2021
Date

Brian Rutkowski
Name of Responsible Official

General Manager, Shoreline Amphitheatre
Title of Responsible Official

Mail to:

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

NSPS/BAAQMD Rule 8-34 Semi-Annual Report
June 1, 2021 through November 30, 2021
Shoreline Amphitheatre
Mountain View, California (Facility No. A2561)

Prepared for:

Shoreline Amphitheatre
1 Amphitheatre Parkway
Mountain View, CA 94043

For Submittal to:

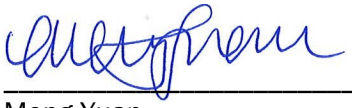
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

SCS ENGINEERS

01202092.00, Task 8 | December 2021

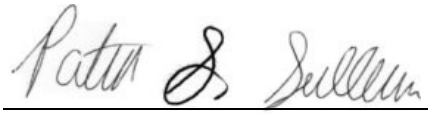
3843 Brickway Boulevard, Suite 208
Santa Rosa, CA 95403
707-546-9461

This New Source Performance Standards (NSPS)/Bay Area Air Quality Management District (BAAQMD) Rule 8-34 Semi-Annual Report for the Shoreline Amphitheatre in Mountain View, California, dated December 2021, was prepared and reviewed by the following:



Meng Yuan
Staff Professional
SCS ENGINEERS

Cassandra Drotman
Project Manager
SCS ENGINEERS



Patrick S. Sullivan, REPA, CPP, BCES
Senior Vice President
SCS ENGINEERS

Table of Contents

Tables

Appendices

1.0 INTRODUCTION

On behalf of Shoreline Amphitheatre (Shoreline or Landfill), SCS Engineers (SCS) submits this New Source Performance Standards (NSPS); 40 Code of Federal Regulations [CFR] Part 60, Subpart WWW and Cc), and Bay Area Air Quality Management District (BAAQMD) Rule 8-34 Semi-Annual Report to the BAAQMD. This Semi-Annual Report pertains to the landfill gas (LFG) collection and control system (GCCS) operated at Shoreline and covers the period of June 1, 2021 through November 30, 2021.

Please note that 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. The updated NSPS/EG references will be updated in the next semi-annual report. This Semi-Annual report also meets the requirements of the revised federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63, Subpart AAAA rule for MSW landfills, 40 CFR 63, Subpart AAAA, including provisions which went into effect on September 27, 2021, and complies with the requirements specified in Shoreline's Title V permit and BAAQMD Rule 8-34 which contains some NSPS Subpart WWW requirements. As of September 27, 2021, the revised NESHAP rule superseded the major compliance provisions of the Subpart OOO provisions in the California EG Rule. The new standards did not apply to this reporting period, except for September 27 through October 31, 2021, and will be discussed in this report as needed. Shoreline complied with the pre-September 27, 2021 version of the NESHAP during the June 1, 2021 to September 26, 2021 reporting period. Note the NESHAP startup, shut down, and malfunction (SSM) report is submitted as a separate report with this submittal.

This report includes the following information, as required by BAAQMD Rule 8-34-411:

- All collection system and/or component downtime and reasons for the shutdown (8-34-501.1)
- All emission control system downtime and reason for the shutdown (8-34-501.2)
- Continuous temperature monitoring and dates of any excesses (8-34-501.3 and 507)
- Testing performed to satisfy of the requirements of this Rule (8-34-501.4)
- Monthly LFG flow rates and excesses (8-34-501.5)
- Collection and emission control system leak testing and any excesses, action taken to correct excesses, and re-monitored concentrations (8-34-501.6 and 503)
- Landfill surface monitoring, location of excesses, excess concentration, date discovered, actions taken to repair the excess, and re-monitored concentrations (8-34-501.6 and 506)
- Annual refuse acceptance rates, amount of refuse in place, and the nature, location, and amount of non-degradable waste (8-34-501.7 and 501.8).
- Well head monitoring including gauge pressure, LFG temperature, and LFG oxygen concentration (8-34-501.9 and 505)

- Continuous flow monitoring (8-34-501.10)
- Key emission control system operating parameters (8-34-509)

2.0 SITE BACKGROUND INFORMATION

Shoreline is a small portion of a much larger landfill site owned and operated by the City of Mountain View. The portion that includes Shoreline is referred to as the Vista site and was operated as a municipal landfill from 1980 to 1993. Bill Graham Presents, Inc. (BGP) began leasing the land on the northeast edge of the Vista site from the City of Mountain View in 1986 and developed it as the Shoreline Amphitheatre entertainment complex. The portion of the landfill operated as Shoreline Amphitheatre has not accepted waste since BGP began leasing the property. BGP installed a GCCS shortly after developing the site as an amphitheatre and has maintained it separately from the larger City of Mountain View Landfill.

2.1 EXISTING LANDFILL GAS CONTROL SYSTEM

The existing GCCS at Shoreline consists of 34 horizontal and 22 vertical extraction wells, five test ports, leachate and condensate collection systems, an enclosed flare, and an activated carbon adsorption system (CAS), which act as control devices to destroy or remove organic constituents in the LFG. The system has a maximum flow capacity of 400 standard cubic feet per minute (scfm) of LFG. A site plan of the existing GCCS is provided in Appendix A. Maintenance of the GCCS is contracted to SCS Field Services (SCSFS).

3.0 MONITORING AND RECORDS

3.1 CONTINUOUSLY MONITORED PARAMETERS

Under BAAQMD Rule 8-34-301.1, the GCCS must be operated continuously. Occasionally it becomes necessary to shut down all or portions of the system for routine maintenance and repair. There are two continuous monitoring devices that report the running status of the two main system components: two continuous flow meters (one for the CAS and one for the flare) detect if the LFG collection/extraction system is running by reporting the presence or absence of flow, and a temperature gauge (thermocouple) detects if the emission control combustion device (flare) is running by the presence or absence of combustion-range temperatures. Because the LFG extraction system and control device are designed to work in tandem, any downtime for the extraction system also results in downtime for the control device. When no flow is developed by the LFG extraction system, the flare will go off-line. Conversely, if combustion is not detected in the flare, the LFG extraction system will go off-line. However, the LFG extraction system can be restarted without the flare by diverting the LFG to the CAS (A-1) under Condition # 876, Part 4 of the Title V permit.

For the past several years, the CAS has been acting as the main control device due to low gas quality and quantity being collected at Shoreline, which is not sufficient to sustain the flare flame. However, due to the BAAQMD's concerns regarding the CAS operating as the main control device, which does not control methane, a greenhouse gas (GHG), the BAAQMD, Shoreline, and SCS have been working towards a solution as the gas quality continues to decline, and Shoreline is unable to maintain combustion using the A-2 flare.

Per a Compliance and Enforcement Agreement (CEA) dated November 6, 2018, between the BAAQMD and Live Nation Worldwide, Inc. (Live Nation), the owner/operator of Shoreline, the BAAQMD allowed Live Nation and SCSFS to conduct a study to assess the feasibility of operating the GCCS intermittently to enable use of the flare to control methane emissions from the collected LFG. The study involved shutting down the GCCS for an extended period to determine whether the methane concentration of the LFG could be elevated to a point where the LFG could be effectively flared, and whether this method could be implemented without causing surface or equipment leaks in excess of the standards set forth in BAAQMD Rule 8-34. This study was performed from December 10, 2018 through January 28, 2019, with daily, brief startups of the system in order to take LFG readings. During the study, methane levels never reached 35%, a level which would indicate a minimum combustible level of methane. The results of this study were submitted to the BAAQMD on March 1, 2019.

As methane concentrations during the study never elevated to the point where the LFG could be effectively flared, a revised CEA dated September 29, 2019 was issued, which required the GCCS to be reconfigured to transport LFG from the Shoreline Amphitheatre collection system directly to the City of Mountain View's flare station instead of directing the LFG to the CAS. As required by the September 2019 CEA, SCS submitted a proposed plan for implementing the project on November 27, 2019. Brenda Cabral of the BAAQMD provided notification of District approval of the Plan via email on March 24, 2020. On May 5, 2020, SCS submitted a permit application on behalf of Live Nation to the BAAQMD to apply for the necessary permits to reconfigure the GCCS to the City of Mountain View's flare station. The Authority to Construct (ATC) permit was issued by the BAAQMD on February 1, 2021. The City of Mountain View required Live Nation to obtain a building permit prior to commencing construction. The building permit was received on June 17, 2021. GCCS construction activities began August 2021 and concluded in November 2021. As of November 30, 2021, LFG from Shoreline is routed to the City of Mountain View's flare station and the A-2 flare and CAS are no longer in operation.

3.1.1 Gas Extraction System Downtime

During the reporting period, the LFG extraction system went off-line on several occasions. The extraction system downtime log is provided in **Table 1**, including the date, total elapsed downtime, reason for the downtime, and a description of the corrective action.

3.1.2 Emission Control System Downtime

During the reporting period, the CAS went off-line on several occasions. The total elapsed time for the reporting period when the entire GCCS was offline was 16.45 hours (**Table 1**). On November 30, 2021, the CAS system was permanently shutdown per the ATC that was issued by the BAAQMD on February 1, 2021 to reconfigure the GCCS to the City of Mountain View's flare station.

During this reporting period, there were no instances when LFG flow passed through the flare or CAS uncontrolled (i.e., free venting), and the collected LFG stream was never diverted from the control devices.

3.1.3 Individual Well Downtime

Individual well downtime is permitted in accordance with Condition 876, Part 3 of the Landfill's permit, which allows less than continuous operation of a certain number of wells as long as there are

a minimum of 20 wells operating continuously at any one time. Wells were temporarily disconnected at various dates and times when the methane concentration detected at the wellhead was less than 20% by volume, prior to disconnection. At all times during this reporting period prior to the reconfiguration of the GCCS in August 2021, a minimum of 20 wells were continuously operating, in accordance with Condition 876, Part 3(a)(i). Beginning August 2021 and through November 2021, all of the wells at the Landfill that were connected to the GCCS were permanently decommissioned per the ATC issued by the BAAQMD on February 1, 2021.

3.1.4 Flow Meter and Temperature Gauge Downtime

A temperature 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 and LFG flow rate monitoring data are used to determine the amount of time the LFG GCCS is online. The temperature data are also used to show compliance with the flare minimum temperature requirement. The monitoring devices must be operating continuously to be in compliance with 40 CFR 60.756 (b) and to show that the flare or CAS is online at any time that the collection system is sending LFG to the flare or CAS (in compliance with 40 CFR 60.753 (e) and (f)). There were no downtime events for the flow meter or temperature monitoring/recording equipment during the reporting period.

3.1.5 Minimum Flare Temperature

Flare A-2 did not operate during the reporting period because there was not enough fuel to sustain combustion. Additionally, due to LFG quality, annual performance testing of the flare did not occur. A performance test was conducted on the carbon vent station to demonstrate compliance with applicable BAAQMD Rules. The BAAQMD inspector, beginning several years ago, has been aware of the poor LFG quality at Shoreline and has understood that annual performance testing is conducted on the carbon vent station, the main control device at Shoreline, rather than the flare. The last annual performance test was performed on September 30, 2021.

3.2 COMPONENT LEAK QUARTERLY MONITORING

3.2.1 Third Quarter 2021 Monitoring

The third quarter 2021 component leak monitoring, required by BAAQMD Rule 8-34-503, was conducted on August 10, 2021. Testing was performed by SCSFS using an organic vapor analyzer (OVA), which was calibrated on the day the testing occurred. Results of the monitoring event are provided in **Appendix B**.

No concentrations of methane gas over 500 parts per million by volume (ppmv) were detected during the third quarter 2021 monitoring event. The highest reading detected during the third quarter 2021 leak testing was 3 ppmv.

3.2.2 Fourth Quarter Monitoring

The fourth quarter 2021 component leak monitoring, required by BAAQMD Rule 8-34-503, was conducted on October 27, 2021. Testing was performed by SCSFS using an OVA, which was calibrated on the day the testing occurred. Results of the monitoring event are provided in **Appendix B**.

No concentrations of methane gas over 500 ppmv were detected during the fourth quarter 2021 monitoring event. The highest reading detected the fourth quarter 2021 leak testing was 3 ppmv.

3.3 CONTROL EFFICIENCY

Due to poor gas quality preventing flare operation, a source test was not performed on flare A-2. Instead, a source test was performed on the carbon vent system, which is the only control device operating at Shoreline. The BAAQMD inspector, beginning several years ago, has been aware of the poor LFG quality causing the flare to remain inoperable, and has understood that performance testing is conducted on the carbon vent station, rather than on the flare. On September 30, 2021, testing was performed to demonstrate compliance with either the control efficiency standard of 98% non-methane organic compound (NMOC) destruction efficiency or the outlet concentration standard of 120 ppmv of NMOC as methane at 3% oxygen (O_2), as required by BAAQMD Rule 8-34-301.4, 8-34-412 and 8-304-413.

The NMOC outlet concentration was measured to be 38.3 ppmv as methane at 3% O_2 during the source test, and therefore demonstrated compliance with the rule. An excerpt from the source test report, dated November 5, 2021, is provided in **Appendix C**.

3.4 LANDFILL SURFACE MONITORING

Surface emissions monitoring (SEM) at Shoreline is conducted in accordance with BAAQMD Rule 8-34, and as required by the City of Mountain View Fire Department for health and safety purposes. Shoreline uses an alternative to the standard back and forth sweep monitoring pattern typically used for landfill SEM. A reading is taken over 134 pre-determined points and along 17 continuous paths including sweeps across the wellfield surface, all buildings on the landfill property, and all areas accessible to concert patrons. The surface is monitored before every event that takes place at Shoreline, resulting in almost weekly monitoring during the spring, summer, and fall months. Winter monitoring is less frequent; however, rarely is there a time period greater than one month between surface monitoring events. However, as Shoreline is a closed landfill, the facility is eligible to conduct SEM annually rather than quarterly, per 8-34-506. As such, only the results from the SEM conducted by SCSFS during the first quarter of 2021 are included in this report.

3.4.1 Annual 2021 Monitoring

Annual surface emissions testing for any leaks with a methane concentration of greater than 500 ppmv, as required by BAAQMD Rule 8-34-506, was conducted on January 14, 2021. SCSFS performed the quarterly testing using an OVA, which was calibrated on the testing date.

No methane gas concentrations in excess of 500 ppmv were detected during the annual 2021 monitoring event (**Appendix D**). The highest reading detected during the 2021 annual SEM was 1.5 ppmv. The next required annual SEM event is due by the end of 2022.

3.5 GAS COLLECTION SYSTEM INSTALLATIONS AND UPGRADES

From August 2021 through November 2021, the GCCS at Shoreline was reconfigured to route all LFG to the City of Mountain View - Shoreline Landfill's (Plant #2740) flare station. All wells connected to the GCCS as well as the CAS were permanently decommissioned during construction.

3.6 WELLHEAD MONTHLY MONITORING

During the reporting period, the extraction wells were monitored for pressure, oxygen, and temperature as required by Rule 8-34. Condition 876, Part 3 of the Landfill's permit allows for wells to be temporarily disconnected if the methane concentration at the wellhead is less than 20% by volume. In operational wells, the oxygen concentration is not permitted to exceed 15% by volume, unless the well contains less than 20% methane by volume, if the well is being operated in order to minimize exposure to LFG during an event, or if a well must be operated to fulfill the requirement of at least 20 wells operating continuously at any one time (Condition 876, Part 3(i)).

Please note that during the reporting period prior to the reconfiguration of the GCCS, several wells were unable to be monitored because they were covered by portable toilets and other items in storage and therefore inaccessible. These wells were offline prior to being inaccessible, and there were at least 20 wells operating while these wells were offline so that compliance was achieved. Specifically, wells EW-24, EW-25, EW-26, and EW-27 were unable to be monitored during in June 2021. Per the ATC, all wells connected to the GCCS were decommissioned from August 1, 2021 through November 30, 2021.

The wells at Shoreline are a sub-grade design with limited access, which only allows for operation of the valve. This is a necessity at Shoreline since the wellfield area is also used as a recreational amphitheatre. As such, it is sometimes difficult to get accurate readings of the gas quality at the wellhead since the valve where the sample port is connected is not at the actual wellhead. In addition, because of the use of the closed landfill as an outdoor amphitheatre, there is no margin of error for LFG surface emissions or migration; therefore, the extraction wells are generally kept online throughout the year although they are pulling low quality gas with high oxygen.

Due to Shoreline's use as an amphitheatre, certain wells are inaccessible for monitoring at different times during the year.

3.6.1 Pressure

The majority of the operational extraction wells were operating under negative pressure during the monitoring events conducted during the reporting period, in accordance with BAAQMD Rule 8-34-305 and 8-34-414. For any operational wells that exhibited positive pressure during this reporting period, the identification number and dates that each well was operating with positive pressure are provided in **Table 2**. The table also includes corrective action and re-monitoring results. In all instances, corrective action and re-monitoring were performed the same day as the exceedances.

3.6.2 Oxygen

Efforts were made to operate all extraction wells with an oxygen content of less than 15% in accordance with the Landfill's permit. Because Shoreline cannot afford to allow surface leaks while recreational events are occurring on the premises, the LFG extraction system vacuum is often

operated at a higher than optimal extraction rate; as such, oxygen concentrations in the collected LFG can be higher than in typical scenarios. During the reporting period, there were no exceedances of the oxygen limit based on the alternative wellhead limits that have been approved for the Landfill. Note under the EG rule and Subpart OOO, which took effect on June 21, 2021, oxygen is no longer and exceedance, but under BAAQMD Rule 8-34-414 it still is, and the Landfill will continue to follow these requirements as stipulated in the permit.

3.6.3 Temperature

As discussed above, the wells at Shoreline are a sub-grade design with limited access, which only allows for operation of the valve. Therefore, temperature monitoring of the individual wellheads is not always accurate, and any readings would not be representative of actual LFG temperatures at the actual wellhead. However, readings were taken in order to comply with BAAQMD Rule 8-34, and these temperature readings all show ambient temperatures below 131 degrees Fahrenheit (°F) (55 degrees Celsius [°C]).

3.7 COVER INTEGRITY MONITORING

The integrity of the landfill cover is monitored continuously at Shoreline. The use of the site as a recreational amphitheatre with the patrons actually sitting on the final grade of the landfill requires that the cover be no less than perfect. Shoreline employs a full-time grounds maintenance team that continuously monitors and makes any necessary repairs to the landfill cover to ensure its continuous integrity.

Additionally, a full inspection of the grounds is conducted prior to each event during the concert season and at least monthly during the remainder of the year. This monitoring schedule complies with and far exceeds the BAAQMD Rule 8-34-510 schedule requirement of monthly monitoring. Monthly cover integrity monitoring for purposes of BAAQMD Rule 8-34 was conducted on June 3, 2021, July 1, 2021, August 27, 2021, September 10, 2021, October 27, 2021, and November 3, 2021. Surface emissions and cover integrity monitoring results indicate that the plastic cover is intact and without leaks.

3.8 GAS GENERATION ESTIMATE AND MONTHLY FLOW METER READINGS

Shoreline is a small portion of the larger City of Mountain View Landfill, specifically the northeast edge of the Vista Site. Shoreline includes approximately 10 acres of the 84-acre Vista Site; however, it only represents one slope of the landfill, so the actual percentage of refuse is expected to be approximately 5% of the entire Vista Site. The LFG generation rate for Shoreline was estimated using a U.S. Environmental Protection Agency (EPA) LFG generation model. A LFG generation estimate for the Vista portion of the Mountain View Landfill is provided in **Appendix E**.

A gas flow rate meter is installed on the collection system between the blower and the flare (or CAS). Based on actual average monthly LFG flow meter readings (**Table 3**), the GCCS collected approximately 2.8 scfm of LFG (corrected to 50% methane) for the reporting period. As of November 30, 2021, LFG is routed to the City of Mountain View's flare station.

3.9 ANNUAL WASTE ACCEPTANCE RATE AND REFUSE IN PLACE

As discussed in Section 3.8, Shoreline is a small portion of the City of Mountain View Landfill, specifically the northeast edge of the Vista Site. The Landfill has not accepted waste since 1986. Detailed records for annual acceptance rates and refuse-in-place totals for the Mountain View Landfill are kept by the City of Mountain View. Shoreline currently has approximately 366,000 tons or less of refuse in place.

3.9.1 Non-Degradable Waste Areas

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

Tables

Table 1. GCCS Downtime
Shoreline Amphitheatre, Mountain View, CA
(June 1, 2021 through November 30, 2021)

Date Offline	Date Online*	Hours Down	Reason	Corrective Action
9/24/2021 9:09	9/24/2021 9:23	0.23	Shutdown for carbon change	N/A
11/30/2021 7:47	12/1/2021 0:00	16.22	Permanent system shutdown per BAAQMD compliance and enforcement agreement	N/A
Total Downtime		**16.45**		

*The carbon system was permanently decommissioned on November 30, 2021. For reporting purposes, the shutdown is being calculated as having ended on December 1, 2021 at 00:00.

Table 2. LFG Extraction Wells with Positive Pressure
Shoreline Amphitheatre, Mountain View, California
(June 1, 2021 through November 30, 2021)

Name	Date	Pressure ("H_2O)	5-Day Corrective Action Date	Corrective Action	5-Day Follow-Up Pressure ("H2O)	Follow-Up Date	Comments
EW-33	8/27/2021	0.05	9/1/2021	Second Reading Taken	-0.02	9/1/2021*	N/A

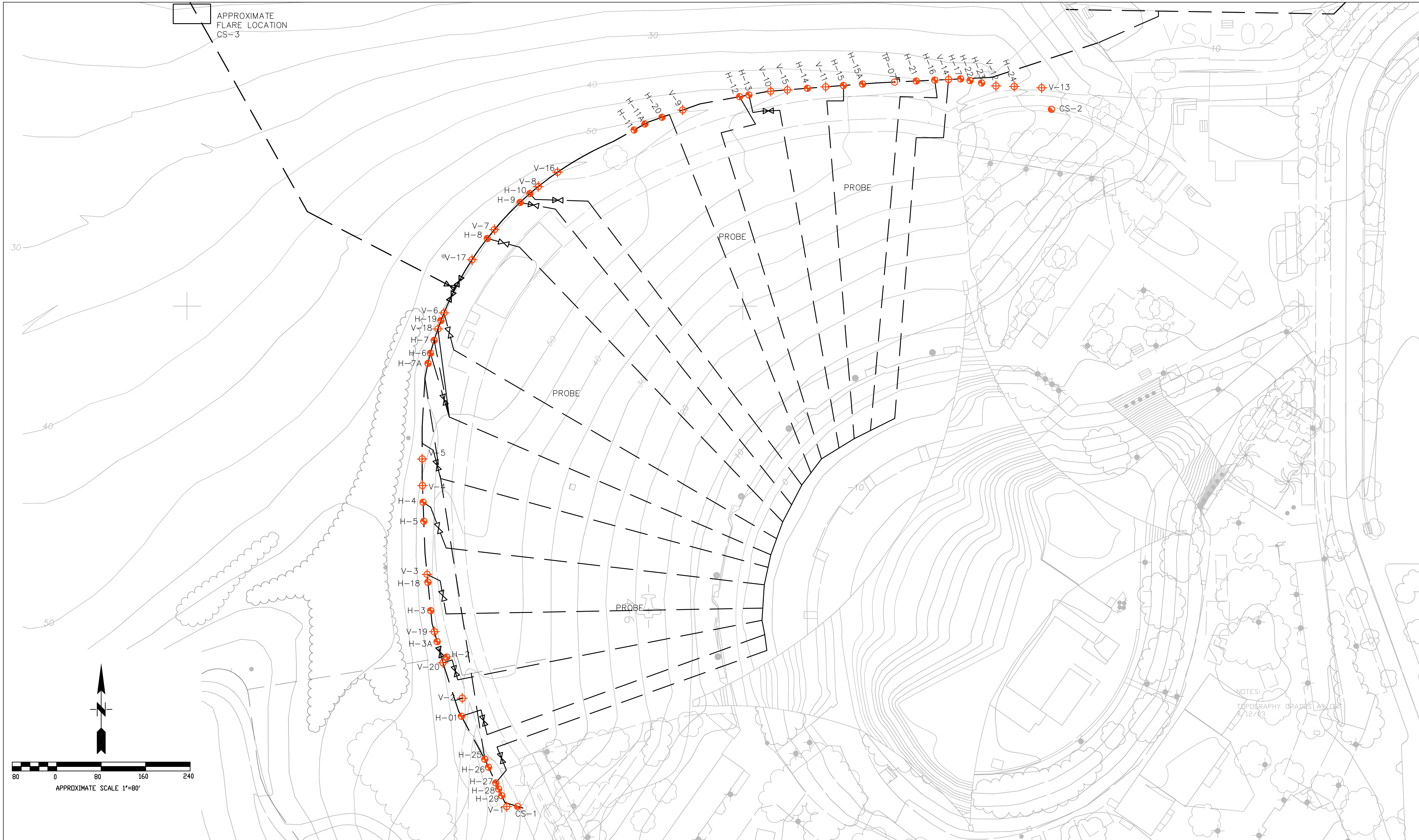
*Exceedance was corrected within 15 days

Table 3. Average Monthly Flow Meter Readings
Shoreline Amphitheatre, Mountain View, CA
June 1, 2021 through November 30, 2021

Month	Methane Content (%)	Average LFG Flow (scfm)	Average LFG Flow at 50% Methane (scfm)
Jun-21	2.4	61.5	3.0
Jul-21	2.8	66.1	3.7
Aug-21	2.6	63.6	3.3
Sep-21	1.8	61.7	2.2
Oct-21	2.1	63.2	2.6
Nov-21	1.8	62.3	2.3
Average During Reporting Period	**2.2**	**63.1**	**2.8**

Appendix A

LFG Collection and Control System Figure



ABBREVIATION

TC TEST PORT
CS CONDENSATE SUMP
H HORIZONTAL COLLECTOR
V VERTICAL

LEGEND

EXISTING HEADER AND LATERAL LINES
LFG VERTICAL EXTRACTION WELL
LFG HORIZONTAL EXTRACTION WELL
LFG TEST PIT
LFG CONDESATE SUMP

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
3050 FITE CIRCLE, SUITE 106
SACRAMENTO, CA 95827-1808
PH. (916) 361-1297 FAX. (916) 361-1299

PROJ. NO. 01202192.00 | DWN. BY: AB | ACAD FILE: SHORELINE.dwg
DSN. BY: --- | CHK. BY: --- | APP. BY: ---

THE SHORELINE AMPHITHEATRE
CITY OF MOUNTAIN VIEW

SHEET TITLE
LFG COLLECTION SYSTEM

PROJECT TITLE
SHORELINE AMPHITHEATRE LANDFILL

NO.	REVISION	DATE

DATE: 12/17/04
SCALE: 1"=80'
DRAWING NO.
1 of 1

Appendix B

Quarterly Component Leak Monitoring Results

Component Emissions Monitoring Results
Shoreline Amphitheatre, Mountain View, California

Field Technician and Weather Conditions				
Technician	**Date**	**Ambient Temp**	**Barometric Pressure (in - Hg)**	**General Weather**
Liam McGinn	08/10/2021	60	30.0	Foggy
		Wind Speed	**Wind Direction**	
		1 to 3	North	
Name		**Valve Vault (ppm)**	**Test Port Vault (ppm)**	**Comments**
EW-1	08/10/2021	1-3ppm	1-3ppm	None
EW-10	08/10/2021	1-3ppm	1-3ppm	None
EW-11	08/10/2021	1-3ppm	1-3ppm	None
EW-12	08/10/2021	1-3ppm	1-3ppm	None
EW-13	08/10/2021	1-3ppm	1-3ppm	None
EW-14	08/10/2021	1-3ppm	1-3ppm	None
EW-15	08/10/2021	1-3ppm	1-3ppm	None
EW-16	08/10/2021	1-3ppm	1-3ppm	None
EW-17	08/10/2021	1-3ppm	1-3ppm	None
EW-18	08/10/2021	1-3ppm	1-3ppm	None
EW-19	08/10/2021	1-3ppm	1-3ppm	None
EW-2	08/10/2021	1-3ppm	1-3ppm	None
EW-20	08/10/2021	1-3ppm	1-3ppm	None
EW-21	08/10/2021	1-3ppm	1-3ppm	None
EW-22	08/10/2021	1-3ppm	1-3ppm	None
EW-23	08/10/2021	1-3ppm	1-3ppm	None
EW-24	08/10/2021	1-3ppm	1-3ppm	None
EW-25	08/10/2021	1-3ppm	1-3ppm	None
EW-26	08/10/2021	1-3ppm	1-3ppm	None
EW-27	08/10/2021	1-3ppm	1-3ppm	None
EW-28	08/10/2021	1-3ppm	1-3ppm	None
EW-29	08/10/2021	5-10 ppm	3-5 ppm	None
EW-3	08/10/2021	1-3ppm	1-3ppm	None
EW-30	08/10/2021	1-3ppm	1-3ppm	None
EW-31	08/10/2021	1-3ppm	1-3ppm	None
EW-32	08/10/2021	1-3ppm	1-3ppm	None
EW-33	08/10/2021	1-3ppm	1-3ppm	None
EW-34	08/10/2021	1-3ppm	1-3ppm	None
EW-35	08/10/2021	1-3ppm	1-3ppm	None
EW-36	08/10/2021	1-3ppm	1-3ppm	None
EW-37	08/10/2021	1-3ppm	1-3ppm	None
EW-38	08/10/2021	1-3ppm	1-3ppm	None
EW-39	08/10/2021	1-3ppm	1-3ppm	None
EW-4	08/10/2021	1-3ppm	1-3ppm	None
EW-40	08/10/2021	1-3ppm	1-3ppm	None
EW-41	08/10/2021	1-3ppm	1-3ppm	None
EW-42	08/10/2021	1-3ppm	1-3ppm	None
EW-43	08/10/2021	1-3ppm	1-3ppm	None
EW-44	08/10/2021	1-3ppm	1-3ppm	None
EW-45	08/10/2021	1-3ppm	1-3ppm	None
EW-46	08/10/2021	1-3ppm	1-3ppm	None
EW-47	08/10/2021	1-3ppm	1-3ppm	None
EW-48	08/10/2021	1-3ppm	1-3ppm	None
EW-49	08/10/2021	1-3ppm	1-3ppm	None
EW-5	08/10/2021	1-3ppm	1-3ppm	None
EW-50	08/10/2021	1-3ppm	1-3ppm	None

Component Emissions Monitoring Results
Shoreline Amphitheatre, Mountain View, California

Name		Valve Vault (ppm)	Test Port Vault (ppm)	Comments
EW-51	08/10/2021	1-3ppm	1-3ppm	None
EW-52	08/10/2021	1-3ppm	1-3ppm	None
EW-53	08/10/2021	1-3ppm	1-3ppm	None
EW-54	08/10/2021	1-3ppm	1-3ppm	None
EW-55	08/10/2021	1-3ppm	1-3ppm	None
EW-6	08/10/2021	1-3ppm	1-3ppm	None
EW-7	08/10/2021	1-3ppm	1-3ppm	None
EW-8	08/10/2021	1-3ppm	1-3ppm	None
EW-9	08/10/2021	1-3ppm	1-3ppm	None

Flare Station	Date	Piping	Valves	Flex Hoses
	08/10/2021	4	4	4

Grass Area	Date	Low ppm	High ppm	Above 500 ppm
Surface Scan	08/10/2021	1	3	None

Component Emissions Monitoring Results
Shoreline Amphitheatre, Mountain View, California

Field Technician and Weather Conditions				
Technician	**Date**	**Ambient Temp**	**Barometric Pressure (in - Hg)**	**General Weather**
Liam McGinn	10/27/2021	58	29.9	foggy
		Wind Speed	**Wind Direction**	
		1 to 3	NNE	
Name		**Valve Vault (ppm)**	**Test Port Vault (ppm)**	**Comments**
EW-10	10/27/2021	1-3ppm	1-3ppm	on line
EW-11	10/27/2021	1-3ppm	1-3ppm	on line
EW-18	10/27/2021	1-3ppm	1-3ppm	on line
EW-19	10/27/2021	1-3ppm	1-3ppm	on line
EW-29	10/27/2021	1-3ppm	1-3ppm	on line
EW-32	10/27/2021	1-3ppm	1-3ppm	on line
EW-33	10/27/2021	1-3ppm	1-3ppm	on line
EW-34	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-35	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-36	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-37	10/27/2021	1-3ppm	1-3ppm	on line
EW-38	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-39	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-40	10/27/2021	1-3ppm	1-3ppm	on line
EW-41	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-42	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-43	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-44	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-45	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-46	10/27/2021	1-3ppm	1-3ppm	on line
EW-47	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement

Component Emissions Monitoring Results
Shoreline Amphitheatre, Mountain View, California

Name		Valve Vault (ppm)	Test Port Vault (ppm)	Comments
EW-48	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-49	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement
EW-53	10/27/2021	1-3ppm	1-3ppm	Off line scheduled for abandonement

Flare Station	Date	Piping	Valves	Flex Hoses
	10/27/2021	1	4	1

Grass Area	Date	Low ppm	High ppm	Above 500 ppm
Surface Scan	10/27/2021	1	3	None

Appendix C

Excerpts from Carbon Vent Source Tests

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 Beale Street, Suite 600
San Francisco, California 94105
(415) 771-6000

Contractor Source Test Supplemental Form

Site name: Shoreline Amphitheater Landfill, Site A2561
NST number: 6817
Testing company: Best Environmental

Test purpose:

- X Routine compliance testing
- ☐ Compliance test required after previous source test failure
- ☐ Start-up test
- ☐ Other, ex: trial testing for permit changes, engineering studies
  Please explain _____
- ☐ Revised report with corrections noted
  Revision number _____

Preliminary test results:

- X In compliance
- ☐ Not in compliance
- ☐ N/A
  Please explain_____

SOURCE TEST REPORT

SHORELINE AMPHITHEATRE LANDFILL
Mountain View, CA

Carbon Adsorption System (A-1)
NMOC Emission Results & Landfill Gas Characterization
Facility #A2561
NST-6817

Test Date: September 30, 2021

Report Date: November 5, 2021

Prepared For:

SCS Field Services
4730 Enterprise Way
Modesto, CA 95956
Attn: Art Jones

Performed and Reported by:

BEST ENVIRONMENTAL
339 Stealth Court
Livermore, CA 94551
Phone: (925) 455-9474
Fax: (925) 455-9479

For Submittal To:

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105-2006

REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program. If this report is submitted for compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please call the Team Leader or Reviewer at (925) 455-9474.

William Johnston
Project Manager

Reviewer:

I have reviewed this report for presentation and accuracy of content, and hereby certify that to the best of my knowledge the information is complete and correct.

Basim (Bobby) Asfour
Principal

Source Test Information

Source Location:	Shoreline Amphitheatre Landfill One Amphitheatre Pkwy Mountain View, California
Facility Number:	A2561
Engineering Firm: Phone: Contact:	SCS Field Services (209) 545-8490 ext. 103 Art Jones
Source Description:	Landfill Gas Carbon Adsorption System (A-1)
PTO Number:	Regulation 8-34-301.3, 8-34-412 and Condition 876
Test Parameters:	NMOC & TRS
Emission Limits:	**Average Results**
NMOC:120 ppmv @ 3% O_2	**<38 ppmv @ 3% O_2**
TRS: 1,300 ppm	**<1.2 ppm**
Source Testing Firm: Contact:	BEST ENVIRONMENTAL 339 Stealth Court Livermore, CA 94551 Phone (925) 455-9474 Fax (925) 455-9479 Bobby Asfour
Test Date:	September 30, 2021
Analytical Laboratories:	BEST ENVIRONMENTAL (CH_4 & Fixed Gases) 339 Stealth Court Livermore, CA 94551 Atmospheric Analysis & Consultants (Inlet VOC-M25C) 1534 Eastman Avenue, Ste. A Ventura, CA 93003 Phone: (805) 650-1642
NST No.:	6817

TABLE of CONTENTS

SECTION 1. INTRODUCTION

1.1. Test Purpose

Best Environmental (BE) was contracted by SCS Field Services to perform Title V emissions testing on one landfill gas carbon adsorption system (A-1) located at the Shoreline Amphitheatre Landfill (Facility # A2561) The purpose of the test was to demonstrate compliance with Bay Area Air Quality Management District (BAAQMD) Regulation 8-34-301.3, 8-34-412 and Condition 876 from the facility permit. Testing was performed at the outlet for Non-Methane Organic Compounds (NMOC) and at the inlet for a landfill gas characterization. The landfill gas characterization was analyzed for TRS and those organic compounds listed in EPA AP-42 Table 2.4-1. A copy of the permit is located Appendix F.

1.2. Test Location

The test was conducted on the landfill gas carbon adsorption system located at the Shoreline Amphitheatre Landfill, One Amphitheatre Pkwy, Mountain View, California.

1.3. Test Date

Testing was conducted on September 30, 2021.

1.4. Test Parameters and Methods

The following emission parameters were measured.

Parameter	Test Methods
Inlet & Outlet NMOC	EPA Method 25C
LFG O_2, CH_4, TRS	ASTM-D-1945 & D-6228
LFG organics	Modified EPA TO-15

1.5. Sampling and Observing Personnel

The test notification was submitted to the BAAQMD on September 8, 2021, by BE and assigned a Notice of Source Test Number 6817. William Johnston of BE performed the test. SES coordinated the test program. No representative of the BAAQMD was present to witness the test.

SECTION 2. SUMMARY OF RES ULTS

2.1. Emission Results

Table 2.1 presents the Average Test Result. Triplicate samples were collected at the inlet and outlet locations. NMOC emissions compliance was determined using the by 120 ppm limit. The results of the LFG gas characterization are presented in the analytical lab report in Appendix B. A more extensive summary of the emissions is presented in Table 1 on page 7.

Table 2.1: Average Test Results
Carbon Adsorption System (A-1)

Parameter	Average Results	Limits
TRS, landfill gas	<1.2	1,300
NMOC, ppm @ 3% O_2 as Methane	<38.3	120

2.2. Process Data

The carbon adsorption system flow rate was approximately 63 cubic feet per minute (CFM).

2.3. Allowable Emissions

The Carbon Bed System is following the NMOC ppm @ 3% O_2 outlet emission limit. The destruction efficiency could not be demonstrated due to low NMOC concentrations at the inlet.

2.4. Comments: Discussion of Quality Assurance and Errors

Quality assurance procedures listed in the above referenced test methods and referenced in the Source Test Plan were performed and documented. The QA/QC procedures are described in Section 4.4 of the report. Documentation of the QA/QC is provided in Appendix A & B.

Process data which is located in Appendix C, was provided by SCS A calibration report of the measuring device is in Appendix C.

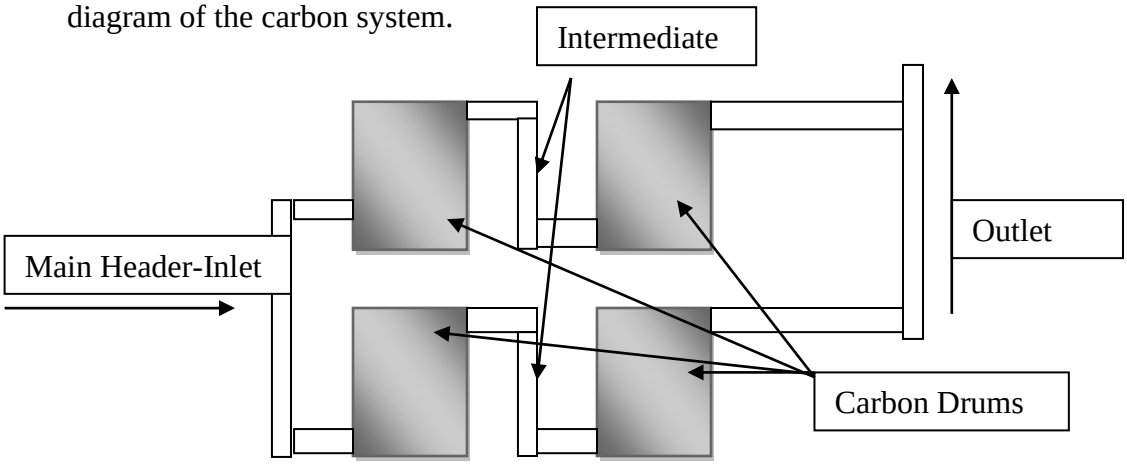
SECTION 3. SOURCE OPERATION

3.1. Process Description

Activated carbon is used for adsorption of organic substances and non-polar adsorbates and it is also usually used for waste gas (and wastewater) treatment. It is the most widely used adsorbent. Its usefulness derives mainly from its large micropore and mesopore volumes and the resulting high surface area. Several 50-gallon drums are aligned in series and/or parallel and are used to remove VOC's from the onsite landfill gas. See diagram below.

3.2. Flow Diagram

A digital image of the adsorption system is contained in Appendix D. Below is a flow diagram of the carbon system.



3.3. Process and control operating parameters during testing

The carbon adsorption system was operated at ~59 SCFM according to the onsite, monitoring device.

3.4. Normal Operating Parameters

The carbon adsorption system was operating normally during the test periods.

3.5. Testing or Process interruptions and changes

There were no process interruptions during the testing.

SECTION 4. SAMPLING AND ANALYSIS PROCEDURES

4.1. Port Location

Sampling of the carbon adsorption system inlet and outlet emissions was performed via 6-inch PVC pipes with inside diameters of 5.75 inches (Area SQFT = 0.18). Inlet sampling was performed from a single port/tap located approximately 1-foot downstream from the nearest disturbance and 10-feet upstream from the flare flame arrestor (during flare testing). Outlet sampling was performed from a single port/tap located approximately 3-foot downstream from the nearest disturbance and 4-feet upstream from the exhaust fan.

4.2. Point Description/Labeling – Ports/Stack

Inlet samples were collected via a sample pump into tedlar bags. Outlet gases were collected by positive pressure into the tedlar bags at each location.

4.3. Method Description, Equipment, Sampling, Analysis and QA/QC

Sampling and analytical procedures of the methods were followed as published in the BAAQMD Manual of Procedures and the EPA "Quality Assurance Handbook for Air Pollution Measurement Systems" Volume III, US EPA 600/4-77-027b.

The following is an overview of the Testing Performed

Parameter	Location	Methods	Duration	# of Runs
NMOC	Inlet/Outlet	EPA Method 25C	30 mins	6
O_2, CH_4 & TRS	Inlet	ASTM D-1945 & D-6228	15 mins	1
LFG Speciated VOCs	Inlet	Modified EPA TO-15 &	15 mins	1
Flow Rate	Inlet	Gas Metering System	--	3

EPA Method TO-15 analysis is used to determine emissions of Organic compounds. Inlet gases are filled into tedlar bags corresponding to the test program. The bags are labeled respectively then sent to a laboratory and analyzed for GC/MS (gas chromatography/mass spectrometer) within 72 hours. For more information on the lab analysis, refer to Appendix B for method description and QA/QC.

ASTM D-6228 analysis is used to determine emissions total reduced sulfur compounds. Inlet gases are filled into tedlar bags corresponding to the test program. The bags are labeled respectively then sent to a laboratory and analyzed for GC/SCD (gas chromatography/Sulfur Chemiluminescence Detector) within 24 hours. For more information on the lab analysis, refer to Appendix B for method description and QA/QC.

ASTM D-1945 analysis is used to determine the composition of fuel gas (e.g. methane, fixed gases & HHV). Inlet gases are filled into a tedlar bag using positive pressure from the fuel line. The bag is labeled respectively then sent to a laboratory and analyzed for fixed gases (O_2, CO_2, N_2, ect.), methane and C_1-C_6 using GC/FID-TCD (gas chromatography/flame ionization detector and thermal

conductivity detector). Many of these compounds have calorific values that are used to calculate the fuel higher heating values (HHV). The results are reported in percent levels.

EPA Method 25C is used to determine the emissions of NMOC and can also be used to identify and quantify fixed gases (O_2, CO_2, N_2 & CH_4) in conjunction with **EPA Method 3C**. Gaseous emissions are drawn through Teflon sample line to a tedlar bag. Positive pressure is adjusted to maintain an integrated sample flow between 30 to 60 minutes. The bag samples are taken to a laboratory and analyzed for Non-Methane Organic Compound (NMOC) referenced to methane and fixed gases using GC/FID-TCA (gas chromatography/flame ionization detector-total combustion analysis) within 72 hours.

4.4. Analytical Laboratories

BE analyzed samples for methane, TRS and fixed gases. Samples were sent to Atmospheric Analysis and Consulting, Inc. for NMOC and LFG characterization analysis. For more information on the analysis procedure and QA/QC refer to Appendix B.

TABLE 1
Shoreline Landfill
VOC Emissions
Carbon Adsorption System

RUN #	1		2		3		AVG		Limit
TEST LOCATION	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	
TEST DATE	9/30/2021		9/30/2021		9/30/2021				
TEST TIME	841-911		914-944		947-1017				
STANDARD TEMP., °F	70		70		70				
FLOW RATE, DSCFM	62	62	63	63	63	63	63	63	
H_2S	<1.0		<1.0		<1.0		<1.0		
TRS	<1.2		<1.2		<1.2		<1.2		
O_2, %	19.2	19.2	19.2	19.2	19.1	19.2	19.2	19.2	
NMOC, ppm as methane	<3.9	<3.4	<3.8	<3.4	<3.7	<4.1	<3.8	<3.6	
NMOC ppm @ 3%O_2		**<35.8**		**<35.8**		**<43.2**		**<38.3**	**120**
NMOC, lbs/hr	0.0006	0.0005	0.0006	<0.0005	<0.0006	<0.0006	0.0006	<0.0006	

WHERE:

DSCFM = Dry Standard Cubic Feet Per Minute
D.E. = Destruction Efficiency
N.M. = Not Measured
N.A. = Not Applicable
ppm = Parts per Million
VOC = Non-Methane Non-Ethane Organic Compounds
lbs/hr = Pounds Per Hour Emission Rate

CALCULATIONS:

R.E. = 100 * (Inlet TNMHC lbs/hr - Outlet TNMHC lbs/hr) / Inlet TNMHC lbs/hr
lbs/hr (68^oF) = ppm * DSCFM * MW *60 / 386 x 10^6
TRS = 1.2 x H2S (calculation as per Condition 876, 15a)

APPENDICES

APPENDIX A – CALCULATIONS & NOMENCLATURE

APPENDIX B - LABORATORY REPORTS

APPENDIX C - FIELD DATA SHEETS

APPENDIX D- STACK DIAGRAMS

APPENDIX E - SOURCE TEST PLAN

APPENDIX F – PERMIT TO OPERATE

APPENDIX A
CALCULATIONS & NOMENCLATURE

Standard Abbreviations for Reports

Unit	Abbreviation	Unit	Abbreviation
Billion	G	microgram	µg
Brake horsepower	bhp	milligram	mg
Brake horsepower hour	bhp-hr	milliliter	ml
British Thermal Unit	Btu	million	MM
capture efficiency	CE	minute	min
destruction efficiency	DE	Molecular Weight	M
Dry Standard Cubic Feet	DSCF	nanogram	ng
Dry Standard Cubic Feet per Minute	DSCFM	Parts per Billion	ppb
Dry Standard Cubic Meter	DSCM	Parts per Million	ppm
Dry Standard Cubic Meter per Minute	DSCMM		
grains per dry standard cubic foot	gr/DSCF	pound	lb
gram	g	pounds per hour	lbs/hr
grams per Brake horsepower hour	g/bhp-hr	pounds per million Btu	lbs/MMBtu
kilowatt	kW	second	sec
liter	l	Specific Volume, ft^3/lb-mole	SV
Megawatts	MW	Thousand	k
meter	m	watt	W

Common Conversions / Calculations / Constants

1 gram = 15.432 grains

1 pound = 7000 grains

grams per pound = 453.6

bhp = 1.411 * Engine kW, (where Engine kW = Generator kW output / 0.95) @ 95% efficiency

g/bhp-hr = 453*ppm*(MW / (385E6))* 0.00848 * f-factor * (20.9 / (20.9-O_2)); **CARB**

g/bhp-hr = lbs/hr * 453.6 / bhp

2.59E-9 = Conversion factor for ppm to lbs/scf; **EPA 40CFR60.45 @ 68°F**

Correction Multiplier for Standard Temperature = (460 + $T_{std.}$ °F) / 528

F factor: dscf / MMBTU @ **60°F = 8579,** @ **68°F = 8710.** @ 70° F = **8743** for natural gas

Btu/ft^3: **1040**

lb/hr Part. Emission Rate = 0.00857 * gr/dscf * dscfm; **EPA Method 5**

lbs/hr = ppm / SV x dscfm x M * 60; **CARB Method 100; where SV ≈ $385E^6$ @ 68°F or ≈ $379E^6$ @ 60°F or ≈ $386E^6$ @ 70°F.**

Correction to 12% CO_2 = gr/dscf * 12% / stack CO_2%; **EPA Method 5**

Correction to 3% O_2 = ppm * 17.9 / (20.9 - stack O_2 %); **CARB Method 100**

Correction to 15% O_2 = ppm * 5.9 / (20.9 - stack O_2 %); **CARB Method 100**

dscfm = Gas Fd * MMBtu/min * 20.9 / (20.9 - stack O_2 %); **EPA Method 19**

lb/MMBtu @ **60°F** = Fd * M * ppm * **2.64E-9** * 20.9 / (20.9 - stack O_2 %);
@ **68°F** = Fd * M * ppm * **2.59E-9** * 20.9 /(20.9 - stack O_2 %);
@**70F** = Fd * M * ppm * **2.58-9** * 20.9 / (20.9 - stack O_2 %)

Standard Temperatures by District

EPA	68 °F	NSAPCD - Northern Sonoma	68 °F
CARB	68 °F	PCAPCD - Placer	68 °F
BAAQMD - Bay Area	70 °F	SLOCAPCD - San Luis Obispo	60 °F
SJVUAPCD - San Joaquin	60 °F	SMAQMD - Sacramento	68°F de facto
SCAQMD - South Coast	60 °F	SCAQMD - Shasta County	68 °F
MBUAPCD - Monterey Bay	68 °F	YSAPCD - Yolo-Solano	68 °F
FRAQMD – Feather River	68 °F	AADBAPC – Amador County	68 °F

APPENDIX B
LAB REPORTS

BEST ENVIRONMENTAL
339 Stealth Court
Livermore, California 94551
(925) 455-9474 FAX (925) 455-9479
bestair@best-enviro.com

October 29, 2021

Subject: On September 30, 2021 Best Environmental collected three inlet samples from the Shoreline Amphitheatre Landfill Source Test.

CLIENT: SCS Field Services
PROJECT NAME: Shoreline Amphitheatre Landfill Source Test
BE PROJECT NO: 239
ANALYSIS DATE: 10/1/21

Sample ID	Lab Sample Number
Run 1 Inlet	2790
Run 2 Inlet	2791
Run 3 Inlet	2792

The samples were analyzed in accordance with ASTM D-1945/6228 (fuel composition analysis).

The following pages present inlet LFG gas composition analytical results. A chain of custody can also be found in this report. This Lab report contains a total of 6 pages.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples.

If you have any questions concerning these results, or if Best Environmental can be of any further assistance, please contact me at (925) 455-9474 x 103.

Submitted by,

Bobby Asfour
Lab Director

ASTM D-1945/3588/6228
Digester Gas Low

Facility: Shoreline Amphithetre
Source: Carbon System

Test Date: 9/30/21
Lab Personnel: BA

Analysis Date: 10/1/21
Project #: 239

GC/FID/FPD/TCD: SRI 8610C
Column: 3 foot Haysep D, 60M capillary, 12' 13x Packed column
Chromatic integration: Peak444 Peaksimple by SRI
Gas Standards: C1-C6 n-alkane in N2
O2/CO2 in N2
Natural gas standard in Methane

2790 **Fuel Analysis-R1 inlet**

Helium	0.0196
Hydrogen	0.5053
Nitrogen	77.7713
Oxygen	19.1945
Carbon Monc	0.0000
Carbon Dioxi	1.7641
Methane	1.1689
Ethane	0.0000
Propane	0.0000
Isobutane	0.0000
n-Butane	0.0000
Isopentane	0.0000
n-Pentane	0.0000
Hexanes	0.0048
H2S	<1.0

2791 **Fuel Analysis-R2 Inlet**

Helium	0.0226
Hydrogen	0.3249
Nitrogen	76.5749
Oxygen	19.1655
Carbon Mo	0.0000
Carbon Dio	2.1016
Methane	1.5080
Ethane	0.0000
Propane	0.0000
Isobutane	0.0000
n-Butane	0.0000
Isopentane	0.0000
n-Pentane	0.0000
Hexanes	0.0030
H2S	<1.0

2792 **Fuel Analysis-R3 Inlet**

Helium	0.0119	%
Hydrogen	0.2894	%
Nitrogen	76.2699	%
Oxygen	19.0533	%
CO	0.0000	%
CO2	2.1823	%
Methane	1.5923	%
Ethane	0.0000	%
Propane	0.0001	%
Isobutane	0.0000	%
n-Butane	0.0000	%
Isopentane	0.0000	%
n-Pentane	0.0000	%
Hexanes	0.0037	%
H2S	<1.0	ppm

H2S Calibrations
GC/FPD

BEST ENVIRONMENTAL — Livermore, CA 925 455-9474

Facility: Shoreline Amphithetre **Source:** **Carbon System**

Test Date: 9/30/21 **Lab Personnel:** BA

Analysis Date: 10/1/21

H2S

	Initial blank			limit
	ND			DL

dilution	initial cal			
1	169			
2	84.5			
10	16.90			

	Cal difference-3 injections			limit
	169.3			
	168.5			
	167.2			
average	168.33			
Deviation	1.06			
% diff (dev.)	**0.63**			**<5**
% recovery	**99.61**			**85-115**

Detection Limit\ND	
H2S ppm	<1

CERTIFICATE OF ANALYSIS

Customer Name: Best Environmental
Stock / Analyzer Tag #: 03143
Customer Reference: 1142
MESA Reference: 128792
Date of Certification: December 22, 2020
Recommended Shelf Life: 3 Years

Cylinder Number: 789342
Product Class Certified Standard
Cylinder Contents (1): 14 Liters @ 240 PSI
Cylinder CGA: 14L/160, 1/8" NPT-F
Analysis Method: GC-TCD
Preparation Method: Transfill

Component	Requested Concentration (2)	Reported Concentration (2,3)
Nitrogen	2.40%	2.39%
Carbon Dioxide	1.90%	1.90%
Ethane	4.80%	4.79%
Propane	1.00%	0.996%
Isobutane	0.30%	0.301%
N-Butane	0.30%	0.298%
Isopentane	0.10%	0.100%
N-Pentane	0.10%	0.100%
Hexane	0.08%	0.080%
Heptane	0.01%	0.010%
Methane	Balance	Balance

Methane
88.27%

LOT #: 15KE661

Authorized Signature: _____

(1) The fill pressure shown on the COA is as originally quoted. The fill pressure measured by the customer may differ from the fill pressure originally quoted due to temperature effects, compressibility of the individual components when blended together in the cylinder, gauge accuracy or reduction in content volume before shipping as a result of samples withdrawn for laboratory QC necessary to ensure product quality.
(2) Unless otherwise stated, concentrations are given in molar units.
(3) Vapor pressure mixes are blended at a sufficiently low pressure so as to eliminate phase separation under most low temperature conditions encountered during transport or storage. However, it is generally recommended that cylinders containing vapor pressure restricted mixes be placed on the floor in a horizontal position and rolled back and forth to improve homogeneity of the gas phase mixture before being put into service.

Analytical Gas Standards are prepared and analyzed using combinations of NIST traceable weights, SRM's provided by NIST, or internal gas standards that have been verified for accuracy using procedures published by the US-EPA. Pure gases are analyzed and certified for purity using minor component Analytical Gas Standards prepared according to the methods specified above. Balances are calibrated to NIST test weights covered by NIST test number 822/278982-10. Reference Certification #'s: 825/T, 986/Z and 3280/I. Calibration methods are in conformance with MIL-STD 45662A.

MESA Specialty Gases & Equipment
division of MESA International Technologies, Inc.
2427 S. Anne St. • Santa Ana, California 92704 • USA

PRAXAIR
Making our planet more productive

DocNumber: 233331

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-586-2154
Fax: 714-542-6689
PGVP ID: F22019

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 02/01/2019
Praxair Order Number: 67930533
Part Number: EV NIHS170ME-AS
Customer PO Number: 8934

Fill Date: 01/21/2019
Lot Number: 70086902109
Cylinder Style & Outlet: AS CGA 330
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	02/01/2022	NIST Traceable
Cylinder Number:	SA20654	Expanded Uncertainty
169 ppm	Hydrogen sulfide	± 0.9 %
Balance	Nitrogen	

Certification Information:

Certification Date: 02/01/2019 *Term:* 36 Months *Expiration Date:* 02/01/2022

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.
Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* Hydrogen sulfide

Requested Concentration: 170 ppm
Certified Concentration: 169 ppm
Instrument Used: ZW-9900-S1330-1
Analytical Method: UV Spectrometry
Last Multipoint Calibration: 01/11/2019

Reference Standard: Type / Cylinder #: GMIS / HA8682
Concentration / Uncertainty: 249.6 ppm ±0.704%
Expiration Date: 01/19/2020
Traceable to: SRM # / Sample # / Cylinder #: PRM#5603504 / 3222510.02 / PRM#5603504
SRM Concentration / Uncertainty: 400.1 PPM / ±2.8 PPM
SRM Expiration Date: 05/02/2017

First Analysis Data:						Date	01/25/2019
Z: 0	R: 250	C: 169	Conc: 169				
R: 250	Z: 0	C: 169	Conc: 169				
Z: 0	C: 169	R: 250	Conc: 169				
UOM: ppm			Mean Test Assay:	169	ppm		

Second Analysis Data:						Date	02/01/2019
Z: 0	R: 250	C: 169	Conc: 169				
R: 250	Z: 0	C: 169	Conc: 169				
Z: 0	C: 170	R: 250	Conc: 170				
UOM: ppm			Mean Test Assay:	169	ppm		

Analyzed By: Jose Vasquez

Certified By: Danielle Burns

Best Environmental Ph (925) 455-9474; Fx (925) 455-9479

Project ID: Shoreline **SAMPLE CHAIN OF CUSTODY** **BE PROJECT MANAGER:** BA

Analyical Lab: BE

#	DATE	TIME	SAMPLE ID Run#/Method/Fraction/Source	CONTAINER size / type	Volume	Storage Temp °F	SAMPLE DESCRIPTION	ANALYSIS	TAT
1	9/30/21		Run 1/Inlet	10L/Tedlar	7L	Amb.	Landfill Gas	Comp. Fuel & Total Sulfur	Norm.
2									
3	9/30/21		Run 2/Inlet	10L/Tedlar	7L	Amb.	Landfill Gas	Comp. Fuel & Total Sulfur	Norm.
4									
5	9/30/21		Run 3/Inlet	10L/Tedlar	7L	Amb.	Landfill Gas	Comp. Fuel & Total Sulfur	Norm.
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

SPECIAL INSTRUCTIONS: Record & Report all liquid sample volumes.

Submit Results to: Attn: Bobby Asfour BEST ENVIRONMENTAL 6261 SOUTHFRONT RD. LIVERMORE CA. 94551

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

SAMPLE CONDITION AS RECEIVED: OK or not OK

Atmospheric Analysis & Consulting, Inc.

CLIENT	: Best Environmental
PROJECT NAME	: Shoreline
AAC PROJECT NO.	: 211821
REPORT DATE	: 10/21/2021

On October 6th, 2021, Atmospheric Analysis & Consulting, Inc. received six (6) Six-Liter Summa Canisters for TNMOC analysis by EPA 25C. Upon receipt, the samples were assigned unique Laboratory ID numbers as follows:

Client ID	Lab No.	Return Pressure (mmHg)
LFG R1	211821-24140	776.0
LFG R2	211821-24141	769.0
LFG R3	211821-24142	749.5
Outlet R1	211821-24143	785.5
Outlet R2	211821-24144	793.0
Outlet R3	211821-24145	789.5

This analysis is performed in accordance with AAC's Quality Manual. Test results apply to the samples as received. For detailed information pertaining to specific EPA, NCASI, ASTM and SCAQMD accreditations (Methods & Analytes), please visit our website at www.aaclab.com.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples. The Technical Director or his/her designee, as verified by the following signature, has authorized release of the data.

If you have any questions or require further explanation of data results, please contact the undersigned.

Sucha Parmar, Ph.D.
Technical Director

This report consists of 5 pages.

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com • (805) 650-1642

Laboratory Analysis Report

Client : Best Environmental
Project No. : 211821
Matrix : AIR
Units : ppmC

Sampling Date : 09/30/2021
Receiving Date : 10/06/2021
Analysis Date : 10/15-20/2021
Report Date : 10/21/2021

EPA 25C

Reporting Limit: 3.0 ppmC		*Canister Dilution Factor*	*Analysis Dilution Factor*	TNMOC*	SRL (RL x DF's)
Client Sample ID	AAC ID				
LFG R1	211821-24140	1.3	1.0	<SRL	3.9
LFG R2	211821-24141	1.3	1.0	<SRL	3.8
LFG R3	211821-24142	1.2	1.0	<SRL	3.7
Outlet R1	211821-24143	1.1	1.0	<SRL	3.4
Outlet R2	211821-24144	1.1	1.0	<SRL	3.4
Outlet R3	211821-24145	1.4	1.0	<SRL	4.1

Sample Reporting Limit (SRL) is equal to Reporting Limit x Analysis Dil. Fac x Canister Dil. Fac.

**Total Non-Methane Organic Carbon*

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Analysis Date : 10/15/2021
Analyst : DL
Units : ppmv

Instrument ID: GCTCA#2-FID
Calibration Date: 9/1/2021

I - Opening Calibration Verification Standard - Method 25C

Analyte	xRF	DRF	%RPD*
Propane	881041	826671	6.4

II - TNMOC Response Factor - Method 25C

Analyte	xRF	CV RF	CV dp RF	CV tp RF	Average RF	% RPD***
Propane	881041	826671	829373	792403	816149	7.6

III - Method Blank - Method 25C

AAC ID	Analyte	Sample Result
MB	TNMOC	0.00

IV - Laboratory Control Spike & Duplicate - Method 25C

AAC ID	Analyte	Spike Added	LCS	LCSD	LCS % Rec **	LCSD % Rec **	% RPD***
LCS/LCSD	Propane	51.0	50.16	50.33	98.5	98.8	0.3

V - Closing Calibration Verification Standard - Method 25C

Analyte	xCF	dCF	%RPD*
Propane	881041	841571	4.6

xCF - Average Calibration Factor from Initial Calibration Curve
dCF - Daily Calibration Factor
* Must be <15%
** Must be 90-110 %
*** Must be <20%

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Analysis Date : 10/20/2021
Analyst : DL
Units : ppmv

Instrument ID: GCTCA#2-FID
Calibration Date: 9/1/2021

I - Opening Calibration Verification Standard - Method 25C

Analyte	xRF	DRF	%RPD*
Propane	881041	823868	6.7

II - TNMOC Response Factor - Method 25C

Analyte	xRF	CV RF	CV dp RF	CV tp RF	Average RF	% RPD***
Propane	881041	823868	818121	825948	822646	6.9

III - Method Blank - Method 25C

AAC ID	Analyte	Sample Result
MB	TNMOC	0.00

IV - Laboratory Control Spike & Duplicate - Method 25C

AAC ID	Analyte	Spike Added	LCS	LCSD	LCS % Rec **	LCSD % Rec **	% RPD***
LCS/LCSD	Propane	51.0	50.42	49.21	99.0	96.6	2.4

V - Closing Calibration Verification Standard - Method 25C

Analyte	xCF	dCF	%RPD*
Propane	881041	760811	14.6

xCF - Average Calibration Factor from Initial Calibration Curve
dCF - Daily Calibration Factor
* Must be <15%
** Must be 90-110 %
*** Must be <20%

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24182 1

Ph (925) 455-9474; Fx (925) 455-9479

Project ID: Shoreline **SAMPLE CHAIN OF CUSTODY** **BE PROJECT MANAGER: B Johnston**

Analyical Lab: AAC

#	DATE	TIME	SAMPLE ID Run#/Method/Fraction/Source	CONTAINER size / type	Volume	can ID	Method	ANALYSIS	Pressure Initial	Pressure Final
1	9/30/21	841	LFG R1 24190	Can	6L	333	EPA M25C, TO15	NMOC, Speciated VOC	30	0
2	9/30/21	914	LFG R2 24191	Can	6L	60	EPA M25C, TO15	NMOC, Speciated VOC	30	0
3	9/30/21	947	LFG R3 24192	Can	6L	488	EPA M25C, TO15	NMOC, Speciated VOC	30	0
4	9/30/21	841	Outlet R1 24193	Can	6L	1280	EPA M25C	NMOC	30	0
5	9/30/21	914	Outlet R2 24194	Can	6L	70	EPA M25C	NMOC	30	0
6	9/30/21	947	Outler R3 24195	Can	6L	141	EPA M25C	NMOC	30	0

SPECIAL INSTRUCTIONS:

sults to: Attn: BEST ENVIRONMENTAL 339 STEALTH COURT, LIVERMORE CA. 94551

Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Received by: HUNTER DALTON Date: 10/6/21 Time: 1210

SAMPLE CONDITION AS RECEIVED: OK or not OK

Fx- 6x cans

Atmospheric Analysis & Consulting, Inc.

CLIENT	: Best Environmental
PROJECT NAME	: Shoreline
AAC PROJECT NO.	: 211821
REPORT DATE	: 10/15/2021

On October 6, 2021, Atmospheric Analysis & Consulting, Inc. received three (3) six-Liter Summa Canisters for Volatile Organic Compounds analysis by EPA Method TO-15. Upon receipt, the samples were assigned unique Laboratory ID numbers as follows:

Client ID	Lab ID	Return Pressure (mmHga)
LFG R1	211821-24140	776.0
LFG R2	211821-24141	769.0
LFG R3	211821-24142	749.5

This analysis is accredited under the laboratory's ISO/IEC 17025:2017 accreditation issued by the ANSI National Accreditation Board. Refer to certificate and scope of accreditation AT-1908. Test results apply to the sample(s) as received. For detailed information pertaining to specific EPA, NCASI, ASTM and SCAQMD accreditations (Methods & Analytes), please visit our website at www.aaclab.com.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples.

The Technical Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy report.

If you have any questions or require further explanation of data results, please contact the undersigned.

Sucha Parmar, Ph.D.
Technical Director

This report consists of 10 pages.

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com (805) 650-1642

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : Best Environmental
PROJECT NO : 211821
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 10/06/2021
DATE REPORTED : 10/15/2021
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	LFG R1			Sample Reporting Limit (SRL)	LFG R2			Sample Reporting Limit (SRL)	Method Reporting Limit (MRL)
AAC ID	211821-24140				211821-24141				
Date Sampled	09/30/2021				09/30/2021				
Date Analyzed	10/12/2021				10/12/2021				
Can Dilution Factor	1.31				1.28				
Compound	Result	Qualifier	Analysis DF	(MRLxDF's)	Result	Qualifier	Analysis DF	(MRLxDF's)	
Chlorodifluoromethane	0.94		1	0.65	<SRL	U	1	0.64	0.50
Propene	44.7		1	1.31	46.5		1	1.28	1.00
Dichlorodifluoromethane	0.67		1	0.65	<SRL	U	1	0.64	0.50
Chloromethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Dichlorotetrafluoroethane	1.42		1	0.65	1.10		1	0.64	0.50
Vinyl Chloride	4.18		1	0.65	3.71		1	0.64	0.50
Methanol	13.7		1	6.53	<SRL	U	1	6.38	5.00
1,3-Butadiene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Bromomethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Chloroethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Dichlorofluoromethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Ethanol	<SRL	U	1	2.61	<SRL	U	1	2.55	2.00
Vinyl Bromide	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Acetone	23.8		1	2.61	35.6		1	2.55	2.00
Trichlorofluoromethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
2-Propanol (IPA)	<SRL	U	1	2.61	<SRL	U	1	2.55	2.00
Acrylonitrile	<SRL	U	1	2.61	<SRL	U	1	2.55	2.00
1,1-Dichloroethene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Methylene Chloride (DCM)	<SRL	U	1	1.31	<SRL	U	1	1.28	1.00
Allyl Chloride	<SRL	U	1	1.31	<SRL	U	1	1.28	1.00
Carbon Disulfide	38.6		1	2.61	109		1	2.55	2.00
Trichlorotrifluoroethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
trans-1,2-Dichloroethene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,1-Dichloroethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Vinyl Acetate	2.62		1	1.31	3.09		1	1.28	1.00
2-Butanone (MEK)	6.98		1	1.31	18.8		1	1.28	1.00
cis-1,2-Dichloroethene	0.78		1	0.65	0.79		1	0.64	0.50
Hexane	13.2		1	0.65	12.4		1	0.64	0.50
Chloroform	5.59		1	0.65	4.79		1	0.64	0.50
Ethyl Acetate	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Tetrahydrofuran	5.27		1	0.65	6.22		1	0.64	0.50
1,2-Dichloroethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,1,1-Trichloroethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Benzene	4.03		1	0.65	4.13		1	0.64	0.50

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Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : Best Environmental
PROJECT NO : 211821
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 10/06/2021
DATE REPORTED : 10/15/2021
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	LFG R1			Sample Reporting Limit (SRL)	LFG R2			Sample Reporting Limit (SRL)	Method Reporting Limit (MRL)
AAC ID	211821-24140				211821-24141				
Date Sampled	09/30/2021				09/30/2021				
Date Analyzed	10/12/2021				10/12/2021				
Can Dilution Factor	1.31				1.28				
Compound	Result	Qualifier	Analysis DF	(MRLxDF's)	Result	Qualifier	Analysis DF	(MRLxDF's)	
Carbon Tetrachloride	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Cyclohexane	1.24		1	0.65	1.25		1	0.64	0.50
1,2-Dichloropropane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Bromodichloromethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,4-Dioxane	<SRL	U	1	1.31	<SRL	U	1	1.28	1.00
Trichloroethene (TCE)	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
2,2,4-Trimethylpentane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Heptane	6.78		1	0.65	7.28		1	0.64	0.50
cis-1,3-Dichloropropene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
4-Methyl-2-pentanone (MiBK)	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
trans-1,3-Dichloropropene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,1,2-Trichloroethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Toluene	3.15		1	0.65	3.38		1	0.64	0.50
2-Hexanone (MBK)	<SRL	U	1	1.31	<SRL	U	1	1.28	1.00
Dibromochloromethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,2-Dibromoethane	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Tetrachloroethene (PCE)	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Chlorobenzene	6.83		1	0.65	6.95		1	0.64	0.50
Ethylbenzene	28.8		1	0.65	29.0		1	0.64	0.50
m & p-Xylene	30.8		1	1.31	31.2		1	1.28	1.00
Bromoform	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
Styrene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,1,2,2-Tetrachloroethane	<SRL	U	1	0.65	1.05		1	0.64	0.50
o-Xylene	11.8		1	0.65	11.6		1	0.64	0.50
4-Ethyltoluene	7.85		1	0.65	7.13		1	0.64	0.50
1,3,5-Trimethylbenzene	6.46		1	0.65	6.02		1	0.64	0.50
1,2,4-Trimethylbenzene	14.1		1	0.65	13.1		1	0.64	0.50
Benzyl Chloride (a-Chlorotoluene)	1.79		1	0.65	<SRL	U	1	0.64	0.50
1,3-Dichlorobenzene	<SRL	U	1	1.31	<SRL	U	1	1.28	1.00
1,4-Dichlorobenzene	9.40		1	0.65	8.86		1	0.64	0.50
1,2-Dichlorobenzene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
1,2,4-Trichlorobenzene	<SRL	U	1	1.31	<SRL	U	1	1.28	1.00
Hexachlorobutadiene	<SRL	U	1	0.65	<SRL	U	1	0.64	0.50
BFB-Surrogate Std. % Recovery		99%				92%			70-130%

U - Compound was not detected at or above the SRL.

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Laboratory Analysis Report

CLIENT : Best Environmental
PROJECT NO : 211821
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 10/06/2021
DATE REPORTED : 10/15/2021
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	LFG R3			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	211821-24142				
Date Sampled	09/30/2021				
Date Analyzed	10/12/2021				
Can Dilution Factor	1.23				
Compound	Result	Qualifier	Analysis DF		
Chlorodifluoromethane	<SRL	U	1	0.61	0.50
Propene	31.9		1	1.23	1.00
Dichlorodifluoromethane	<SRL	U	1	0.61	0.50
Chloromethane	<SRL	U	1	0.61	0.50
Dichlorotetrafluoroethane	1.08		1	0.61	0.50
Vinyl Chloride	3.49		1	0.61	0.50
Methanol	<SRL	U	1	6.15	5.00
1,3-Butadiene	<SRL	U	1	0.61	0.50
Bromomethane	<SRL	U	1	0.61	0.50
Chloroethane	<SRL	U	1	0.61	0.50
Dichlorofluoromethane	<SRL	U	1	0.61	0.50
Ethanol	<SRL	U	1	2.46	2.00
Vinyl Bromide	<SRL	U	1	0.61	0.50
Acetone	4.14		1	2.46	2.00
Trichlorofluoromethane	<SRL	U	1	0.61	0.50
2-Propanol (IPA)	<SRL	U	1	2.46	2.00
Acrylonitrile	<SRL	U	1	2.46	2.00
1,1-Dichloroethene	<SRL	U	1	0.61	0.50
Methylene Chloride (DCM)	<SRL	U	1	1.23	1.00
Allyl Chloride	<SRL	U	1	1.23	1.00
Carbon Disulfide	3.22		1	2.46	2.00
Trichlorotrifluoroethane	<SRL	U	1	0.61	0.50
trans-1,2-Dichloroethene	<SRL	U	1	0.61	0.50
1,1-Dichloroethane	<SRL	U	1	0.61	0.50
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1	0.61	0.50
Vinyl Acetate	<SRL	U	1	1.23	1.00
2-Butanone (MEK)	<SRL	U	1	1.23	1.00
cis-1,2-Dichloroethene	0.76		1	0.61	0.50
Hexane	13.3		1	0.61	0.50
Chloroform	4.86		1	0.61	0.50
Ethyl Acetate	<SRL	U	1	0.61	0.50
Tetrahydrofuran	5.63		1	0.61	0.50
1,2-Dichloroethane	<SRL	U	1	0.61	0.50
1,1,1-Trichloroethane	<SRL	U	1	0.61	0.50
Benzene	4.17		1	0.61	0.50

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Laboratory Analysis Report

CLIENT : Best Environmental
PROJECT NO : 211821
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 10/06/2021
DATE REPORTED : 10/15/2021
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	LFG R3			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
AAC ID	211821-24142				
Date Sampled	09/30/2021				
Date Analyzed	10/12/2021				
Can Dilution Factor	1.23				
Compound	Result	Qualifier	Analysis DF		
Carbon Tetrachloride	<SRL	U	1	0.61	0.50
Cyclohexane	1.30		1	0.61	0.50
1,2-Dichloropropane	<SRL	U	1	0.61	0.50
Bromodichloromethane	<SRL	U	1	0.61	0.50
1,4-Dioxane	<SRL	U	1	1.23	1.00
Trichloroethene (TCE)	<SRL	U	1	0.61	0.50
2,2,4-Trimethylpentane	<SRL	U	1	0.61	0.50
Heptane	7.44		1	0.61	0.50
cis-1,3-Dichloropropene	<SRL	U	1	0.61	0.50
4-Methyl-2-pentanone (MiBK)	<SRL	U	1	0.61	0.50
trans-1,3-Dichloropropene	<SRL	U	1	0.61	0.50
1,1,2-Trichloroethane	<SRL	U	1	0.61	0.50
Toluene	1.91		1	0.61	0.50
2-Hexanone (MBK)	<SRL	U	1	1.23	1.00
Dibromochloromethane	<SRL	U	1	0.61	0.50
1,2-Dibromoethane	<SRL	U	1	0.61	0.50
Tetrachloroethene (PCE)	<SRL	U	1	0.61	0.50
Chlorobenzene	6.81		1	0.61	0.50
Ethylbenzene	27.2		1	0.61	0.50
m & p-Xylene	28.4		1	1.23	1.00
Bromoform	<SRL	U	1	0.61	0.50
Styrene	<SRL	U	1	0.61	0.50
1,1,2,2-Tetrachloroethane	<SRL	U	1	0.61	0.50
o-Xylene	9.85		1	0.61	0.50
4-Ethyltoluene	6.57		1	0.61	0.50
1,3,5-Trimethylbenzene	5.03		1	0.61	0.50
1,2,4-Trimethylbenzene	10.5		1	0.61	0.50
Benzyl Chloride (a-Chlorotoluene)	<SRL	U	1	0.61	0.50
1,3-Dichlorobenzene	<SRL	U	1	1.23	1.00
1,4-Dichlorobenzene	7.19		1	0.61	0.50
1,2-Dichlorobenzene	<SRL	U	1	0.61	0.50
1,2,4-Trichlorobenzene	<SRL	U	1	1.23	1.00
Hexachlorobutadiene	<SRL	U	1	0.61	0.50
BFB-Surrogate Std. % Recovery		83%			70-130%

U - Compound was not detected at or above the SRL.

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com (805) 650-1642

QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 10/12/2021
MATRIX : High Purity N_2
UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-04
CALIBRATION STD ID : PS082421-03
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Continuing Calibration Verification of the 09/09/2021 Calibration

Analyte Compounds	*Source*[1]	*CCV*[2]	*% Recovery*[3]
4-BFB (surrogate standard)	10.00	10.43	104
Chlorodifluoromethane	10.70	11.01	103
Propene	10.90	12.17	112
Dichlorodifluoromethane	10.30	11.12	108
Dimethyl Ether	10.70	10.78	101
Chloromethane	10.30	11.85	115
Dichlorotetrafluoroethane	9.80	11.51	117
Vinyl Chloride	10.10	11.50	114
Acetaldehyde	20.50	18.77	92
Methanol	16.20	15.31	95
1,3-Butadiene	10.70	11.35	106
Bromomethane	10.30	11.42	111
Chloroethane	9.90	10.24	103
Dichlorofluoromethane	10.40	10.63	102
Ethanol	10.50	9.67	92
Vinyl Bromide	10.60	11.63	110
Acrolein	10.90	10.39	95
Acetone	10.40	9.58	92
Trichlorofluoromethane	10.20	9.98	98
2-Propanol (IPA)	10.90	9.80	90
Acrylonitrile	11.30	9.41	83
1,1-Dichloroethene	10.70	10.89	102
Methylene Chloride (DCM)	10.90	9.50	87
TertButanol (TBA)	10.80	10.10	94
Allyl Chloride	10.90	9.40	86
Carbon Disulfide	10.50	9.27	88
Trichlorotrifluoroethane	10.90	10.01	92
trans-1,2-Dichloroethene	10.40	9.64	93
1,1-Dichloroethane	10.30	9.23	90
Methyl Tert Butyl Ether (MTBE)	10.80	10.64	99
Vinyl Acetate	11.00	9.80	89
2-Butanone (MEK)	10.50	9.39	89
cis-1,2-Dichloroethene	10.50	10.47	100
Hexane	10.70	10.30	96
Chloroform	10.60	9.90	93
Ethyl Acetate	10.60	9.32	88
Tetrahydrofuran	10.60	10.06	95
1,2-Dichloroethane	10.60	9.72	92
1,1,1-Trichloroethane	10.50	9.74	93
Benzene	10.60	10.42	98
Carbon Tetrachloride	10.70	10.01	94
Cyclohexane	10.50	10.30	98

Analyte Compounds (Continued)	*Source*[1]	*CCV*[2]	*% Recovery*[3]
1,2-Dichloropropane	10.60	9.54	90
Bromodichloromethane	10.50	9.73	93
1,4-Dioxane	10.50	9.66	92
Trichloroethene (TCE)	10.50	10.06	96
2,2,4-Trimethylpentane	10.60	10.41	98
Methyl Methacrylate	10.60	9.75	92
Heptane	10.60	10.08	95
cis-1,3-Dichloropropene	10.20	9.20	90
4-Methyl-2-pentanone (MiBK)	10.20	9.07	89
trans-1,3-Dichloropropene	10.10	8.97	89
1,1,2-Trichloroethane	10.80	10.05	93
Toluene	10.80	11.90	110
2-Hexanone (MBK)	10.70	8.33	78
Dibromochloromethane	10.60	10.12	95
1,2-Dibromoethane	10.90	10.14	93
Tetrachloroethene (PCE)	10.50	9.88	94
Chlorobenzene	10.90	10.48	96
Ethylbenzene	10.90	12.55	115
m & p-Xylene	21.60	21.64	100
Bromoform	10.80	10.83	100
Styrene	10.70	10.90	102
1,1,2,2-Tetrachloroethane	10.70	9.79	91
o-Xylene	10.70	11.34	106
1,2,3-Trichloropropane	10.80	10.51	97
Isopropylbenzene (Cumene)	10.80	10.44	97
α-Pinene	11.60	14.25	123
2-Chlorotoluene	10.90	10.69	98
n-Propylbenzene	10.20	10.23	100
4-Ethyltoluene	10.60	10.94	103
1,3,5-Trimethylbenzene	10.50	10.08	96
β-Pinene	9.30	9.31	100
1,2,4-Trimethylbenzene	10.50	10.40	99
Benzyl Chloride (a-Chlorotoluene)	10.60	7.77	73
1,3-Dichlorobenzene	10.60	9.13	86
1,4-Dichlorobenzene	10.40	10.01	96
Sec-ButylBenzene	10.80	10.51	97
1,2-Dichlorobenzene	10.30	9.47	92
n-ButylBenzene	10.60	9.37	88
1,2-Dibromo-3-Chloropropane	10.70	8.52	80
1,2,4-Trichlorobenzene	10.50	8.50	81
Naphthalene	10.50	8.87	84
Hexachlorobutadiene	10.70	9.52	89

[1] Concentration of analyte compound in certified source standard.

[2] Measured result from daily Continuing Calibration Verification (CCV).

[3] The acceptable range for analyte recovery is 100±30%.

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QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 10/12/2021
MATRIX : High Purity N_2
UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-04
CALIBRATION STD ID : PS082421-03
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Laboratory Control Spike Analysis

System Monitoring Compounds	*Sample Concentration*	*Spike Added*	*LCS[1] Recovery*	*LCSD[1] Recovery*	*LCS[1] % Recovery[2]*	*LCSD[1] % Recovery[2]*	*RPD[3]*
4-BFB (surrogate standard)	0.0	10.00	10.43	9.87	104.3	98.7	5.5
1,1-Dichloroethene	0.0	10.70	10.89	10.23	102	96	6.3
Methylene Chloride (DCM)	0.0	10.90	9.50	8.93	87	82	6.2
Benzene	0.0	10.60	10.42	10.18	98	96	2.3
Trichloroethene (TCE)	0.0	10.50	10.06	9.59	96	91	4.8
Toluene	0.0	10.80	11.90	12.21	110	113	2.6
Tetrachloroethene (PCE)	0.0	10.50	9.88	9.33	94	89	5.7
Chlorobenzene	0.0	10.90	10.48	9.45	96	87	10.3
Ethylbenzene	0.0	10.90	12.55	12.30	115	113	2.0
m & p-Xylene	0.0	21.60	21.64	20.18	100	93	7.0
o-Xylene	0.0	10.70	11.34	10.64	106	99	6.4

[1] Laboratory Control Spike (LCS) / Laboratory Control Spike Duplicate (LCSD)

[2] The acceptable range for analyte recovery is 100±30%.

[3] Relative Percent Difference (RPD) between LCS recovery and LCSD recovery (acceptable range is <25%).

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QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 10/12/2021
MATRIX : High Purity He or N_2
UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-04
ANALYST : MB/RC

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Method Blank Analysis

Analyte Compounds	*MB 101221*	*Reporting Limit (RL)*
4-BFB (surrogate standard)	84%	100±30%
Chlorodifluoromethane	<RL	0.5
Propene	<RL	1.0
Dichlorodifluoromethane	<RL	0.5
Dimethyl Ether	<RL	0.5
Chloromethane	<RL	0.5
Dichlorotetrafluoroethane	<RL	0.5
Vinyl Chloride	<RL	0.5
Acetaldehyde	<RL	5.0
Methanol	<RL	5.0
1,3-Butadiene	<RL	0.5
Bromomethane	<RL	0.5
Chloroethane	<RL	0.5
Dichlorofluoromethane	<RL	0.5
Ethanol	<RL	2.0
Vinyl Bromide	<RL	0.5
Acrolein	<RL	1.0
Acetone	<RL	2.0
Trichlorofluoromethane	<RL	0.5
2-Propanol (IPA)	<RL	2.0
Acrylonitrile	<RL	2.0
1,1-Dichloroethene	<RL	0.5
Methylene Chloride (DCM)	<RL	1.0
TertButanol (TBA)	<RL	0.5
Allyl Chloride	<RL	1.0
Carbon Disulfide	<RL	2.0
Trichlorotrifluoroethane	<RL	0.5
trans-1,2-Dichloroethene	<RL	0.5
1,1-Dichloroethane	<RL	0.5
Methyl Tert Butyl Ether (MTBE)	<RL	0.5
Vinyl Acetate	<RL	1.0
2-Butanone (MEK)	<RL	1.0
cis-1,2-Dichloroethene	<RL	0.5
Hexane	<RL	0.5
Chloroform	<RL	0.5
Ethyl Acetate	<RL	0.5
Tetrahydrofuran	<RL	0.5
1,2-Dichloroethane	<RL	0.5
1,1,1-Trichloroethane	<RL	0.5
Benzene	<RL	0.5
Carbon Tetrachloride	<RL	0.5
Cyclohexane	<RL	0.5

Analyte Compounds (Continued)	*MB 101221*	*Reporting Limit (RL)*
1,2-Dichloropropane	<RL	0.5
Bromodichloromethane	<RL	0.5
1,4-Dioxane	<RL	1.0
Trichloroethene (TCE)	<RL	0.5
2,2,4-Trimethylpentane	<RL	0.5
Methyl Methacrylate	<RL	0.5
Heptane	<RL	0.5
cis-1,3-Dichloropropene	<RL	0.5
4-Methyl-2-pentanone (MiBK)	<RL	0.5
trans-1,3-Dichloropropene	<RL	0.5
1,1,2-Trichloroethane	<RL	0.5
Toluene	<RL	0.5
2-Hexanone (MBK)	<RL	1.0
Dibromochloromethane	<RL	0.5
1,2-Dibromoethane	<RL	0.5
Tetrachloroethene (PCE)	<RL	0.5
Chlorobenzene	<RL	0.5
Ethylbenzene	<RL	0.5
m & p-Xylene	<RL	1.0
Bromoform	<RL	0.5
Styrene	<RL	0.5
1,1,2,2-Tetrachloroethane	<RL	0.5
o-Xylene	<RL	0.5
1,2,3-Trichloropropane	<RL	0.5
Isopropylbenzene (Cumene)	<RL	0.5
α-Pinene	<RL	0.5
2-Chlorotoluene	<RL	0.5
n-Propylbenzene	<RL	0.5
4-Ethyltoluene	<RL	0.5
1,3,5-Trimethylbenzene	<RL	0.5
β-Pinene	<RL	0.5
1,2,4-Trimethylbenzene	<RL	0.5
Benzyl Chloride (a-Chlorotoluene)	<RL	0.5
1,3-Dichlorobenzene	<RL	1.0
1,4-Dichlorobenzene	<RL	0.5
Sec-ButylBenzene	<RL	0.5
1,2-Dichlorobenzene	<RL	0.5
n-ButylBenzene	<RL	1.0
1,2-Dibromo-3-Chloropropane	<RL	1.0
1,2,4-Trichlorobenzene	<RL	1.0
Naphthalene	<RL	1.0
Hexachlorobutadiene	<RL	0.5

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QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 10/12/2021
MATRIX : Air
UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-04
ANALYST : MB/RC
DILUTION FACTOR[1] : x1.43

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Duplicate Analysis of AAC Sample ID: 211755-23953

Analyte Compounds	*Sample*	*Duplicate*	*RPD*[2]
4-BFB (surrogate standard)	8.73	8.87	1.6
Chlorodifluoromethane	<SRL	<SRL	*NA*
Propene	<SRL	<SRL	*NA*
Dichlorodifluoromethane	<SRL	<SRL	*NA*
Dimethyl Ether	<SRL	<SRL	*NA*
Chloromethane	1.02	1.03	1.4
Dichlorotetrafluoroethane	<SRL	<SRL	*NA*
Vinyl Chloride	<SRL	<SRL	*NA*
Acetaldehyde	<SRL	<SRL	*NA*
Methanol	35.7	35.1	1.9
1,3-Butadiene	<SRL	<SRL	*NA*
Bromomethane	<SRL	<SRL	*NA*
Chloroethane	<SRL	<SRL	*NA*
Dichlorofluoromethane	<SRL	<SRL	*NA*
Ethanol	48.5	47.3	2.5
Vinyl Bromide	<SRL	<SRL	*NA*
Acrolein	<SRL	<SRL	*NA*
Acetone	12.9	13.1	1.8
Trichlorofluoromethane	<SRL	<SRL	*NA*
2-Propanol (IPA)	9.30	8.78	5.7
Acrylonitrile	<SRL	<SRL	*NA*
1,1-Dichloroethene	<SRL	<SRL	*NA*
Methylene Chloride (DCM)	<SRL	<SRL	*NA*
TertButanol (TBA)	<SRL	<SRL	*NA*
Allyl Chloride	<SRL	<SRL	*NA*
Carbon Disulfide	<SRL	<SRL	*NA*
Trichlorotrifluoroethane	<SRL	<SRL	*NA*
trans-1,2-Dichloroethene	<SRL	<SRL	*NA*
1,1-Dichloroethane	<SRL	<SRL	*NA*
Methyl Tert Butyl Ether (MTBE)	<SRL	<SRL	*NA*
Vinyl Acetate	<SRL	<SRL	*NA*
2-Butanone (MEK)	2.25	2.45	8.5
cis-1,2-Dichloroethene	<SRL	<SRL	*NA*
Hexane	<SRL	<SRL	*NA*
Chloroform	<SRL	<SRL	*NA*
Ethyl Acetate	<SRL	<SRL	*NA*
Tetrahydrofuran	<SRL	<SRL	*NA*
1,2-Dichloroethane	<SRL	<SRL	*NA*
1,1,1-Trichloroethane	<SRL	<SRL	*NA*
Benzene	<SRL	<SRL	*NA*
Carbon Tetrachloride	<SRL	<SRL	*NA*
Cyclohexane	<SRL	<SRL	*NA*

Analyte Compounds (Continued)	*Sample*	*Duplicate*	*RPD*[2]
1,2-Dichloropropane	<SRL	<SRL	*NA*
Bromodichloromethane	<SRL	<SRL	*NA*
1,4-Dioxane	<SRL	<SRL	*NA*
Trichloroethene (TCE)	<SRL	<SRL	*NA*
2,2,4-Trimethylpentane	<SRL	<SRL	*NA*
Methyl Methacrylate	<SRL	<SRL	*NA*
Heptane	<SRL	<SRL	*NA*
cis-1,3-Dichloropropene	<SRL	<SRL	*NA*
4-Methyl-2-pentanone (MiBK)	<SRL	<SRL	*NA*
trans-1,3-Dichloropropene	<SRL	<SRL	*NA*
1,1,2-Trichloroethane	<SRL	<SRL	*NA*
Toluene	<SRL	<SRL	*NA*
2-Hexanone (MBK)	<SRL	<SRL	*NA*
Dibromochloromethane	<SRL	<SRL	*NA*
1,2-Dibromoethane	<SRL	<SRL	*NA*
Tetrachloroethene (PCE)	<SRL	<SRL	*NA*
Chlorobenzene	<SRL	<SRL	*NA*
Ethylbenzene	<SRL	<SRL	*NA*
m & p-Xylene	<SRL	<SRL	*NA*
Bromoform	<SRL	<SRL	*NA*
Styrene	<SRL	<SRL	*NA*
1,1,2,2-Tetrachloroethane	<SRL	<SRL	*NA*
o-Xylene	<SRL	<SRL	*NA*
1,2,3-Trichloropropane	<SRL	<SRL	*NA*
Isopropylbenzene (Cumene)	<SRL	<SRL	*NA*
α-Pinene	0.79	0.82	3.6
2-Chlorotoluene	<SRL	<SRL	*NA*
n-Propylbenzene	<SRL	<SRL	*NA*
4-Ethyltoluene	<SRL	<SRL	*NA*
1,3,5-Trimethylbenzene	<SRL	<SRL	*NA*
β-Pinene	1.32	1.45	9.3
1,2,4-Trimethylbenzene	<SRL	<SRL	*NA*
Benzyl Chloride (a-Chlorotoluene)	<SRL	<SRL	*NA*
1,3-Dichlorobenzene	<SRL	<SRL	*NA*
1,4-Dichlorobenzene	<SRL	<SRL	*NA*
Sec-ButylBenzene	<SRL	<SRL	*NA*
1,2-Dichlorobenzene	<SRL	<SRL	*NA*
n-ButylBenzene	<SRL	<SRL	*NA*
1,2-Dibromo-3-Chloropropane	<SRL	<SRL	*NA*
1,2,4-Trichlorobenzene	<SRL	<SRL	*NA*
Naphthalene	<SRL	<SRL	*NA*
Hexachlorobutadiene	<SRL	<SRL	*NA*

[1] Dilution factor is the product of the Canister Dilution Factor and the Analysis Dilution Factor.

[2] Relative Percent Difference (RPD) between Sample analysis and Duplicate analysis (acceptable range is <25%).

SRL - Sample Reporting Limit (minimum)

2225 Sperry Ave., Ventura, CA 93003 www.aaclab.com (805) 650-1642

211821

Ph (925) 455-9474; Fx (925) 455-9479

Project ID: Shoreline **SAMPLE CHAIN OF CUSTODY** **BE PROJECT MANAGER: B Johnston**

Analyical Lab: AAC

#	DATE	TIME	SAMPLE ID Run#/Method/Fraction/Source	CONTAINER size / type	Volume	can ID	Method	ANALYSIS	Pressure Initial	Pressure Final
1	9/30/21	841	LFG R1 24140	Can	6L	333	EPA M25C, TO15	NMOC, Speciated VOC	30	0
2	9/30/21	914	LFG R2 24141	Can	6L	60	EPA M25C, TO15	NMOC, Speciated VOC	30	0
3	9/30/21	947	LFG R3 24142	Can	6L	488	EPA M25C, TO15	NMOC, Speciated VOC	30	0
4	9/30/21	841	Outlet R1 24143	Can	6L	1280	EPA M25C	NMOC	30	0
5	9/30/21	914	Outlet R2 24144	Can	6L	70	EPA M25C	NMOC	30	0
6	9/30/21	947	Outler R3 24145	Can	6L	141	EPA M25C	NMOC	30	0

SPECIAL INSTRUCTIONS:

sults to: Attn: BEST ENVIRONMENTAL 339 STEALTH COURT, LIVERMORE CA. 94551

Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: CWR Received by: HUNTER DACTON Date: 10/6/21 Time: 1210

SAMPLE CONDITION AS RECEIVED: OK or not OK

Fx- 6x cans

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APPENDIX C
FIELD DATA SHEETS

BEST ENVIRONMENTAL

Can/Bag Data Sheet

Client: Shoreline Landfill

Location: Carbon Bed

Date: 9-30-21

	Canister			Time		Vacuum			
	Bag	Can	Can ID	Start	Stop	Initial	Final	Location	Analyte(s)
1	X	—		825	—			Inlet	
2	X	—		841	~~—~~			Inlet	
3	X	—		1019	—			Inlet	
4		X	333	841	911	30	0	Inlet	R1
5		X	60	914	944	30	0	Inlet	R2
6		X	488	947	1017	30	0	Inlet	R3
7		X	1280	841	911	30	0	Out	R1
8		X	70	914	942	30	0	Out	R2
9		X	141	947	1017	30	0	Out	R3
10									
11									
12									
13									
14									
15									

Comments:

Shoreline Carbon Unit

Date	Time	°F MIN	MAX	SCFM MIN	MAX
Run 1					
2021/09/30	08:41:00	58	58	61	64
2021/09/30	08:42:00	58	58	61	64
2021/09/30	08:43:00	57	58	62	63
2021/09/30	08:44:00	57	58	62	63
2021/09/30	08:45:00	57	58	61	64
2021/09/30	08:46:00	58	58	62	63
2021/09/30	08:47:00	58	58	61	64
2021/09/30	08:48:00	58	58	61	64
2021/09/30	08:49:00	58	58	61	63
2021/09/30	08:50:00	57	58	61	64
2021/09/30	08:51:00	57	58	61	64
2021/09/30	08:52:00	57	58	61	63
2021/09/30	08:53:00	57	58	61	64
2021/09/30	08:54:00	58	58	61	64
2021/09/30	08:55:00	58	58	62	64
2021/09/30	08:56:00	58	58	61	64
2021/09/30	08:57:00	58	58	61	63
2021/09/30	08:58:00	58	58	61	64
2021/09/30	08:59:00	58	58	61	64
2021/09/30	09:00:00	57	58	62	64
2021/09/30	09:01:00	58	58	61	64
2021/09/30	09:02:00	58	58	62	63
2021/09/30	09:03:00	58	58	61	64
2021/09/30	09:04:00	58	58	61	63
2021/09/30	09:05:00	58	58	61	64
2021/09/30	09:06:00	58	58	62	64
2021/09/30	09:07:00	58	58	61	64
2021/09/30	09:08:00	58	58	61	64
2021/09/30	09:09:00	58	58	61	64
2021/09/30	09:10:00	58	58	61	64
Average		**58**	**58**	**61**	**64**
		58		**62**	
2021/09/30	09:11:00	58	58	61	64
2021/09/30	09:12:00	58	58	61	64
2021/09/30	09:13:00	58	58	61	64
Run 2					
2021/09/30	09:14:00	58	58	62	64
2021/09/30	09:15:00	58	58	62	64
2021/09/30	09:16:00	58	58	62	64
2021/09/30	09:17:00	58	58	62	64
2021/09/30	09:18:00	58	58	62	64
2021/09/30	09:19:00	58	58	62	64
2021/09/30	09:20:00	58	58	61	64
2021/09/30	09:21:00	58	58	62	64
2021/09/30	09:22:00	58	58	62	64
2021/09/30	09:23:00	58	58	62	64
2021/09/30	09:24:00	58	58	62	64
2021/09/30	09:25:00	58	58	61	64
2021/09/30	09:26:00	58	58	62	65
2021/09/30	09:27:00	58	58	62	64
2021/09/30	09:28:00	58	58	62	64
2021/09/30	09:29:00	58	58	62	64
2021/09/30	09:30:00	58	58	62	64
2021/09/30	09:31:00	58	58	62	64
2021/09/30	09:32:00	58	58	62	64
2021/09/30	09:33:00	58	58	62	64
2021/09/30	09:34:00	58	58	62	65
2021/09/30	09:35:00	58	58	62	65
2021/09/30	09:36:00	58	58	62	65
2021/09/30	09:37:00	58	58	62	65
2021/09/30	09:38:00	58	58	62	65
2021/09/30	09:39:00	58	58	62	65
2021/09/30	09:40:00	58	58	62	64
2021/09/30	09:41:00	58	58	62	64
2021/09/30	09:42:00	58	58	63	64
2021/09/30	09:43:00	58	58	62	65
Average		**58**	**58**	**62**	**64**
		58		**63**	

Shoreline Carbon Unit

Date	Time	°F MIN	MAX	SCFM MIN	MAX
2021/09/30	09:44:00	58	58	62	64
2021/09/30	09:45:00	58	58	62	64
2021/09/30	09:46:00	58	58	62	64
Run 3					
2021/09/30	09:47:00	58	58	62	64
2021/09/30	09:48:00	58	58	62	64
2021/09/30	09:49:00	58	58	62	65
2021/09/30	09:50:00	58	58	62	65
2021/09/30	09:51:00	58	58	62	65
2021/09/30	09:52:00	58	58	62	64
2021/09/30	09:53:00	58	58	62	64
2021/09/30	09:54:00	58	58	62	64
2021/09/30	09:55:00	58	58	62	64
2021/09/30	09:56:00	58	58	62	64
2021/09/30	09:57:00	58	58	62	65
2021/09/30	09:58:00	58	58	63	64
2021/09/30	09:59:00	58	58	62	65
2021/09/30	10:00:00	58	58	62	65
2021/09/30	10:01:00	58	58	62	64
2021/09/30	10:02:00	58	58	61	64
2021/09/30	10:03:00	58	58	62	64
2021/09/30	10:04:00	58	58	62	65
2021/09/30	10:05:00	58	58	61	64
2021/09/30	10:06:00	58	59	62	65
2021/09/30	10:07:00	58	59	62	64
2021/09/30	10:08:00	58	59	62	65
2021/09/30	10:09:00	58	59	62	64
2021/09/30	10:10:00	58	59	62	65
2021/09/30	10:11:00	59	59	62	64
2021/09/30	10:12:00	59	59	62	64
2021/09/30	10:13:00	59	59	62	64
2021/09/30	10:14:00	59	59	62	64
2021/09/30	10:15:00	59	59	62	64
2021/09/30	10:16:00	59	59	62	64
Average		**58**	**58**	**62**	**64**
			58		**63**

R1	58	62
R2	58	63
R3	58	63
Average	**58**	**63**

Calibration Certificate

Telstar Instruments Inc
1717 Solano Way, Suite #34, Concord Ca
Tel 925-671-2888 - Fax 925-671-9507
Contractors License # - CA: 422364 NV: 0084749

TELSTAR INSTRUMENTS

Certificate	**CC-10-37134-01**
Calibration date	**9/2/2020**
Next calibration due	**9/2/2021**

Customer information

Company name	**SCS Field Services**
Address	**1 Ampitheatre Parkway, Mountain View, CA**
Contact	**Jon Silva 209-345-6027**

Location of calibration

Company name	**SCS Field Services**
Address	**1 Ampitheatre Parkway, Mountain View, CA**

Instrument information

Manufacturer	**Kurz**
Model	**454FT-12-12**
Serial	**FD.4684A**
Tag	**NA**
Description	**Mass flow Meter**

Received	Out of Tolerance
Returned	In Tolerance

Calibrated range	0	to	180.27	SCFM
User Specified Tolerance			2.00	%
Instrument Output	4	to	20	mA

Test standards used

This calibration certificate documents the traceability to national standards, which states the units of measurement according to the International System of Units (SI)

Telstar Identification	Description	Serial number	Certificate	Due date
CAL210	**Fluke 725**	**8276104**	**1030295**	**10/14/2020**
CAL408	**Zero Flow Tester**	**N/A**	**N/A**	**N/A**

Procedure Used

CP0006 - Distance Level Transmitter

☐ As Found = As Left

As Found

Cal. point(s)	Standard	Expected Output	UUT	Measured Output	Error	Output Error
1	**0**	**4.000**	**0**	**3.985**	**0.00**	**-0.09**
2	**180.270**	**20.000**	**188.72**	**19.906**	**4.69**	**-0.59**
3	**0.00**	**4.000**	**0.00**	**3.986**	**0.00**	**-0.09**
4	**55.885**	**8.960**	**50.23**	**8.921**	**-3.14**	**-0.24**
5						
6						
7						
8						
9						
10						
Units*	**SCFM**	**mA**	**SCFM**	**mA**	**%**	**%**

As Left

Standard	Expected Output	UUT	Measured Output	Error	Output Error
0	**4.000**	**0.01**	**4.002**	**0.01**	**0.01**
180.270	**20.000**	**180.22**	**20.004**	**-0.03**	**0.03**
0.00	**4.000**	**0.00**	**4.001**	**0.00**	**0.01**
61.88	**9.492**	**61.75**	**9.468**	**-0.07**	**-0.15**
SCFM	**mA**	**SCFM**	**mA**	**%**	**%**

Error calculated as percent of span

Conformity

☑ **UUT conforms** ☐ **UUT does not conform**

☑ **INSTRUMENT RETURNED TO SERVICE (EXPLAIN IN REMARKS IF NOT)**

Remarks

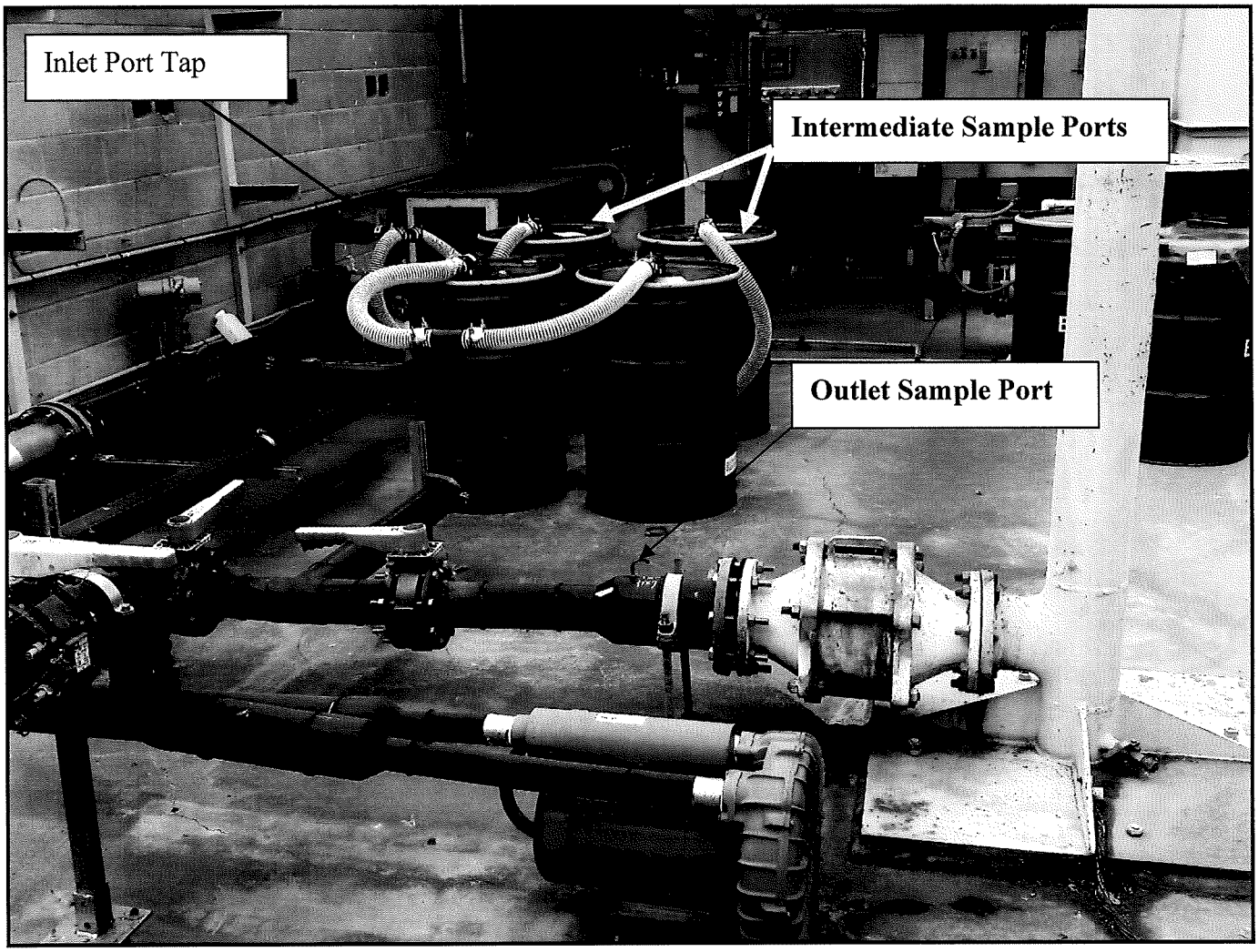
Calibrated as loop to chart recorder. Found scaling wrong in chart recorder, found 0-200 and voltage input 1.215 to 5.200: Adjusted to 0-180.27 and 1-5 volt input. Cal Pnts 1-2 are mA output calibration to chart recorder. Cal Pnt 3-4 is zero flow reading and inline flow reading, Standard in pnt 4 is instrument display for reference to chart recorder display. Cleaned probe.
Passcode: 123456: Flow Area: 0.18028: Type FD12: Support: 0 SBCF:1.00

Service Engineer	**Benjamin Marston**	Date	9/2/2020
Signature	*Benjamin Marston*		

APPENDIX D
STACK DIAGRAMS

Shoreline Amphitheatre Landfill
Landfill Gas Carbon Adsorption Unit (A-1)

[Facility #A2561, Condition #876)



APPENDIX E
SOURCE TEST PLAN

Bobby Asfour

From: Gloria Espena <GEspena@baaqmd.gov>
Sent: Wednesday, September 08, 2021 4:57 PM
To: Bobby Asfour; Marco Hernandez
Cc: Jones, Art (AJones@scsengineers.com)
Subject: NST-6817: NST Request-Shoreline Amphitheatre Landfill
Attachments: Contractor ST Supplemental Form.docx

NST-6817 has been assigned the pending 9/23/2021 work referenced below.

Also, we've introduced a new, supplemental form to be included when reports are submitted. It's just a sheet intended to help us with processing reports and prioritizing report review. The intention of the email is not to request additional testing. Please complete and submit the attached **"Contractor ST Supplemental Form"** with the final test report.

NST number(s) that are assigned for each source test notifications are for inner-office tracking purposes only, not an approval of the test plan. (For source testing methodologies please review permit conditions, BAAQMD Regulations and CFR, accordingly). Future notifications and report submittals should be made to **GEspena@baaqmd.gov** and **cc: MHernandez@baaqmd.gov.**

If you have other questions, please contact Marco Hernandez at mhernandez@baaqmd.gov.

Thank you,

Gloria M. Espena
Meteorology & Measurements
Source Test Section & Performance Evaluation Group
The Bay Area Air Quality Management District
375 Beale Street, Ste. 600 | San Francisco, CA 94105
Ofc (415) 749-4725 | Fax (510) 758-3087
gespena@baaqmd.gov | www.baaqmd.gov

Please Think Before You Print

From: Bobby Asfour <bobby@best-enviro.com>
Sent: Wednesday, September 8, 2021 4:28 PM
To: Gloria Espena <GEspena@baaqmd.gov>; Marco Hernandez <MHernandez@baaqmd.gov>
Cc: Jones, Art (AJones@scsengineers.com) <ajones@scsengineers.com>
Subject: RE: NST Request-Shoreline Amphitheatre Landfill

Date Correction. Should be 9/23/21 not 10/23/21.

From: Bobby Asfour
Sent: Wednesday, September 08, 2021 4:19 PM
To: Gloria Espena (GEspena@baaqmd.gov) <gespena@baaqmd.gov>; Marco Hernandez <mhernandez@baaqmd.gov>

Cc: Jones, Art (AJones@scsengineers.com) <ajones@scsengineers.com>
Subject: NST Request-Shoreline Amphitheatre Landfill

Hi Gloria,

Please accept this Notification/Protocol for performing a source test at the above referenced facility. Let me know if you have any questions.

Site Number: A2561
Plant Name: Shoreline Amphitheatre Landfill
Plant Contact Name: Art Jones, SCS Field Services
Plant Contact Phone: 209-702-6228
Testing Company: Best Environmental
Testing Company Contact Name: Bobby Asfour
Testing Company Contact Phone: 925-455-9474 x 103
Purpose: Permit Condition 876 Annual Compliance
Source: A-1
Description: Carbon Adsorption System (CAU)
Parameters:

Inlet: N2, O2, CO2, Total Reduced Sulfur, LFG speciation section 16/Flow Rate NMOC DRE, CH4, LFG Flow

Outlet: NMOC

Methods to be Used:

Inlet: EPA 25C & TO-15, (30-min runs triplicate TO-cans)
ASTM D-1945 & 6228. (Triplicate tedlar bags)
Outlet: EPA 25C (30-minute runs triplicate TO-cans)

The CAU will be tested for NMOC removal efficiency and landfill gas characterization. Flow meter calibration to be included in final report.
This will be the final source test before the system is permanently removed.
Test Date: 9/23/21

Let me know if you have any questions.

Thanks,
Basim Asfour (Bobby)
Best Environmental
339 Stealth Court
Livermore, CA 94551
925/455-9474 x103 ph
510/719-0769 cell
bobby@best-enviro.com
www.best-enviro.com

Please note our new email address

APPENDIX F
PERMIT TO OPERATE

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Final

MAJOR FACILITY REVIEW PERMIT

Issued To:
Shoreline Amphitheatre
Facility #A2561

Facility Address:
One Amphitheatre Parkway
Mountain View, CA 94043

Mailing Address:
One Amphitheatre Parkway
Mountain View, CA 94043

Responsible Official
David M. Mayeri, C.O.O.
415-371-5500

Facility Contact
Mike Kelly, Director of Operations
650-967-3000

Type of Facility:	Landfill	BAAQMD Permit Division Contact:
Primary SIC:	4953	Carol S. Allen
Product:	Closed Solid Waste Landfill	

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Singed by Peter Hess for William C. Norton — June 13, 2003
William C. Norton, Executive Officer/Air Pollution Control Officer — Date

II. EQUIPMENT

Table II A - Permitted Sources

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-301.

S#	Description	Make/Design	Model	Capacity
S-1	Landfill (includes a small area of the Vista Landfill) Landfill Gas Collection System	Closed Solid Waste Disposal Site Active		Max. Design Capacity = 542,000 yd^3 (414,400 m^3); Max. Cumulative Waste In Place = 366,000 tons; 35 horizontal collectors 26 vertical wells
S-3	Diesel Engine for Emergency Standby Generator	Onan	0615T2A	484 bhp, 930 in^3; 3.151 MM BTU/hour, 23.0 gallons/hour of diesel oil

Table II B - Abatement Devices

A#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit(s) for Each Device
A-1	Carbon Adsorption System (operating alone)	S-1	BAAQMD 8-34-301.4b; and BAAQMD Condition # 876, Part 13, see also Table IV-A	Replace carbon upon detection of 108 ppmv of NMOC, as CH_4, at 3% O_2, dry, see also Table VII-A	Either 98% removal of NMOC or < 120 ppmv of NMOC, as CH_4, at 3% O_2, dry
A-2	Landfill Gas Flare, 3.6 MM BTU per hour (operating alone or downstream of A-1)	S-1	BAAQMD 8-34-301.3, see also Table IV-A	Minimum combustion zone temperature of: (a) 1450 °F (when A-2 is operating alone) or, (b) 1200 °F (when A-2 is downstream of A-1), see also Table VII-A	Either 98% destruction of NMOC or < 30 ppmv of NMOC, as CH_4, at 3% O_2, dry

VI. PERMIT CONDITIONS

Any condition that is preceded by an asterisk is not federally enforceable.

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

1. The S-1 Landfill is closed. The Permit Holder shall apply for and receive a Change of Permit Conditions before accepting any solid waste for disposal at S-1. The total cumulative amount of all wastes placed in the landfill area controlled by the Permit Holder shall not exceed 366,000 tons. The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill area controlled by the Permit Holder, excluding final cover) shall not exceed 542,000 cubic yards. (Basis: Regulation 2-1-301)

2. The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described in Part 2a below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing the locations of wells or collectors are all considered to be modifications that are subject to the Authority to Construct requirement.
   a. The Permit Holder has been issued a Permit to Operate for a landfill gas collection system consisting of 61 collection components (35 horizontal collectors and 26 vertical wells). Well and collector locations, depths, and lengths are as described in detail in Permit Application #2486.

   (Basis: Regulations 2-1-301, 8-34-301.1, 8-34-303, 8-34-304, and 8-34-305)

3. The landfill gas collection system components described above in Part 2a shall be operated continuously. Components shall not be disconnected or removed and isolation or adjustment valves shall not be closed, without prior written authorization from the APCO, unless the Permit Holder complies with all applicable provisions of Regulation 8, Rule 34, Sections 113, 117, and/or 118. (Basis: Regulation 8-34-301.1)

VI. Permit Conditions

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

4. All collected landfill gas shall be vented to the A-2 Landfill Gas Flare, which shall be properly operated and maintained. In the event of a shutdown of the A-2 Landfill Gas Flare, landfill gas shall be automatically diverted to the A-1 Carbon Adsorption System. Landfill gas flow shall be returned to the flare as soon as A-2 is operating properly. Raw or untreated landfill gas shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair (which is performed in compliance with Regulation 8, Rule 34, Sections 113, 117, and/or 118) and inadvertent component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (Basis: Regulation 8-34-301)

5. The heat input to the A-2 Landfill Gas Flare shall not exceed 86.4 million BTU per day nor 31,536 million BTU per year. (Basis: Cumulative Increase and Regulation 2-1-301)

6. Nitrogen oxide (NO_x) emissions from the A-2 Landfill Gas Flare shall not exceed 30 ppmv of NO_x, corrected to 15% oxygen, dry basis. (Basis: Cumulative Increase)

7. Carbon monoxide (CO) emissions from the A-2 Landfill Gas Flare shall not exceed 33 ppmv of CO, corrected to 15% oxygen, dry basis. (Basis: Cumulative Increase)

8. The Permit Holder for the A-2 Landfill Gas Flare shall comply with either subpart a or subpart b below.
   a. The combustion zone temperature of A-2 shall be maintained at a minimum of 1450 degrees F, averaged over any 3-hour period, during all times that landfill gas is vented directly to the A-2 Landfill Gas Flare. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise the minimum combustion zone temperature limit, in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for a flare shall be equal to the average combustion zone temperature measured during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature shall not be less than 1400 degrees F.

VI. Permit Conditions

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

b. If the flare combustion zone temperature cannot be maintained at the minimum temperature required in part 8a above, the Permit Holder may demonstrate compliance with Regulations 8-34-301.3 and 8-34-301.4 by using the A-1 Carbon Adsorption System to pretreat the landfill gas and then venting the treated landfill gas to the A-2 Landfill Gas Flare to complete the NMOC destruction, provided that:
   (i) the Permit Holder complies with all operating, monitoring, and record keeping requirements for the A-1 Carbon Adsorption System (Parts 12, 13, 14, 18b, 18d, and 18g) and
   (ii) the combustion zone temperature of A-2 is maintained at a minimum of 1200 degrees F, averaged over any 3-hour period, during all times that landfill gas is vented to A-1 followed by A-2.

(Basis: Regulations 8-34-301.3 and 8-34-301.4)

9. The A-2 Landfill Gas Flare shall be equipped with a continuous temperature monitor and recorder. (Basis: Regulation 8-34-507)

10. The A-2 Landfill Gas Flare shall be equipped with both local and remote alarm systems and shall be capable of restarting automatically after a power failure. (Basis: Regulation 8-34-301)

11. The A-2 Landfill Gas Flare shall be equipped with a gas flow meter and recorder meeting the requirements of Regulation 8-34-508. (Basis: Cumulative Increase and Regulations 8-34-301, 8-34-501.10, and 8-34-508)

12. The A-1 Carbon Adsorption System shall be equipped with at least three carbon canisters. Two carbon canisters shall be operated in series, whenever landfill gas is vented to A-1. At least one canister containing fresh carbon shall be maintained on site as a backup for the operating canisters and/or for replacement of spent carbon. Each canister shall contain at least 135 pounds of activated carbon. (Basis: Regulation 2-1-301)

VI. Permit Conditions

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

13. Upon detection of 108 ppmv or more of non-methane organic compounds (NMOC), expressed as methane and corrected to 3% oxygen, at the outlet of the final carbon canister, the Permit Holder shall replace the carbon canisters in A-1. The first carbon canister shall be replaced with either the final carbon canister or a fresh carbon canister. The final carbon canister shall be replaced with a fresh carbon canister. (Basis: Regulation 8-34-301.4)

14. In order to demonstrate compliance with Regulation 8-34-301.4 and Parts 8b and 13 above, the Permit Holder shall monitor the exhaust from the final carbon canister of A-1 using a portable analyzer. The exhaust from A-1 shall be monitored at least once for every 16 hours that A-1 is operated. This monitoring frequency shall be increased to once every 8 operating hours, if the detected exhaust exceeds 90 ppmv of NMOC, expressed as methane and corrected to 3% oxygen. (Basis: Regulation 8-34-301.4 and 8-34-509)

15. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in the flare exhaust, unless the Permit Holder has met the requirements of Part 15b below. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 1300 ppmv (dry).
    a. In order to demonstrate compliance with this part, the Permit Holder shall measure the hydrogen sulfide concentration in collected landfill gas on a quarterly basis using a draeger tube. The landfill gas sample shall be taken from the main landfill gas header. The Permit Holder shall follow the manufacturer's recommended procedures for using the draeger tube and interpreting the results. The Permit Holder shall conduct the first draeger tube test no later than 3 months after the issue date of the MFR Permit and quarterly thereafter. The total reduced sulfur concentration of the landfill gas shall be calculated by multiplying 1.2 times the measured hydrogen sulfide concentration (TRS = 1.2 * H_2S).
    b. After conducting at least 4 quarters of monitoring for hydrogen sulfide concentration pursuant to Part 15a above, the Permit Holder may discontinue the quarterly draeger tube monitoring, if all of the following criteria are satisfied:
        i. each quarterly test indicates that the hydrogen sulfide concentration in the collected landfill gas is less than 400 ppmv of H_2S,

VI. Permit Conditions

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

ii. the standard deviation of the measured hydrogen sulfide concentration (determined from at least 4 quarterly monitoring events) is less than 100 ppmv of H_2S, and

iii. the permit holder conducts the annual sulfur dioxide testing specified in Part 16g or the annual landfill gas sulfur compound testing specified in Part 17.

(Basis: Regulation 9-1-302)

16. In order to demonstrate compliance with Parts 6, 7, and 8 above and Regulation 8, Rule 34, Sections 301.3 and 412, the Permit Holder shall ensure that a District approved source test is conducted annually on the A-2 Landfill Gas Flare. The annual source test shall determine the following:

a. landfill gas flow rate to the flare (dry basis);
b. concentrations (dry basis) of carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2), total hydrocarbons (THC), methane (CH_4), and total non-methane organic compounds (NMOC) in the landfill gas;
c. stack gas flow rate from the flare (dry basis);
d. concentrations (dry basis) of NO_x, CO, THC, CH_4, NMOC, and O_2 in the flare stack gas;
e. NMOC destruction efficiency achieved by the flare;
f. average combustion zone temperature in the flare during the test period; and
g. concentration (dry basis) of SO_2 in the flare stack gas, unless the Permit Holder is meeting the requirements of Part 15a or tests for all sulfur compounds listed in EPA's AP-42 Table 2.4-1 pursuant to Part 17.

Each annual source test shall be conducted no earlier than 9 months and no later than 12 months after the previous annual source test. The Source Test Section of the District shall be contacted to obtain approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. (Basis: Cumulative Increase and Regulations 8-34-301.3, 8-34-412, and 9-1-302)

VI. Permit Conditions

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

17. The Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by Part 16 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in Part 16b, the landfill gas shall be analyzed for all the organic and sulfur compounds listed in the most recent version of EPA's AP-42 Table 2.4-1. Sulfur compound testing is not required, if the Permit Holder is satisfying Part 16g by conducting annual SO_2 testing at the flare exhaust. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. After conducting three annual landfill gas characterization tests, the Permit Holder may request – by submitting a permit application for a Change of Conditions – to remove specific compounds from the list of compounds requiring testing. The District will consider eliminating future test requirements for a compound, if the compound has not been detected and the District determines that the compounds will have no significant impacts on the cancer risk or hazard index determinations for the site. (Basis: AB-2588 Air Toxics Hot Spots Act, and Regulations 8-34-412 and 9-1-302).

18. In order to demonstrate compliance with the above conditions, the Permit Holder shall:
    a. Maintain an accurate map of the landfill that indicates the locations of all refuse boundaries and the locations of all wells and collectors (using unique identifiers) that are required to be operating continuously pursuant to Part 2a.
    b. Record the date and time for each startup event and each shutdown event for the A-1 Carbon Adsorption System and the A-2 Landfill Gas Flare, and identify any time periods when the A-1 Carbon Adsorption System is vented to the A-2 Landfill Gas Flare.
    c. Identify the maximum daily landfill gas collection rate for each month and summarize the total landfill gas collection rate on a monthly basis.
    d. Record the operating time for the A-1 Carbon Adsorption System on a daily basis and summarize the total operating time for A-1 on a monthly basis.
    e. Summarize the total operating time for the A-2 Landfill Gas Flare on a monthly basis.

VI. Permit Conditions

Condition # 876
FOR: S-1, LANDFILL AND GAS COLLECTION SYSTEM;
FOR: A-1, CARBON ADSORPTION SYSTEM; AND
FOR: A-2, LANDFILL GAS FLARE;

f. Calculate and record, on a monthly basis, the maximum daily and total monthly heat input to the flare to demonstrate compliance with Part 5. The heat input shall be calculated using: (i) the landfill gas flow rate recorded pursuant to Parts 11 and 18c, (ii) the average methane concentration in the landfill gas measured during the most recent source test (assume the methane content is 45% until the first source test results are available), and (iii) a high heating value for methane of 1013 BTU/ft^3 at 60 degrees F.

g. For each monitoring event at the A-1 Carbon Adsorption System, record: (i) the date and time that the exhaust concentration was measured, (ii) the operating time for A-1 since the exhaust concentration was last measured, (iii) the measured NMOC exhaust concentration, and (iv) the corrected NMOC exhaust concentration (expressed as methane at 3% oxygen). Show any calculations used to correct the measured NMOC concentration.

h. For each landfill gas sulfur monitoring event, record: (i) the date and time that the landfill gas sulfur content was measured and (ii) the total reduced sulfur content that was measured using the draeger tube.

i. Maintain records of all test dates and test results performed to maintain compliance with Parts 16 and 17 above, Regulations 8-34-301, 8-34-303, 8-34-305, 8-34-412, 8-34-414, and 8-34-415, or any other applicable rule or regulation.

All records shall be maintained on site in an APCO approved logbook or shall be made readily available to District staff upon request for a period of at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable rules or regulations. (Basis: Cumulative Increase and Regulations 2-1-301, 2-6-501, 8-34-301, 8-34-303, 8-34-305, 8-34-412, 8-34-414, 8-34-415, 8-34-501, 8-34-503, 8-34-505, 8-34-506, and 9-1-302)

VII. APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS

This section has been included to summarize the applicable emission limits contained in Section IV, Source-Specific Applicable Requirements, of this permit. The following tables show the relationship between each emission limit and the associated compliance monitoring provisions, if any. The monitoring frequency column indicates whether periodic (P) or continuous (C) monitoring is required. For periodic monitoring, the frequency of the monitoring has also been shown using the following codes: annual (A), quarterly (Q), monthly (M), weekly (W), daily (D), or on an event basis (E). No monitoring (N) has been required if the current applicable rule or regulation does not require monitoring, and the operation is unlikely to deviate from the applicable emission limit based upon the nature of the operation.

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 LANDFILL AND GAS COLLECTION SYSTEM,
A-1 CARBON ADSORPTION SYSTEM, AND
A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Collection System Installation Dates	BAAQMD 8-34-304.1	Y		For Inactive/Closed Areas: collection system components must be installed and operating by 2 years + 60 days after initial waste placement	BAAQMD 8-34-501.7 and 501.8	P/E	Records
Gas Flow	BAAQMD 8-34-301 and 301.1	Y		Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	BAAQMD 8-34-501.10 and 508	C	Gas Flow Meter and Recorder (every 15 minutes)

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 LANDFILL AND GAS COLLECTION SYSTEM, A-1 CARBON ADSORPTION SYSTEM, AND A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	Is Limit Federally Enforceable?	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Gas Flow	BAAQMD Condition # 876, Parts 2, 3, and 4	Y		Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	BAAQMD Condition # 876, Parts 10, 11, and 18b-e and BAAQMD Regulation 8-34-501.1 and 8-34-501.2	P/D	Gas Flow Meter, Flare Alarms, and Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components
Collection and Control Systems Shutdown Time	BAAQMD 8-34-113.2	Y		240 hours/year and 5 consecutive days	BAAQMD Condition # 876, Parts 18b, 18d, and 18e and BAAQMD 8-34-501.1	P/D	Operating Records
Periods of Inoperation for Parametric Monitors	BAAQMD 1-523.2	Y		15 consecutive days/incident and 30 calendar days/12 month period	BAAQMD 1-523.4	P/D	Operating Records for All Parametric Monitors
Continuous Monitors	40 CFR 60.13(e)	Y		Requires Continuous Operation except for breakdowns, repairs, calibration, and required span adjustments	40 CFR 60.7(b)	P/D	Operating Records for All Continuous Monitors

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 LANDFILL AND GAS COLLECTION SYSTEM,
A-1 CARBON ADSORPTION SYSTEM, AND
A-2 LANDFILL GAS FLARE

Emission Limit	Citation of Limit	CEQA Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Wellhead Pressure	BAAQMD 8-34-305.1	Y		< 0 psig	BAAQMD 8-34-414, 501.9 and 505.1 and BAAQMD Condition # 876, Part 18i	P/M	Monthly Inspection and Records
Temper-ature of Gas at Wellhead	BAAQMD 8-34-305.2	Y		< 55 °C (131 °F)	BAAQMD 8-34-414, 501.9 and 505.2 and BAAQMD Condition # 876, Part 18i	P/M	Monthly Inspection and Records
Gas Concen-trations at Wellhead	BAAQMD 8-34-305.3 or 305.4	Y		N_2 < 20% OR O_2 < 5%	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4 and BAAQMD Condition # 876, Part 18i	P/M	Monthly Inspection and Records
Well Shutdown Limits	BAAQMD 8-34-117.4	Y		No more than 5 wells at a time or 10% of total collection system, whichever is less	BAAQMD 8-34-117.6 and 501.1	P/D	Records
Well Shutdown Limits	BAAQMD 8-34-117.5	Y		24 hours per well	BAAQMD 8-34-117.6 and 501.1	P/D	Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 LANDFILL AND GAS COLLECTION SYSTEM,
A-1 CARBON ADSORPTION SYSTEM, AND
A-2 LANDFILL GAS FLARE

Pollutant or Parameter	Citation of Limit	Y/N?	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Method(s) (P/C/N)	Monitoring Type
TOC (Total Organic Compounds Plus Methane)	BAAQMD 8-34-301.2	Y		1000 ppmv as methane (component leak limit)	BAAQMD 8-34-501.6 and 503 and BAAQMD Condition # 876, Part 18i	P/Q	Quarterly Inspection of collection and control system components with Portable Analyzer and Records
TOC	BAAQMD 8-34-303	Y		500 ppmv as methane at 2 inches above surface (surface leak limit)	BAAQMD 8-34-415, 416, 501.6, 506 and 510 and BAAQMD Condition # 876, Part 18i	P/M, Q, and E	Monthly Visual Inspection of Cover, Quarterly Inspection with Portable Analyzer of Surface, Various Reinspection Times for Leaking Areas, and Records
Non-Methane Organic Compounds (NMOC)	BAAQMD 8-34-301.3	Y		98% removal by weight OR < 30 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-2 Landfill Gas Flare only)	BAAQMD 8-34-412 and 8-34-501.4 and BAAQMD Condition # 876, Parts 16 and 18i	P/A	Source Tests and Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 LANDFILL AND GAS COLLECTION SYSTEM,
A-1 CARBON ADSORPTION SYSTEM, AND
A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	Air Toxic? Y/N	Federally Enforceable? Y/N	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/E/C/A)	Monitoring Type
NMOC	BAAQMD 8-34-301.4	Y		98% removal by weight OR < 120 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-1 Carbon Adsorption System only)	BAAQMD 8-34-501.11 and 8-34-509 and BAAQMD Condition # 876, Parts 14 and 18g	P/E (at least once for every 16 hours of A-1 operation; after conc. is > 90 ppm, at least once for every 8 hours of A-1 operation)	Periodic Monitoring of A-1 Exhaust with a Portable Analyzer and Records
NMOC	BAAQMD Condition # 876, Part 13	Y		Replace carbon when exhaust concentration exceeds 108 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-1 Carbon Adsorption System only)	BAAQMD Condition # 876, Parts 14 and 18g	P/E (at least once for every 16 hours of A-1 operation; after conc. is > 90 ppm, at least once for every 8 hours of A-1 operation)	Periodic Monitoring of A-1 Exhaust with a Portable Analyzer and Records
Temperature of Combustion Zone (CT)	BAAQMD Condition # 876, Part 8a	Y		CT ≥ 1450 °F, averaged over any 3-hour period (applies to A-2 Landfill Gas Flare when A-2 is operated alone)	BAAQMD 8-34-501.3 and 507 and SIP 8-34-501.3 and BAAQMD Condition # 876, Part 9	C	Temperature Sensor and Recorder (continuous)

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 Landfill and Gas Collection System, A-1 Carbon Adsorption System, and A-2 Landfill Gas Flare

Type of Limit	Citation of Limit	Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Temperature of Combustion Zone (CT)	BAAQMD Condition # 876, Part 8b	Y		CT ≥ 1200 °F, averaged over any 3-hour period (applies to A-2 Landfill Gas Flare when A-2 is down stream of A-1)	BAAQMD 8-34-501.3 and 507 and SIP 8-34-501.3 and BAAQMD Condition # 876, Part 9	C	Temperature Sensor and Recorder (continuous)
Opacity	BAAQMD 6-301	Y		Ringelmann No. 1 for < 3 minutes/hour (applies to A-1 Carbon Adsorption System and A-2 Landfill Gas Flare)	None	N	N/A
FP	BAAQMD 6-310	Y		≤ 0.15 grains/dscf (applies to A-1 Carbon Adsorption System and A-2 Landfill Gas Flare)	None	N	N/A
SO_2	BAAQMD 9-1-301	Y		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 A-2 Landfill Gas Flare only)	None	N	N/A

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 Landfill and Gas Collection System, A-1 Carbon Adsorption System, and A-2 Landfill Gas Flare

Type of Limit	Citation of Limit	Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO_2	BAAQMD Regulation 9-1-302	Y		≤ 300 ppm (dry basis) (applies to A-2 Landfill Gas Flare only)	BAAQMD Condition # 876, Parts 15, or 16, or 17 and 18h-i	P/Q or A	Quarterly Hydrogen Sulfide Analysis of Landfill Gas, or Annual TRS Analysis of Landfill Gas, or Annual SO2 Test at Flare, and Records
Total Sulfur Content in Landfill Gas	BAAQMD Condition # 876, Part 15	Y		≤ 1300 ppmv, expressed as H_2S	BAAQMD Condition # 876, Parts 15 or 17 and 18h-i	P/Q or A	Quarterly Hydrogen Sulfide or Annual TRS Analysis of Landfill Gas and Records
H_2S	BAAQMD 9-2-301	N		Property Line Ground Level Limits: ≤ 0.06 ppm, averaged over 3 minutes and ≤ 0.03 ppm, averaged over 60 minutes	None	N	N/A
Amount of Waste Accepted	BAAQMD Condition # 876, Part 1	Y		0 tons/day and ≤ 366,000 tons (cumulative amount of all wastes) and ≤ 542,000 yd^3 (cumulative amount of all wastes and cover materials)	BAAQMD Regulation 8-34-501.7	P/A	Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 LANDFILL AND GAS COLLECTION SYSTEM,
A-1 CARBON ADSORPTION SYSTEM, AND
A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	Case by Case? Y/N	Limit Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Heat Input	BAAQMD Condition # 876, Part 5	Y		≤ 86.4 MM BTU per day and ≤ 31,536 MM BTU per year (applies to A-2 Landfill Gas Flare only)	BAAQMD Condition # 876, Parts 11, 18c, 18e, and 18f	P/C, M	Gas Flow Meter and Records
NO_x	BAAQMD Condition # 876, Part 6	Y		≤ 30 ppmv of NO_x, corrected to 15% O_2, dry (applies to A-2 Landfill Gas Flare only)	BAAQMD Condition # 876, Parts 16d and 18i	P/A	Source Tests and Records
CO	BAAQMD Condition # 876, Part 7	Y		≤ 33 ppmv of CO, corrected to 15% O_2, dry (applies to A-2 Landfill Gas Flare only)	BAAQMD Condition # 876, Parts 16d and 18i	P/A	Source Tests and Records
Startup Shutdown or Malfunction Procedures	40 CFR 63.6(e)	Y	1/16/04	Minimize Emissions by Implementing SSM Plan	40 CFR 63.1980(a-b)	P/E	Records (all occurrences, duration of each, corrective actions)

Appendix D

Annual Surface Emissions Monitoring Results


Shoreline Amphitheatre
January 14, 2021
SEM Pathway Map
No Exceedance of the 25 ppm Threshold observed
Grid 1 - 1.5 ppm
Grid 2 - 1.2 ppm
Grid 3 - 1.3 ppm
Legend
Bill Graham Pkwy
N
400 ft
Google Earth
©2021 Google

Appendix E

Projected LFG and NMOC Generation Rates – Mountain View (Shoreline Landfill)

PROJECTED LFG AND NMOC GENERATION RATES
CITY OF MOUNTAINVIEW LANDFILL, MOUNTAIN VIEW, CALIFORNIA

Year	Disposal Rate (tons/yr)	Refuse In-Place (tons)	Disposal Rate (Mg/yr)	Refuse In-Place (Mg)	Methane Generation Rates (m^3/yr)	LFG Generation Rates (cfm)	LFG Generation Rates (Million ft^3/yr)	NMOC Generation Rates (tons/yr)	NMOC Generation Rates (Mg/yr)
1968	0	0	0	0	0.000E+00	0	0	0	0
1969	0	0	0	0	0.000E+00	0	0	0	0
1970	0	0	0	0	0.000E+00	0	0	0	0
1971	0	0	0	0	0.000E+00	0	0	0	0
1972	0	0	0	0	0.000E+00	0	0	0	0
1973	0	0	0	0	0.000E+00	0	0	0	0
1974	0	0	0	0	0.000E+00	0	0	0	0
1975	0	0	0	0	0.000E+00	0	0	0	0
1976	0	0	0	0	0.000E+00	0	0	0	0
1977	0	0	0	0	0.000E+00	0	0	0	0
1978	0	0	0	0	0.000E+00	0	0	0	0
1979	0	0	0	0	0.000E+00	0	0	0	0
1980	0	0	0	0	0.000E+00	0	0	0	0
1981	261,619	0	237,337	0	0.000E+00	0	0	0	0
1982	266,852	261,619	242,084	237,337	8.065E+05	108	57	25	23
1983	272,189	528,471	246,926	479,421	1.613E+06	217	114	50	45
1984	277,632	800,660	251,864	726,347	2.420E+06	325	171	75	68
1985	283,185	1,078,292	256,901	978,210	3.228E+06	434	228	100	91
1986	288,849	1,361,477	262,039	1,235,111	4.037E+06	543	285	125	114
1987	294,626	1,650,326	267,280	1,497,151	4.848E+06	651	342	151	137
1988	300,518	1,944,952	272,625	1,764,431	5.660E+06	761	400	176	160
1989	306,529	2,245,470	278,078	2,037,056	6.474E+06	870	457	201	183
1990	312,659	2,551,999	283,639	2,315,135	7.291E+06	980	515	227	206
1991	318,912	2,864,658	289,312	2,598,774	8.110E+06	1,090	573	252	229
1992	325,291	3,183,570	295,099	2,888,086	8.933E+06	1,200	631	278	252
1993	331,797	3,508,861	301,001	3,183,185	9.759E+06	1,311	689	303	275
1994	0	3,840,658	0	3,484,186	1.059E+07	1,423	748	329	299
1995	0	3,840,658	0	3,484,186	1.038E+07	1,395	733	323	293
1996	0	3,840,658	0	3,484,186	1.017E+07	1,367	719	316	287
1997	0	3,840,658	0	3,484,186	9.972E+06	1,340	704	310	281
1998	0	3,840,658	0	3,484,186	9.774E+06	1,313	690	304	276
1999	0	3,840,658	0	3,484,186	9.581E+06	1,287	677	298	270
2000	0	3,840,658	0	3,484,186	9.391E+06	1,262	663	292	265
2001	0	3,840,658	0	3,484,186	9.205E+06	1,237	650	286	260
2002	0	3,840,658	0	3,484,186	9.023E+06	1,212	637	280	254
2003	0	3,840,658	0	3,484,186	8.844E+06	1,188	625	275	249
2004	0	3,840,658	0	3,484,186	8.669E+06	1,165	612	269	244
2005	0	3,840,658	0	3,484,186	8.497E+06	1,142	600	264	240
2006	0	3,840,658	0	3,484,186	8.329E+06	1,119	588	259	235
2007	0	3,840,658	0	3,484,186	8.164E+06	1,097	577	254	230
2008	0	3,840,658	0	3,484,186	8.002E+06	1,075	565	249	226
2009	0	3,840,658	0	3,484,186	7.844E+06	1,054	554	244	221
2010	0	3,840,658	0	3,484,186	7.689E+06	1,033	543	239	217
2011	0	3,840,658	0	3,484,186	7.536E+06	1,013	532	234	213
2012	0	3,840,658	0	3,484,186	7.387E+06	993	522	230	208
2013	0	3,840,658	0	3,484,186	7.241E+06	973	511	225	204
2014	0	3,840,658	0	3,484,186	7.098E+06	954	501	221	200
2015	0	3,840,658	0	3,484,186	6.957E+06	935	491	216	196
2016	0	3,840,658	0	3,484,186	6.819E+06	916	482	212	192
2017	0	3,840,658	0	3,484,186	6.684E+06	898	472	208	188
2018	0	3,840,658	0	3,484,186	6.552E+06	880	463	204	185
2019	0	3,840,658	0	3,484,186	6.422E+06	863	454	200	181
2020	0	3,840,658	0	3,484,186	6.295E+06	846	445	196	178
2021	0	3,840,658	0	3,484,186	6.170E+06	829	436	192	174
2022	0	3,840,658	0	3,484,186	6.048E+06	813	427	188	171
2023	0	3,840,658	0	3,484,186	5.928E+06	797	419	184	167
2024	0	3,840,658	0	3,484,186	5.811E+06	781	410	181	164
2025	0	3,840,658	0	3,484,186	5.696E+06	765	402	177	161
2026	0	3,840,658	0	3,484,186	5.583E+06	750	394	174	157
2027	0	3,840,658	0	3,484,186	5.473E+06	735	387	170	154
2028	0	3,840,658	0	3,484,186	5.364E+06	721	379	167	151

ESTIMATED NMOC CONCENTRATION IN LFG:	4000	ppmv
ASSUMED METHANE CONTENT OF LFG:	50%	
SELECTED DECAY RATE CONSTANT:	0.02	
SELECTED ULTIMATE METHANE RECOVERY RATE	5,443	ft3/ton
METRIC EQUIVALENT:	169.9	cu m/Mg

Startup, Shutdown, and Malfunction Plan Report
June 1, 2021 through November 30, 2021
Shoreline Amphitheatre
Mountain View, California (Facility No. A2561)

Prepared for:

Shoreline Amphitheatre
1 Amphitheatre Parkway
Mountain View, CA 94043

TV Tracking #: 354

1. ☐ RECEIVED IN ENFORCEMENT: 12/28/2021

For Submittal to:

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

SCS ENGINEERS

01202092.00, Task 8 | December 2021

3843 Brickway Boulevard, Suite 208
Santa Rosa, CA 95403
707-546-9461

Semi-Annual SSM Report
Shoreline Amphitheatre
December 2021

This semi-annual startup, shutdown, and malfunction (SSM) plan report was prepared in order to comply with the requirements set forth in Shoreline Amphitheatre's SSM plan and in accordance with 40 Code of Federal Regulations (CFR) 63.6(d)(5)(i) requirements. Unless otherwise noted in this report, all actions taken during the reporting period were consistent with Shoreline's SSM Plan. This report contains information regarding the number, duration, and description of each SSM event. 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.

Name of Report Preparer: Meng Yuan, SCS Engineers December 28, 2021
Date

Name of Report Reviewer: Cassandra Drotman, SCS Engineers December 28, 2021
Date

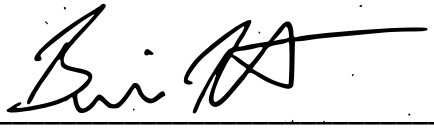
Approved:  December 21, 2021
Brian Rutkowski, General Manager, Shoreline Amphitheatre Date

Table of Contents

Table

Appendices

1 INTRODUCTION

Shoreline Amphitheatre (Shoreline) is subject to 40 Code of Federal Regulations (CFR) Part 63, Subpart AAAA, the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Municipal Solid Waste (MSW) Landfills. A startup, shutdown, and malfunction (SSM) plan (SSM Plan) was prepared for Shoreline in accordance with NESHAPs requirements. The SSM Plan documents the procedures for operating and maintaining the affected elements of the landfill gas (LFG) collection and control system (GCCS) during startup, shutdown, and malfunction events.

In addition to the requirement to prepare a SSM Plan, 40 CFR §63.10(d)(5)(i) contains provisions requiring periodic SSM Reports. At a minimum, these reports must be prepared on a semi-annual basis and must be delivered or postmarked by the 30th day following the end of the reporting period (or other period specified by the regulatory agency or permit). This SSM Report covers the period of June 1, 2021 through September 26, 2021, as SSM recordkeeping and reporting requirements were no longer applicable after that, as the updated NESHAPs took effect on September 27, 2021, and are documented below.

This SSM Report has been organized into four sections; one for startup reporting, one for shutdown reporting, one for malfunction reporting, and one for SSM Plan revisions. The SSM events include SSM for the GCCS and all components as well as GCCS monitoring equipment.

Please note that individual well downtime is permitted in accordance with Condition 876, Part 3 of the Landfill's permit, which allows less than continuous operation of a certain number of wells as long as 20 wells are operating continuously at any one time. Therefore, wells were temporarily disconnected at various dates and times when the methane concentration detected at the wellhead was less than 20% by volume for at least one month, prior to disconnection. At all times during this reporting period prior to the reconfiguration of the GCCS, a minimum of 20 wells were continuously operating, in accordance with Condition 876, Part 3(a)(i). As such, temporarily disconnected wells are not considered to be shutdown events. From August 2021 through November 2021, all wells that were connected to the GCCS were permanently decommissioned per the ATC issued by the BAAQMD on February 1, 2021.

In addition, during the reporting period prior to the reconfiguration of the GCCS, several wells were unable to be monitored because they were covered by portable toilets and other items in storage and therefore inaccessible. These wells were offline prior to being inaccessible, and there were at least 20 wells operating while these wells were offline so that compliance was achieved. Specifically, wells EW-24, EW-25, EW-26, and EW-27 were unable to be monitored during June 2021.

All SSM events associated with monitoring equipment required for a GCCS under New Source Performance Standards must also be documented in the SSM Plan reports. This equipment includes flow and temperature meters (and data recording equipment) for the collected LFG. Temperature monitoring is required for flare operation, which is not applicable to GCCS operations at Shoreline.

This report should be considered a closeout report for SSM requirements under NESHAP Subpart AAAA.

2 STARTUP REPORTING REQUIREMENTS

One (1) GCCS startup event occurred during the reporting period. The SSM Plan contains startup report forms that are filled out under certain conditions even when the actions taken during the startup are in accordance with the SSM Plan. There were no periods of downtime for the flow meter or data recording equipment during the reporting period.

The SSM Plan was successfully implemented for the startup events that occurred during this reporting period. Specific information regarding the startup events is included in **Appendix A**.

3 SHUTDOWN REPORTING REQUIREMENTS

Two (2) GCCS shutdown events occurred during the reporting period. The SSM Plan contains shutdown report forms that are filled out under certain conditions even when the actions taken during the shutdown are in accordance with the SSM Plan. There were no periods of downtime for the flow meter or data recording equipment during the reporting period.

The SSM Plan was successfully implemented for the shutdown events that occurred during this reporting period. Specific information regarding the shutdown events is included in **Appendix A**.

4 MALFUNCTION REPORTING REQUIREMENTS

During the reporting period, there were no malfunction events, as defined in Shoreline's SSM Plan. The SSM Plan contains malfunction report forms that are filled out under certain conditions even when the actions taken during the malfunction are in accordance with the SSM Plan. Since there were no malfunction events, there are no report forms for this reporting period. There were also no malfunction events for the flow meter or data recording equipment during the reporting period.

5 STARTUP, SHUTDOWN, AND MALFUNCTION PLAN REVISIONS

No revisions were made to the SSM Plan during this reporting period. As previously mentioned, 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.

Per 40 CFR §63.6(e)(3)(viii) requirements, if Shoreline's SSM Plan fails to address or inadequately addresses an event that meets the definition of a startup, shutdown, or malfunction, the SSM Plan shall be revised within 45 days after the event to include procedures for operating and maintaining the appropriate equipment during a similar malfunction event, and the revised SSM Plan will be included in this semi-annual report. Additionally, if any revisions are made to the SSM Plan that alter the scope of SSM activities at Shoreline or otherwise modify the applicability of any emission limit, work practice requirement, or other requirement in 40 CFR §63, the revised SSM Plan is not effective until written notice is provided to the permitting authority describing the SSM Plan revision. In these cases, a copy of the written notification will be included in this semi-annual report along with a copy of the revised SSM Plan.

There were no events which occurred during the reporting period, that were not adequately addressed by the SSM Plan, and in each case, the SSM Plan was successfully implemented. Additionally, the SSM Plan required no revisions during the reporting period.

Table

Table 1. GCCS Downtime
Shoreline Amphitheatre, Mountain View, CA
(June 1, 2021 through November 30, 2021)

Date Offline	Date Online*	Hours Down	Reason	Corrective Action
9/24/2021 9:09	9/24/2021 9:23	0.23	Shutdown for carbon change	N/A
11/30/2021 7:47	12/1/2021 0:00	16.22	Permanent system shutdown per BAAQMD compliance and enforcement agreement	N/A
Total Downtime		**16.45**		

*The carbon system was permanently decommissioned on November 30, 2021. For reporting purposes, the shutdown is being calculated as having ended on December 1, 2021 at 00:00.

Appendix A - Startup/Shutdown Report Forms

SSM CHECKLIST FORM

Shoreline Amphitheater

Landfill Gas Collection and Control System

This form is used to document actions taken during a planned startup, shutdown, or malfunction of any portion of the gas collection and control system. If any of the steps taken are not consistent with the SSM Plan, document the variations on a "SSM Plan Departure Form" and follow the reporting requirements in the SSM plan.

1. Type of Event (check all that apply) ☒ **Startup** ☒ **Shutdown** ☐ **Malfunction**

2. Beginning of Event: *Date:* 9/24/2021 *Time: 09:09*

3. End of Event: *Date:* 9/24/2021 *Time: 09:23*

4. Duration of Event (hours): 0.23 hours

5. Description of Affected Equipment: (Circle the applicable Equipment)
Carbon System

6. Cause/Reason for Startup/Shutdown/Malfunction (Circle appropriate Reason):
Shutdown to change carbon

7. Name and Title (please print): Jon Silva

8. Signature: Jonathon Silva 9. Date: 9/24/2021

10. Did the actual steps taken vary from the procedure specified in the SSM Plan?
If response is "Yes," proceed to box 11 below and complete an SSM Plan Departure Report Form. If "No," stop.
☐ **YES** ☒ **NO**

11. Did this event result in an exceedance of any applicable emission limitation?
If response is "Yes," proceed to box 12 below. If "No," stop.
☐ **YES** ☒ **NO**

12. Describe the emission standard that was exceeded below.

[Notify the BAAQMD verbally or by fax within 2 working days after commencing the actions that an event inconsistent with the SSM Plan and which resulted in an exceedance of an applicable emission limitation has occurred. Follow up in writing within 7 working days after the end of the event.]

SSM CHECKLIST FORM

Shoreline Amphitheater

Landfill Gas Collection and Control System

This form is used to document actions taken during a planned startup, shutdown, or malfunction of any portion of the gas collection and control system. If any of the steps taken are not consistent with the SSM Plan, document the variations on a "SSM Plan Departure Form" and follow the reporting requirements in the SSM plan.

1. Type of Event (check all that apply) ☐ **Startup** ✠ **Shutdown** ☐ **Malfunction**

2. Beginning of Event: *Date:* 11/30/2021 *Time: 07:47*

3. End of Event: *Date:* N/A *Time:* N/A

4. Duration of Event (hours): N/A

5. Description of Affected Equipment: (Circle the applicable Equipment)
Carbon System

6. Cause/Reason for Startup/Shutdown/Malfunction (Circle appropriate Reason):
Permanent shutdown of carbon system

7. Name and Title (please print): Jon Silva

8. Signature: Jonathon Silva 9. Date: 11/30/2021

10. Did the actual steps taken vary from the procedure specified in the SSM Plan?
If response is "Yes," proceed to box 11 below and complete an SSM Plan Departure Report Form. If "No," stop.
☐ **YES** ✠ **NO**

11. Did this event result in an exceedance of any applicable emission limitation?
If response is "Yes," proceed to box 12 below. If "No," stop.
☐ **YES** ✠ **NO**

12. Describe the emission standard that was exceeded below.

[Notify the BAAQMD verbally or by fax within 2 working days after commencing the actions that an event inconsistent with the SSM Plan and which resulted in an exceedance of an applicable emission limitation has occurred. Follow up in writing within 7 working days after the end of the event.]

Appendix B – Malfunction Report Forms

(No malfunction events occurred during the June 1, 2021 through November 30, 2021 reporting period)