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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

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WASTE MANAGEMENT

Tri-Cities Recycling and Recovery Facility
7010 Auto Mall Parkway, Fremont, CA 94538

November 26, 2019

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

Director of Enforcement Division
TRI & Air Section (ENF-2-1)
USEPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: Combined Title V Semi-Annual and Partial 8-34 Annual Report
40 CFR 63 Subpart AAAA Semi-Annual Report
Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway, Fremont, CA 94538
Plant Number A2246

Dear Sir or Madam:

The Tri-Cities Recycling and Disposal Facility (TCRDF) is pleased to submit the attached Combined Title V Semi-Annual and Partial 8-34 Annual Report for the period of May 1, 2019 to October 31, 2019 to the Bay Area Air Quality Management District (BAAQMD) and the United States Environmental Protection Agency (USEPA), Region IX. As required by 40 CFR Part 63 Subpart AAAA, the Semi-Annual Startup, Shutdown and Malfunction (SSM) Report is also enclosed. The Combined Title V Semi-Annual and Partial 8-34 Annual Report satisfies the requirements of the Title V Permit listed in Condition Number 8366, Part 19 and Standard Condition I.F.

Based on information and belief formed after reasonable inquiry, I certify under penalty of law that the statements included in this report are true, accurate, and complete.

Sincerely,

Patrick Madej
District Manager

Attachments:
Combined Title V Semi-Annual and Partial 8-34 Annual Report

Combined Title V Semi-Annual and Partial 8-34 Annual Report
For the Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway
Fremont, California 94538
Plant Number A2246
May 1, 2019 to October 31, 2019

Prepared for
Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway
Fremont, California 94538

For Submittal to:
The Bay Area Air Quality Management District
375 Beale St., Ste 600
San Francisco, California 94105

and

USEPA, Region IX
75 Hawthorne Street
San Francisco, California 94105

Prepared by

Waste Management of Alameda County, Inc.
172 98th Ave
Oakland, California 94603

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1 INTRODUCTION

1.1 PURPOSE

This document is a Title V Combined Semi-Annual and Partial 8-34 Annual Report for the Tri-Cities Recycling and Disposal Facility (TCRDF), a Waste Management of Alameda County, Inc. (WMAC) facility, pursuant to Title V Permit Condition Number 8366, Part 19. This Combined Report satisfies the requirements of Bay Area Air Quality Management District's (BAAQMD) Regulation 8, Rule 34, Section 411 and Title 40 Code of Federal Regulations (CFR) Part 60 Subpart WWW, New Source Performance Standards (NSPS) for municipal solid waste (MSW) landfills (40 CFR §60.757[f]), the TCRDF Title V Standard Condition I.F, and covers compliance activities conducted from May 1, 2019 to October 31, 2019. This Combined Report also includes the semi-annual report of Start-up, Shutdown, Malfunction (SSM) Plan activities, pursuant to National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart AAAA for landfills.

Section 2 of this report contains the elements required to satisfy both BAAQMD Regulation 8-34-411 and 40 CFR §60.757(f). A summary of results from the February 6, 2019 Performance Test Report that meets the requirements of both BAAQMD Regulation 8-34-413 and 40 CFR §60.758(g) is included in Appendix L. Section 4 of this Combined Report includes the semi-annual report of the SSM Plan activities, pursuant to NESHAP, 40 CFR Part 63, Subpart AAAA for landfills.

1.2 RECORD KEEPING AND REPORTING

Records are maintained and available for inspection in accordance with BAAQMD Regulation 8-34-501.12 and 40 CFR §60.758. The primary location for records storage is at the TCRDF. Records are maintained at this location for a minimum of five years.

1.3 REPORT PREPARATION

This Combined Report has been prepared by WMAC and was based on WMAC's review of information pertaining to the site operations.

2 SEMI-ANNUAL MONITORING REPORT

In accordance with Title V Permit Standard Condition I.F and Condition 8366, Part 19, BAAQMD Regulation 8-34-411, and 40 CFR §60.757(f) in the NSPS, this Report is a Combined Title V Semi-Annual and Partial 8-34 Annual Report that is required to be submitted by TCRDF. The report contains monitoring data for the operation of the landfill gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe included in this report is May 1, 2019 to October 31, 2019. The following table lists the rules and regulations that are required to be included in this Combined Report.

Table 2-1 Semi-Annual Report Requirements

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.1 §60.757(f)(4)	All collection system downtime, including individual well shutdown times and the reason for the shutdown.	Section 2.1, Appendices B & C
8-34-501.2 §60.757(f)(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2, Appendix B
8-34-501.3, 8-34-507, §60.757(f)(1)	Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507.	Section 2.3, Appendix D
8-34-501.4, 8-34-505, 8-34-510	Testing performed to satisfy any of the requirements of this Rule.	Sections 2.4 & 2.10 Appendices E & G
8-34-501.5	Monthly landfill gas flow rates and well concentration readings for facilities subject to 8-34-404.	Sections 2.5 & 2.11 Appendix J
8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5)	For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppm_v), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppmv.	Sections 2.6 & 2.7, Appendix F
8-34-501.7	Annual waste acceptance rate and current amount of waste in place.	Section 2.8,
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the GCCS Design Plan.	Section 2.9
8-34-501.9, 8-34-505, §60.757(f)(1)	For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair.	Section 2.10, Appendices G & H

Table 2-1 Semi-Annual Report Requirements (continued)

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.10, 8-34-508, §60.757(f)(1)	Continuous gas flow rate records for any site subject to Section 8-34-508.	Section 2.11, Appendices D & I
8-34-501.11, 8-34-509	For operations subject to Section 8-34-509, records of key emission control system operating parameters.	Section 2.2.2
8-34-501.12	The records required above shall be made available and retained for a period of five years.	Section 1.2
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.12
§60.10 (d)(5)(i)	Startup, Shutdown, Malfunction Events	Section 4, Appendices B & C

2.1 COLLECTION SYSTEM OPERATION (BAAQMD 8-34-501.1 & §60.757(F)(4))

Appendix A contains a map dated February 2, 2017 of TCRDF's GCCS. No wells were added to or removed from the collection system during the reporting period.

Appendix B includes all collection system downtimes and the reason for the shutdowns. The information contained in Section 2.1.2 and Appendix C includes the individual well shutdown times and the reason for each shutdown.

2.1.1 COLLECTION SYSTEM DOWNTIME

During the period covered in this report, the landfill gas (LFG) collection system was not shut down for more than five (5) days on any one occasion. Pursuant to BAAQMD Regulation 8-34-113, Limited Exemption, Inspection and Maintenance, the total downtime is summarized below:

Table 2-2 Collection System Downtime

PERIOD	DOWNTIME (HOURS)
January 1, 2019 – October 31, 2019	39.17
May 1, 2019 - October 31, 2019	25.67

A Flare SSM Log that lists dates, times, and lengths of shutdowns for the reporting period is included in Appendix B.

2.1.2 WELL DISCONNECTION LOG

During the reporting period, zero (0) wellfield SSM events occurred. In addition, zero wells (out of a possible 3) remain disconnected at the end of the reporting period, pursuant to BAAQMD Regulation 8-32-116.2 (Limited Exemption, Well Raising).

A Wellfield SSM Log that lists dates, times, and lengths of disconnections for the reporting period is included in Appendix C.

2.2 EMISSION CONTROL DEVICE DOWNTIME (BAAQMD 8-34-501.2 & §60.757(F)(3))

The emission control system consists of the A-3 Enclosed Flare. No bypassing of the control system or emissions of raw LFG occurred. A Flare SSM Log for the A-3 Flare is included in Appendix B. Total downtime is summarized in the following table:

Table 2-3 Flare A-3 Downtime

PERIOD	DOWNTIME (HOURS)
January 1, 2019 – October 31, 2019	39.17
May 1, 2019 - October 31, 2019	25.67

2.2.1 LFG BYPASS OPERATIONS *(§60.757(f)(2))*

Title 40 CFR §60.757(f)(2) is not applicable at the TCRDF because no bypass line is installed. LFG cannot be diverted from the control equipment.

2.2.2 KEY EMISSION CONTROL OPERATING PARAMETERS *(BAAQMD 8-34-501.11 & 8-34-509)*

BAAQMD Regulations 8-34-501.11 and 8-34-509 are not applicable to the A-3 Flare because the A-3 Flare is subject to continuous temperature monitoring as required by BAAQMD Regulation 8-34-507 and §60.757(f)(1).

2.3 TEMPERATURE MONITORING RESULTS (BAAQMD 8-34-501.3, 8-34-507, & §60.757(F)(1))

The combustion zone temperature of the flare is monitored with thermocouples and recorded with a Yokogawa paperless chart recorder. There were no continuous recorder device SSM events during the reporting period. As shown in Appendix D, there were no periods of missing temperature data for the flares during the reporting period.

Title V Permit Condition Number 8366 Part 6 states that the minimum combustion zone temperature, averaged over a 3-hour period, shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50°F, provided that the minimum combustion zone temperature is not less than 1,450°F. Pursuant to Part 6, the following temperature limits applied during the reporting period:

Table 2-4 Applicable 3-Hour Temperature Limits

Source Test Date	Source Test Report Submitted	Average Temperature During Test (°F)	3-hr Minimum Temperature (°F)
2/6/2019	3/22/2019	1,602	1,552

2.4 MONTHLY COVER INTEGRITY MONITORING (BAAQMD 8-34-501.4)

The Monthly Cover Integrity Monitoring Reports are included in Appendix E. The cover integrity monitoring was performed on the following dates:

- May 30, 2019
- June 25, 2019
- July 25, 2019
- August 28, 2019
- September 26, 2019
- October 30, 2019

2.5 LESS THAN CONTINUOUS OPERATION (BAAQMD 8-34-501.5)

The TCRDF does not operate under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) and therefore is not required to submit monthly LFG flow rates.

2.6 SURFACE EMISSIONS MONITORING (BAAQMD 8-34-501.6, 8-34-506, & §60.757(F)(5))

The TCRDF is a closed landfill as defined by 8-34-223. As of the First Quarter 2016 event completed March 1, 2016, the Site has achieved three consecutive quarters with no Surface Emissions Monitoring (SEM) exceedances. Therefore, the TCRDF may now reduce the frequency of SEM events to annually. The 2019 annual SEM occurred during the previous reporting period on January 22, 2019. The next SEM event is due by March 31, 2019. Any exceedance detected during annual monitoring will require the Site to revert to quarterly monitoring.

2.7 COMPONENT LEAK TESTING (BAAQMD 8-34-501.6 & 8-34-503)

Quarterly Component Leak Testing using FIDs, pursuant to 8-34-503, occurred during the reporting period on the following date:

- Second Quarter 2019 – May 16, 2019
- Third Quarter 2019 – August 26, 2019

No component leaks were discovered during either test event. Quarterly LFG Component Leak Check logs are presented in Appendix F.

2.8 WASTE ACCEPTANCE RECORDS (BAAQMD 8-34-501.7)

The TCRDF is closed and all final closure documentation has been received. No degradable waste was accepted during the reporting period. The total waste in place is 12.78 million tons.

2.9 NON-DEGRADABLE WASTE ACCEPTANCE RECORDS (BAAQMD 8-34-501.8)

TCRDF does not have non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

2.10 WELLHEAD MONITORING DATA (BAAQMD 8-34-501.4 & 8-34-505)

Wellhead monitoring was performed on a monthly basis pursuant to 8-34-505. The wellhead concentration readings for the reporting period are included in Appendix G. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 - Each wellhead shall operate under a vacuum.
- 8-34-305.2 - The LFG temperature in each wellhead shall be less than 55 degrees Celsius (°C) (131°F).
- 8-34-305.4 - The oxygen (O_2) concentration in each wellhead shall be less than 5 percent by volume.

The wellhead monitoring was performed on the following dates:

- May 7 and 16, 2019
- June 4, 2019
- July 9, 12, and 15, 2019
- August 13, 16, and 29, 2019
- September 4 and 13, 2019
- October 9, 16, 23, and 30, 2019

Wellhead Deviations *(BAAQMD 8-34-501.9 & §60.757(f)(1))*

Wellfield deviations from BAAQMD Regulation 8-34-305 during the reporting period are summarized in Table 2-5. The Wellfield Deviation Log is attached in Appendix H.

Table 2-5 Wellfield Deviation Summary

Well ID	Exceedance Date	Exceedance Value	Re-monitoring Date	Compliance Date and Reading	Days in Exceedance
No well exceedances during the reporting period.					

2.11 GAS FLOW MONITORING RESULTS (BAAQMD 8-34-501.10, 8-34-508, & §60.757(F)(1))

Flow is measured using a Kurz flow meter installed on March 12, 2015. The LFG flow is displayed and digitally recorded with a General Electric data panel and Yokogawa Digital Recorder, which records flow every two minutes. The flow data readings are saved to a compact flash card. The flow meter is maintained and calibrated pursuant to the manufacturer's recommendations. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording at least every 15 minutes. The flow records for the flare are available for review at the TCRDF. As shown in Appendix D, no flare temperature or flow deviations occurred from May 1, 2019 to October 31, 2019.

Title V Permit Condition Number 8366, Part 11 limits daily heat input to 1,800 Million British thermal units (MMBTU) per day and annual heat input to 657,000 MMBTU. Table 2-6 below is a summary of the total LFG flow for the reporting period of May 1, 2019 to October 31, 2019. Monthly and daily flow rates are presented in Appendix I.

Table 2-6 LFG Input to A-3 Flare

Emission Control Device	Average Flow (scfm)	Average CH_4 (%)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heat Input (MMBtu)	Max Daily Heat Input (MMBtu)
A-3 Flare	1,165	46.77	306,945,264	143,548,171	145,414	828

(1) The methane content was determined from the February 6, 2019 source test.

2.12 COMPLIANCE WITH §60.757(F)(6)

"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."

At the end of the reporting period, the GCCS consisted of thirty-eight (38) vertical LFG collection wells. No wells were added to or removed from the collection system during the reporting period.

2.13 COMPLIANCE WITH TITLE V PERMIT CONDITION 8366, PART 12

Title V Condition Number 8366, Part 12 requires annual monitoring for hydrogen sulfide using a Draeger tube. The 2019 Annual sample concentration was 100 ppm_v (collected July 9, 2019). Data from the monitoring event is presented in Appendix K.

2.14 COMPLIANCE WITH TITLE V PERMIT CONDITION 2593 FOR S-24

Daily records were maintained and totaled as required by Condition 2593 Part 4. Concrete accepted at S-24 did not exceed 150,000 tons during any consecutive 12-month period. Combined concrete and asphalt accepted and removed from the site did not exceed 2,500 tons in any day.

3 PERFORMANCE TEST REPORT

In accordance with BAAQMD Regulation 8-34-413 and 40 CFR §60.757(g) in the NSPS, a Performance Test Report is required to be submitted for subject facilities containing performance and monitoring data for the operation of the GCCS. The operational records listed in Table 3-1 have been reviewed, summarized, and are included in this Performance Test Report.

Table 3-1 Performance Test Requirements

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-412, §60.8, §60.752(b)(2)(iii)(B), §60.754(d)	Compliance Demonstration Test	Section 3.1, Appendix L
§60.757(g)(1)	A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for future collection system expansion.	Section 3.2, Appendix A
§60.757(g)(2)	The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based.	Section 3.3
§60.757(g)(3)	The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material.	Section 3.4
§60.757(g)(4)	The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area.	Section 3.5
§60.757(g)(5)	The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill.	Section 3.6
§60.757(g)(6)	The provisions for the control of off-site migration.	Section 3.7, Appendix J

3.1 FLARE COMPLIANCE DEMONSTRATION TEST RESULTS (BAAQMD 8-34-412)

The most recent A-3 Flare Annual Compliance Demonstration Test was conducted on February 6, 2019. The Source Test Report was submitted to the BAAQMD on March 22, 2019.

Table 3-3 shows the results of the A-3 2019 Flare Compliance Demonstration Test, averaged from three test runs. A summary of the results from the February 6, 2019 Compliance Demonstration Test in Appendix L.

Table 3-2 A-3 Flare Compliance Demonstration Test Results

Condition	Flare Average Results	Applicable Limit	Compliance Status
NOx, lbs/MMBTU	0.04	< 0.06	In Compliance
CO, lbs/MMBTU	0.004	<0.30	In Compliance
NMOC (ppm_v @ 3% O_2)	< 3.9	< 30	In Compliance

3.2 COMPLIANCE WITH §60.757(G)(1)

"A diagram of the collection system showing collection system positioning including wells, horizontal collectors…"

A map dated February 2, 2017 of the LFG collection system showing the positioning of all vertical wells, horizontal collectors, and other LFG extraction devices is included in Appendix A.

3.3 COMPLIANCE WITH §60.757(G)(2)

"The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based."

In general, the sufficient capacities of the GCCS components are based on establishing, maintaining, and documenting that the surface emissions of non-methane organic compounds (NMOCs) and subsurface LFG migration are controlled within compliance limits. Over the monitoring period covered by this Combined Report, the sufficiency of the GCCS components was based as follows:

- The existing GCCS has historically provided LFG wells and collectors spaced in accordance with standard industry practices. The installed collector density during the reporting period appears to be more than adequate for controlling surface emissions and subsurface LFG migration, based on continuous compliance and operational experience.
- The total capacity of the LFG mover equipment exceeds the current United States Environmental Protection Agency (USEPA) Model AP-42 projections of LFG generation and the historic LFG extraction rates determined to be continuously available from the landfill.

The landfill operator conducts routine monitoring in accordance with NSPS requirements. If the TCRDF GCCS does not meet the measures of performance set forth in the NSPS, the GCCS will be adjusted or modified, as required.

Demonstrating Compliance with §60.757(g)(2)

"The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based."

The Site is now closed; therefore peak generation has already occurred. LFG generation will decline over time. The existing GCCS conveyance piping has sufficient capacity to handle all current and future LFG flow rates based on well vacuum data, LFG generation estimates, and surface emissions monitoring.

Compliance with 40 CFR §60.757(g)(2) is demonstrated by performing SEM. Refer to Section 2.6, Surface Emissions Monitoring for information pertaining to the SEM results.

3.4 COMPLIANCE WITH §60.757(G)(3)

"The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material."

No segregated areas or accumulations of asbestos or non-degradable material are documented for the TCRDF in the GCCS Design Plan. Therefore, 40 CFR §60.757(g)(3) is not applicable.

3.5 COMPLIANCE WITH §60.757(G)(4)

"The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area."

No non-productive areas have been excluded from the coverage of the GCCS. Therefore, 40 CFR §60.757(g)(4) is not applicable.

3.6 COMPLIANCE WITH §60.757(G)(5)

"The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill."

The present gas mover equipment capacity is adequate to move the current LFG flow rate. The current A-3 Flare has a capacity of 2,500 scfm at 50 percent methane. Since the Site is now closed, peak generation has already occurred; therefore the current equipment is capable of moving the maximum flow rate over the remaining life of the landfill.

3.7 COMPLIANCE WITH §60.757(G)(6)

"The provisions for the control of off-site migration."

There have been no significant LFG migration occurrences at the TCRDF. The most recent Perimeter Gas Migration Monitoring Plan (PGMMP) was updated in January 2012 to include a variance from probe monitoring requirements and recent changes to building monitoring locations. Buildings on-site at the TCRDF are monitored quarterly for LFG migration.

Quarterly Methane-In-Structure Monitoring occurred on the following dates:

- Second Quarter 2019 – June 26, 2019
- Third Quarter 2019 – August 26, 2019

All in-structure locations were in compliance with no detections above the 1.25 percent methane limit. The Methane-In-Structure Survey Reports are included in Appendix J.

Demonstrating Compliance with §60.757(g)(6)

"The provisions for the control of off-site migration."

The landfill operator will continue monitoring in accordance with the existing plan as discussed above. If the GCCS at the TCRDF does not meet the measures of performance set forth in the NSPS, the GCCS will be adjusted or modified in accordance with the NSPS requirements.

4 STARTUP, SHUTDOWN, MALFUNCTION (SSM) REPORT

SSM Report for the GCCS at the Tri-Cities Recycling and Disposal Facility

The NESHAP contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a semi-annual report (under 40 CFR 63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by 40 CFR §63.1980(a) of the NESHAP and 40 CFR §60.757(f) of the NSPS summarize the GCCS exceedances. These two semi-annual reports contain similar information and have been combined as allowed by 40 CFR §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR Part 63, AAAA became effective on January 16, 2004. Those SSM events that occurred during the NSPS semi-annual reporting period (May 1, 2019 to October 31, 2019) are reported in this section. The following information is included as required:

- During the reporting period, 5 flare SSM events occurred. The cause, time and duration of each event are presented in the Flare SSM Log, which is contained in Appendix B.
- During the reporting period, 0 wellfield SSM events occurred to allow for active filling, repairs, and well raising. The time and duration of each event are presented in the Wellfield SSM Log, which is contained in Appendix C.
- During the reporting period, 0 recorder SSM events occurred.
- In all, 5 events were consistent with the standard operating procedures contained in the SSM Plan.
- No exceedances of any applicable emission limitation in the landfill's NESHAP (63.10(d)(5)(i)) occurred.
- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required, nor prepared (§63.6(e)(3)(viii)).

I certify the following:

Based on information and belief formed after reasonable inquiry, information on the startup, shutdown, malfunction forms, all accompanying reports, and other required certifications are true, accurate, and complete.

Patrick Madej

Signature of Responsible Official

November 26, 2019

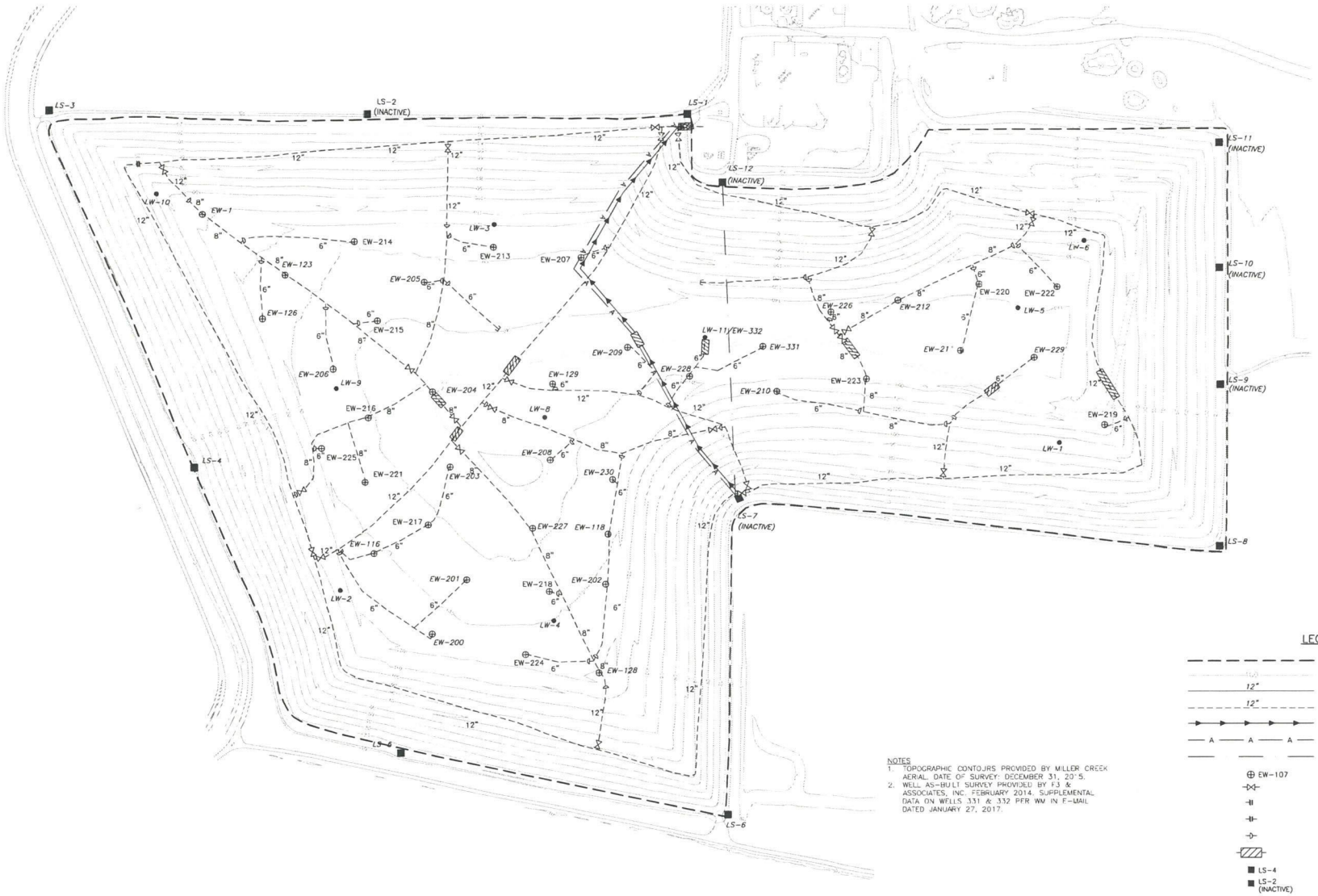
Date

Patrick Madej

Name of Responsible Official

APPENDIX A

SITE MAP



NOTES
1. TOPOGRAPHIC CONTOURS PROVIDED BY MILLER CREEK AERIAL. DATE OF SURVEY: DECEMBER 31, 20'5.
2. WELL AS-BUILT SURVEY PROVIDED BY K J & ASSOCIATES, INC. FEBRUARY 2014. SUPPLEMENTAL DATA ON WELLS 331 & 332 PER WM IN E-MAIL DATED JANUARY 27, 2017.

LEGEND

- EXISTING SOLID WASTE BOUNDARY
- EXISTING 10' CONTOUR
- 12" EXISTING LFG HEADER – ABOVE GROUND
- 12" EXISTING LFG HEADER – BELOW GROUND
- EXISTING CONDENSATE FORCE MAIN
- A A A EXISTING AIR FORCE MAIN
- EXISTING HORIZONTAL COLLECTOR
- ⊕ EW-107 EXISTING LFG EXTRACTION WELL
- EXISTING CONTROL VALVE
- EXISTING BLIND FLANGE
- EXISTING FLANGE CONNECTION
- EXISTING REDUCER
- EXISTING ROAD CROSSING
- ■ LS-4 EXISTING LEACHATE SUMP
- ■ LS-2 (INACTIVE) INDICATES CURRENTLY INACTIVE LEACHATE SUMP
- ● LW-1 EXISTING LEACHATE LEVEL MONITORING WELL

Update on 6/16/2017 - EW-331and EW-332 decommissioned

1" 1/2" 0" 1"

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REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
DATE OF ISSUE	02/02/17	DRAWN BY RAW	CHECKED BY JAB			
		DESIGNED BY	APPROVED BY			

cornerstone
A TETRA TECH COMPANY

TRI-CITIES RECYCLING AND DISPOSAL FACILITY
FREMONT, CALIFORNIA

GCCS AS-BUILT SITE PLAN

SHEET NO 1

PROJECT N 170138

APPENDIX B

FLARE SSM LOG

TRI-CITIES RECYCLING AND DISPOSAL FACILITY
CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Startup x Shutdown Malfunction	A-3 Flare	5/23/19 12:08 5/23/19 17:16	5/23/19 12:10 5/23/19 17:18	0.03 0.03	5.13	Manual shutdown for flare station maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	5/23/2019
2	x Startup x Shutdown Malfunction	A-3 Flare	6/17/19 9:16 6/17/19 16:52	6/17/19 9:18 6/17/19 16:54	0.03 0.03	7.60	Manual shutdown for Knock Out Pot maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	6/17/2019
No flare SSM events in July 2019															
No flare SSM events in August 2019															
No flare SSM events in September 2019															
3	x Startup x Shutdown Malfunction	A-3 Flare	10/9/19 8:12 10/9/19 8:24	10/9/19 8:14 10/9/19 8:26	0.03 0.03	0.20	Manual shutdown for blower maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	10/9/2019
4	x Startup x Shutdown Malfunction	A-3 Flare	10/27/19 12:52 10/27/19 15:30	10/27/19 12:54 10/27/19 15:32	0.03 0.03	2.63	KO Pot alarm shutdown. System inspected and restarted.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	10/27/2019
5	x Startup x Shutdown Malfunction	A-3 Flare	10/30/19 18:40 10/31/19 4:46	10/30/19 18:42 10/31/19 4:48	0.03 0.03	10.10	Low temperature alarm shutdown. System inspected and restarted.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	10/31/2019

(a) **STANDARD OPERATING PROCEDURES**

Shutdown

Procedure No.	Procedure
1.	Ensure that there are no unsafe conditions present, contact manager immediately
2.	Initiate shutdown sequence below by one or more of the following (Note date and time in Section 1 of form above) a. Press Emergency Stop if necessary b. Close On/Off switch(es) or Push On/Off button(s) c. Close adjacent valves if necessary
3.	Observe that system achieves normal shutdown ranges for levels, pressures, and temperatures (Note date and time in Section 2 of form above)

Startup

Procedure No.	
1.	Ensure that there are no unsafe conditions present
2.	Ensure that the system is ready to start by one of the following: a. Valves are in correct position b. Levels, pressures, and temperatures are within normal starting range c. Alarms are cleared d. Power is on and available to control panel and ready to energize equipment. e. Emergency stop is de-energized
3.	Initiate start sequence (Note time and date in section 1 of form above)
4.	Observe that system achieves normal startup ranges for levels, pressures, and temperatures (Note time and date in Section 2 of form above)

Malfunction

EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	PROCEDURE NO. -TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Blower or Other Gas Mover Equipment	Applies vacuum to wellfield to extract LFG and transport to control device	Loss of LFG Flow /Blower Malfunction	-Flame arrestor fouling deterioration -Automatic valve problems -Blower failure (e.g., belt, motor, impeller, coupling, seizing, etc.) -Loss of power -Extraction piping failure -Condensate knock-out problems -Extraction piping blockages	1. Repair breakages in extraction piping 2. Clean flame arrestor 3. Repair blockages in extraction piping 4. Verify automatic valve operation, compressed air/nitrogen supply 5. Notify power utility, if appropriate 6. Provide/utilize auxiliary power source, if necessary 7. Repair Settlement in Collection Piping 8. Repair Blower 9. Activate back-up blower, if available 10. Clean knock-up pot demister 11. Drain knock-out pot
Extraction Wells and Collection Piping	Conduits for extractions and movement of LFG flow	Collection well and pipe failures	-Break/crack in header or lateral piping -Leaks at wellheads, valves, flanges, Test -Collection piping blockages -Problems due to settlement (e.g. pipe separation, deformation, development of low points)	12. Repair leaks or breaks in lines or wellheads 13. Follow procedures for loss of LFG flow/blower malfunction 14. Repair blockages in collection piping 15. Repair settlement in collection piping 16. Re-install, repair, or replace piping
Blower or Other Gas Mover Equipment And Control Device	Collection and control of LFG	Loss of electrical power	- Force majeure/Act of God (e.g., lightning, flood, earthquake, etc.) -Area-wide or local blackout or brown-out -Interruption in service (e.g. blown service fuse) -Electrical line failure -Breaker trip -Transformer failure -Motor starter failure trip -Overdraw of power -Problems in electrical panel -Damage to electrical equipment from on-site operations	17. Check/reset breaker 18. Check/repair electrical panel components 19. Check/repair transformer 20. Check/repair motor starter 21. Check/repair electrical line 22. Test amperage to various equipment 23. Contact electricity supplier 24. Contact/contract electrician 25.Provide auxiliary power (if necessary)
LFG Control Device	Combusts LFG	Low temperature conditions at control device	-Problems with temperature -monitoring equipment -Problems/failure of -thermocouple and/or thermocouple wiring -Change of LFG flow -Change of LFG quality -Problems with air louvers -Problems with air/fuel controls -Change in atmospheric conditions	26. Check/repair temperature monitoring equipment 27. Check/repair thermocouple and/or wiring 28. Follow procedures for loss of flow/blower malfunction 29. Check/adjust louvers 30. Check/adjust air fuel controls
LFG Control Device	Combusts LFG	Loss of Flame	-Problems/failure of thermocouple -Loss/change of LFG flow -Loss/change of LFG quality -Problems with air/fuel controls -Problems/failure of flame sensor -Problems with temperature monitoring equipment	31. Check/repair temperature monitoring equipment 32. Check/repair thermocouple 33. Follow procedures for loss of flow/blower malfunction 34. Check/adjust air/fuel controls 35. Check/adjust/repair flame sensor 36. Check/adjust LFG collectors
Flow Monitoring Recording Device	Measures and records gas flow from collection system to control	Malfunctions of Flow Monitoring/Recording Device	-Problems with orifice plate, pitot tube, or other in-line flow measuring device -Problems with device controls and/or wiring -Problems with chart recorder	37. Check/adjust/repair flow measuring device and/or wiring 38. Check/repair chart recorder 39. Replace paper in chart recorder
Temperature Monitoring/ Recording Device	Monitors and records combustion temperature of enclosed combustion device	Malfunctions of Temperature Monitoring/Recording Device	-Problems with thermocouple -Problems with device controls and/or wiring -Problems with chart recorder	40. Check/adjust/repair thermocouple 41. Check/adjust/repair controller and/or wiring 42. Check/adjust/repair electrical panel components 43. Check/repair chart recorder 44. Replace paper in chart recorder
Control Device	Combusts LFG	Other Control Device Malfunctions	-Control device smoking (i.e. visible emissions) -Problems with flare insulation -Problems with pilot light system -Problems with air louvers -Problems with air/fuel controllers -Problems with thermocouple -Problems with burners -Problems with flame arrester -Alarmed malfunction conditions not covered above -Unalarmed conditions discovered during inspection not covered above	45. Site-specific diagnosis procedures 46. Site-specific responses actions based on diagnosis 47. Open manual louvers 48. Clean pitot orifice 49. Clean/drain flame arrestor 50. Refill propane supply 51. Check/repair pilot sparking system

(b) For each permit limit exceedance complete an "SSM Plan Departure Form". Notify 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 permit has occured. Follow up in writing to the agency within 7 working days after the end of the event.

APPENDIX C

WELLFIELD SSM LOG

TRI-CITIES RECYCLING & DISPOSAL FACILITY
COLLECTION SYSTEM DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
No Well SSM Events in May 2019															
No Well SSM Events in June 2019															
No Well SSM Events in July 2019															
No Well SSM Events in August 2019															
No Well SSM Events in September 2019															
No Well SSM Events in October 2019															

(a) STANDARD OPERATING PROCEDURES

Shutdown

Procedure No.	Procedure
1.	Ensure that there are no unsafe conditions present, contact manager immediately
2.	Initiate shutdown sequence below by one or more of the following (Note date and time in Section 1 of form above) a. Press Emergency Stop if necessary b. Close On/Off switch(es) or Push On/Off button(s) c. Close adjacent valves if necessary
3.	Observe that system achieves normal shutdown ranges for levels, pressures, and temperatures (Note date and time in Section 2 of form above)

Startup

Procedure No.	
1.	Ensure that there are no unsafe conditions present
2.	Ensure that the system is ready to start by one of the following: a. Valves are in correct position b. Levels, pressures, and temperatures are within normal starting range c. Alarms are cleared d. Power is on and available to control panel and ready to energize equipment. e. Emergency stop is de-energized
3.	Initiate start sequence (Note time and date in section 1 of form above)
4.	Observe that system achieves normal startup ranges for levels, pressures, and temperatures (Note time and date in Section 2 of form above)

Malfunction

EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	PROCEDURE NO. -TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Blower or Other Gas Mover Equipment	Applies vacuum to wellfield to extract LFG and transport to control device	Loss of LFG Flow/Blower Malfunction	-Flame arrestor fouling/deterioration -Automatic valve problems -Blower failure (e.g., belt, motor, impeller, coupling, seizing, etc.) -Loss of power -Extraction piping failure -Condensate knock-out problems -Extraction piping blockages	1. Repair breakages in extraction piping 2. Clean flame arrestor 3. Repair blockages in extraction piping 4. Verify automatic valve operation, compressed air/nitrogen supply 5. Notify power utility, if appropriate 6. Provide/utilize auxiliary power source, if necessary 7. Repair Settlement in Collection Piping 8. Repair Blower 9. Activate back-up blower, if available 10. Clean knock-up pot/demister 11. Drain knock-out pot
Extraction Wells and Collection Piping	Conduits for extractions and movement of LFG flow	Collection well and pipe failures	-Break/crack in header or lateral piping -Leaks at wellheads, valves, flanges, Test ports, seals, couplings, etc. -Collection piping blockages -Problems due to settlement (e.g. pipe separation, deformation, development of low points)	12. Repair leaks or breaks in lines or wellheads 13. Follow procedures for loss of LFG flow/blower malfunction 14. Repair blockages in collection piping 15. Repair settlement in collection piping 16. Re install, repair, or replace piping
Blower or Other Gas Mover Equipment And Control Device	Collection and control of LFG	Loss of electrical power	- Force majeure/Act of God (e.g., lightning, flood, earthquake, etc.) -Area-wide or local blackout or brown-out -Interruption in service (e.g. blown service fuse) -Electrical line failure -Breaker trip -Transformer failure -Motor starter failure/trip -Overdraw of power -Problems in electrical panel -Damage to electrical equipment from on-site operations	17. Check/reset breaker 18. Check/repair electrical panel components 19. Check/repair transformer 20. Check/repair motor starter 21. Check/repair electrical line 22. Test amperage to various equipment 23. Contact electricity supplier 24. Contact/contract electrician 25.Provide auxiliary power (if necessary)
LFG Control Device	Combusts LFG	Low temperature conditions at control device	-Problems with temperature -monitoring equipment -Problems/failure of -thermocouple and/or thermocouple wiring -Change of LFG flow -Change of LFG quality -Problems with air louvers -Problems with air/fuel controls -Change in atmospheric conditions	26. Check/repair temperature monitoring equipment 27. Check/repair thermocouple and/or wiring 28. Follow procedures for loss of flow/blower malfunction 29. Check/adjust louvers 30. Check/adjust air/fuel controls
LFG Control Device	Combusts LFG	Loss of Flame	-Problems/failure of thermocouple -Loss/change of LFG flow -Loss/change of LFG quality -Problems with air/fuel controls -Problems/failure of flame sensor -Problems with temperature monitoring equipment	31. Check/repair temperature monitoring equipment 32. Check/repair thermocouple 33. Follow procedures for loss of flow/blower malfunction 34. Check/adjust air/fuel controls 35. Check/adjust/repair flame sensor 36. Check/adjust LFG collectors
Flow Monitoring/ Recording Device	Measures and records gas flow from collection system to control	Malfunctions of Flow Monitoring/Recording Device	-Problems with orifice plate, pitot tube, or other in-line flow measuring device -Problems with device controls and/or wiring -Problems with chart recorder	37. Check/adjust/repair flow measuring device and/or wiring 38. Check/repair chart recorder 39. Replace paper in chart recorder
Temperature Monitoring/ Recording Device	Monitors and records combustion temperature of enclosed combustion device	Malfunctions of Temperature Monitoring/Recording Device	-Problems with thermocouple -Problems with device controls and/or wiring -Problems with chart recorder	40. Check/adjust/repair thermocouple 41. Check/adjust/repair controller and/or wiring 42. Check/adjust/repair electrical panel components 43. Check/repair chart recorder 44. Replace paper in chart recorder
Control Device	Combusts LFG	Other Control Device Malfunctions	-Control device smoking (i.e. visible emissions) -Problems with flare insulation -Problems with pilot light system -Problems with air louvers -Problems with air/fuel controllers -Problems with thermocouple -Problems with burners -Problems with flame arrester -Alarmed malfunction conditions not covered above -Unalarmed conditions discovered during inspection not covered above	45. Site-specific diagnosis procedures 46. Site-specific responses actions based on diagnosis 47. Open manual louvers 48. Clean pitot orifice 49. Clean/drain flame arrestor 50. Refill propane supply 51. Check/repair pilot sparking system

(b) For each permit limit exceedance complete an "SSM Plan Departure Form". Notify 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 permit has occured. Follow up in writing to the agency within 7 working days after the end of the event.

APPENDIX D

FLARE TEMPERATURE AND FLOW DEVIATION REPORT

TRI-CITIES RECYCLING & DISPOSAL FACILITY, Fremont, CA
TEMPERATURE & FLOW DEVIATION REPORT
May 1, 2019 - October 31, 2019

REPORT PREPARED BY: Mike Chan **DATE:** November 24, 2019
TEMPERATURE SENSING DEVICE: Thermocouple **MODEL:** Thermo-Electric

START DATE TIME	END DATE TIME	DURATION (Hours)	TEMPERATURE (°F) / FLOW (SCFM)	CAUSE	EXPLANATION	ACTION TAKEN
No Deviations were reported in May 2019						
No Deviations were reported in June 2019						
No Deviations were reported in July 2019						
No Deviations were reported in August 2019						
No Deviations were reported in September 2019						
No Deviations were reported in October 2019						

COMMENTS: 1) The A-3 Flare 3-hour average combustion zone temperature did not drop below the 1,546°F limit (March 27, 2018 - March 21, 2019) or the 1,552°F limit (3/22/19 present) established during the February 14, 2018 and February 6, 2019 source tests pursuant to 40 CFR §60.758(c)(1)(i).

scfm - standard cubic feet per minute °F - Degrees Fahrenheit

APPENDIX E

COVER INTEGRITY RESULTS

OPERATIONS AND MAINTENANCE SITE INSPECTION REPORT
Monthly Cover Monitoring

LOCATION: Tri-Cities Recycling and Disposal Facility
INSPECTION DATE: May 30, 2019
TECHNICIAN: Matthew Frame

COVER & VEGETATION	YES	NO	COMMENTS
Settling of cap		X	
Dead vegetation	X		Due to lack of rain
Erosion on cap system		X	
Erosion on side slopes		X	
Ponding of water on cap		X	
Surface cracking	X		Normal geometric cracking.
Storm water down drains clear	X		
Storm water ditches inspected	X		
Acceptable vegetation	X		
Exposed waste		X	

REPAIR AREAS:

GPS Coordinates		Date of Repair	COMMENTS
Northing	Easting		

OPERATIONS AND MAINTENANCE SITE INSPECTION REPORT
Monthly Cover Monitoring

LOCATION: Tri-Cities Recycling and Disposal Facility
INSPECTION DATE: June 25, 2019
TECHNICIAN: Matthew Frame

COVER & VEGETATION	YES	NO	COMMENTS
Settling of cap		X	
Dead vegetation	X		Due to lack of rain
Erosion on cap system		X	
Erosion on side slopes		X	
Ponding of water on cap		X	
Surface cracking	X		Normal geometric cracking.
Storm water down drains clear	X		
Storm water ditches inspected	X		
Acceptable vegetation	X		
Exposed waste		X	

REPAIR AREAS:

GPS Coordinates		Date of Repair	COMMENTS
Northing	Easting		

OPERATIONS AND MAINTENANCE SITE INSPECTION REPORT
Monthly Cover Monitoring

LOCATION: Tri-Cities Recycling and Disposal Facility
INSPECTION DATE: July 25, 2019
TECHNICIAN: Matthew Frame

COVER & VEGETATION	YES	NO	COMMENTS
Settling of cap		X	
Dead vegetation	X		Due to lack of rain
Erosion on cap system		X	
Erosion on side slopes		X	
Ponding of water on cap		X	
Surface cracking	X		Normal geometric cracking.
Storm water down drains clear	X		
Storm water ditches inspected	X		
Acceptable vegetation	X		
Exposed waste		X	

REPAIR AREAS:

GPS Coordinates		Date of Repair	COMMENTS
Northing	Easting		

OPERATIONS AND MAINTENANCE SITE INSPECTION REPORT
Monthly Cover Monitoring

LOCATION: Tri-Cities Recycling and Disposal Facility
INSPECTION DATE: August 28, 2019
TECHNICIAN: Matthew Frame

COVER & VEGETATION	YES	NO	COMMENTS
Settling of cap		X	
Dead vegetation	X		Due to lack of rain
Erosion on cap system		X	
Erosion on side slopes		X	
Ponding of water on cap		X	
Surface cracking	X		Normal geometric cracking.
Storm water down drains clear	X		
Storm water ditches inspected	X		
Acceptable vegetation	X		
Exposed waste		X	

REPAIR AREAS:

GPS Coordinates		Date of Repair	COMMENTS
Northing	Easting		

OPERATIONS AND MAINTENANCE SITE INSPECTION REPORT
Monthly Cover Monitoring

LOCATION: Tri-Cities Recycling and Disposal Facility
INSPECTION DATE: September 26, 2019
TECHNICIAN: Matthew Frame

COVER & VEGETATION	YES	NO	COMMENTS
Settling of cap		X	
Dead vegetation	X		Due to lack of rain
Erosion on cap system		X	
Erosion on side slopes		X	
Ponding of water on cap		X	
Surface cracking	X		Normal geometric cracking.
Storm water down drains clear	X		
Storm water ditches inspected	X		
Acceptable vegetation	X		
Exposed waste		X	

REPAIR AREAS:

GPS Coordinates		Date of Repair	COMMENTS
Northing	Easting		

OPERATIONS AND MAINTENANCE SITE INSPECTION REPORT
Monthly Cover Monitoring

LOCATION: Tri-Cities Recycling and Disposal Facility
INSPECTION DATE: October 30, 2019
TECHNICIAN: Matthew Frame

COVER & VEGETATION	YES	NO	COMMENTS
Settling of cap		X	
Dead vegetation	X		Normal for time of year
Erosion on cap system		X	
Erosion on side slopes		X	
Ponding of water on cap		X	
Surface cracking	X		Geometric cracking by well 1
Storm water down drains clear	X		
Storm water ditches inspected	X		
Acceptable vegetation	X		
Exposed waste		X	

REPAIR AREAS:

GPS Coordinates		Date of Repair	COMMENTS
Northing	Easting		

APPENDIX F

SURFACE EMISSIONS/COMPONENT LEAK CHECK MONITORING REPORTS

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

July 26, 2019

Mr. Patrick Madej
Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway
Fremont, California 94538

Re: Second Quarter 2019 Surface Emissions and Component Leak Monitoring Report for Tri-Cities Recycling and Disposal Facility

Dear Mr. Madej:

This monitoring report for "Tri-Cities Recycling and Disposal Facility (TCRDF)" contains the results of the Second Quarter 2019 Integrated and Instantaneous Surface Emissions Monitoring (SEM) and Component Leak Monitoring. All monitoring was performed by SCS Engineers (SCS).

APPLICABLE REQUIREMENTS

The monitoring discussed in this report was conducted in accordance with the following requirements:

Surface Emission Monitoring (SEM)

- New Source Performance Standard (NSPS), Title 40 of the Code of Federal Regulations (CFR) §60.755 (c) and (d), 40 CFR 60, Appendix A Method 21, promulgated by the United States Environmental Protection Agency (USEPA).
- California Code of Regulations (CCR) Title 17, Subchapter 10, Article 4, Subarticle 6, §95460 to §95476, known as the Assembly Bill 32 (AB32) landfill methane rule (LMR).
- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 303 (Landfill Surface Requirements) and Section 607 (Landfill Surface Inspection procedures).

Component Leak

- BAAQMD Regulation 8, Rule 34, Section 301 (Landfill Gas Collection and Emission Control System Requirements) and Section 602 (Collection and Control System Leak Inspection procedures).
- CCR Title 17, Subchapter 10, Article 4, Subarticle 6, §95464.

TCRDF Plan and Alternative Compliance Measures

An Alternative Compliance Option (ACO) Request was submitted to the California Air Resources Board (CARB) on May 16, 2011. After receipt of comments, this ACO was amended, restated, and submitted to BAAQMD on July 1, 2016. SEM and Component Leak monitoring was conducted according to the methods outlined in the July 1, 2016 ACO.

PROCEDURES

General

The surface of the TCRDF disposal area has been divided into one-hundred-and-nine (109), approximately 50,000 square foot monitoring grids. The entire landfill surface is monitored with the exception of active portions of the Landfill, slope areas, and as requested in the approved ACO, areas containing only asbestos-containing waste, inert waste and/or non-decomposable waste which are excluded for safety as allowed by CCR Title 17 §95466.

Field personnel walked the surface of the landfill following the walking pattern as depicted the 2011 TCRDF AB-32 SEM Plan, which traverses each monitoring grid. Additionally, in accordance with the provisions of 40 CFR 60.753(d) and 60.755(c)(1-3), the entire perimeter of the landfill surface was monitored. During the event, special attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and any areas with unusual odors.

The monitoring probe was positioned 2 inches above the ground surface. While walking, the wand tip of the flame ionization detector (FID) was held within 2 inches of the landfill surface while traversing the grid. Per the approved alternative request, the wand tip of the FID was held at 2 inches of vegetation in areas where the landfill surface is covered with low-lying vegetation such as grasses while traversing the grid.

Monitoring Path

The TCRDF completed four consecutive instantaneous and integrated monitoring events with no exceedances. Pursuant to §95471(c)(1)(B)1., sites that complete four consecutive integrated and instantaneous monitoring events with no exceedances may increase the walking pattern spacing from a 25-foot spacing to a 100-foot spacing. In the event that an integrated or instantaneous exceedance cannot be remediated within 10 calendar days or an exceedance is observed during a compliance inspection, the TCRDF will be required to revert to 25-foot spacing.

Combined Instantaneous and Integrated Surface Emissions Monitoring

The instantaneous and integrated SEM were performed simultaneously by SCS using Landtec SEM-500 flame ionization detectors (FID), calibrated to 500 parts per million by volume (ppm_v) methane. The devices meet or exceed all guidelines set forth in the CCR Title 17 §95471(a) and the United States Environmental Protection Agency (USEPA) Method 21 requirements.

SCS personnel walked the surface of the landfill on a grid by grid basis. After completing the grid; the technicians also checked any surface impoundments (wells or otherwise) for leaks.

Technicians also checked any surface cracks, seeps, or other areas that show evidence of surface emissions (odors or distressed vegetation). Active and sloped areas excluded for safety were documented on field data sheets and maps.

All instantaneous surface monitoring was performed in accordance with the applicable requirements referenced in this report. Any detections of methane above 200 ppm_v (areas of concern) or 500 ppm_v (exceedances) for instantaneous were recorded, flagged, and marked on an SEM Map. Applicable corrective action and re-monitoring timelines are listed below:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
    - If the re-monitoring event shows the exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance.
    - If the 1-month re-monitoring event shows the location is still corrected, all re-monitoring requirements have been completed.
- If either the first 10-day or 1-month re-monitoring events show a second exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance. If the 1-month re-monitoring event shows the area is still corrected, monitoring requirements have been completed.
- If any location shows three exceedances, an additional well shall be installed within 120 days of the initial exceedance.

The combined monitoring was conducted in accordance with the requirements of CCR Title 17 §95471(c)(2). Grids with results greater than 25 ppm_v were recorded, marked on the SEM map, and flagged for remediation. Any grids with integrated concentrations greater than 25 ppm_v are subject to the following corrective action and re-monitoring timeline:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
- If the 10-day re-monitoring event shows the exceedance is corrected, all re-monitoring requirements have been completed.
- If the first 10-day re-monitoring event shows a second grid exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, all re-monitoring requirements have been completed.

- The second 10-day re-monitoring event shows a third grid exceedance, an additional well shall be installed within 120 days of the initial exceedance.

Component Leak Monitoring Procedures

SCS monitored the exposed LFG components under positive pressure (pipes, well heads, valves, blowers, and other mechanical appurtenances). All component leaks measured within 0.5 inches exceeding the compliance limit of 500 ppm_v per requirements outlined in pursuant to §Section 95464(b)(1)(B) and 1,000 ppm per requirements outlined in BAAQMD 8-34-303 were recorded. Component leaks are subject to the following timelines:

- 500-999 ppm_v leaks are subject to a 10-day repair and re-monitoring deadline from §95469(b)(3).

- Leaks at or above 1000 ppm_v are subject a 7-day repair and re-monitoring deadline from BAAQMD 8-34-301.2.

SECOND QUARTER 2019 SEM AND COMPONENT LEAK RESULTS

The following is a summary of the SEM and component leak monitoring results completed for the Second Quarter 2019.

Reduction of SEM Frequency

The TCRDF has completed four consecutive instantaneous and integrated monitoring events with no exceedances. Pursuant to §95469(2)(C), any closed or inactive areas of active MSW landfills with no integrated exceedances for four consecutive quarters may reduce the frequency of integrated and instantaneous SEM to an annual basis. In the event that an exceedance cannot be remediated within 10 calendar days or an exceedance is observed during a compliance inspection, the TCRDF will be required to revert to quarterly monitoring. The next SEM event is due by March 31, 2020.

Pursuant to 8-34-506, landfills that are closed as defined in 8-34-223 with no exceedances in three consecutive quarters may reduce the frequency of instantaneous SEM to an annual basis. Any exceedance detected during annual monitoring will require the site to revert to quarterly monitoring.

Component Leak Monitoring Results

Component leak monitoring was conducted per the applicable requirements on May 16, 2019. There were no leaks detected above 500 ppm_v. Results are summarized in Attachment A.

EQUIPMENT CALIBRATION

The portable analyzers were calibrated to meet the instrument specifications requirements of U.S. EPA Method 21. The calibration gas used was methane, diluted to a nominal concentration of 25 ppm_v in air for integrated sample analyses and 500 ppm_v in air for instantaneous monitoring to comply with the requirements.

All analyzers were calibrated prior to use with required response time and precision related instrument checks. Calibration records include the following: One time response time test record; One time response factor determination for methane; Calibration Precision test records (test to be performed every 3 months); and Daily Instrument Calibration and Background test records for each gas meter that was used during the quarterly monitoring event. The calibration log records are included in Attachment B.

All monitoring was completed in accordance with the applicable regulatory requirements or approved alternatives. If you have any questions regarding this report, please do not hesitate to contact me at (510) 613-2852.

Thank you,
Waste Management

Michael Chan
Environmental Protection Air Specialist

Attachment A –Component Leak Monitoring Event Records

- Component Leak Exceedances and Monitoring Logs

Attachment B –Calibration Records

- Instrument and Gas Calibration Records

Attachment A

Component Leak Monitoring Event Records

Table A.1
AB-32 Component Leak Monitoring
Summary of Component Leaks Greater than 500 ppmv

2019 QUARTER: 2

LANDFILL NAME: **Tri-Cities Recycling and Disposal Facility**

Location	Initial Monitoring			Corrective Action		10-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances								

Table A.2
BAAQMD Component Leak Monitoring
Summary of Component Leaks Greater than 1,000 ppmv

2019 QUARTER: 2

LANDFILL NAME: **Tri-Cities Recycling and Disposal Facility**

Location	Initial Monitoring			Corrective Action		7-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances								

Attachment B

Calibration Records

CALIBRATION AND PERTINENT DATA

Date: 5-16-19 Site Name: Tri Cities

Inspector(s): Michael Morris Instrument: TVA2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: S Barometric Pressure: 29.8 "Hg

Air Temperature: 63 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

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

Instrument Serial Number: 2364 Cal Gas Concentration: 500

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	.3	501	1	3
2	.1	498	2	2
3	.2	499	1	4

Average Difference: 1.3

*Perform recalibration if average difference is greater than 10

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

= 100%- 1.3 /500 x 100%

= 99.7 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 127999
Counters Observed for the Zero= 2963

Trial 2:
Counts Observed for the Span= 127509
Counters Observed for the Zero= 2984

Trial 3:
Counts Observed for the Span= 127032
Counters Observed for the Zero= 2971

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 1.2 ppm

Downwind Location Description: Grid 25 Reading: 1.7 ppm

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

CALIBRATION AND PERTINENT DATA

Post

Date: 5-16-19 Site Name: Tri Cities

Inspector(s): Michael Morris Instrument: TVA2020

WEATHER OBSERVATIONS

Wind Speed: 4 MPH Wind Direction: S Barometric Pressure: 29.8 "Hg

Air Temperature: 66 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

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

Instrument Serial Number: 2364 Cal Gas Concentration: 500

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	.2	500	0	3
2	.3	502	2	2
3	.3	498	2	2

Average Difference: 1.3

*Perform recalibration if average difference is greater than 10

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

= 100% - 1.3 /500 x 100%

= 99.7 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 132072
Counters Observed for the Zero= 2722

Trial 2:
Counts Observed for the Span= 131718
Counters Observed for the Zero= 2701

Trial 3:
Counts Observed for the Span= 131118
Counters Observed for the Zero= 2717

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 1.2 ppm

Downwind Location Description: Grid 25 Reading: 1.4 ppm

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

CALIBRATION AND PERTINENT DATA

Date: 5-16-19 Site Name: Tri Cities

Inspector(s): Liam McGinn Instrument: TVA-2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: S Barometric Pressure: 29.8 "Hg

Air Temperature: 63 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

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

Instrument Serial Number: 4103 Cal Gas Concentration: 500

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	.3	498	2	3
2	.3	499	1	3
3	.2	499	1	3

Average Difference: 1.3

*Perform recalibration if average difference is greater than 10

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

= 100%- 1.3 /500 x 100%

= 99.7 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 130072
Counters Observed for the Zero= 3201

Trial 2:
Counts Observed for the Span= 129711
Counters Observed for the Zero= 3225

Trial 3:
Counts Observed for the Span= 129071
Counters Observed for the Zero= 3217

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 1.1 ppm

Downwind Location Description: Grid 25 Reading: 1.6 ppm

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

CALIBRATION AND PERTINENT DATA

Post

Date: 5-16-19 Site Name: Tri Cities

Inspector(s): Liam McGinn Instrument: TVA2020

WEATHER OBSERVATIONS

Wind Speed: 4 MPH Wind Direction: S Barometric Pressure: 29.8 "Hg

Air Temperature: 66 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

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

Instrument Serial Number: 4103 Cal Gas Concentration: 500

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	.1	498	2	3
2	.4	500	0	3
3	.2	497	3	3

Average Difference: 1.7

*Perform recalibration if average difference is greater than 10

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

= 100%- 1.7 /500 x 100%

= 99.7 %

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 133171
Counters Observed for the Zero= 2967

Trial 2:
Counts Observed for the Span= 132508
Counters Observed for the Zero= 2972

Trial 3:
Counts Observed for the Span= 132719
Counters Observed for the Zero= 2988

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 1.2 ppm

Downwind Location Description: Yard 25 Reading: 1.4 ppm

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

SpecAir Specialty Gases
A DIVISION OF MAINEOXY

22 Albiston Way
Auburn, ME 04210
800-292-6218
207-777-6218
Fax 207-777-6215
www.specair.com

Date: 01/07/2019

Certificate of Analysis

Customer:
QED ENVIRONMENTAL SYSTEMS

Order #: 1480578
Purchase Order #: 130938

Results are reported in mole percent, unless otherwise indicated. Mixes are prepared via partial pressure methods, or gravimetrically, using high load high sensitivity electronic scales. Prior to use, scales are verified for accuracy using applicable NIST traceable weights; analyses are calibrated against reference materials traceable to NIST weights and/or NIST gas reference materials.

Cylinder Size: 105L **CGA Connection:** C10 **Fill Pressure:** 1000 PSI

Analysis: Air Batch Analysis **Lot #:** 4900761

Component(s):	Requested Concentration(s):	Actual Concentration(s):
Oxygen	19.5% - 23.5%	21.7%
Moisture	< 3 PPM	0.7 PPM
THC	< 0.1 PPM	< 0.1 PPM
CO/CO2	< 1 PPM	< 0.1 PPM

Expiration Date: 01/2022

Comments: MEETS OR EXCEEDS ULTRA ZERO GRADE

Approved By:

Kyle Christianson

CGAIR-0
AIR: ULTRA ZERO GRADE
CGAIR-0

The information contained herein has been prepared at your request by qualified experts. While we believe that the information is accurate within the limits of the analytical methods employed, and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability arising out of the use of the information contained herein exceed the fee established for providing such information.

ANALYSIS CERTIFICATION

METHOD OF PREPARATION : GRAVIMETRIC / PRESSURE TRANSFILLING

METHOD OF ANALYSIS : PARAMAGNETIC OXYGEN CELL, GC(FID)

ACCURACY : ± 2% RELATIVE

LOT NO. & QTY.	COMP. 1 O_2	COMP. 2 N_2	COMP. 3	COMP. 4	COMP. 5	COMP. 6	Exp Date
1124904(1)	21.00%	BALANCE	(<1 PPM THC)				05/01/24

Gas mixtures manufactured with balances calibrated by an ISO 17025 accredited Company using NIST traceable weights and meets or exceeds the requirements of NIST Handbook 44.
Calibration test 121088, 121097, 121091, or 121100 dated, 18th January 2019 applies.
WEIGHT SETS USED: Kit #92231, Test #2740564, Kit # 03610, Test # VA-19-1135 T3 Test # VA-19-11350B, T5 Test #VA-19-11350F, VA-19-11350E, VA-19-11350D, IM1966 Test VA-18-11340H

No affecting environmental conditions during analysis.

REQUESTED BY : THERMO ENVIRONMENTAL INSTRUMENTS

CUSTOMER PURCHASE ORDER NUMBER : P181187

PACKING LIST NUMBER : 12146081

CERTIFICATION DATE : April 30, 2019

ANALYSIS BY : Robin Watson
Quality Representative

"We certify that all the cylinders for the Lot numbers identified herein are manufactured and tested within the requirements of CFR 49 part 178.65 and that physical and chemical test reports are on file and copies will be furnished upon request."

CALGAZ, a division of Airgas USA LLC
821 Chesapeake Drive, Cambridge, MD 21613-0149
Phone: (410)228-6400 Fax: (410)228-4251

ANALYSIS CERTIFICATION

METHOD OF PREPARATION : GRAVIMETRIC / PRESSURE TRANSFILLING

METHOD OF ANALYSIS : GC(FID)

ACCURACY : ± 2% RELATIVE

LOT NO. & QTY.	COMP. 1 CH_4	COMP. 2 AIR	COMP. 3	COMP. 4	COMP. 5	COMP. 6	Exp Date
1133904(1)	95PPM	BALANCE					05/01/24

Gas mixtures manufactured with balances calibrated by an ISO 17025 accredited Company using NIST traceable weights and meets or exceeds the requirements of NIST Handbook 44.
Calibration test 121088, 121097, 121091, or 121100 dated, 18th January 2019 applies.
WEIGHT SETS USED: Kit #92231, Test #2740564, Kit # 03610, Test # VA-19-1135 T3 Test # VA-19-11350B, T5 Test #VA-19-11350F, VA-19-11350E, VA-19-11350D, IM1966 Test VA-18-11340H

No affecting environmental conditions during analysis.

REQUESTED BY : THERMO ENVIRONMENTAL INSTRUMENTS

CUSTOMER PURCHASE ORDER NUMBER : P181187

PACKING LIST NUMBER : 12146081

CERTIFICATION DATE : April 30, 2019

ANALYSIS BY : Robin Watson
Quality Representative

"We certify that all the cylinders for the Lot numbers identified herein are manufactured and tested within the requirements of CFR 49 part 178.65 and that physical and chemical test reports are on file and copies will be furnished upon request."

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821 Chesapeake Drive, Cambridge, MD 21613-0149
Phone: (410)228-6400 Fax: (410)228-4251

22 Albiston Way
Auburn, ME 04210
800-292-6218
207-777-6218
Fax 207-777-6215
www.specair.com

Date: 01/02/2019

Certificate of Analysis

Customer:
QED ENVIRONMENTAL SYSTEMS

Order #: 1476036
Purchase Order #: 130837

Results are reported in mole percent, unless otherwise indicated. Mixes are prepared via partial pressure methods, or gravimetrically, using high load high sensitivity electronic scales. Prior to use, scales are verified for accuracy using applicable NIST traceable weights; analyses are calibrated against reference materials traceable to NIST weights and/or NIST gas reference materials.

Cylinder Size: 105L **CGA Connection:** C10 **Fill Pressure:** 1000 PSI

Analysis: Certified Batch Analysis **Lot #:** 4900201

Component(s):	Requested Concentration(s):	Actual Concentration(s):
Methane	500 PPM	498 PPM
Air	BALANCE	BALANCE

Expiration Date: 01/2022

Comments: MIX MADE USING DIGITAL BALANCES CALIBRATED TO NIST TRACEABLE WEIGHTS / ACCURACY: +/- 5%
METHOD OF PREPARATION: GRAVIMETRIC / PRESSURE TRANSFILLING
ANALYTICAL PRINCIPLE: GC (TCD)

Approved By:

Ron Abbott

CGCH4-500
CH4 500PPM: BALANCE AIR
CGCH4-500

The information contained herein has been prepared at your request by qualified experts. While we believe that the information is accurate within the limits of the analytical methods employed, and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability arising out of the use of the information contained herein exceed the fee established for providing such information.

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

September 11, 2019

Mr. Patrick Madej
Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway
Fremont, California 94538

Re: Third Quarter 2019 Surface Emissions and Component Leak Monitoring Report for Tri-Cities Recycling and Disposal Facility

Dear Mr. Madej:

This monitoring report for "Tri-Cities Recycling and Disposal Facility (TCRDF)" contains the results of the Third Quarter 2019 Integrated and Instantaneous Surface Emissions Monitoring (SEM) and Component Leak Monitoring. All monitoring was performed by SCS Engineers (SCS).

APPLICABLE REQUIREMENTS

The monitoring discussed in this report was conducted in accordance with the following requirements:

Surface Emission Monitoring (SEM)

- New Source Performance Standard (NSPS), Title 40 of the Code of Federal Regulations (CFR) §60.755 (c) and (d), 40 CFR 60, Appendix A Method 21, promulgated by the United States Environmental Protection Agency (USEPA).
- California Code of Regulations (CCR) Title 17, Subchapter 10, Article 4, Subarticle 6, §95460 to §95476, known as the Assembly Bill 32 (AB32) landfill methane rule (LMR).
- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 303 (Landfill Surface Requirements) and Section 607 (Landfill Surface Inspection procedures).

Component Leak

- BAAQMD Regulation 8, Rule 34, Section 301 (Landfill Gas Collection and Emission Control System Requirements) and Section 602 (Collection and Control System Leak Inspection procedures).
- CCR Title 17, Subchapter 10, Article 4, Subarticle 6, §95464.

TCRDF Plan and Alternative Compliance Measures

An Alternative Compliance Option (ACO) Request was submitted to the California Air Resources Board (CARB) on May 16, 2011. After receipt of comments, this ACO was amended, restated, and submitted to BAAQMD on July 1, 2016. SEM and Component Leak monitoring was conducted according to the methods outlined in the July 1, 2016 ACO.

PROCEDURES

General

The surface of the TCRDF disposal area has been divided into one-hundred-and-nine (109), approximately 50,000 square foot monitoring grids. The entire landfill surface is monitored with the exception of active portions of the Landfill, slope areas, and as requested in the approved ACO, areas containing only asbestos-containing waste, inert waste and/or non-decomposable waste which are excluded for safety as allowed by CCR Title 17 §95466.

Field personnel walked the surface of the landfill following the walking pattern as depicted the 2011 TCRDF AB-32 SEM Plan, which traverses each monitoring grid. Additionally, in accordance with the provisions of 40 CFR 60.753(d) and 60.755(c)(1-3), the entire perimeter of the landfill surface was monitored. During the event, special attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and any areas with unusual odors.

The monitoring probe was positioned 2 inches above the ground surface. While walking, the wand tip of the flame ionization detector (FID) was held within 2 inches of the landfill surface while traversing the grid. Per the approved alternative request, the wand tip of the FID was held at 2 inches of vegetation in areas where the landfill surface is covered with low-lying vegetation such as grasses while traversing the grid.

Monitoring Path

The TCRDF completed four consecutive instantaneous and integrated monitoring events with no exceedances. Pursuant to §95471(c)(1)(B)1., sites that complete four consecutive integrated and instantaneous monitoring events with no exceedances may increase the walking pattern spacing from a 25-foot spacing to a 100-foot spacing. In the event that an integrated or instantaneous exceedance cannot be remediated within 10 calendar days or an exceedance is observed during a compliance inspection, the TCRDF will be required to revert to 25-foot spacing.

Combined Instantaneous and Integrated Surface Emissions Monitoring

The instantaneous and integrated SEM were performed simultaneously by SCS using Landtec SEM-500 flame ionization detectors (FID), calibrated to 500 parts per million by volume (ppm_v) methane. The devices meet or exceed all guidelines set forth in the CCR Title 17 §95471(a) and the United States Environmental Protection Agency (USEPA) Method 21 requirements.

SCS personnel walked the surface of the landfill on a grid by grid basis. After completing the grid; the technicians also checked any surface impoundments (wells or otherwise) for leaks.

Technicians also checked any surface cracks, seeps, or other areas that show evidence of surface emissions (odors or distressed vegetation). Active and sloped areas excluded for safety were documented on field data sheets and maps.

All instantaneous surface monitoring was performed in accordance with the applicable requirements referenced in this report. Any detections of methane above 200 ppm_v (areas of concern) or 500 ppm_v (exceedances) for instantaneous were recorded, flagged, and marked on an SEM Map. Applicable corrective action and re-monitoring timelines are listed below:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
    - If the re-monitoring event shows the exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance.
    - If the 1-month re-monitoring event shows the location is still corrected, all re-monitoring requirements have been completed.
- If either the first 10-day or 1-month re-monitoring events show a second exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance. If the 1-month re-monitoring event shows the area is still corrected, monitoring requirements have been completed.
- If any location shows three exceedances, an additional well shall be installed within 120 days of the initial exceedance.

The combined monitoring was conducted in accordance with the requirements of CCR Title 17 §95471(c)(2). Grids with results greater than 25 ppm_v were recorded, marked on the SEM map, and flagged for remediation. Any grids with integrated concentrations greater than 25 ppm_v are subject to the following corrective action and re-monitoring timeline:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
- If the 10-day re-monitoring event shows the exceedance is corrected, all re-monitoring requirements have been completed.
- If the first 10-day re-monitoring event shows a second grid exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, all re-monitoring requirements have been completed.

- The second 10-day re-monitoring event shows a third grid exceedance, an additional well shall be installed within 120 days of the initial exceedance.

Component Leak Monitoring Procedures

SCS monitored the exposed LFG components under positive pressure (pipes, well heads, valves, blowers, and other mechanical appurtenances). All component leaks measured within 0.5 inches exceeding the compliance limit of 500 ppm_v per requirements outlined in pursuant to §Section 95464(b)(1)(B) and 1,000 ppm per requirements outlined in BAAQMD 8-34-303 were recorded. Component leaks are subject to the following timelines:

- 500-999 ppm_v leaks are subject to a 10-day repair and re-monitoring deadline from §95469(b)(3).

- Leaks at or above 1000 ppm_v are subject a 7-day repair and re-monitoring deadline from BAAQMD 8-34-301.2.

THIRD QUARTER 2019 SEM AND COMPONENT LEAK RESULTS

The following is a summary of the SEM and component leak monitoring results completed for the Third Quarter 2019.

Reduction of SEM Frequency

The TCRDF has completed four consecutive instantaneous and integrated monitoring events with no exceedances. Pursuant to §95469(2)(C), any closed or inactive areas of active MSW landfills with no integrated exceedances for four consecutive quarters may reduce the frequency of integrated and instantaneous SEM to an annual basis. In the event that an exceedance cannot be remediated within 10 calendar days or an exceedance is observed during a compliance inspection, the TCRDF will be required to revert to quarterly monitoring. The next SEM event is due by March 31, 2020.

Pursuant to 8-34-506, landfills that are closed as defined in 8-34-223 with no exceedances in three consecutive quarters may reduce the frequency of instantaneous SEM to an annual basis. Any exceedance detected during annual monitoring will require the site to revert to quarterly monitoring.

Component Leak Monitoring Results

Component leak monitoring was conducted per the applicable requirements on August 26, 2019. There were no leaks detected above 500 ppm_v. Results are summarized in Attachment A.

EQUIPMENT CALIBRATION

The portable analyzers were calibrated to meet the instrument specifications requirements of U.S. EPA Method 21. The calibration gas used was methane, diluted to a nominal concentration of 25 ppm_v in air for integrated sample analyses and 500 ppm_v in air for instantaneous monitoring to comply with the requirements.

All analyzers were calibrated prior to use with required response time and precision related instrument checks. Calibration records include the following: One time response time test record; One time response factor determination for methane; Calibration Precision test records (test to be performed every 3 months); and Daily Instrument Calibration and Background test records for each gas meter that was used during the quarterly monitoring event. The calibration log records are included in Attachment B.

All monitoring was completed in accordance with the applicable regulatory requirements or approved alternatives. If you have any questions regarding this report, please do not hesitate to contact me at (510) 613-2852.

Thank you,
Waste Management

Michael Chan
Environmental Protection Air Specialist

Attachment A –Component Leak Monitoring Event Records

- Component Leak Exceedances and Monitoring Logs

Attachment B –Calibration Records

- Instrument and Gas Calibration Records

Attachment A

Component Leak Monitoring Event Records

Table A.1
AB-32 Component Leak Monitoring
Summary of Component Leaks Greater than 500 ppmv

2019 QUARTER: 3

LANDFILL NAME: Tri-Cities Recycling and Disposal Facility

Location	Initial Monitoring			Corrective Action		10-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances								

Table A.2
BAAQMD Component Leak Monitoring
Summary of Component Leaks Greater than 1,000 ppmv

2019 QUARTER: 3

LANDFILL NAME: **Tri-Cities Recycling and Disposal Facility**

Location	Initial Monitoring			Corrective Action		7-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances								

Attachment B

Calibration Records

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 8-26-19 Site Name: TriCities

Inspector(s): Ryan Haslam Instrument: TVA2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: V Barometric Pressure: 29.4 "Hg

Air Temperature: 72 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

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

Instrument Serial Number: 1211 Cal Gas Concentration: 500

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	.2	501	1	3
2	.1	499	1	2
3	.3	498	2	3

Average Difference: 1.3

*Perform recalibration if average difference is greater than 10

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

= 100%- 1.3 /500 x 100%

= 99.7 % .3

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 132091
Counters Observed for the Zero= 3912

Trial 2:
Counts Observed for the Span= 132427
Counters Observed for the Zero= 3929

Trial 3:
Counts Observed for the Span= 132179
Counters Observed for the Zero= 3918

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 1.1 ppm

Downwind Location Description: Entrance Reading: 1.7 ppm

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

22 Albiston Way
Auburn, ME 04210
800-292-6218
207-777-6218
Fax 207-777-6215
www.specair.com

Date: 01/07/2019

Certificate of Analysis

Customer:
QED ENVIRONMENTAL SYSTEMS

Order #: 1480578
Purchase Order #: 130938

Results are reported in mole percent, unless otherwise indicated. Mixes are prepared via partial pressure methods, or gravimetrically, using high load high sensitivity electronic scales. Prior to use, scales are verified for accuracy using applicable NIST traceable weights; analyses are calibrated against reference materials traceable to NIST weights and/or NIST gas reference materials.

Cylinder Size: 105L **CGA Connection:** C10 **Fill Pressure:** 1000 PSI

Analysis: Air Batch Analysis **Lot #:** 4900761

Component(s):	Requested Concentration(s):	Actual Concentration(s):
Oxygen	19.5% - 23.5%	21.7%
Moisture	< 3 PPM	0.7 PPM
THC	< 0.1 PPM	< 0.1 PPM
CO/CO2	< 1 PPM	< 0.1 PPM

Expiration Date: 01/2022

Comments: MEETS OR EXCEEDS ULTRA ZERO GRADE

Approved By:

Kyle Christianson

CGAIR-0
AIR: ULTRA ZERO GRADE
CGAIR-0

The information contained herein has been prepared at your request by qualified experts. While we believe that the information is accurate within the limits of the analytical methods employed, and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability arising out of the use of the information contained herein exceed the fee established for providing such information.

22 Albiston Way
Auburn, ME 04210
800-292-6218
207-777-6218
Fax 207-777-6215
www.specair.com

Date: 01/02/2019

Certificate of Analysis

Customer:
QED ENVIRONMENTAL SYSTEMS

Order #: 1476036
Purchase Order #: 130837

Results are reported in mole percent, unless otherwise indicated. Mixes are prepared via partial pressure methods, or gravimetrically, using high load high sensitivity electronic scales. Prior to use, scales are verified for accuracy using applicable NIST traceable weights; analyses are calibrated against reference materials traceable to NIST weights and/or NIST gas reference materials.

Cylinder Size: 105L **CGA Connection:** C10 **Fill Pressure:** 1000 PSI

Analysis: Certified Batch Analysis **Lot #:** 4900201

Component(s):	Requested Concentration(s):	Actual Concentration(s):
Methane	500 PPM	498 PPM
Air	BALANCE	BALANCE

Expiration Date: 01/2022

Comments: MIX MADE USING DIGITAL BALANCES CALIBRATED TO NIST TRACEABLE WEIGHTS / ACCURACY: +/- 5%
METHOD OF PREPARATION: GRAVIMETRIC / PRESSURE TRANSFILLING
ANALYTICAL PRINCIPLE: GC (TCD)

Approved By:

Ron Abbott

CGCH4-500
CH4 500PPM: BALANCE AIR
CGCH4-500

The information contained herein has been prepared at your request by qualified experts. While we believe that the information is accurate within the limits of the analytical methods employed, and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability arising out of the use of the information contained herein exceed the fee established for providing such information.

APPENDIX G

WELLFIELD MONITORING LOGS

Tri-Cities Recycling & Disposal Facility

Wellfield Monitoring Report - May 7 and 16, 2019

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
TRIC0001	5/7/2019 9:41	44.7	35.5	0.0	19.8	-33.99	96.3	-34.06	96.3
TRIC0116	5/7/2019 9:03	60.2	39.1	0.6	0.1	-53.96	69.3	-53.95	69.3
TRIC0118	5/7/2019 8:09	14.0	24.1	0.0	61.9	-2.06	94.3	-2.06	94.3
TRIC0123	5/7/2019 9:35	51.1	37.7	0.0	11.2	-16.16	119.6	-16.34	119.6
TRIC0126	5/7/2019 9:29	49.9	36.0	0.0	14.1	-9.02	112.6	-9.02	112.5
TRIC0128	5/7/2019 8:19	47.6	35.5	0.0	16.9	-11.53	113.1	-11.46	113.1
TRIC0129	5/16/2019 9:17	44.5	32.9	4.6	18.0	-9.85	59.5	-9.84	59.5
TRIC0200	5/7/2019 8:58	47.0	35.5	0.0	17.5	-11.29	113.4	-11.19	113.3
TRIC0201	5/7/2019 8:54	30.5	30.0	0.0	39.5	-2.60	103.7	-2.55	103.4
TRIC0202	5/7/2019 8:14	47.5	36.7	0.0	15.8	-13.49	117.8	-13.04	117.7
TRIC0204	5/16/2019 9:28	51.9	39.7	0.0	8.4	-10.06	127.9	-10.06	127.9
TRIC0205	5/7/2019 9:56	50.4	37.6	0.0	12.0	-15.67	125.7	-15.67	125.7
TRIC0206	5/7/2019 9:25	50.0	37.9	0.0	12.1	-4.56	122.1	-4.54	122.1
TRIC0207	5/16/2019 9:46	49.1	36.0	0.0	14.9	-44.80	120.3	-44.82	120.4
TRIC0208	5/7/2019 7:58	49.8	38.8	0.0	11.4	-30.90	124.3	-30.90	124.3
TRIC0209	5/7/2019 7:36	51.7	38.9	0.0	9.4	-54.02	117.8	-54.16	117.9
TRIC0210	5/7/2019 7:23	45.7	36.4	0.0	17.9	-2.57	119.7	-2.51	119.5
TRIC0211	5/16/2019 10:18	50.0	36.9	0.0	13.1	-23.02	117.5	-23.03	117.5
TRIC0212	5/16/2019 9:59	36.2	30.3	0.0	33.5	-3.02	109.7	-3.02	109.7
TRIC0213	5/16/2019 9:41	49.5	37.5	0.0	13.0	-4.30	117.6	-4.25	117.7
TRIC0214	5/7/2019 9:46	48.5	37.8	0.0	13.7	-1.58	115.8	-1.58	115.8
TRIC0215	5/7/2019 9:52	52.1	38.1	0.0	9.8	-56.41	126.2	-56.30	126.2
TRIC0218	5/7/2019 8:30	25.4	27.4	0.0	47.2	-3.43	93.8	-3.44	93.8
TRIC0219	5/7/2019 7:09	42.2	33.9	0.0	23.9	-1.87	110.5	-1.77	109.8
TRIC0220	5/16/2019 10:05	39.7	32.5	0.0	27.8	-3.46	108.4	-3.45	108.5
TRIC0222	5/16/2019 10:09	48.3	35.7	0.0	16.0	-9.49	116.7	-9.48	116.7
TRIC0223	5/7/2019 7:16	47.9	36.3	0.0	15.8	-4.49	120.8	-4.48	120.7
TRIC0224	5/7/2019 8:26	29.2	25.2	3.9	41.7	-3.09	68.8	-3.08	68.9
TRIC0225	5/7/2019 9:15	52.6	36.9	0.0	10.5	-4.21	117.5	-4.31	117.7
TRIC0226	5/16/2019 9:54	51.7	38.9	0.0	9.4	-2.32	115.9	-2.30	115.9
TRIC0227	5/7/2019 8:36	30.0	29.4	0.0	40.6	-2.24	81.5	-2.20	82.5
TRIC0228	5/7/2019 7:29	40.3	34.6	0.0	25.1	-3.24	114.4	-3.21	114.6
TRIC0229	5/16/2019 10:13	48.5	36.2	0.0	15.3	-6.57	114.7	-6.58	114.6
TRIC0230	5/7/2019 8:03	35.3	32.2	0.0	32.5	-3.93	122.3	-3.86	122.1
TRICO203	5/7/2019 8:43	49.8	38.9	0.0	11.3	-2.85	117.1	-2.87	117.2
TRICO216	5/7/2019 9:19	44.6	34.9	0.0	20.5	-2.95	101.0	-2.95	101.1
TRICO217	5/7/2019 8:49	52.2	38.7	0.0	9.1	-5.40	121.7	-5.51	121.7
TRICO221	5/7/2019 9:09	48.5	36.3	0.0	15.2	-2.72	114.8	-2.71	114.9

Tri-Cities Recycling & Disposal Facility

Wellfield Monitoring Report - June 4, 2019

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
TRIC0001	6/4/2019 9:25	43.6	35.1	0.0	21.3	-34.59	97.1	-34.65	97.1
TRIC0116	6/4/2019 8:53	58.0	38.0	0.6	3.4	-52.63	80.8	-52.66	80.8
TRIC0118	6/4/2019 7:47	15.0	24.6	0.0	60.4	-1.25	96.2	-1.25	96.2
TRIC0123	6/4/2019 9:20	48.5	36.8	0.0	14.7	-17.69	120.1	-17.69	120.1
TRIC0126	6/4/2019 9:16	48.4	35.6	0.0	16.0	-8.88	113.7	-8.87	113.8
TRIC0128	6/4/2019 7:57	47.0	34.6	0.0	18.4	-9.81	113.7	-9.80	113.7
TRIC0129	6/4/2019 10:04	42.1	32.1	4.8	21.0	-39.46	78.3	-39.57	78.4
TRIC0200	6/4/2019 8:47	47.3	35.1	0.0	17.6	-9.95	113.8	-9.94	113.8
TRIC0201	6/4/2019 8:42	31.7	29.9	0.0	38.4	-1.68	105.4	-1.69	105.4
TRIC0202	6/4/2019 7:52	47.0	36.1	0.0	16.9	-11.00	118.2	-11.01	118.3
TRIC0204	6/4/2019 10:09	49.9	38.5	0.0	11.6	-9.64	129.3	-9.65	129.3
TRIC0205	6/4/2019 9:42	48.6	36.9	0.0	14.5	-14.93	126.1	-14.95	126.1
TRIC0206	6/4/2019 9:11	49.2	37.5	0.0	13.3	-3.90	123.1	-3.90	123.3
TRIC0207	6/4/2019 9:51	46.2	35.1	0.0	18.7	-44.26	120.7	-43.96	120.8
TRIC0208	6/4/2019 7:36	49.0	38.1	0.0	12.9	-29.18	124.6	-29.15	124.6
TRIC0209	6/4/2019 7:11	51.3	38.1	0.0	10.6	-53.23	106.9	-53.94	108.2
TRIC0210	6/4/2019 6.59	47.8	36.6	0.0	15.6	-1.55	120.2	-1.55	120.3
TRIC0211	6/4/2019 10:35	48.8	36.3	0.0	14.9	-22.41	115.1	-22.40	115.1
TRIC0212	6/4/2019 10:16	34.1	29.8	0.0	36.1	-2.14	112.7	-2.10	112.6
TRIC0213	6/4/2019 9:46	47.4	36.4	0.0	16.2	-3.49	120.1	-3.51	119.9
TRIC0214	6/4/2019 9:30	46.3	37.2	0.0	16.5	-1.34	117.3	-1.28	117.2
TRIC0215	6/4/2019 9:36	50.7	37.4	0.0	11.9	-55.72	126.6	-55.72	126.6
TRIC0218	6/4/2019 8:08	26.0	27.4	0.0	46.6	-2.17	97.1	-2.17	97.1
TRIC0219	6/4/2019 6:48	46.3	34.3	0.0	19.4	-1.18	111.0	-1.01	110.3
TRIC0220	6/4/2019 10:20	38.9	31.9	0.0	29.2	-2.49	111.1	-2.48	111.1
TRIC0222	6/4/2019 10:24	46.4	34.7	0.2	18.7	-8.71	117.3	-8.66	117.3
TRIC0223	6/4/2019 6:54	48.6	35.9	0.0	15.5	-3.68	121.7	-3.68	121.7
TRIC0224	6/4/2019 8:04	31.9	27.0	2.4	38.7	-1.86	80.6	-1.84	80.7
TRIC0225	6/4/2019 9:02	51.1	36.5	0.0	12.4	-3.93	118.7	-3.94	118.7
TRIC0226	6/4/2019 9:56	51.2	38.4	0.0	10.4	-1.37	101.8	-1.36	102.1
TRIC0227	6/4/2019 8:14	29.6	29.3	0.0	41.1	-1.43	75.8	-1.43	75.9
TRIC0228	6/4/2019 7:05	43.1	35.4	0.0	21.5	-2.43	97.2	-2.49	97.6
TRIC0229	6/4/2019 10:30	47.5	35.9	0.0	16.6	-5.89	98.6	-5.93	98.4
TRIC0230	6/4/2019 7:42	37.6	33.4	0.1	28.9	-2.80	102.3	-2.78	102.2
TRICO203	6/4/2019 8:24	49.7	38.6	0.0	11.7	-1.75	119.4	-1.75	119.4
TRICO216	6/4/2019 9:06	43.8	34.9	0.0	21.3	-2.20	104.8	-2.22	104.7
TRICO217	6/4/2019 8:29	50.4	37.6	0.0	12.0	-4.78	122.4	-4.78	122.4
TRICO221	6/4/2019 8:57	47.3	35.7	0.0	17.0	-2.17	116.4	-2.18	116.4

Tri-Cities Recycling & Disposal Facility

Wellfield Monitoring Report - July 9, 12, and 15, 2019

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
TRIC0001	7/9/2019 9:55	44.2	34.9	0.0	20.9	-31.82	96.7	-31.81	96.7
TRIC0001	7/12/2019 14:13	44.8	34.8	0.0	20.4	-34.93	99.0	-37.30	98.8
TRIC0001	7/15/2019 13:00	44.6	34.3	0.0	21.1	-40.01	100.0	-43.21	100.0
TRIC0116	7/9/2019 9:16	53.5	35.4	2.0	9.1	-50.11	71.8	-50.12	71.7
TRIC0118	7/9/2019 8:08	16.5	25.4	0.0	58.1	-1.55	96.1	-1.54	96.1
TRIC0123	7/9/2019 9:48	49.3	36.7	0.0	14.0	-16.96	119.7	-16.94	119.7
TRIC0126	7/9/2019 9:44	49.5	35.6	0.0	14.9	-8.61	112.8	-8.61	112.8
TRIC0128	7/9/2019 8:17	48.7	34.5	0.0	16.8	-9.56	113.3	-9.55	113.4
TRIC0129	7/9/2019 8:52	41.9	31.6	4.7	21.8	-39.04	75.3	-39.11	75.2
TRIC0129	7/12/2019 14:28	48.0	35.0	3.4	13.6	-10.67	91.2	-20.74	91.6
TRIC0200	7/9/2019 9:11	49.0	34.9	0.0	16.1	-9.42	113.5	-9.42	113.5
TRIC0201	7/9/2019 9:07	33.3	29.9	0.0	36.8	-1.95	103.8	-1.94	103.9
TRIC0202	7/9/2019 8:12	48.3	35.9	0.0	15.8	-10.63	117.7	-10.61	117.8
TRIC0204	7/9/2019 10:57	50.2	38.0	0.0	11.8	-9.41	129.1	-9.40	129.1
TRIC0205	7/9/2019 10:10	49.2	36.6	0.0	14.2	-14.25	125.9	-14.26	125.9
TRIC0206	7/9/2019 9:39	50.0	37.4	0.0	12.6	-3.90	121.9	-3.90	122.0
TRIC0207	7/9/2019 10:23	45.9	35.0	0.0	19.1	-39.84	121.0	-39.79	121.0
TRIC0208	7/9/2019 7:57	49.5	37.7	0.0	12.8	-27.61	124.5	-27.58	124.5
TRIC0209	7/9/2019 7:51	51.4	37.7	0.0	10.9	-48.84	111.1	-48.95	111.2
TRIC0210	7/9/2019 7:32	49.4	36.6	0.0	14.0	-1.68	120.3	-1.67	120.3
TRIC0211	7/9/2019 10:52	49.3	35.9	0.0	14.8	-21.34	114.9	-21.33	114.9
TRIC0212	7/9/2019 10:37	34.7	29.7	0.0	35.6	-2.43	112.4	-2.43	112.4
TRIC0213	7/9/2019 10:18	48.2	36.1	0.0	15.7	-3.68	119.7	-3.66	119.6
TRIC0214	7/9/2019 10:00	47.0	37.3	0.0	15.7	-1.40	115.6	-1.31	115.4
TRIC0215	7/9/2019 10:05	50.8	36.7	0.0	12.5	-50.41	126.7	-50.41	126.7
TRIC0218	7/9/2019 8:28	26.9	27.6	0.0	45.5	-2.57	96.7	-2.58	96.7
TRIC0219	7/9/2019 7:19	48.9	34.4	0.0	16.7	-1.20	109.8	-1.18	109.8
TRIC0220	7/9/2019 10:41	39.7	31.8	0.0	28.5	-2.87	110.9	-2.84	110.9
TRIC0222	7/9/2019 10:45	48.3	35.0	0.0	16.7	-8.65	117.2	-8.63	117.2
TRIC0223	7/9/2019 7:25	49.8	35.7	0.0	14.5	-3.68	121.4	-3.68	121.5
TRIC0224	7/9/2019 8:22	33.4	27.5	2.0	37.1	-2.20	83.8	-2.18	83.8
TRIC0225	7/9/2019 9:28	52.3	36.2	0.0	11.5	-3.91	117.8	-3.96	117.9
TRIC0226	7/9/2019 10:33	52.2	38.4	0.0	9.4	-1.82	92.2	-1.87	98.0
TRIC0227	7/9/2019 8:36	29.3	29.2	0.0	41.5	-1.74	73.9	-1.74	74.0
TRIC0228	7/9/2019 7:41	44.8	35.6	0.0	19.6	-2.52	95.9	-2.53	95.9
TRIC0229	7/9/2019 10:49	48.0	35.6	0.0	16.4	-6.06	93.5	-6.07	93.6
TRIC0230	7/9/2019 8:03	38.5	33.6	0.0	27.9	-3.06	91.6	-3.03	92.5
TRICO203	7/9/2019 8:58	49.8	38.2	0.0	12.0	-1.99	117.9	-1.99	117.9
TRICO216	7/9/2019 9:33	44.7	35.0	0.0	20.3	-2.40	100.0	-2.41	100.0
TRICO217	7/9/2019 9:03	50.7	37.1	0.0	12.2	-4.9	122.1	-4.9	122.1
TRICO221	7/9/2019 9:22	47.2	35.4	0.0	17.4	-2.3	114.9	-2.3	115.1

Tri-Cities Recycling & Disposal Facility

Wellfield Monitoring Report - August 13, 16, and 29, 2019

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
TRIC0001	8/13/2019 9:51	41.5	34.4	0.0	24.1	-43.85	98.8	-43.85	98.9
TRIC0116	8/13/2019 9:02	52.3	34.9	2.3	10.5	-55.05	81.0	-55.04	80.9
TRIC0118	8/13/2019 7:34	15.8	25.4	0.0	58.8	-1.41	98.0	-1.41	98.0
TRIC0123	8/13/2019 9:43	48.1	36.7	0.0	15.2	-17.85	120.2	-17.84	120.2
TRIC0126	8/13/2019 9:39	48.2	35.8	0.0	16.0	-8.78	115.0	-8.79	115.1
TRIC0128	8/13/2019 7:58	49.0	34.7	0.0	16.3	-9.84	113.8	-9.83	113.8
TRIC0129	8/29/2019 7:33	39.9	31.1	4.8	24.2	-48.11	68.1	-48.22	68.1
TRIC0200	8/13/2019 8:51	49.1	35.2	0.0	15.7	-9.83	113.9	-9.82	113.9
TRIC0201	8/13/2019 8:42	34.4	30.4	0.0	35.2	-1.61	106.6	-1.63	106.5
TRIC0202	8/13/2019 7:47	48.0	36.5	0.0	15.5	-11.00	118.3	-11.01	118.3
TRIC0204	8/16/2019 9:22	50.1	38.4	0.1	11.4	-9.46	129.5	-9.47	129.5
TRIC0205	8/16/2019 8:31	49.5	37.2	0.0	13.3	-14.75	126.2	-14.72	126.2
TRIC0206	8/13/2019 9:35	48.9	37.5	0.0	13.6	-3.99	123.7	-3.96	123.7
TRIC0207	8/16/2019 8:42	45.3	35.2	0.0	19.5	-42.37	120.7	-42.32	120.8
TRIC0208	8/13/2019 7:06	48.9	37.9	0.0	13.2	-28.97	124.4	-28.97	124.4
TRIC0209	8/13/2019 6:22	51.5	38.4	0.0	10.1	-53.78	111.9	-53.77	111.9
TRIC0210	8/13/2019 10:05	47.5	36.7	0.0	15.8	-1.54	121.4	-1.56	121.4
TRIC0211	8/16/2019 9:09	49.3	36.2	0.0	14.5	-22.61	115.3	-22.61	115.5
TRIC0212	8/16/2019 8:51	33.8	29.9	0.0	36.3	-2.29	114.4	-2.29	114.4
TRIC0213	8/16/2019 8:37	48.4	36.8	0.0	14.8	-3.45	120.6	-3.46	120.8
TRIC0214	8/16/2019 8:23	48.8	38.9	0.0	12.3	-0.81	116.4	-0.84	116.4
TRIC0215	8/16/2019 8:27	50.5	37.4	0.0	12.1	-55.00	126.5	-55.00	126.5
TRIC0218	8/13/2019 8:07	27.2	27.6	0.0	45.2	-2.22	98.2	-2.21	98.3
TRIC0219	8/13/2019 9:58	48.9	34.6	0.0	16.5	-1.07	112.4	-1.06	112.5
TRIC0220	8/16/2019 8:55	38.9	31.9	0.0	29.2	-2.75	112.9	-2.75	112.9
TRIC0222	8/16/2019 8:59	48.2	35.2	0.0	16.6	-8.85	117.3	-8.84	117.3
TRIC0223	8/13/2019 6:11	49.3	36.5	0.0	14.2	-3.44	121.4	-3.44	121.4
TRIC0224	8/13/2019 8:03	34.5	27.7	2.2	35.6	-1.92	88.5	-1.91	88.5
TRIC0225	8/13/2019 9:19	51.1	36.5	0.0	12.4	-4.10	118.6	-4.10	118.6
TRIC0226	8/16/2019 8:47	51.3	39.0	0.0	9.7	-1.79	105.4	-1.79	105.6
TRIC0227	8/13/2019 8:19	28.9	29.4	0.0	41.7	-1.42	78.2	-1.41	78.4
TRIC0228	8/13/2019 6:18	44.5	36.4	0.0	19.1	-2.02	91.9	-1.99	92.0
TRIC0229	8/16/2019 9:05	48.0	36.0	0.0	16.0	-6.07	99.2	-6.06	99.4
TRIC0230	8/13/2019 7:30	37.8	34.0	0.0	28.2	-2.90	94.4	-2.88	94.9
TRICO203	8/13/2019 8:32	48.9	38.8	0.0	12.3	-1.85	120.4	-1.86	120.3
TRICO216	8/13/2019 9:25	43.1	34.8	0.0	22.1	-2.25	106.9	-2.25	107.0
TRICO217	8/13/2019 8:37	50.9	37.5	0.0	11.6	-4.70	122.4	-4.69	122.4
TRICO221	8/13/2019 9:15	46.8	35.8	0.0	17.4	-2.17	116.4	-2.21	116.4

Tri-Cities Recycling & Disposal Facility

Wellfield Monitoring Report - September 4 and 13, 2019

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
TRIC0001	9/13/2019 7:57	41.9	34.5	0.0	23.6	-39.21	96.6	-39.21	96.7
TRIC0116	9/4/2019 10:05	55.9	36.3	1.0	6.8	-48.37	83.9	-50.17	83.7
TRIC0118	9/4/2019 9:18	16.7	25.6	0.0	57.7	-1.21	99.3	-1.22	99.3
TRIC0123	9/13/2019 7:52	49.7	36.8	0.0	13.5	-16.40	120.0	-16.39	120.1
TRIC0126	9/13/2019 7:47	49.8	35.8	0.0	14.4	-8.09	113.9	-8.08	113.7
TRIC0128	9/4/2019 9:30	49.1	34.8	0.0	16.1	-9.31	113.8	-9.30	113.9
TRIC0129	9/13/2019 9:31	40.9	31.3	4.7	23.1	-1.47	88.3	-1.98	88.3
TRIC0200	9/4/2019 10:01	49.2	35.4	0.0	15.4	-9.27	113.7	-9.25	113.7
TRIC0201	9/4/2019 9:56	34.5	30.8	0.0	34.7	-1.39	107.1	-1.38	107.3
TRIC0202	9/4/2019 9:26	48.0	36.1	0.0	15.9	-10.35	118.3	-10.36	118.3
TRIC0204	9/13/2019 9:01	50.1	38.4	0.0	11.5	-8.78	129.5	-8.80	129.5
TRIC0205	9/13/2019 8:12	49.8	37.1	0.0	13.1	-13.41	126.0	-13.41	126.0
TRIC0206	9/4/2019 10:26	49.1	37.2	0.0	13.7	-3.29	123.5	-3.31	123.6
TRIC0207	9/13/2019 8:29	45.3	35.3	0.0	19.4	-37.99	120.9	-37.21	120.9
TRIC0208	9/4/2019 9:07	48.1	37.8	0.0	14.1	-27.71	124.6	-27.72	124.6
TRIC0209	9/4/2019 8:41	51.1	38.1	0.0	10.8	-50.84	109.9	-50.85	109.8
TRIC0210	9/4/2019 8:25	49.4	37.4	0.0	13.2	-1.42	120.5	-1.41	120.6
TRIC0211	9/13/2019 8:56	49.3	36.2	0.0	14.5	-20.71	115.8	-20.70	116.0
TRIC0212	9/13/2019 8:38	34.2	30.1	0.0	35.7	-2.06	113.4	-2.06	113.4
TRIC0213	9/13/2019 8:24	48.7	37.0	0.0	14.3	-3.11	120.6	-3.10	120.6
TRIC0214	9/13/2019 8:01	50.6	39.1	0.0	10.3	-0.67	116.1	-0.66	116.1
TRIC0215	9/13/2019 8:07	51.2	37.3	0.0	11.5	-48.50	126.7	-48.48	126.7
TRIC0218	9/4/2019 9:39	29.5	28.7	0.0	41.8	-1.93	99.8	-1.93	99.8
TRIC0219	9/4/2019 8:15	52.0	35.3	0.0	12.7	-0.94	109.9	-0.99	110.1
TRIC0220	9/13/2019 8:43	40.1	32.3	0.0	27.6	-2.47	111.8	-2.47	111.8
TRIC0222	9/13/2019 8:47	48.8	35.4	0.0	15.8	-8.27	117.1	-8.26	117.1
TRIC0223	9/4/2019 8:21	49.7	36.4	0.0	13.9	-3.43	121.4	-3.43	121.5
TRIC0224	9/4/2019 9:35	35.3	28.3	1.7	34.7	-1.62	89.9	-1.62	89.9
TRIC0225	9/4/2019 10:15	51.2	36.9	0.0	11.9	-3.67	118.5	-3.67	118.5
TRIC0226	9/13/2019 8:34	50.9	39.2	0.0	9.9	-1.65	98.0	-1.65	98.2
TRIC0227	9/4/2019 9:43	30.1	30.3	0.0	39.6	-1.17	78.0	-1.14	78.1
TRIC0228	9/4/2019 8:35	45.0	36.5	0.0	18.5	-2.01	98.8	-1.96	100.8
TRIC0229	9/13/2019 8:51	48.5	36.2	0.0	15.3	-5.42	100.8	-5.43	101.0
TRIC0230	9/4/2019 9:14	38.6	34.3	0.0	27.1	-2.46	101.9	-2.45	103.4
TRICO203	9/4/2019 9:48	49.4	39.2	0.0	11.4	-1.51	119.9	-1.53	119.9
TRICO216	9/4/2019 10:19	44.7	35.4	0.0	19.9	-1.82	106.6	-1.83	106.6
TRICO217	9/4/2019 9:52	50.7	37.6	0.0	11.7	-4.25	122.3	-4.25	122.3
TRICO221	9/4/2019 10:11	46.6	35.8	0.0	17.6	-1.76	116.5	-1.76	116.5

Tri-Cities Recycling & Disposal Facility

Wellfield Monitoring Report - October 9, 16, 23, and 30, 2019

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
TRIC0001	10/16/2019 12:38	43.4	34.8	0.0	21.8	-40.81	96.5	-40.80	96.5
TRIC0116	10/16/2019 11:47	59.2	38.6	0.5	1.7	-41.37	81.7	-41.37	81.7
TRIC0118	10/9/2019 11:10	20.5	27.7	0.0	51.8	-0.94	98.1	-0.94	98.1
TRIC0123	10/16/2019 12:52	50.7	37.9	0.0	11.4	-15.66	120.1	-15.67	120.1
TRIC0126	10/16/2019 12:58	51.8	36.7	0.0	11.5	-7.24	114.0	-7.24	114.1
TRIC0128	10/9/2019 11:39	53.4	36.9	0.0	9.7	-9.14	113.6	-9.14	113.5
TRIC0128	10/23/2019 10:53	53.3	35.7	0.0	11.0	-8.73	113.9	-8.88	113.9
TRIC0128	10/23/2019 11:00	51.2	35.1	0.0	13.7	-9.02	113.8	-9.03	113.8
TRIC0128	10/30/2019 9:50	51.4	35.1	0.0	13.5	-11.02	113.5	-11.02	113.5
TRIC0129	10/23/2019 9:56	48.0	35.0	3.8	13.2	-11.17	73.6	-11.60	73.7
TRIC0200	10/9/2019 11:58	54.7	37.4	0.0	7.9	-8.92	113.5	-8.93	113.5
TRIC0200	10/23/2019 10:47	53.1	36.8	0.0	10.1	-8.76	113.8	-9.27	113.9
TRIC0200	10/30/2019 9:57	50.9	35.6	0.0	13.5	-11.56	113.5	-11.55	113.5
TRIC0201	10/16/2019 11:39	35.5	31.2	0.1	33.2	-1.01	103.7	-1.01	103.7
TRIC0202	10/9/2019 11:17	52.1	38.2	0.0	9.7	-10.39	118.0	-10.41	118.0
TRIC0204	10/16/2019 12:09	51.5	39.0	0.0	9.5	-8.42	129.2	-8.43	129.2
TRIC0205	10/23/2019 9:33	53.9	38.2	0.1	7.8	-13.28	126.0	-13.28	125.9
TRIC0206	10/16/2019 12:22	51.3	38.2	0.0	10.5	-2.74	123.0	-2.74	122.9
TRIC0207	10/23/2019 9:43	49.6	36.2	0.1	14.1	-37.47	120.7	-37.46	120.8
TRIC0208	10/9/2019 10:54	51.0	39.4	0.0	9.6	-26.98	124.4	-26.98	124.4
TRIC0209	10/23/2019 10:07	53.2	39.4	0.0	7.4	-48.38	119.0	-48.40	119.0
TRIC0210	10/9/2019 12:23	53.2	39.5	0.0	7.3	-1.26	120.5	-1.26	120.5
TRIC0210	10/23/2019 11:14	52.4	38.5	0.0	9.1	-1.01	121.3	-1.07	121.4
TRIC0210	10/30/2019 11:10	48.9	36.5	0.0	14.6	-2.14	120.4	-2.14	120.4
TRIC0211	10/23/2019 10:30	53.1	37.3	0.0	9.6	-20.76	119.1	-20.76	119.1
TRIC0212	10/23/2019 10:15	37.9	31.9	0.0	30.2	-1.62	112.2	-1.61	112.2
TRIC0213	10/23/2019 9:38	53.2	38.0	0.0	8.8	-2.69	119.9	-2.69	119.9
TRIC0213	10/30/2019 10:24	48.7	36.8	0.0	14.5	-4.32	118.6	-4.10	117.6
TRIC0214	10/16/2019 13:42	55.0	41.2	0.0	3.8	-0.26	117.5	-0.24	117.4
TRIC0214	10/23/2019 9:22	54.2	39.2	0.1	6.5	-0.90	117.1	-1.13	117.7
TRIC0215	10/16/2019 13:11	52.8	38.6	0.0	8.6	-50.19	126.4	-50.17	126.4
TRIC0218	10/9/2019 11:30	30.3	29.7	0.0	40.0	-1.99	98.3	-1.99	98.2
TRIC0219	10/9/2019 10:10	52.3	36.3	0.0	11.4	-1.48	112.2	-1.69	112.5
TRIC0220	10/23/2019 10:19	45.0	34.2	0.0	20.8	-2.00	111.3	-2.01	111.3
TRIC0222	10/23/2019 10:24	52.9	36.8	0.0	10.3	-7.93	117.0	-7.93	117.0
TRIC0223	10/9/2019 10:33	51.5	37.7	0.0	10.8	-3.62	121.7	-3.57	121.9
TRIC0224	10/9/2019 11:50	43.3	32.5	0.0	24.2	-1.70	85.9	-1.71	85.8
TRIC0225	10/16/2019 11:57	54.0	37.5	0.0	8.5	-3.14	118.0	-3.14	118.0
TRIC0226	10/23/2019 9:48	54.5	40.6	0.0	4.9	-1.20	117.0	-1.19	117.1
TRIC0227	10/9/2019 11:23	31.2	32.0	0.0	36.8	-1.25	88.2	-1.25	88.3
TRIC0228	10/9/2019 10:42	47.3	37.6	0.0	15.1	-2.24	118.1	-2.25	118.1
TRIC0229	10/23/2019 10:37	51.9	37.5	0.0	10.6	-4.86	116.1	-4.86	116.1
TRIC0230	10/9/2019 10:48	40.0	35.1	0.0	24.9	-2.70	126.1	-2.71	126.1
TRICO203	10/16/2019 12:14	50.3	39.1	0.0	10.6	-0.89	119.2	-0.89	119.3
TRICO216	10/16/2019 12:03	46.1	35.6	0.0	18.3	-1.32	105.5	-1.32	105.4
TRICO217	10/16/2019 11:31	52.5	37.9	0.0	9.6	-3.94	122.2	-3.94	122.2
TRICO217	10/23/2019 11:35	53.8	38.9	0.0	7.3	-3.66	122.4	-3.86	122.6
TRICO217	10/30/2019 10:09	50.8	37.6	0.0	11.6	-5.76	121.4	-5.76	121.5
TRICO221	10/16/2019 11:52	48.8	35.8	0.0	15.4	-1.34	115.4	-1.35	115.5

APPENDIX H

WELLFIELD DEVIATION LOGS

TRI-CITIES RECYCLING & DISPOSAL FACILITY
Wellfield Deviation Report
May 1, 2019 - October 31, 2019

REPORT PREPARED BY: Mike Chan
UPDATED DATE: 11/24/2019
FLOW SENSING DEVICE: GEM
MODEL: 2000
DATE LAST CALIBRATED: DAILY

Well ID	Time	CH_4 (%)	CO_2 (%)	O_2 (%)	Balance Gas (%)	Initial Static Pressure (" w.c.)	Initial Temperature (°F)	Adjusted Static Pressure (" w.c.)	Adjusted Temperature (°F)	Comments	Duration of Exceedance (Days)
No well exceedances in May 2019											
No well exceedances in June 2019											
No well exceedances in July 2019											
No well exceedances in August 2019											
No well exceedances in September 2019											
No well exceedances in October 2019											

1) Any adjustments to the wells were made after the first reading was taken. The well was then adjusted accordingly (e.g. valve was slightly opened, slighly closed, fully closed, or fully opened).

2) Abbreviations - CAI: Corrective Action Initiated, NSPS/EG: New Source Performance Standards/Emissions Guidelines

CH_4 - Methane CO_2 - Carbon Dioxide O_2 - Oxygen % - Percent " w.c. - Inches Water Column °F - Degrees Fahrenheit ppmv - parts per million by volume

APPENDIX I

MONTHLY LANDFILL GAS FLOW RATES

2019 Monthly LFG Input to Flare (A-3)

TRI-CITES RECYCLING AND DISPOSAL FACILITY, Fremont, CA

A-3 (Flare)

Month	Total Available Runtime (Hours)	Total Downtime (Hours)	Total Runtime (Hours)	Average Flow (scfm)	CH_4 (%)[1]	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)
January-19	744.00	2.60	741.40	1,183	43.77	52,634,817	23,036,522	23,336
February-19	672.00	8.43	663.57	1,165	43.77	46,370,721	20,294,934	20,559
March-19	743.00	2.43	740.57	1,159	44.73	51,478,531	23,025,142	23,324
April-19	720.00	0.00	720.00	1,147	46.77	49,539,653	23,168,062	23,469
May-19	744.00	5.13	738.87	1,152	46.77	51,070,098	23,883,800	24,194
June-19	720.00	7.60	712.40	1,169	46.77	49,988,422	23,377,935	23,682
July-19	744.00	0.00	744.00	1,180	46.77	52,663,112	24,628,800	24,949
August-19	744.00	0.00	744.00	1,197	46.77	53,435,313	24,989,934	25,315
September-19	720.00	0.00	720.00	1,142	46.77	49,354,860	23,081,639	23,382
October-19	744.00	12.93	731.07	1,150	46.77	50,433,453	23,586,063	23,893
November-19								
December-19								
TOTAL/AVERAGE:	**7,295.00**	**39.13**	**7,255.87**	**1,164**	**45.96**	**506,968,989**	**233,072,832**	**236,103**

NOTE: The annual heat input rate for the A-3 Flare shall not exceed 657,000 MMBtu (Title V Condition No. 8366, Part No. 11).
(1) The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.
scfm - standard cubic feet per minute % - percent scf - standard cubic feet MMBTU - million British thermal units

May 1, 2019 - October 31, 2019 Monthly LFG Input to Flare (A-3)

TRI-CITES RECYCLING AND DISPOSAL FACILITY, Fremont, CA

A-3 (Flare)

Month	Total Available Runtime (Hours)	Total Downtime (Hours)	Total Runtime (Hours)	Average Flow (scfm)	CH_4 (%)[1]	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)
May-19	744.00	5.13	738.87	1,152	46.77	51,070,098	23,883,800	24,194
June-19	720.00	7.60	712.40	1,169	46.77	49,988,422	23,377,935	23,682
July-19	744.00	0.00	744.00	1,180	46.77	52,663,112	24,628,800	24,949
August-19	744.00	0.00	744.00	1,197	46.77	53,435,316	24,989,934	25,315
September-19	720.00	0.00	720.00	1,142	46.77	49,354,860	23,081,639	23,382
October-19	744.00	12.93	731.07	1,150	46.77	50,433,456	23,586,063	23,893
TOTAL/AVERAGE:	**4,416.00**	**25.67**	**4,390.33**	**1,165**	**46.77**	**306,945,264**	**143,548,171**	**145,414**

NOTE: The annual heat input rate for the A-3 Flare shall not exceed 657,000 MMBtu (Title V Condition No. 8366, Part No. 11).
(1) The methane content was determined from the February 6, 2019 (3/22/19 - current) source tests.
scfm - standard cubic feet per minute % - percent scf - standard cubic feet MMBTU - million British thermal units

Tri-Cities Recycling & Disposal Facility
Fremont, CA

Heat Input Rate

MONTH: May-19

Date	Runtime (Hours)	CH_4* (%)	Average Flow (scfm)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heating Value of CH_4 (BTU/scf)	Heat Input (MMBTU)/Day
5/1/2019	24.00	46.8	1,143	1,646,554	770,039	1,013	780
5/2/2019	24.00	46.8	1,149	1,654,548	773,777	1,013	784
5/3/2019	24.00	46.8	1,148	1,653,604	773,336	1,013	783
5/4/2019	24.00	46.8	1,145	1,648,115	770,769	1,013	781
5/5/2019	24.00	46.8	1,141	1,642,416	768,104	1,013	778
5/6/2019	24.00	46.8	1,137	1,637,366	765,742	1,013	776
5/7/2019	24.00	46.8	1,137	1,637,762	765,927	1,013	776
5/8/2019	24.00	46.8	1,144	1,647,171	770,328	1,013	780
5/9/2019	24.00	46.8	1,141	1,642,811	768,288	1,013	778
5/10/2019	24.00	46.8	1,134	1,632,444	763,440	1,013	773
5/11/2019	24.00	46.8	1,135	1,635,009	764,640	1,013	775
5/12/2019	24.00	46.8	1,138	1,639,103	766,554	1,013	777
5/13/2019	24.00	46.8	1,141	1,642,335	768,066	1,013	778
5/14/2019	24.00	46.8	1,142	1,644,140	768,910	1,013	779
5/15/2019	24.00	46.8	1,140	1,642,226	768,015	1,013	778
5/16/2019	24.00	46.8	1,125	1,619,543	757,407	1,013	767
5/17/2019	24.00	46.8	1,135	1,634,039	764,186	1,013	774
5/18/2019	24.00	46.8	1,142	1,644,443	769,052	1,013	779
5/19/2019	24.00	46.8	1,132	1,629,912	762,256	1,013	772
5/20/2019	24.00	46.8	1,133	1,631,284	762,898	1,013	773
5/21/2019	24.00	46.8	1,136	1,636,342	765,263	1,013	775
5/22/2019	24.00	46.8	1,139	1,640,652	767,279	1,013	777
5/23/2019	18.87	46.8	1,157	1,309,748	612,526	1,013	620
5/24/2019	24.00	46.8	1,190	1,713,090	801,156	1,013	812
5/25/2019	24.00	46.8	1,191	1,715,200	802,142	1,013	813
5/26/2019	24.00	46.8	1,174	1,690,962	790,807	1,013	801
5/27/2019	24.00	46.8	1,182	1,702,227	796,075	1,013	806
5/28/2019	24.00	46.8	1,193	1,718,615	803,740	1,013	814
5/29/2019	24.00	46.8	1,192	1,716,032	802,532	1,013	813
5/30/2019	24.00	46.8	1,184	1,705,161	797,448	1,013	808
5/31/2019	24.00	46.8	1,193	1,717,244	803,098	1,013	814
Total/Average	**738.87**	**46.8**	**1,152**	**51,070,098**	**23,883,800**	**1,013**	**24,194**
						Maximum:	**814**
						Average:	**780**

Notes: The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.

The heat input for the A-3 Flare did not exceed 1,800 million Btu per day, as required by Title V Condition 8366, Part 11.

% - percent scfm - standard cubic feet per minute scf - standard cubic feet BTU - British thermal units
MMBTU - million British thermal units

Tri-Cities Recycling & Disposal Facility
Fremont, CA

Heat Input Rate

MONTH: Jun-19

Date	Runtime (Hours)	CH_4* (%)	Average Flow (scfm)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heating Value of CH_4 (BTU/scf)	Heat Input (MMBTU)/Day
6/1/2019	24.00	46.8	1,190	1,713,289	801,249	1,013	812
6/2/2019	24.00	46.8	1,184	1,705,559	797,634	1,013	808
6/3/2019	24.00	46.8	1,189	1,712,871	801,053	1,013	811
6/4/2019	24.00	46.8	1,193	1,717,992	803,448	1,013	814
6/5/2019	24.00	46.8	1,189	1,712,480	800,870	1,013	811
6/6/2019	24.00	46.8	1,184	1,704,430	797,106	1,013	807
6/7/2019	24.00	46.8	1,186	1,707,909	798,733	1,013	809
6/8/2019	24.00	46.8	1,194	1,719,085	803,959	1,013	814
6/9/2019	24.00	46.8	1,199	1,726,539	807,445	1,013	818
6/10/2019	24.00	46.8	1,203	1,732,877	810,409	1,013	821
6/11/2019	24.00	46.8	1,206	1,736,650	812,174	1,013	823
6/12/2019	24.00	46.8	1,201	1,729,399	808,783	1,013	819
6/13/2019	24.00	46.8	1,190	1,713,233	801,223	1,013	812
6/14/2019	24.00	46.8	1,184	1,704,667	797,217	1,013	808
6/15/2019	24.00	46.8	1,183	1,703,090	796,479	1,013	807
6/16/2019	24.00	46.8	1,186	1,707,622	798,598	1,013	809
6/17/2019	16.40	46.8	1,195	1,175,932	549,945	1,013	557
6/18/2019	24.00	46.8	1,162	1,673,912	782,833	1,013	793
6/19/2019	24.00	46.8	1,137	1,637,013	765,577	1,013	776
6/20/2019	24.00	46.8	1,138	1,638,221	766,142	1,013	776
6/21/2019	24.00	46.8	1,135	1,635,066	764,666	1,013	775
6/22/2019	24.00	46.8	1,140	1,641,714	767,775	1,013	778
6/23/2019	24.00	46.8	1,143	1,646,523	770,024	1,013	780
6/24/2019	24.00	46.8	1,143	1,646,030	769,794	1,013	780
6/25/2019	24.00	46.8	1,138	1,638,034	766,054	1,013	776
6/26/2019	24.00	46.8	1,133	1,632,083	763,271	1,013	773
6/27/2019	24.00	46.8	1,138	1,638,372	766,213	1,013	776
6/28/2019	24.00	46.8	1,144	1,646,682	770,099	1,013	780
6/29/2019	24.00	46.8	1,143	1,646,143	769,847	1,013	780
6/30/2019	24.00	46.8	1,142	1,645,005	769,315	1,013	779
Total/Average	**712.40**	**46.8**	**1,169**	**49,988,422**	**23,377,935**	**1,013**	**23,682**
						Maximum:	**823**
						Average:	**789**

Notes: The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.

The heat input for the A-3 Flare did not exceed 1,800 million Btu per day, as required by Title V Condition 8366, Part 11.

% - percent scfm - standard cubic feet per minute scf - standard cubic feet BTU - British thermal units
MMBTU - million British thermal units

Tri-Cities Recycling & Disposal Facility
Fremont, CA

Heat Input Rate

MONTH: Jul-19

Date	Runtime (Hours)	CH_4* (%)	Average Flow (scfm)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heating Value of CH_4 (BTU/scf)	Heat Input (MMBTU)/Day
7/1/2019	24.00	46.8	1,144	1,647,096	770,292	1,013	780
7/2/2019	24.00	46.8	1,143	1,645,576	769,582	1,013	780
7/3/2019	24.00	46.8	1,140	1,641,771	767,802	1,013	778
7/4/2019	24.00	46.8	1,139	1,639,769	766,866	1,013	777
7/5/2019	24.00	46.8	1,139	1,640,020	766,983	1,013	777
7/6/2019	24.00	46.8	1,142	1,644,699	769,171	1,013	779
7/7/2019	24.00	46.8	1,139	1,640,142	767,040	1,013	777
7/8/2019	24.00	46.8	1,135	1,633,948	764,144	1,013	774
7/9/2019	24.00	46.8	1,140	1,641,349	767,605	1,013	778
7/10/2019	24.00	46.8	1,142	1,643,820	768,760	1,013	779
7/11/2019	24.00	46.8	1,147	1,650,971	772,105	1,013	782
7/12/2019	24.00	46.8	1,167	1,680,337	785,838	1,013	796
7/13/2019	24.00	46.8	1,186	1,707,893	798,725	1,013	809
7/14/2019	24.00	46.8	1,184	1,705,153	797,444	1,013	808
7/15/2019	24.00	46.8	1,199	1,726,750	807,544	1,013	818
7/16/2019	24.00	46.8	1,210	1,742,051	814,700	1,013	825
7/17/2019	24.00	46.8	1,207	1,737,729	812,679	1,013	823
7/18/2019	24.00	46.8	1,204	1,733,445	810,675	1,013	821
7/19/2019	24.00	46.8	1,204	1,733,630	810,762	1,013	821
7/20/2019	24.00	46.8	1,201	1,729,614	808,883	1,013	819
7/21/2019	24.00	46.8	1,205	1,734,855	811,334	1,013	822
7/22/2019	24.00	46.8	1,205	1,735,764	811,760	1,013	822
7/23/2019	24.00	46.8	1,204	1,733,245	810,581	1,013	821
7/24/2019	24.00	46.8	1,213	1,746,740	816,893	1,013	828
7/25/2019	24.00	46.8	1,208	1,738,828	813,192	1,013	824
7/26/2019	24.00	46.8	1,203	1,731,811	809,911	1,013	820
7/27/2019	24.00	46.8	1,212	1,744,711	815,944	1,013	827
7/28/2019	24.00	46.8	1,210	1,742,432	814,878	1,013	825
7/29/2019	24.00	46.8	1,201	1,729,881	809,008	1,013	820
7/30/2019	24.00	46.8	1,200	1,728,399	808,315	1,013	819
7/31/2019	24.00	46.8	1,202	1,730,683	809,383	1,013	820
Total/Average	**744.00**	**46.8**	**1,180**	**52,663,112**	**24,628,800**	**1,013**	**24,949**
						Maximum:	**828**
						Average:	**805**

Notes: The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.

The heat input for the A-3 Flare did not exceed 1,800 million Btu per day, as required by Title V Condition 8366, Part 11.

% - percent scfm - standard cubic feet per minute scf - standard cubic feet BTU - British thermal units
MMBTU - million British thermal units

Tri-Cities Recycling & Disposal Facility
Fremont, CA

Heat Input Rate

MONTH: Aug-19

Date	Runtime (Hours)	CH_4* (%)	Average Flow (scfm)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heating Value of CH_4 (BTU/scf)	Heat Input (MMBTU)/Day
8/1/2019	24.00	46.8	1,199	1,725,857	807,126	1,013	818
8/2/2019	24.00	46.8	1,205	1,735,738	811,747	1,013	822
8/3/2019	24.00	46.8	1,207	1,738,339	812,964	1,013	824
8/4/2019	24.00	46.8	1,202	1,731,110	809,583	1,013	820
8/5/2019	24.00	46.8	1,205	1,735,875	811,811	1,013	822
8/6/2019	24.00	46.8	1,203	1,731,746	809,880	1,013	820
8/7/2019	24.00	46.8	1,199	1,726,517	807,435	1,013	818
8/8/2019	24.00	46.8	1,200	1,727,724	807,999	1,013	819
8/9/2019	24.00	46.8	1,203	1,731,956	809,979	1,013	821
8/10/2019	24.00	46.8	1,202	1,730,662	809,374	1,013	820
8/11/2019	24.00	46.8	1,205	1,734,881	811,347	1,013	822
8/12/2019	24.00	46.8	1,208	1,738,826	813,192	1,013	824
8/13/2019	24.00	46.8	1,207	1,738,117	812,860	1,013	823
8/14/2019	24.00	46.8	1,209	1,741,642	814,508	1,013	825
8/15/2019	24.00	46.8	1,212	1,744,808	815,989	1,013	827
8/16/2019	24.00	46.8	1,204	1,734,405	811,124	1,013	822
8/17/2019	24.00	46.8	1,194	1,719,997	804,386	1,013	815
8/18/2019	24.00	46.8	1,192	1,716,066	802,547	1,013	813
8/19/2019	24.00	46.8	1,192	1,717,159	803,059	1,013	813
8/20/2019	24.00	46.8	1,196	1,722,806	805,700	1,013	816
8/21/2019	24.00	46.8	1,205	1,734,785	811,302	1,013	822
8/22/2019	24.00	46.8	1,205	1,735,061	811,431	1,013	822
8/23/2019	24.00	46.8	1,196	1,721,658	805,163	1,013	816
8/24/2019	24.00	46.8	1,195	1,721,190	804,944	1,013	815
8/25/2019	24.00	46.8	1,201	1,729,773	808,958	1,013	819
8/26/2019	24.00	46.8	1,193	1,717,663	803,294	1,013	814
8/27/2019	24.00	46.8	1,174	1,690,181	790,442	1,013	801
8/28/2019	24.00	46.8	1,166	1,678,988	785,207	1,013	795
8/29/2019	24.00	46.8	1,172	1,687,022	788,965	1,013	799
8/30/2019	24.00	46.8	1,178	1,696,466	793,381	1,013	804
8/31/2019	24.00	46.8	1,179	1,698,298	794,238	1,013	805
Total/Average	**744.00**	**46.8**	**1,197**	**53,435,316**	**24,989,934**	**1,013**	**25,315**
						Maximum:	**827**
						Average:	**817**

Notes: The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.

The heat input for the A-3 Flare did not exceed 1,800 million Btu per day, as required by Title V Condition 8366, Part 11.

% - percent scfm - standard cubic feet per minute scf - standard cubic feet BTU - British thermal units
MMBTU - million British thermal units

Tri-Cities Recycling & Disposal Facility
Fremont, CA

Heat Input Rate

MONTH: Sep-19

Date	Runtime (Hours)	CH_4* (%)	Average Flow (scfm)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heating Value of CH_4 (BTU/scf)	Heat Input (MMBTU)/Day
9/1/2019	24.00	46.8	1,177	1,694,641	792,528	1,013	803
9/2/2019	24.00	46.8	1,171	1,686,118	788,542	1,013	799
9/3/2019	24.00	46.8	1,175	1,692,211	791,391	1,013	802
9/4/2019	24.00	46.8	1,159	1,668,294	780,206	1,013	790
9/5/2019	24.00	46.8	1,125	1,620,621	757,911	1,013	768
9/6/2019	24.00	46.8	1,131	1,628,488	761,590	1,013	771
9/7/2019	24.00	46.8	1,132	1,630,085	762,337	1,013	772
9/8/2019	24.00	46.8	1,134	1,632,831	763,621	1,013	774
9/9/2019	24.00	46.8	1,134	1,633,439	763,906	1,013	774
9/10/2019	24.00	46.8	1,130	1,627,555	761,154	1,013	771
9/11/2019	24.00	46.8	1,133	1,630,985	762,758	1,013	773
9/12/2019	24.00	46.8	1,141	1,642,342	768,069	1,013	778
9/13/2019	24.00	46.8	1,143	1,646,120	769,836	1,013	780
9/14/2019	24.00	46.8	1,137	1,636,859	765,505	1,013	775
9/15/2019	24.00	46.8	1,130	1,627,713	761,228	1,013	771
9/16/2019	24.00	46.8	1,125	1,620,521	757,864	1,013	768
9/17/2019	24.00	46.8	1,131	1,629,333	761,985	1,013	772
9/18/2019	24.00	46.8	1,139	1,640,608	767,258	1,013	777
9/19/2019	24.00	46.8	1,144	1,646,924	770,212	1,013	780
9/20/2019	24.00	46.8	1,145	1,649,320	771,333	1,013	781
9/21/2019	24.00	46.8	1,148	1,652,522	772,830	1,013	783
9/22/2019	24.00	46.8	1,145	1,648,738	771,060	1,013	781
9/23/2019	24.00	46.8	1,145	1,648,728	771,056	1,013	781
9/24/2019	24.00	46.8	1,154	1,661,523	777,039	1,013	787
9/25/2019	24.00	46.8	1,155	1,663,574	777,999	1,013	788
9/26/2019	24.00	46.8	1,142	1,643,770	768,737	1,013	779
9/27/2019	24.00	46.8	1,142	1,644,490	769,074	1,013	779
9/28/2019	24.00	46.8	1,137	1,636,715	765,438	1,013	775
9/29/2019	24.00	46.8	1,133	1,631,736	763,109	1,013	773
9/30/2019	24.00	46.8	1,138	1,638,056	766,065	1,013	776
Total/Average	**720.00**	**46.8**	**1,142**	**49,354,860**	**23,081,639**	**1,013**	**23,382**
						Maximum:	**803**
						Average:	**779**

Notes: The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.

The heat input for the A-3 Flare did not exceed 1,800 million Btu per day, as required by Title V Condition 8366, Part 11.

% - percent scfm - standard cubic feet per minute scf - standard cubic feet BTU - British thermal units
MMBTU - million British thermal units

Tri-Cities Recycling & Disposal Facility
Fremont, CA

Heat Input Rate

MONTH: Oct-19

Date	Runtime (Hours)	CH_4* (%)	Average Flow (scfm)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Heating Value of CH_4 (BTU/scf)	Heat Input (MMBTU)/Day
10/1/2019	24.00	46.8	1,141	1,642,639	768,208	1,013	778
10/2/2019	24.00	46.8	1,143	1,646,070	769,813	1,013	780
10/3/2019	24.00	46.8	1,142	1,644,356	769,011	1,013	779
10/4/2019	24.00	46.8	1,142	1,644,964	769,295	1,013	779
10/5/2019	24.00	46.8	1,151	1,657,414	775,118	1,013	785
10/6/2019	24.00	46.8	1,152	1,659,064	775,889	1,013	786
10/7/2019	24.00	46.8	1,152	1,658,343	775,552	1,013	786
10/8/2019	24.00	46.8	1,147	1,651,758	772,473	1,013	783
10/9/2019	23.80	46.8	1,139	1,626,496	760,659	1,013	771
10/10/2019	24.00	46.8	1,140	1,641,157	767,515	1,013	777
10/11/2019	24.00	46.8	1,146	1,650,804	772,027	1,013	782
10/12/2019	24.00	46.8	1,147	1,651,379	772,295	1,013	782
10/13/2019	24.00	46.8	1,141	1,643,166	768,455	1,013	778
10/14/2019	24.00	46.8	1,138	1,638,380	766,216	1,013	776
10/15/2019	24.00	46.8	1,143	1,645,351	769,476	1,013	779
10/16/2019	24.00	46.8	1,149	1,654,334	773,677	1,013	784
10/17/2019	24.00	46.8	1,145	1,648,225	770,820	1,013	781
10/18/2019	24.00	46.8	1,145	1,648,845	771,110	1,013	781
10/19/2019	24.00	46.8	1,149	1,654,235	773,631	1,013	784
10/20/2019	24.00	46.8	1,151	1,656,856	774,857	1,013	785
10/21/2019	24.00	46.8	1,155	1,663,841	778,124	1,013	788
10/22/2019	24.00	46.8	1,160	1,669,861	780,939	1,013	791
10/23/2019	24.00	46.8	1,165	1,677,525	784,523	1,013	795
10/24/2019	24.00	46.8	1,162	1,673,632	782,702	1,013	793
10/25/2019	24.00	46.8	1,166	1,678,642	785,045	1,013	795
10/26/2019	24.00	46.8	1,165	1,677,163	784,354	1,013	795
10/27/2019	21.37	46.8	1,148	1,472,018	688,414	1,013	697
10/28/2019	24.00	46.8	1,151	1,657,064	774,954	1,013	785
10/29/2019	24.00	46.8	1,151	1,658,102	775,440	1,013	786
10/30/2019	18.63	46.8	1,146	1,281,524	599,326	1,013	607
10/31/2019	19.27	46.8	1,177	1,360,248	636,143	1,013	644
Total/Average	**731.07**	**46.8**	**1,150**	**50,433,456**	**23,586,063**	**1,013**	**23,893**
						Maximum:	**795**
						Average:	**771**

Notes: The methane content was determined from the February 14, 2018 (3/27/18 - 3/21/19) and February 6, 2019 (3/22/19 - current) source tests.

The heat input for the A-3 Flare did not exceed 1,800 million Btu per day, as required by Title V Condition 8366, Part 11.

% - percent scfm - standard cubic feet per minute scf - standard cubic feet BTU - British thermal units
MMBTU - million British thermal units

APPENDIX J

STRUCTURE MONITORING REPORTS

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

July 15, 2019

Mr. Patrick Madej
Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway
Fremont, California 94538

Re: Second Quarter 2019 Methane-In-Structure Monitoring Report for Tri-Cities Recycling and Disposal Facility

Dear Mr. Madej:

This report for the Tri-Cities Recycling and Disposal Facility (TCRDF) contains the results of the Second Quarter 2019 Perimeter Gas and Methane in Structure Monitoring conducted at the TCRDF.

REGULATORY REQUIREMENTS

Requirements for monitoring are outlined in 40 CFR 258.23, Title 27 California Code of Regulations (CCR), Article 6, Gas Monitoring at Active and Closed Disposal Sites. These regulations require periodic monitoring to ensure that methane concentrations are less than 5 percent at the property boundary and less than 1.25 percent in on-site buildings and structures. Reporting requirements are presented in Title 27 §20934.

MONITORING RESULTS AND MAP [TITLE 27 §20934(a)(1), (2), (3) AND (5)]

Monitoring was conducted in accordance with 40 CFR 258.23 and Title 27, Article 6 at the locations shown in the attached map (Attachment A). Results for both probes and structures are summarized in Table 1. Field data are presented in Attachment B.

Table 1 Monitoring Results

Device ID or Structure	Date	CH_4 (Methane) (ppm_v)
S-3 Ops Trailer	6/26/2019	1.8
S-4 Break Area	6/26/2019	2.0
S-5 Collection Booths	6/26/2019	1.9
S-9 Maintenance Break Area	6/26/2019	2.1
S-10 Parts Wash Room	6/26/2019	2.0
S-12 Compressor Room	6/26/2019	1.8
S-13 Raisch Room	6/26/2019	1.9

MONITORING EQUIPMENT AND METHODOLOGY [TITLE 27 §20934(a)(4)]

Perimeter Gas Monitoring

CalRecycle granted TCRDF a variance from probe monitoring on July 2, 2010. Therfore probe monitoring was not conducted due to the decommissioning of Probe TCGP005.

Facility Structures

The technician used a FID to monitor buildings and structures to check for the presence of methane on June 26, 2019. The instrument was calibrated prior to monitoring using 500 parts per million by volume (ppm_v) methane standard.

Combustible Methane Gas Monitor Calibration

Some facility structures are monitored continuously using Sierra Monitors. The monitor is calibrated at a frequency determined by the manufacturer. The most recent calibration was conducted on June 27, 2019.

CLOSING

If you have any questions regarding this notification, please do not hesitate to contact me at (510) 613-2852.

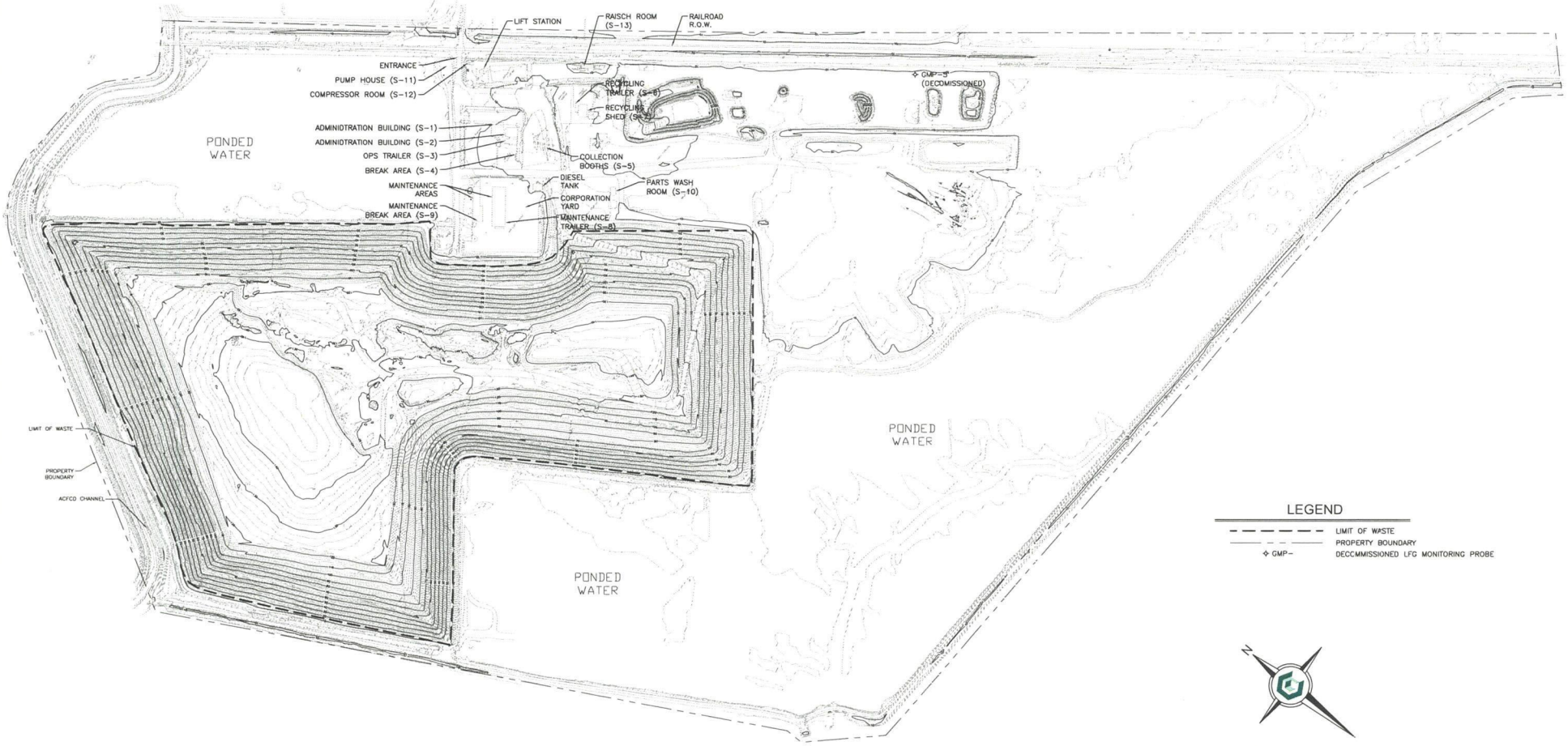
Thank you,

Waste Management

Michael Chan
Environmental Protection Specialist

ATTACHMENT A

SITE MAP



LEGEND

- LIMIT OF WASTE
- PROPERTY BOUNDARY
- ◇ GMP- DECOMMISSIONED LFG MONITORING PROBE

N

0 250 500

SCALE IN FEET

NOTES:

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY WALKER ASSOCIATES. DATE OF PHOTOGRAPHY: JUNE 10, 2010. DATUM: HORIZONTAL – NAD27, VERTICAL – NGVD29.

1" 1/2" 0" 1"

File: X:\PROJECTS\TRI-CITIES - COMPLIANCE 8539.1_PROJECT DRAWINGS\LGMP2010 PGMMP EXHIBITS.dwg, Layout: Sht 2 User: mdrew4 Oct 07, 2010 - 3:13pm

PAUL J. STOUT, P.E.

P.E. Lic. No. C52827 Date

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP B*

DATE OF ISSUE 9/16/2010
DRAWN BY MRF
DESIGNED BY JBS
CHECKED BY DHT
APPROVED BY PJS

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TRICITIES RECYCLING AND DISPOSAL FACILITY

2010 UPDATE PERIMETER GAS MIGRATION MONITORING PLAN

PREVIOUSLY EXISTING LANDFILL GAS MONITORING LOCATIONS

SHEET NO. **2**

PROJECT NO. 098391.1

ATTACHMENT B

FIELD DATA

Tri-Cities Recycling and Disposal Facility
Gas Detector Calibration Record and Structure Monitoring

Table 1

FID Structure Monitoring Data

Analyst: Ryan Haslam Date: 6/26/19

Instrument: TVA Serial #: 2020160312 11

Monitored Location	Time	PPM	Comments
S-3 Ops Trailer	11:53	1.8	
S-4 Break Area	11:54	2.0	
S-5 Collection Booths	11:55	1.9	
S-9 Maintenance Break Area	11:59	2.1	
S-10 Parts Wash Room	12:10	2.0	
S-12 Compressor Room	12:12	1.8	
S-13 Raisch Room	12:13	1.9	

Immediately notify compliance personnel of any readings in excess of 1.25 percent methane.

ND = No detection

Table 2

LOCATION: TRI-CITIES RECYCLING AND DISPOSAL FACILITY

MANUFACTURER & MODEL NUMBER: Sierra Monitor Corporation Model # 2001

CALIBRATED BY / INSTRUMENT USED: David Evans / Cal System Model# 26

CALIBRATION GAS EXPIRATION DATE: May 31 2022

Gas Detector Calibration Record				
Location	DATE CALIBRATED	SERIAL NUMBER	Methane LEL* SENSOR alarm 10,000 ppm	MAINTENANCE PERFORMED / COMMENTS ON MONITOR CONDITION Time
S-3 Ops Trailer	6/27/19	1629404204	Yes	10:43
S-9 Maintenance Break Area	6/27/19	0724904533MTS	Yes	10:50
S-4 Break Area	6-27-19	0608001242	Yes	10 35
S-5 Collection Booths	6/27/19	1131904789	Yes	11:05
S-12 Compressor Room	6/27/19	1131904786	Yes	11:12
S-13 Raisch Room	6/27/19	1915102415	Yes	11:24

** **This form must be retained for 12 months after completion.**

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

Landfill Name: TCRDF Date: 6/26/19

Time: 10:15

Instrument Make: TVA Model: ~~1000~~ 2020 S/N: 2020160312 11

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.
2. Introduce the calibration gas into the probe.

   Stable Reading = 499 ppm
3. Adjust meter to read 500 ppm.

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 1.3 ppm (a)
2. Downwind Reading (highest in 30 seconds): 1.7 ppm (b)

Calculate Background Value:

$\frac{(a) + (b)}{2}$ Background = 1.5 ppm

Performed by: Ryan Haslam

RESPONSE TIME TEST RECORD

Date: 6·26·19

Expiration Date (3 months): _____

Time: 10:15

Instrument Make: Thermo Scientific Model: TVA ~~1000~~ 2020 S/N: 20201603121

Measurement #1:

~~Stabilized Reading Using Calibration Gas:~~ 501 ppm
90% of the Stabilized Reading: 450 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 3 seconds (a)

Measurement #2:

Stabilized Reading Using Calibration Gas: 498 ppm
90% of the Stabilized Reading: 450 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 3 seconds (b)

Measurement #3:

Stabilized Reading Using Calibration Gas: 499 ppm
90% of the Stabilized Reading: 450 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 3 seconds (c)

Calculate Response Time:

$\frac{(a) + (b) + (c)}{3}$ = 3 seconds (must be less than 30 seconds)

Performed by: Ryan Haslam

CALIBRATION PRECISION TEST RECORD

Date: 6-26-19

Expiration Date (3 months): _____

Time: 10:15

Instrument Make: TVA Model: ~~1000~~ 2020 S/N: 2020

Measurement #1:

Meter Reading for Zero Air: .2 ppm (a)

Meter Reading for Calibration Gas: 501 ppm (b)

Measurement #2:

Meter Reading for Zero Air: .3 ppm (c)

Meter Reading for Calibration Gas: 498 ppm (d)

Measurement #3:

Meter Reading for Zero Air: .1 ppm (e)

Meter Reading for Calibration Gas: 499 ppm (f)

Calculate Precision:

$$\frac{\{|(500)-(b)|+|(500)-(d)|+|(500)-(f)|\}}{3} \times \frac{1}{500} \times 100$$

1.3 % (must be < than 10%)

Performed by: Ryan Haslam

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

September 27, 2019

Mr. Patrick Madej
Tri-Cities Recycling and Disposal Facility
7010 Auto Mall Parkway
Fremont, California 94538

Re: Third Quarter 2019 Methane-In-Structure Monitoring Report for Tri-Cities Recycling and Disposal Facility

Dear Mr. Madej:

This report for the Tri-Cities Recycling and Disposal Facility (TCRDF) contains the results of the Third Quarter 2019 Perimeter Gas and Methane in Structure Monitoring conducted at the TCRDF.

REGULATORY REQUIREMENTS

Requirements for monitoring are outlined in 40 CFR 258.23, Title 27 California Code of Regulations (CCR), Article 6, Gas Monitoring at Active and Closed Disposal Sites. These regulations require periodic monitoring to ensure that methane concentrations are less than 5 percent at the property boundary and less than 1.25 percent in on-site buildings and structures. Reporting requirements are presented in Title 27 §20934.

MONITORING RESULTS AND MAP [TITLE 27 §20934(a)(1), (2), (3) AND (5)]

Monitoring was conducted in accordance with 40 CFR 258.23 and Title 27, Article 6 at the locations shown in the attached map (Attachment A). Results for both probes and structures are summarized in Table 1. Field data are presented in Attachment B.

Table 1 Monitoring Results

Device ID or Structure	Date	CH_4 (Methane) (ppm_v)
S-3 Ops Trailer	8/26/2019	1.8
S-4 Break Area	8/26/2019	1.9
S-5 Collection Booths	8/26/2019	1.9
S-9 Maintenance Break Area	8/26/2019	1.9
S-10 Parts Wash Room	8/26/2019	2.0
S-12 Compressor Room	8/26/2019	2.1
S-13 Raisch Room	8/26/2019	1.8

MONITORING EQUIPMENT AND METHODOLOGY [TITLE 27 §20934(a)(4)]

Perimeter Gas Monitoring

CalRecycle granted TCRDF a variance from probe monitoring on July 2, 2010. Therfore probe monitoring was not conducted due to the decommissioning of Probe TCGP005.

Facility Structures

The technician used a FID to monitor buildings and structures to check for the presence of methane on August 26, 2019. The instrument was calibrated prior to monitoring using 500 parts per million by volume (ppm_v) methane standard.

Combustible Methane Gas Monitor Calibration

Some facility structures are monitored continuously using Sierra Monitors. The monitor is calibrated at a frequency determined by the manufacturer. The most recent calibration was conducted on September 25, 2019.

CLOSING

If you have any questions regarding this notification, please do not hesitate to contact me at (510) 613-2852.

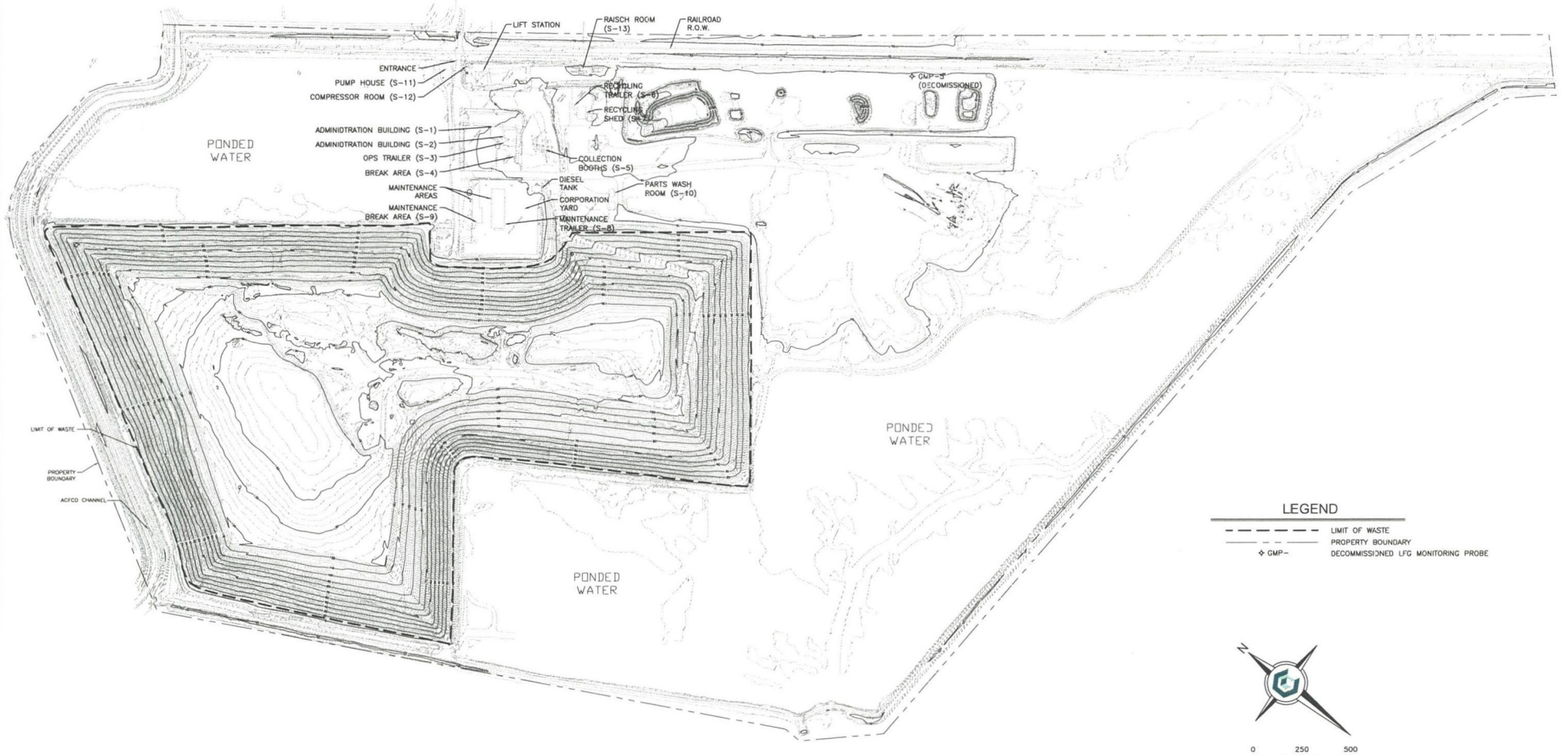
Thank you,

Waste Management

Michael Chan
Environmental Protection Specialist

ATTACHMENT A

SITE MAP



LEGEND

- LIMIT OF WASTE
- PROPERTY BOUNDARY
- ✧ GMP– DECOMMISSIONED LFG MONITORING PROBE

0 250 500
SCALE IN FEET

NOTES:

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY WALKER ASSOCIATES. DATE OF PHOTOGRAPHY: JUNE 10, 2010. DATUM: HORIZONTAL – NAD27, VERTICAL – NGVD29.

PAUL J. STOUT, P.E.

P.E. Lic. No. C52827 Date

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 9/16/2010
DRAWN BY MRF
DESIGNED BY JBS
CHECKED BY DHT
APPROVED BY PJS

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TRICITIES RECYCLING AND DISPOSAL FACILITY
2010 UPDATE PERIMETER GAS MIGRATION MONITORING PLAN
PREVIOUSLY EXISTING LANDFILL GAS MONITORING LOCATIONS

SHEET NO. **2**
PROJECT NO. 393391.1

1" 1/2" 0" 1"

ATTACHMENT B

FIELD DATA

Tri-Cities Recycling and Disposal Facility
Gas Detector Calibration Record and Structure Monitoring

Table 1

FID Structure Monitoring Data

Analyst: Ryan Haslam Date: 8-26-19

Instrument: TVA2020 Serial #: 201603121

Monitored Location	Time	PPM	Comments
S-3 Ops Trailer	10:42	1.8	
S-4 Break Area	10:40	1.9	
S-5 Collection Booths	10:38	1.9	
S-9 Maintenance Break Area	10:45	1.9	
S-10 Parts Wash Room	10:43	2.0	
S-12 Compressor Room	10:35	2.1	
S-13 Raisch Room	10:33	1.8	

Immediately notify compliance personnel of any readings in excess of 1.25 percent methane.

ND = No detection

Table 2

LOCATION: TRI-CITIES RECYCLING AND DISPOSAL FACILITY

MANUFACTURER & MODEL NUMBER: Sierra Monitor Corporation Model # 2001

CALIBRATED BY / INSTRUMENT USED: Edwardo (GP Cal System Model# 26

CALIBRATION GAS EXPIRATION DATE: May 31 2022

Gas Detector Calibration Record				
Location	DATE CALIBRATED + Time	SERIAL NUMBER	Methane LEL* SENSOR alarm 10,000 ppm	MAINTENANCE PERFORMED / COMMENTS ON MONITOR CONDITION
S-3 Ops Trailer	9/25/19 11:37Am	1629404204	Yes	Calibration Check
S-9 Maintenance Break Area	9/25/19 11:20Am	0724904533M TS	Yes	Calibration Check
S-4 Break Area	9/25/19 11:39Am	0608001242	Yes	Calibration Check
S-5 Collection Booths	9/25/19 11:43Am	1131904789	Yes	Calibration Check No Audiable sound
S-12 Compressor Room	9/25/19 11:49 Am	1131904786	Yes	Calibration Check No Audiable Check
S-13 Raisch Room	9/25/19 11:54Am	~~19151024~~ 1915102415	Yes	Calibration Check

** **This form must be retained for 12 months after completion.**

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

Landfill Name: TCRDF Date: 08/26/19

Time: 07:45 AM _____ PM

Instrument Make: Thermo Scientific Model: TVA 2020 S/N: 2020160213211

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.
2. Introduce the calibration gas into the probe.

   Stable Reading = 498 ppm
3. Adjust meter to read 500 ppm.

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 1.1 ppm (a) Flare
2. Downwind Reading (highest in 30 seconds): 1.7 ppm (b) Entrance gate

Calculate Background Value:

$\frac{(a) + (b)}{2}$ Background = 1.4 ppm

Performed by: R. haslam

RESPONSE TIME TEST RECORD

Date: 08/26/19

Expiration Date (3 months): 11/24/19

Time: 7:45 AM _____ PM

Instrument Make: Thermo Scientific Model: TVA 2020 S/N: 2020160231211

Measurement #1:

Stabilized Reading Using Calibration Gas: 501 ppm
90% of the Stabilized Reading: 450 ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas: 3.5 seconds (a)

Measurement #2:

Stabilized Reading Using Calibration Gas: 499 ppm
90% of the Stabilized Reading: 450 ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas: 3.6 seconds (b)

Measurement #3:

Stabilized Reading Using Calibration Gas: 498 ppm
90% of the Stabilized Reading: 450 ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas: 3.4 seconds (c)

Calculate Response Time:

$$\frac{(a) + (b) + (c)}{3} = 3.5 \text{ seconds (must be less than 30 seconds)}$$

Performed by: R. Haslam

CALIBRATION PRECISION TEST RECORD

Date: 08/26/19

Expiration Date (3 months): 11/24/19

Time: 07:45 AM _____ PM

Instrument Make: Thermo Scientific Model: TVA 2020 S/N: 2020160231211

Measurement #1:

Meter Reading for Zero Air: 0.3 ppm (a)

Meter Reading for Calibration Gas: 501 ppm (b)

Measurement #2:

Meter Reading for Zero Air: 0.1 ppm (c)

Meter Reading for Calibration Gas: 499 ppm (d)

Measurement #3:

Meter Reading for Zero Air: 0.2 ppm (e)

Meter Reading for Calibration Gas: 498 ppm (f)

Calculate Precision:

$$\frac{\{|(500)-(b)|+|(500)-(d)|+|(500)-(f)|\}}{3} \times \frac{1}{500} \times 100$$

0.26 % (must be < than 10%)

Performed by: R. Haslam

SURFACE EMISSIONS MONITORING
CALIBRATION AND PERTINENT DATA

Date: 8-26-19 Site Name: Tri Cities

Inspector(s): Ryan Haslam Instrument: TVA2020

WEATHER OBSERVATIONS

Wind Speed: 3 MPH Wind Direction: V Barometric Pressure: 29.9 "Hg

Air Temperature: 72 °F General Weather Conditions: Clear

CALIBRATION INFORMATION

Pre-monitoring Calibration Precision Check

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

Instrument Serial Number: 1211 Cal Gas Concentration: 500

Trial	Zero Air Reading	Cal Gas Reading	|Cal Gas Conc.-Cal Gas Reading|	Response Time (seconds)
1	.2	501	1	3
2	.1	499	1	2
3	.3	498	2	3

Average Difference: 1.3

*Perform recalibration if average difference is greater than 10

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

= 100%- 1.3 /500 x 100%

= 99.7 % .3

Span Sensitivity:

Trial 1:
Counts Observed for the Span= 132091
Counters Observed for the Zero= 3912

Trial 2:
Counts Observed for the Span= 132427
Counters Observed for the Zero= 3924

Trial 3:
Counts Observed for the Span= 132179
Counters Observed for the Zero= 3918

Post Monitoring Calibration Check

Zero Air Reading: 0 ppm Cal Gas Reading: 500 ppm

BACKGROUND CONCENTRATIONS CHECKS

Upwind Location Description: Flare Reading: 1.1 ppm

Downwind Location Description: Entrance Reading: 1.7 ppm

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

APPENDIX K

ANNUAL H_2S MONITORING REPORTS

WM - TRI-CITIES LANDFILL, Fremont, CA			
ANNUAL HYDROGEN SULFIDE (H_2S) MONITORING			
SAMPLE TAKEN BY:	Matthew Frame		
DATE	SAMPLE LOCATION	H_2S CONCENTRATION (PPM)	COMMENTS
7/9/2019	Flare Inlet	100	None
COMMENTS: PPM - parts per million Sample taken with a Draeger Tube per Title V Permit Condition No. 8366, Part 12			

APPENDIX L

SOURCE TEST REPORT SUMMARY

Tri-Cities Recycling and Disposal Facility

BAAQMD Facility #A2246

Annual Compliance Emissions Test Report #19029
Source Test for Landfill Gas Flare Source (A-3)

Located at:

7010 Auto Mall Parkway
Fremont, CA 94538

Performed and Reported by:

Blue Sky Environmental, Inc
624 San Gabriel Avenue
Albany, CA 94706

Prepared For:

SCS Engineers
Dave Bearden
3117 Fite Circle Suite 108
Sacramento, CA 95827
DBearden@scsengineers.com

For Submittal To:

Attn: Marco Hernandez/Jerry Bovee
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
mhernandez@baaqmd.gov/jbovee@baaqmd.gov

Testing Performed On:
February 6th, 2019

Report Submitted On:
March 22nd, 2019

REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that: a) the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program; b) that the sampling and analytical procedures and data presented in the report is authentic and accurate: c) that all testing details and conclusions are accurate and valid, and: d) that the production rate and/or heat input rate during the source test are reported accurately.

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 contact me at (510) 508 3469.

Guy Worthington
Principal Project Manager

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H. Sample Train Configuration and Stack Diagrams
I. Related Correspondence (Source Test Plan and Email Correspondence)
J. BAAQMD Permit To Operate

SECTION 1. INTRODUCTION

1.1. Summary

Blue Sky Environmental, Inc was contracted to perform the emissions testing on the A-3 Landfill Gas Flare at the Tri-Cities Recycling and Disposal Facility, located at 7010 Auto Mall Parkway, Fremont, California. Table 1 summarizes the source test information. Table 2 summarizes the results compared to the emission limits. The flare met all compliance emission criteria.

Table 1. Source Test Information

Test Location:	Tri-Cities Recycling and Disposal Facility 7010 Auto Mall Parkway, Fremont, CA 94538
Source Contact:	Patrick Madej (510) 376-7700
Source Tested:	Enclosed Landfill Gas Flare (A-3)
Source Test Date:	February 6th, 2019
Test Objective:	Determine Compliance with Regulation 8, Rule 34 and Title V Permit Condition 8366 for Facility #A2246
Test Performed By:	Blue Sky Environmental, Inc 624 San Gabriel Ave., Albany, CA 94706 Guy Worthington (510) 508 3469 blueskyenvironmental@yahoo.com
Test Parameters:	**Landfill Gas** Oxygen (O_2), Nitrogen (N_2), Carbon Dioxide (CO_2), Total Hydrocarbons (THC), Methane (CH_4), Non-Methane Organic Compounds (NMOC), High Heating Value (HHV), Gas F-Factor, Total Reduced Sulfur (TRS) & Sulfur Species, Volumetric Flow Rate **Flare Emissions** THC, CH_4, NMOC, NO_X, CO, O_2, SO_2, Volumetric Flow Rate, Stack Exhaust Temperature.

Table 2. Compliance Summary

Emission Parameter	Average Test Result	Permit Limit	Compliance Status
NO_X, lbs/MMBTU	**0.04**	**0.06**	**In Compliance**
CO, lbs/MMBTU	**0.004**	**0.3**	**In Compliance**
NMOC, (ppmvd @ 3% O_2 as CH_4)	**<3.9**	**30**	**In Compliance**
TRS in Landfill Gas, ppm	**107.7**	**1300**	**In Compliance**
Methane Destruction Efficiency, %	**>99.995**	**99**	**In Compliance**

SECTION 2. SOURCE TEST PROGRAM

2.1. Overview

This annual performance test was conducted to demonstrate that the A-3 landfill gas (LFG) flare is operating in accordance with the Bay Area Air Quality Management District (BAAQMD) Title V Permit for Facility #A2246 and Regulation 8 Rule 34.

2.2. Pollutants Tested

The following BAAQMD, Environmental Protection Agency (EPA) and American Society for Testing and Materials (ASTM) sampling and analytical methods were used:

BAAQMD ST-5	Carbon Dioxide (CO_2)
BAAQMD ST-6	Carbon Monoxide (CO)
BAAQMD ST-7	Non-Methane Organic Carbon (NMOC)
BAAQMD ST-13A	Nitrogen Oxides (NO_X)
BAAQMD ST-14	Oxygen (O_2)
BAAQMD ST-19A	Sulfur Dioxide (SO_2) from Total Reduced Sulfur (TRS)
EPA 19 (Flow Rate Calculation)	Dry Standard Cubic Feet per Minute (DSCFM)
EPA 25C	Gas analysis for NMOC by Gas Chromatography (GC)
ASTM 1945/3588	Gas analysis for BTU and F-Factor
ASTM D-5504	Sulfur Species, Hydrogen Sulfide (H_2S) and TRS

2.3. Test Date(s)

Testing was conducted on February 6th, 2019

2.4. Sampling and Observing Personnel

Guy Worthington and Jeff Mesloh representing Blue Sky Environmental, Inc, performed the testing.

Dave Bearden of SCS Engineers was present to operate and oversee the Flare operation and assist in coordinating testing and the collection of process data during testing. Michael Chan from WM was present to assist as well.

The BAAQMD was notified of the test in a plan submitted by SCS Engineers on January 16th, 2019 A Source Test Protocol acknowledgement was requested and received by Blue Sky Environmental (NST Number 5335), but no agency observers were present to witness the testing. A copy of the source test protocol and the BAAQMD NST email can be found in Appendix I.

2.5. Source/Process Description

The enclosed LFG flare consists of a 75 million British Thermal Units per hour (MMBtu/hr) multiple nozzle burner. The flare shell is approximately 40 feet high and has an approximately 102 inch inside diameter (ID).

2.6. Source Operating Conditions

The flare operating temperature and the LFG flow rate records are contained in Appendix-F. There is no condensate injection.

The flare was operated at ~1,602 degrees Fahrenheit (°F). The LFG flow rate averaged ~1,162 Standard Cubic Feet per Minute (SCFM).

The LFG methane content of all three runs averaged 46.8 percent (%).

SECTION 3. SAMPLING AND ANALYSIS PROCEDURES

3.1. Port location

The A-3 Flare sampling was conducted in the 102 inch ID stack, via ports approximately 35 feet above grade, accessed by a 40 foot boom-lift. Two of the four, 4-inch flange ports are available ~4 stack diameters downstream from the burners and ~1 stack diameters upstream from the exit.

3.2. Point description/Labeling – ports/stack

Blue Sky Environmental conducted two perpendicular 8 point traverses and found stratification >10%, therefore subsequent Continuous Emission Monitoring (CEM) sampling was conducted traversing all 16 points. The traverse points for the 102 inch diameter exhaust stack with 4 inch ports were 7.3, 14.7, 23.8, 36.9, 73.1, 86.2, 95.3 and 102.7 inches.

3.3. Sample train description

Sampling system diagrams are included in the Appendix H. Additional descriptive information is included in the following section.

3.4. Sampling procedure description

Three, 32-minute minimum test runs were performed. All Runs featured a full traverse and involved a delay for the port change (16 minutes of time before and after a 5-7 minute port change).

Continuous Emission Monitoring (CEM) by BAAQMD Methods ST-5, 6, 7, 13A and 14. These methods are all continuous monitoring techniques using instrumental analyzers to measure carbon dioxide (CO_2), carbon monoxide (CO), total non-methane hydrocarbons (TNMHC), Total Hydrocarbons THC & Methane (CH_4), nitrogen oxides (NO_X) and oxygen (O_2), respectively. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample and analyzing it by continuous monitoring gas analyzers in a CEM test van. The sampling system consists of a stainless steel sample probe, Teflon sample line, glass-fiber particulate filter, glass moisture-knockout condensers in ice, Teflon sample transfer tubing, diaphragm pump and a stainless steel/Teflon manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 pounds per square inch (PSI) was provided to each analyzer to avoid pressure variable response differences. The entire sampling system was leak checked prior to and at the end of the sampling program.

The sampling and analytical system (per BAAQMD Methods) was calibrated at the beginning and end of each test run. The calibration gases were selected to fall approximately within 80 to 90 percent of the instrument range. Zero and calibration drift values were determined for each test. All calibration gases are EPA Protocol #1. The analyzer data recording system consists of Omega 3 channel strip chart recorders, supported by a computer based Iotech Data Acquisition System.

System Performance Criteria

Instrument Linearity	≤2% Full Scale (checked routinely)
Instrument Bias	≤5% Full Scale (checked routinely)
System Response Time	≤± 2 minutes (checked routinely)
NO_X Converter Efficiency (EPA 20)	≥ 90% (checked prior to testing)
Instrument Zero Drift	≤± 3% Full Scale (complied)
Instrument Span Drift	≤± 3% Full Scale (complied)

Concurrent with the exhaust sampling, Blue Sky collected a total of three SILCO canister samples of the LFG for analysis. The samples were collected using Teflon tubing connections, to Silco SUMMA canisters with a Helium pre-pad same day, prior to shipping to the lab. The gas sample was controlled with a glass orifice to collect a 30-minute integrated sample and vacuum was allowed to drop to zero. All the samples were analyzed for NMOC, HHV, Fd-Factor, Fixed Gases, and Sulfur Species (incl. H_2S and TRS).

The Flare operating temperature (°F) and inlet volumetric flow rate were continuously measured and recorded by the facility monitors. The data is recorded on a Yokogawa system and was exported into Excel then submitted to Blue Sky for inclusion in this report.

3.5. Instrumentation and Analytical procedures

The following continuous emissions analyzers were used:

Instrumentation	Parameter	Principle
TECO 42i	$NO_X/NO/NO_2$	Chemiluminescence
TECO 48C	CO	GFC/IR
Rosemount 400A	THC	FID
Servomex 1440	O_2	Paramagnetic
Servomex 1440	CO_2	IR

All calibration gases are EPA Protocol #1. The analyzer data recording system consists of Omega 3 channel strip chart recorders, supported by a Data Acquisition System (DAS).

The instrument responses were recorded on strip charts in addition to data acquisition into excel files. The averages were corrected for drift using EPA Method 7E, Equation 7E-5b.

3.6. Comments: Limitations and Data Qualifications

Review of the general text
Review of calculations
Review of CEMS data
Review of supporting documentation

The services described in this report were performed in a manner consistent with the generally accepted professional testing principles and practices. No other warranty, expressed or implied, is made. These services were performed in a manner consistent with our agreement with our client. The report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions contained in this report pertain to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and operating parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations, subsequent to this, and do not warranty the accuracy of information supplied by others.

SECTION 4. APPENDICES

A.	Tabulated Results
B.	Calculations
C.	Laboratory Reports
D.	Field Data Sheets
E.	Strip Charts
F.	Process Information
G.	Calibration Certifications and Quality Assurance Records
H.	Sample Train Configuration and Stack Diagrams
I.	Related Correspondence (Source Test Plan and Email Correspondence)
J.	BAAQMD Permit to Operate

A
Tabulated Results

TABLE #1

Tri-Cities Recycling & Disposal Facility
Flare A-3
1,602°F

RUN	Run 1	Run 2	Run 3	AVERAGE	LIMITS
Test Date	2/6/19	2/6/19	2/6/19		
Test Time	0839-0915	0932-1009	1022-1100		
Standard Temp., °F	70	70	70		
Flare Temperature, °F	1,601	1,602	1,602	1,602	
Fuel Flow Rate, SCFM	1,161	1,162	1,164	1,162	
Fuel Heat Input, MMBTU/Hr	33.1	33.1	33.2	33.1	
Exhaust Flow Rate, DSCFM (Method 19)	12,442	12,424	12,446	12,437	
Oxygen, O_2, %	11.7	11.7	11.7	11.7	
Carbon Dioxide, CO_2, %	7.9	7.8	7.8	7.8	
NO, ppm	14.8	14.5	14.6	14.6	
NO_2, ppm	0.44	0.15	0.20	0.27	
NO_2/NO	0.03	0.01	0.01	0.02	
NOx, ppm	15.2	14.7	14.8	14.9	
NOx, ppm @ 15% O_2	9.8	9.4	9.5	9.6	
NOx, lbs/hr	1.35	1.30	1.32	1.32	
NOx, lbs/MMBTU	**0.04**	**0.04**	**0.04**	**0.04**	**0.06**
CO, ppm	2.8	1.2	3.3	2.4	
CO, ppm @ 15% O_2	1.8	0.7	2.1	1.6	
CO, lbs/hr	0.15	0.06	0.18	0.13	
CO, lbs/MMBTU	**0.005**	**0.002**	**0.005**	**0.004**	**0.3**
Total Reduced Sulfur as H_2S in fuel, ppm	**80.2**	**125.0**	**118.0**	**107.7**	**1300**
SO_2, ppm calculated emission concentration	7.5	11.7	11.0	10.1	
THC, ppm	<2.0	<2.0	<2.0	<2.0	
THC, lbs/hr as CH_4	<0.06	<0.06	<0.06	<0.06	
CH_4, ppm	<2.0	<2.0	<2.0	<2.0	
CH_4, lbs/hr	<0.06	<0.06	<0.06	<0.06	
NMOC, ppm as CH_4	<2.0	<2.0	<2.0	<2.0	
NMOC, lbs/hr as CH_4	<0.06	<0.06	<0.06	<0.06	
NMOC, ppm @ 3% O_2 as CH_4	**<3.9**	**<3.9**	**<3.9**	**<3.9**	**30**
INLET NMOC ppm as CH_4 (M25C)	2,881	3,422	3,394	3,232	**OR**
INLET NMOC lbs/hr as CH_4	8.3	9.9	9.8	9.3	
NMOC Removal Efficiency	**>99.3%**	**>99.4%**	**>99.4%**	**>99.3%**	**98**
INLET CH_4 (ASTM 1945)	468,000	467,000	468,000	467,667	
INLET CH_4 lbs/hr	1,349	1,347	1,352	1,349	
CH_4 Removal Efficiency	**>99.995%**	**>99.995%**	**>99.995%**	**>99.995%**	**99**
INLET THC (TOC) ppm as CH_4	470,881	470,422	471,394	471,138	
INLET THC (TOC) lbs/hr as CH_4	1,357	1,357	1,362	1,359	
THC (TOC) Removal Efficiency	99.995%	99.995%	99.995%	99.995%	

WHERE,

ppm = Parts Per Million Concentration
Lbs/hr = Pound Per Hour Emission Rate
Tstd. = Standard Temp. (°R = °F+460)
MW = Molecular Weight
DSCFM = Dry Standard Cubic Feet Per Minute
NOx = Oxides of Nitrogen as NO_2 (MW = 46)
CO = Carbon Monoxide (MW = 28)
TOC = THC = Total Organic Carbon as Methane including CH_4 (MW = 16)
THC = Total Hydrocarbons as Methane (MW = 16)
NMOC = Total Non-Methane Organic Carbon (MW = 16)
SO_2 = Sulfur Dioxide as SO_2 (MW = 64.1)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)
PPM @ 3% O_2 = ppm * 17.9 / (20.9 - %O_2)
Lbs/hr = ppm x 8.223 E-05 x DSCFM x MW / Tstd. °R
Lbs/MMBtu = (Lbs/hr)/(MMBtu/hr)
Lbs/day = Lbs/hr * 24
THC (TOC) Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr
NMHC Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr
SO_2 emission ppm = H_2S in fuel * Fuel Flow/Stack Gas Flow