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**BEFORE THE HEARING BOARD OF THE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

In The Matter Of

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware
Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

**EXHIBIT L TO DECLARATION OF
PATRICK SULLIVAN, BCES, CPP,
REPA**

Health and Safety Code § 41700, and
District Rules 402, 431.1, 3002, 203, 1150

Hearing Date: April 16 and 17, 2025

Hearing Time: 9:30 A.M.

Place: Hearing Board
South Coast Air Quality
Management District,
21865 Copley Drive
Diamond Bar, CA 91765

SOURCE REPORT FOR 2024 LEACHATE AND CONDENSATE VAPOR SAMPLING AT THE CHIQUITA CANYON LANDFILL FACILITY ID: 119219

Prepared For:

SCS Engineers – Chiquita Canyon Landfill
3900 Kilroy Airport Way, Suite 100
Long Beach, California 90806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 279-6777

Pete San Juan

Test Date: **October 17, 2024**
Production Date: **November 15, 2024**
Document Number: **W002AS-044747-RT-6729**

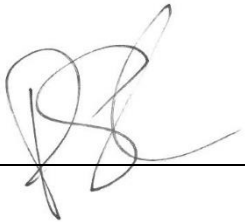


CONFIDENTIALITY STATEMENT

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REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 11/15/2024
Name: Pete San Juan Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 11/15/2024
Name: Michael Chowsanitphon Title: Reporting Hub Manager

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION	5
2.0 FACILITY AND SOURCE INFORMATION	6
2.1 PROCESS EQUIPMENT INFORMATION	6
3.0 TEST INFORMATION AND METHODOLOGY	7
3.1 SCAQMD METHOD 1.1 – SAMPLING AND VELOCITY TRAVERSES FOR STATIONARY SOURCES	7
3.2 SCAQMD METHOD 2.1 – VELOCITY AND VOLUMETRIC FLOW RATE	8
3.3 SCAQMD METHOD 3.1 – GAS ANALYSIS FOR DRY MOLECULAR WEIGHT AND EXCESS AIR	8
3.4 SCAQMD METHOD 4.1 – DETERMINATION OF MOISTURE CONTENT IN STACK GASES	8
3.5 SCAQMD METHOD 307-91 – HYDROGEN SULFIDE AND REDUCED SULFUR COMPOUNDS	8
3.6 EPA METHOD TO-15 – VOLATILES AND HYDROCARBON COLLECTED IN SUMMA CANISTER	8
4.0 RESULTS	9

LIST OF APPENDICES

A TEST DATA	11
A.1 Sample Location Data	12
A.2 Velocity, Moisture and Flow Rate Data	28
A.3 Organics and Sulfur Field and Laboratory Data	42
A.4 Quality Assurance Data	69
B GENERAL EMISSIONS CALCULATIONS	80
C QUALITY ASSURANCE	83
C.1 Quality Assurance Program Summary	84
C.2 SCAQMD and STAC Certifications	90
C.3 Individual QI Certifications	93
C.4 Statement of No Conflict of Interest	97
D FACILITY PERMIT	99
E FLARE NO. 1 REPORT	102

LIST OF TABLES

3-1 TEST PROCEDURES	7
4-1 H ₂ S AND TOTAL REDUCED SULFUR RESULTS	9
4-2 TRACE ORGANICS SPECIES RESULTS	10

1.0 INTRODUCTION

Montrose Air Quality Services, LLC (MAQS) was contacted by SCS Engineers (SCS) to conduct sampling at various locations on the vapor ventilation system located at the Chiquita Canyon Landfill (Chiquita), located in Castaic, California. Testing was conducted to comply with Condition 72 of the Modified Stipulated Order for Abatement (SOFA) issued to Chiquita by the South Coast Air Quality Management District (SCAQMD) on April 24, 2024. The tests were conducted according to the test protocol (MAQS Document Number W002AS-056454-PP-1074) and source test protocol evaluation (S/T ID: P24228). Testing results of the inlet of the flare prior to combustion can be found in the MAQS test report (MAQS Document Number W002AS-040568-RT-6437). The report is included in Appendix E of this report. The Montrose project manager was Mr. Pete San Juan. He was assisted by MAQS technician Jose Iniguez. Pete San Juan was the on-site qualified individual for MAQS. Rodney Davis from SCAQMD witnessed part of the testing. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the SCAQMD to conduct testing for criteria pollutants according to District Methods.

Equipment and facility information is provided in Section 2.0. Source test information is detailed in Section 3.0. Test results are provided in Section 4.0. Supplemental information is contained in the Appendices.

2.0 FACILITY AND SOURCE INFORMATION

The facility address is:

Physical Address: Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, California 91384

Sampling of leachate and condensate vapors was conducted from the following locations:

- The tank vents or manifolds which are representative of a set of tanks;
- The header/manifold from each leachate tank farm or manifold including Tank Farm #2, Tank Farm #6, Tank Farm #7A, Tank Farm #7B, Tank Farm #9A, and Tank Farm #9B. Testing was performed upstream of the piping connection to the LFG Collection and Conveyance System where landfill gas may affect results.

2.1 PROCESS EQUIPMENT INFORMATION

Vapors created from the volatilization of chemicals in the head space in the leachate tanks at tank farms #2, #6, #7A, #7B, #9A and #9B are transferred under vacuum through the wellhead and into the landfill gas collection system then to the flare station for combustion. The pressure and temperature of the vapors in the piping varies based on ambient temperatures during normal operation. The facility operates 24 hours per day.

3.0 TEST INFORMATION AND METHODOLOGY

The pollutants measured and test methodology are summarized in Table 3-1. Volume flow rate measurements were performed before the sample collection.

The field sampling procedures utilized during the test program are described below. The published reference methods provide greater detailed descriptions than in this section. The purpose of this section is to provide an overview of the sampling methods and any variations. The sampling procedures are based on SCAQMD, and EPA Reference Methods.

**TABLE 3-1
TEST PROCEDURES
TEST PROGRAM OVERVIEW
CHIQUITA CANYON LANDFILL
LEACHATE AND CONDENSATE VAPOR SAMPLING**

Parameter	Sample Medium	Analytical Technique	Reference Method	Number of Replicates
Flow Rate/Temperature	Pitot Tube / TC	Differential Pressure / Facility Meter	SCAQMD 2.1	1 for each location
Moisture	Wet Bulb/Dry Bulb	Psychrometric Chart	SCAQMD 4.1	1 for each location
H ₂ S and TRS	Tedlar Bag	GC/SCD	SCAQMD 307-91	1 for each location
TO-15 (Rule 1150.1)	Summa Can	GC/MS	EPA TO-15	1 for each location

3.1 SCAQMD METHOD 1.1 – SAMPLING AND VELOCITY TRAVERSES FOR STATIONARY SOURCES

A preliminary source test site assessment was performed prior to the source test in order to determine applicable sample point traverse locations. The stack diameter, and the distance from sample ports to disturbances (bends, flanges, etc.), both upstream and downstream, were measured. This information is utilized to determine the minimum number of sampling points per traverse, and the distance from the inner stack wall to each sample point location. All sample locations were located according to the minimum requirements of SCAQMD Method 1.1. Additionally, this method considers cyclonic flow patterns and in-situ stratified pollutant concentrations. Cyclonic flow tests were performed at locations where flow was measurable.

3.2 SCAQMD METHOD 2.1 – VELOCITY AND VOLUMETRIC FLOW RATE

The velocity of the gas stream was determined by using an "S" type or standard pitot tube, a low flow electronic manometer, and type "K" thermocouple with a digital temperature measuring device. The calibrated pitot tube is connected to the calibrated electronic Air Data Multimeter (ADM) manometer and leak checked. A temperature and delta P is obtained at each traverse point, and a duct static pressure is measured and recorded. The dry volumetric flow rate is determined from the gas velocity data, stack pressure, stack gas moisture content, stack gas molecular weight, and cross-sectional area of duct.

3.3 SCAQMD METHOD 3.1 – GAS ANALYSIS FOR DRY MOLECULAR WEIGHT AND EXCESS AIR

Leachate and condensate vapor gases were analyzed by GC for O₂ and CO₂.

3.4 SCAQMD METHOD 4.1 – DETERMINATION OF MOISTURE CONTENT IN STACK GASES

Moisture was measured using a wet bulb/dry bulb and calculated with a psychrometric chart.

3.5 SCAQMD METHOD 307-91 – HYDROGEN SULFIDE AND REDUCED SULFUR COMPOUNDS

Samples for determination of hydrogen sulfide and speciated reduced sulfur compounds were collected in Tedlar bags. The samples were analyzed by GC/SCD by Quantum Analytical Service, Inc. in Carson, California, following SCAQMD Method 307-91 protocol. The Tedlar bag samples are analyzed within 24 hours of sampling.

3.6 EPA METHOD TO-15 – VOLATILES AND HYDROCARBON COLLECTED IN SUMMA CANISTER

Samples were collected in glass silicate lined Summa canisters. The samples were analyzed by AtmAA Inc., located in Calabasas, California for volatile organics listed in SCAQMD Rule 1150.1 Table 1 list.

Sampling Procedure:

One summa can per location were filled with sample gas using an evacuated cylinder. The sampling probe was connected to the can with Teflon tubing. The samples were collected at a fixed point halfway into the sampling duct.

4.0 RESULTS

The emission results are presented in Tables 4-1 and 4-2. Site schematics and photographs are presented in Appendix A.1.

Due to extremely low flow rates at Tank Farm 6, 2, and 7B, Reference Method measurements were unable to be performed. Flow rates for these locations were taken from the installed facility meters.

TABLE 4-1
H₂S AND TOTAL REDUCED SULFUR RESULTS
CHIQUITA CANYON LANDFILL
LEACHATE AND CONDENSATE VAPOR SAMPLING
OCTOBER 17, 2024

Parameter/Units	Tank Farm 6	Tank Farm 9A	Tank Farm 9B	Tank Farm 2	Tank Farm 7B	Tank Farm 7A
O ₂ , %	0.28	21.35	21.33	20.30	21.37	21.57
CO ₂ , %	46.82	0.10	0.10	3.43	0.38	0.10
N ₂ , %	0.55	77.45	77.29	73.24	76.82	77.58
H ₂ O, %	3.49	2.80	3.00	3.42	3.60	3.09
Flow Rate, scfm	5.2 ⁽¹⁾	232	268	3.7 ⁽¹⁾	20 ⁽¹⁾	99
Temperature, °F	83	83	81	85	84	86
Sulfur Compounds						
H ₂ S, ppm	37.64	<0.05	<0.05	0.34	0.05	<0.05
Carbonyl Sulfide, ppm	<0.05	<0.05	<0.05	0.38	<0.05	<0.05
Methyl Mercaptan, ppm	21.06	<0.05	0.06	1.23	0.60	<0.05
Ethyl Mercaptan, ppm	0.59	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethyl Sulfide, ppm	192.40	0.49	3.18	78.49	7.34	2.08
Unidentified S Compounds, ppm	8.8	<0.05	0.14	14.29	0.74	0.63
Total Sulfur Compounds						
Total Reduced Sulfur Inlet, ppm	260.4	0.49	3.38	94.73	8.73	2.71

Notes:

(1) Flow rate was not able to be measured, Flow rate was obtained from the installed meter.

TABLE 4-2
TRACE ORGANICS SPECIES RESULTS
CHIQUITA CANYON LANDFILL
LEACHATE AND CONDENSATE VAPOR SAMPLING
OCTOBER 17, 2024

Sample Location:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B	Tank Farm 2	Tank Farm 7B	Tank Farm 7A
Test No.:	1	1	1	1	1	1
Start Time:	939	1030	1030	1130	1207	1300
Flow Rate, scfm:	5.2*	232	268	3.7*	20*	99
Species	ppb	ppb	ppb	ppb	ppb	ppb
Hydrogen sulfide:	11,135	< 150	< 150	< 150	< 150	< 150
Benzene:	15,950	< 1,080	< 445	< 11,100	< 1,130	< 690
Benzyl Chloride:	< 100	< 100	< 100	< 100	< 100	< 100
Chlorobenzene:	267	< 100	< 100	< 100	< 100	< 100
Dichlorobenzenes:**	2,620	< 383	< 150	< 565	< 150	< 150
1,1-dichloroethane:	< 100	< 100	< 100	< 100	< 100	< 100
1,2-dichloroethane:	< 100	< 100	< 100	< 100	< 100	< 100
1,1-dichloroethylene:	< 100	< 100	< 100	< 100	< 100	< 100
Dichloromethane:	< 225	< 225	< 225	< 225	< 225	< 225
1,2-dibromoethane:	< 60	< 60	< 60	< 60	< 60	< 60
Perchloroethylene:	< 60	< 60	< 60	< 60	< 60	< 60
Carbon Tetrachloride:	< 125	< 125	< 125	< 125	< 125	< 125
Toluene:	65,650	< 7,260	< 2,350	< 4,810	< 1,860	< 2,750
1,1,1-trichloroethane:	518	< 809	< 493	< 395	< 439	< 654
Trichloroethene:	< 75	< 75	< 75	< 75	< 75	< 75
Chloroform:	< 80	< 80	< 80	< 80	< 80	< 80
Vinyl Chloride:	< 80	< 80	< 80	< 80	< 80	< 80
M+P-xylenes:	26,700	< 3,330	< 1,200	< 3,250	< 1,090	< 1,780
O-xylene:	7,625	< 964	< 344	< 1,160	< 330	< 532
Bromomethane:	< 55	< 55	< 55	< 55	< 55	< 55
1,4-Dioxane:	186	< 125	< 125	< 820	< 152	< 268

< - indicates that the species was not detected in the sample above the analytical detection limit for this species.

The values reported is the detection limit for the species and the actual concentration is lower.

*Flow rate was not able to be measured, Flow rate was obtained from the installed meter.

**Total amount containing meta, para, and ortho isomers.

APPENDIX A TEST DATA

Appendix A.1

Sample Location Data

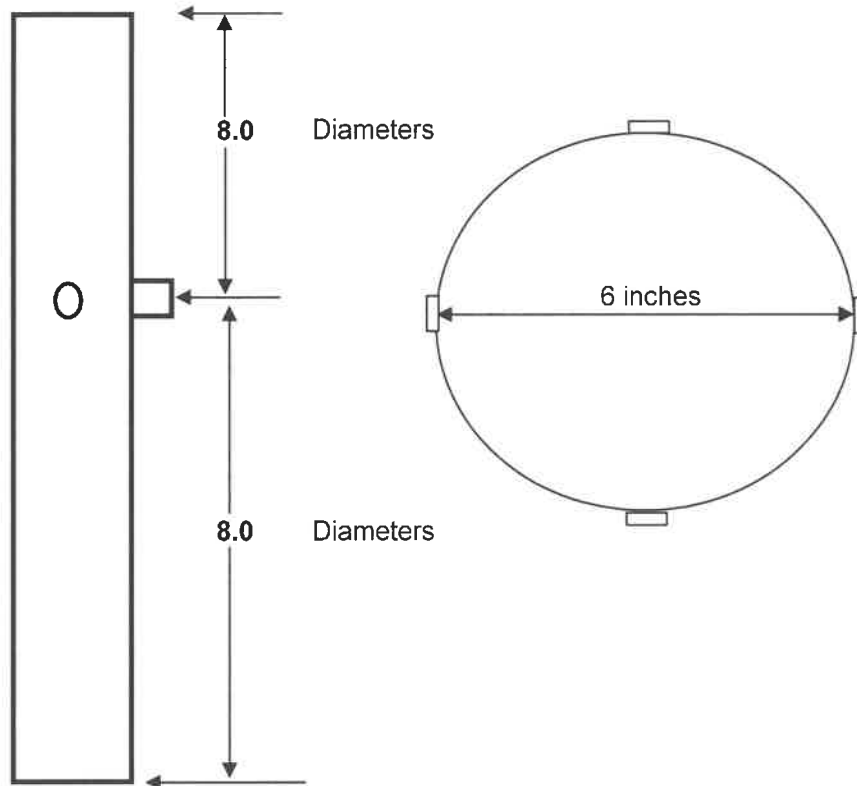
METHOD 1 DATA SHEET INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 6

Performed By: SJ, JI



Diameter (inches)	<u>6.00</u>
Upstream (inches)	<u>48.00</u>
Downstream (inches)	<u>48.00</u>
Coupling (in.)	<u>0.00</u>
Stack Area (ft ²)	<u>0.20</u>

Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
1	4.4	0.5	0.5
2	14.6	0.9	0.9
3	29.6	1.8	1.8
4	70.4	4.2	4.2
5	85.4	5.1	5.1
6	95.6	5.7	5.7

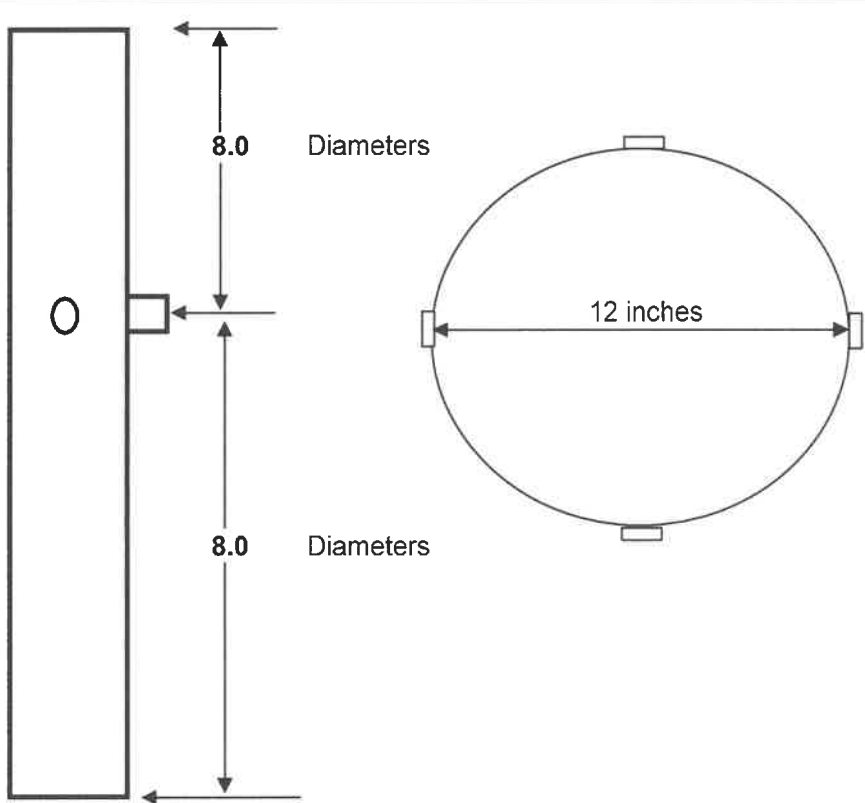
METHOD 1 DATA SHEET INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 9A

Performed By: SJ, JI



Diameter (inches)	12.00		Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
Upstream (inches)	96.00		1	4.4	0.5	0.5
Downstream (inches)	96.00		2	14.6	1.8	1.8
			3	29.6	3.6	3.6
			4	70.4	8.4	8.4
Coupling (in.)	0.00		5	85.4	10.2	10.2
Stack Area (ft ²)	0.79		6	95.6	11.5	11.5

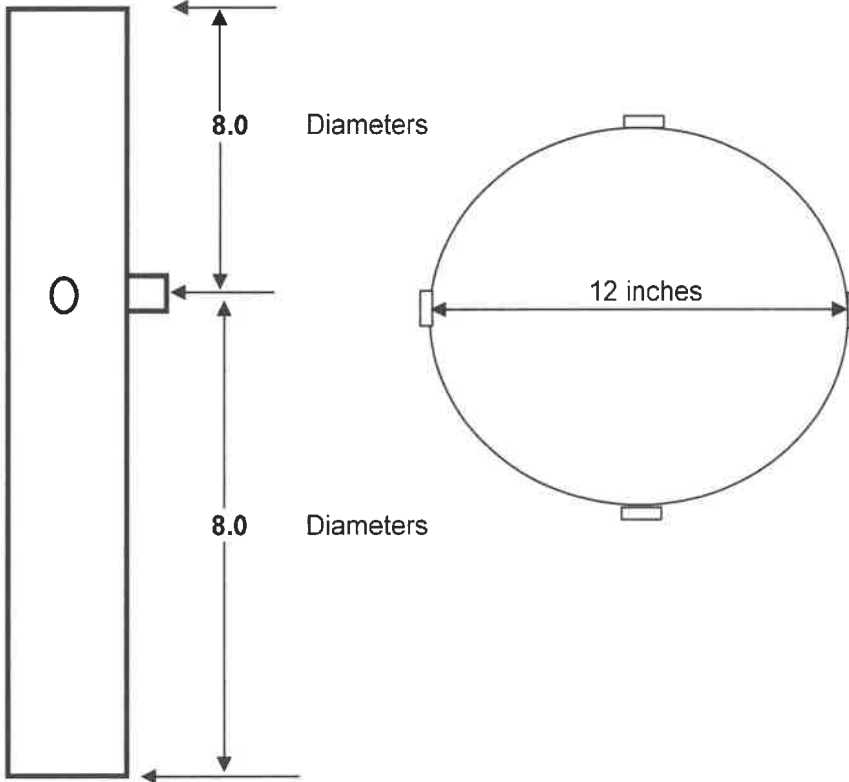
METHOD 1 DATA SHEET INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 9B

Performed By: SJ, JI



The diagram illustrates the inlet sample location. It shows a vertical rectangular stack with a circular inlet. The inlet has a diameter of 12 inches. The distance from the inlet to the top and bottom of the stack is 8.0 diameters. The stack has a diameter of 12 inches.

Diameter (inches)	12.00	Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
Upstream (inches)	96.00	1	4.4	0.5	0.5
Downstream (inches)	96.00	2	14.6	1.8	1.8
Coupling (in.)	0.00	3	29.6	3.6	3.6
Stack Area (ft ²)	0.79	4	70.4	8.4	8.4
		5	85.4	10.2	10.2
		6	95.6	11.5	11.5

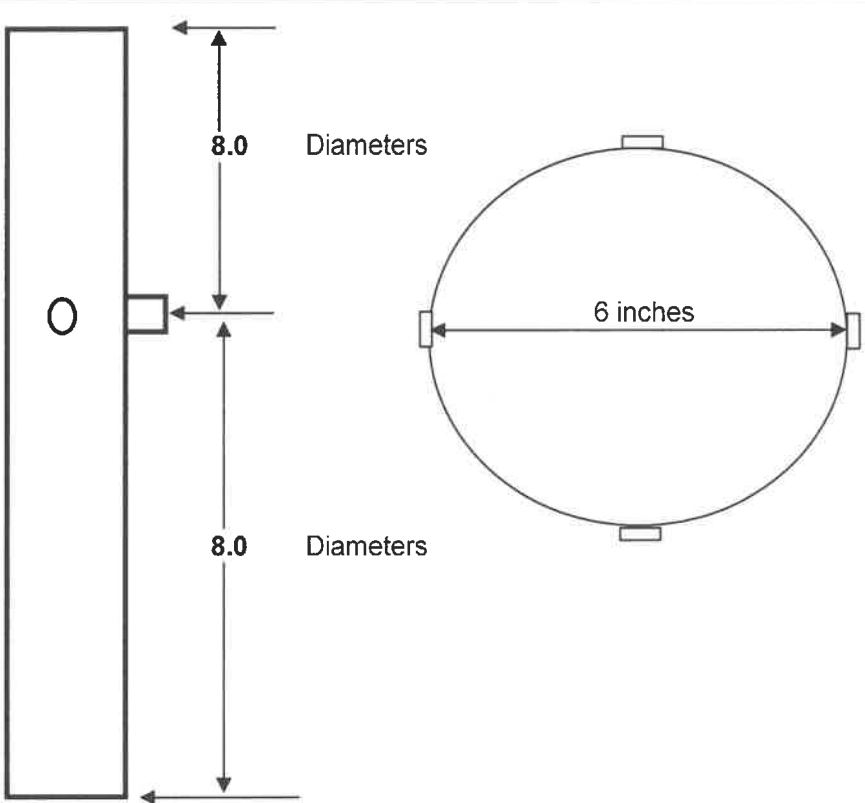
METHOD 1 DATA SHEET INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 2

Performed By: SJ, JI



Diameter (inches)	6.00		Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
Upstream (inches)	48.00		1	4.4	0.5	0.5
Downstream (inches)	48.00		2	14.6	0.9	0.9
Coupling (in.)	0.00		3	29.6	1.8	1.8
Stack Area (ft ²)	0.20		4	70.4	4.2	4.2
			5	85.4	5.1	5.1
			6	95.6	5.7	5.7

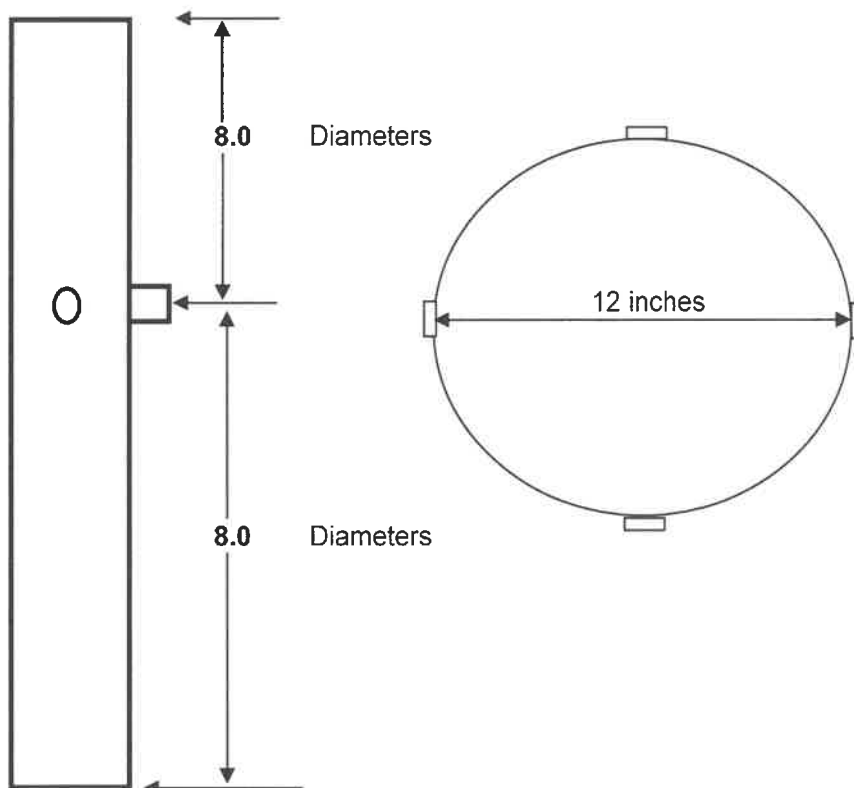
METHOD 1 DATA SHEET INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 7B

Performed By: SJ, JI



Diameter (inches)	<u>12.00</u>
Upstream (inches)	<u>96.00</u>
Downstream (inches)	<u>96.00</u>
Coupling (in.)	<u>0.00</u>
Stack Area (ft ²)	<u>0.79</u>

Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
1	4.4	0.5	0.5
2	14.6	1.8	1.8
3	29.6	3.6	3.6
4	70.4	8.4	8.4
5	85.4	10.2	10.2
6	95.6	11.5	11.5

METHOD 1 DATA SHEET INLET SAMPLE LOCATION

Client: SCS Field Services

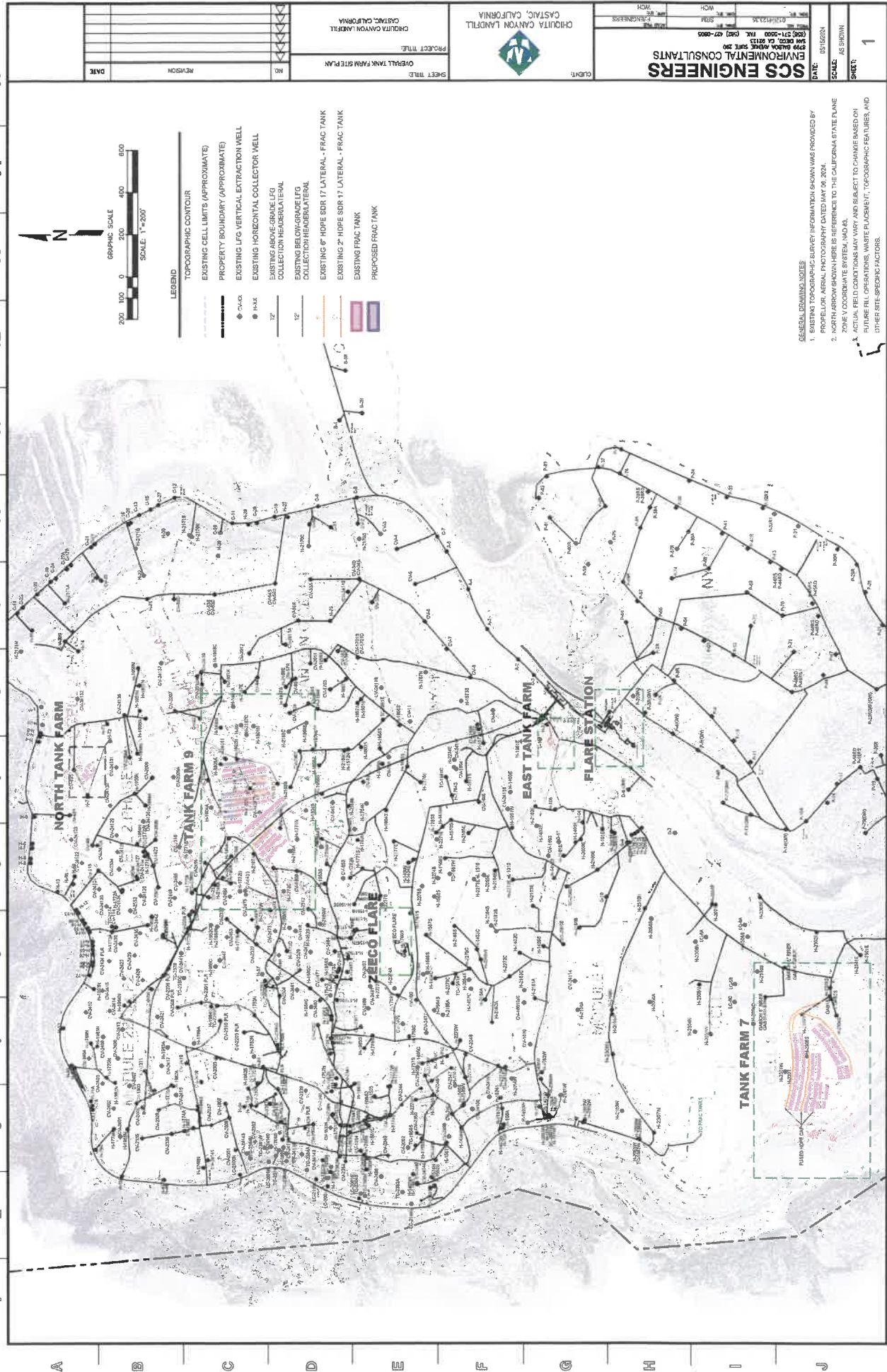
Date: 10/17/24

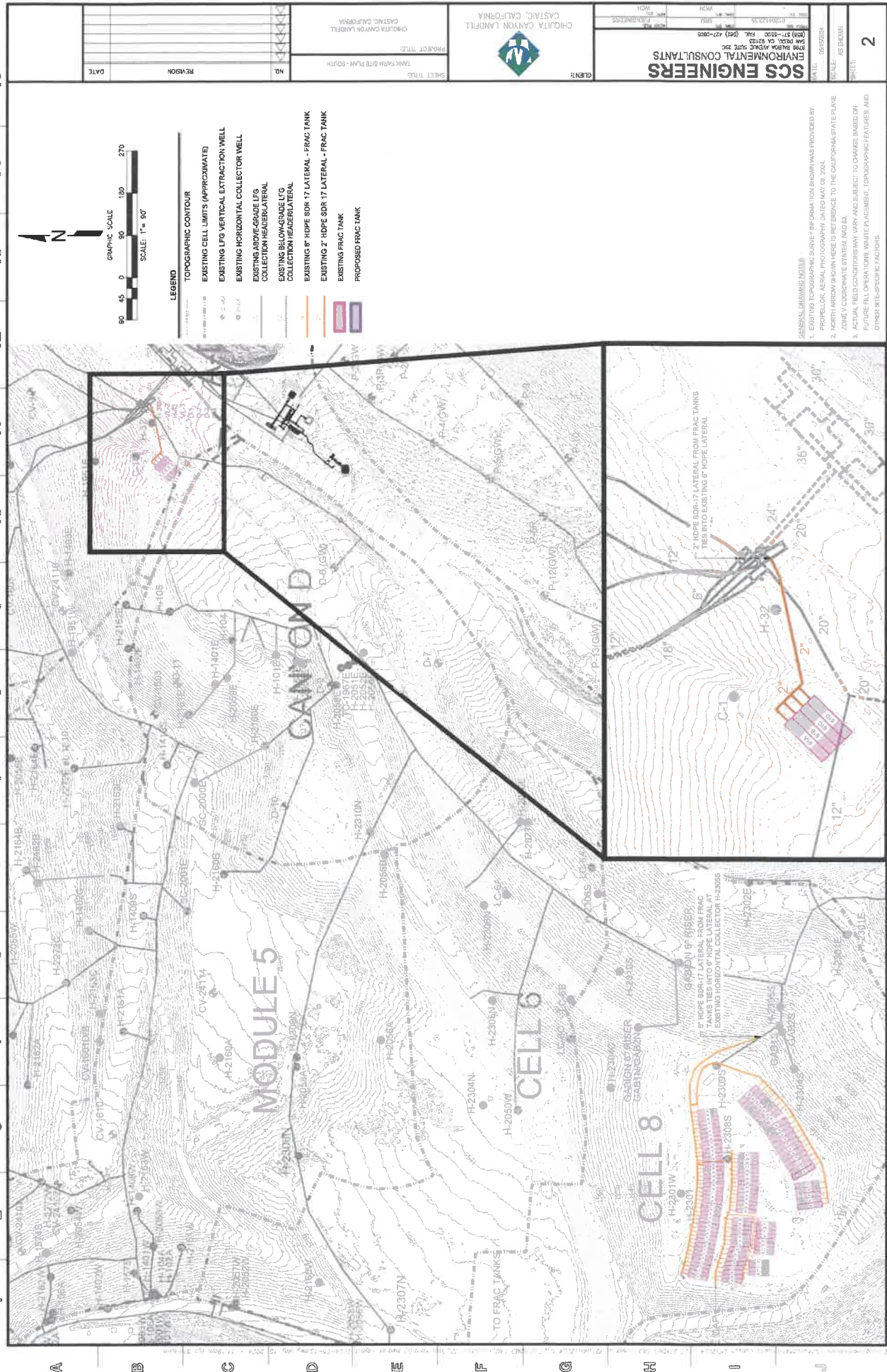
Location: Chiquita TF 7A

Performed By: SJ, JI

Diameter (inches)	<u>12.00</u>
Upstream (inches)	<u>96.00</u>
Downstream (inches)	<u>96.00</u>
Coupling (in.)	<u>0.00</u>
Stack Area (ft ²)	<u>0.79</u>

Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
1	4.4	0.5	0.5
2	14.6	1.8	1.8
3	29.6	3.6	3.6
4	70.4	8.4	8.4
5	85.4	10.2	10.2
6	95.6	11.5	11.5





TANK FARM 6



TANK FARM 9A



TANK FARM 9B



TANK FARM 2



TANK FARM 7B



TANK FARM 7A



Appendix A.2

Velocity, Moisture and Flow Rate Data

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS				
Station: Chiquita Canyon Landfill				
Unit: Tank Farm 6				
Performed By: SJ, JI				
Cp: 0.84				
T _{ref} : 60 °F				
Stack Area: 0.196 ft ²				
TEST VARIABLES				
Start Date: 10/17/24				
Start/End Time: 9:39 10:09				
Test Condition: Normal				
Barom. Pressure: 29.05				
Pstack: 0.00 iwg				
Pstack: 29.05 "Hg				
MW Wet: 27.39 lb/lb-mole				
MW Dry: 27.73 lb/lb-mole				
Moisture				
Moisture Content: 3.49 % From WbDb				
Fuel Gas Composition Data				
O ₂ : 0.28 % From canister analysis				
CO ₂ : 46.82 % From canister analysis				
N ₂ : 0.55 % From canister analysis				
CH ₄ : 43.05 % From canister analysis				
METHOD 2.1 DATA				
Point	dP (in. H ₂ O)	sqrt(dP)	Temp °F	Vel. (fps)
1			83	
2			83	
3			83	
4			83	
5			83	
6			83	
1			83	
2			83	
3			83	
4			83	
5			83	
6			83	
Average			83	
Flow Rate: *5.2 scfm				

*Fuel Flow Rate from facility meter

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS				
Station: Chiquita Canyon Landfill				
Unit: Tank Farm 9A				
Performed By: SJ, JI				
Cp: 0.84				
T _{ref} : 60 °F				
Stack Area: 0.785 ft ²				
TEST VARIABLES				
Start Date: 10/17/24				
Start/End Time: 10:30 11:00				
Test Condition: Normal				
Barom. Pressure: 29.05				
Pstack: 0.00 iwg				
Pstack: 29.05 "Hg				
MW Wet: 28.28 lb/lb-mole				
MW Dry: 28.58 lb/lb-mole				
Moisture				
Moisture Content: 2.80 % From WbDb				
Fuel Gas Composition Data				
O ₂ : 21.35 % From canister analysis				
CO ₂ : 0.10 % From canister analysis				
N ₂ : 77.45 % From canister analysis				
CH ₄ : 0.1 % From canister analysis				
METHOD 2.1 DATA				
Point	dP (in. H ₂ O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.008	0.0894	83	5.30
2	0.007	0.0837	83	4.95
3	0.009	0.0949	83	5.62
4	0.006	0.0775	83	4.59
5	0.008	0.0894	83	5.30
6	0.009	0.0949	83	5.62
1	0.008	0.0894	83	5.30
2	0.009	0.0949	83	5.62
3	0.009	0.0949	83	5.62
4	0.007	0.0837	83	4.95
5	0.008	0.0894	83	5.30
6	0.008	0.0894	83	5.30
Average	0.0080	0.0893	83	5.29
Flow Rate: 249 wacfm				
Flow Rate: 232 scfm				
Flow Rate: 224 dscfm				

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS				
Station: Chiquita Canyon Landfill				
Unit: Tank Farm 9B				
Performed By: SJ, JI				
Cp: 0.84				
T _{ref} : 60 °F				
Stack Area: 0.785 ft ²				
TEST VARIABLES				
Start Date: 10/17/24				
Start/End Time: 10:30 11:00				
Test Condition: Normal				
Barom. Pressure: 29.05				
Pstack: 0.00 iwg				
Pstack: 29.05 "Hg				
MW Wet: 28.21 lb/lb-mole				
MW Dry: 28.53 lb/lb-mole				
Moisture				
Moisture Content: 3.00 % From WbDb				
Fuel Gas Composition Data				
O ₂ : 21.33 % From canister analysis				
CO ₂ : 0.10 % From canister analysis				
N ₂ : 77.29 % From canister analysis				
CH ₄ : 0.1 % From canister analysis				
METHOD 2.1 DATA				
Point	dP (in. H ₂ O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.009	0.0949	81	5.61
2	0.011	0.1049	81	6.20
3	0.012	0.1095	81	6.48
4	0.009	0.0949	81	5.61
5	0.008	0.0894	81	5.29
6	0.010	0.1000	81	5.91
1	0.009	0.0949	81	5.61
2	0.013	0.1140	81	6.74
3	0.012	0.1095	81	6.48
4	0.011	0.1049	81	6.20
5	0.016	0.1265	81	7.48
6	0.009	0.0949	81	5.61
Average	0.0106	0.1032	81	6.10
Flow Rate: 287 wacfm				
Flow Rate: 268 scfm				
Flow Rate: 258 dscfm				

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS				
Station: Chiquita Canyon Landfill				
Unit: Tank Farm 2				
Performed By: SJ, JI				
Cp: 0.84				
T _{ref} : 60 °F				
Stack Area: 0.196 ft ²				
TEST VARIABLES				
Start Date: 10/17/24				
Start/End Time: 11:30 12:00				
Test Condition: Normal				
Barom. Pressure: 29.05				
Pstack: 0.00 iwg				
Pstack: 29.05 "Hg				
MW Wet: 28.46 lb/lb-mole				
MW Dry: 28.83 lb/lb-mole				
Moisture				
Moisture Content: 3.42 % From WbDb				
Fuel Gas Composition Data				
O ₂ : 20.30 % From canister analysis				
CO ₂ : 3.43 % From canister analysis				
N ₂ : 73.24 % From canister analysis				
CH ₄ : 1.98 % From canister analysis				
METHOD 2.1 DATA				
Point	dP (in. H ₂ O)	sqrt(dP)	Temp °F	Vel. (fps)
1			85	
2			85	
3			85	
4			85	
5			85	
6			85	
1			85	
2			85	
3			85	
4			85	
5			85	
6			85	
Average			85	
Flow Rate: *3.7 scfm				

*Fuel Flow Rate from facility meter

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS				
Station: Chiquita Canyon Landfill				
Unit: Tank Farm 7B				
Performed By: SJ, JI				
Cp: 0.84				
T _{ref} : 60 °F				
Stack Area: 0.785 ft ²				
TEST VARIABLES				
Start Date: 10/17/24				
Start/End Time: 12:07 12:37				
Test Condition: Normal				
Barom. Pressure: 29.05				
Pstack: 0.00 iwg				
Pstack: 29.05 "Hg				
MW Wet: 28.15 lb/lb-mole				
MW Dry: 28.53 lb/lb-mole				
Moisture				
Moisture Content: 3.60 % From WbDb				
Fuel Gas Composition Data				
O ₂ : 21.37 % From canister analysis				
CO ₂ : 0.38 % From canister analysis				
N ₂ : 76.82 % From canister analysis				
CH ₄ : 0.1 % From canister analysis				
METHOD 2.1 DATA				
Point	dP (in. H ₂ O)	sqrt(dP)	Temp °F	Vel. (fps)
1			84	
2			84	
3			84	
4			84	
5			84	
6			84	
1			84	
2			84	
3			84	
4			84	
5			84	
6			84	
Average			84	
Flow Rate: *20 scfm				

*Fuel Flow Rate from facility meter

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS				
Station: Chiquita Canyon Landfill				
Unit: Tank Farm 7A				
Performed By: SJ, JI				
Cp: 0.84				
T _{ref} : 60 °F				
Stack Area: 0.785 ft ²				
TEST VARIABLES				
Start Date: 10/17/24				
Start/End Time: 13:00 13:30				
Test Condition: Normal				
Barom. Pressure: 29.05				
P _{stack} : 0.00 iwg				
P _{stack} : 29.05 "Hg				
MW Wet: 28.35 lb/lb-mole				
MW Dry: 28.68 lb/lb-mole				
Moisture				
Moisture Content: 3.09 % From WbDb				
Fuel Gas Composition Data				
O ₂ : 21.57 % From canister analysis				
CO ₂ : 0.10 % From canister analysis				
N ₂ : 77.58 % From canister analysis				
CH ₄ : 0.1 % From canister analysis				
METHOD 2.1 DATA				
Point	dP (in. H ₂ O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.002	0.0447	86	2.66
2	0.002	0.0447	86	2.66
3	0.001	0.0316	86	1.88
4	0.002	0.0447	86	2.66
5	0.002	0.0447	86	2.66
6	0.001	0.0316	86	1.88
1	0.001	0.0316	86	1.88
2	0.002	0.0447	86	2.66
3	0.001	0.0316	86	1.88
4	0.001	0.0316	86	1.88
5	0.001	0.0316	86	1.88
6	0.002	0.0447	86	2.66
Average	0.0015	0.0382	86	2.27
Flow Rate: 107 wacfm				
Flow Rate: 99 scfm				
Flow Rate: 96 dscfm				

MONTROSE AQS
Duct Moisture by Wet bulb/Dry bulb Measurements

Facility: Chiquita Canyon Landfill
 CEM I.D. : T-4

TEST DATE: October 17, 2024

BY: PSJ

$$B_{ws} = \frac{e''}{P_a}$$

$$e_a = e'' - \frac{(P_a - e'')[T_{dry} - T_{wet}]}{2800 - 1.3 \times T_{wet}}$$

	P _{bar}	Static Pressure (in. of H ₂ O)	P _a	T _{dry}	T _{wet}	e _a	B _{ws}	e''
Tank Farm 6	29.05	0.0	29.05	83	80	1.0129	3.49	1.044066
Tank Farm 9A	29.05	0.0	29.05	83	75	0.812402	2.80	0.895744
Tank Farm 9B	29.05	0.0	29.05	81	76	0.871738	3.00	0.923801
Tank Farm 2	29.05	0.0	29.05	85	80	0.992126	3.42	1.044066
Tank Farm 7B	29.05	0.0	29.05	84	81	1.045181	3.60	1.076324
Tank Farm 7A	29.05	0.0	29.05	86	78	0.899046	3.09	0.982252

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: C41001TA
UNIT: TE 6
TEST DATE: 10/12/24
TEST NUMBER: 1
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: ELECTRONIC
ΔP INDICATOR ID: ADM 850 #9

PERFORMED BY: SS / JF
 BAR. PRESSURE: 29.05
 STATIC PRESSURE: -
 TC READOUT ID: PTC 43
 TC ID: 30
 PITOT TUBE ID: 30
 PITOT TUBE COEFFICIENT: 0.84
 ZERO: ✓ LEVEL: ✓

[illegible]

Comments:

FLUE GAS VELOCITY DATASHEET

CLIENT: <u>SLS ENGINEERS</u>	PERFORMED BY: <u>ST, JI</u>
LOCATION: <u>CHIQUITA</u>	BAR. PRESSURE: <u>29.05</u>
UNIT: <u>TE 9A</u>	STATIC PRESSURE: <u>0.0</u>
TEST DATE: <u>10/17/24</u>	TC READOUT ID: <u>PtC43</u>
TEST NUMBER: <u>1</u>	TC ID: <u>30</u>
LEAK CHECK PRE- ☒ POST- ☒	PITOT TUBE ID: <u>30</u>
ΔP INDICATOR TYPE: <u>ELECTRONIC</u>	PITOT TUBE COEFFICIENT: <u>0.84</u>
ΔP INDICATOR ID: <u>AOM 850 #9</u>	ZERO: ☒ LEVEL: ☒

Cycl Time	Port	Point	Vel. Head in. H ₂ O	Temp., °F	Cycl Time	Port	Point	Vel. Head in. H ₂ O	Temp., °F
0	T	1	0.008	83	0	5	1	0.008	83
↓		2	0.007	↓	↓		2	0.009	↓
		3	0.009				3	0.009	
		4	0.006				4	0.007	
		5	0.008				5	0.008	
		6	0.009				6	0.008	
		WB = 75							
		DB = 83							

Comments: ANGIE FINDEL - AF-1

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS

PERFORMED BY: SJ, I

LOCATION: CHIQUITA

BAR. PRESSURE: 29.05

UNIT: TF 9B

STATIC PRESSURE: 0.0

TEST DATE: 10/17/24

TC READOUT ID: PTC43

TEST NUMBER: 1

TC ID: 30

LEAK CHECK PRE- ✓ POST- ✓

PITOT TUBE ID: 30

ΔP INDICATOR TYPE: ELECTRONIC

PITOT TUBE COEFFICIENT: 0.84

ΔP INDICATOR ID: ADM850#9

ZERO: ✓ LEVEL: ✓

[illegible]

Comments: ANGLE FINDER - AF-1

FLUE GAS VELOCITY DATASHEET

CLIENT: <u>SCS ENGINEERS</u>	PERFORMED BY: <u>SS / JT</u>
LOCATION: <u>CHILQUITA</u>	BAR. PRESSURE: <u>29.05</u>
UNIT: <u>TE-2</u>	STATIC PRESSURE: <u>0.0</u>
TEST DATE: <u>10/17/24</u>	TC READOUT ID: <u>PtC43</u>
TEST NUMBER: <u>1</u>	TC ID: <u>32</u>
LEAK CHECK PRE- ☒ POST- ☒	PITOT TUBE ID: <u>32</u>
ΔP INDICATOR TYPE: <u>ELECTRONIC</u>	PITOT TUBE COEFFICIENT: <u>0.84</u>
ΔP INDICATOR ID: <u>ADM 850 #9</u>	ZERO: ☒ LEVEL: ☒

[illegible]

Comments:

FLUE GAS VELOCITY DATASHEET

 CLIENT: SOS ENGINEERS

 PERFORMED BY: ST/JI

 LOCATION: CHIRQUITA

 BAR. PRESSURE: 29.05

 UNIT: TF 7B

 STATIC PRESSURE: 0.0

 TEST DATE: 10/12/24

 TC READOUT ID: PTL43

 TEST NUMBER: 1

 TC ID: 30

 LEAK CHECK PRE- ☒ POST- ☒

 PITOT TUBE ID: 30

 ΔP INDICATOR TYPE: ELECTRONIC

 PITOT TUBE COEFFICIENT: 0.84

 ΔP INDICATOR ID: ADN 850 #9

 ZERO: ☒ LEVEL: ☒

<u>CYCL</u> Time	Port	Point	Vel. Head in. H ₂ O	Temp., °F	<u>CYCL</u> Time	Port	Point	Vel. Head in. H ₂ O	Temp., °F
<u>N/A</u>	<u>T</u>	<u>1</u>	<u>NO FLOW</u>	<u>84</u>	<u>N/A</u>	<u>S</u>	<u>1</u>	<u>NO FLOW</u>	<u>84</u>
<u>↓</u>		<u>2</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>		<u>2</u>	<u>↓</u>	<u>↓</u>
		<u>3</u>					<u>3</u>		
		<u>4</u>					<u>4</u>		
<u>↓</u>		<u>5</u>			<u>↓</u>		<u>5</u>		
		<u>6</u>	<u>↓</u>	<u>↓</u>			<u>6</u>	<u>↓</u>	<u>↓</u>
			<u>WB = 81</u>						
			<u>DB = 84</u>						

Comments: _____

FLUE GAS VELOCITY DATASHEET

CLIENT: <u>SLS ENGINEERS</u>	PERFORMED BY: <u>SJ/JF</u>
LOCATION: <u>CHILQUITA</u>	BAR. PRESSURE: <u>29.05</u>
UNIT: <u>TF-7A</u>	STATIC PRESSURE: <u>0.0</u>
TEST DATE: <u>10/17/24</u>	TC READOUT ID: <u>PTC43</u>
TEST NUMBER: <u>1</u>	TC ID: <u>30</u>
LEAK CHECK PRE- ☒ POST- ☒	PITOT TUBE ID: <u>30</u>
ΔP INDICATOR TYPE: <u>EXTERNAL</u>	PITOT TUBE COEFFICIENT: <u>0.84</u>
ΔP INDICATOR ID: <u>APM85049</u>	ZERO: ☒ LEVEL: ☒

[illegible]

Comments: ANGLE FINDER - AF-1

Appendix A.3

Organics and Sulfur Field and Laboratory Data

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIRQUITA Date: 10/17/24

Unit/Location: TANK FARM 6 Performed By: SS, JI

Barometric Pressure 29.05 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0529	
		Time	Vacuum
Pre-Test Leak Check	Start	0910	30
Pre-Test Leak Check	Stop	0920	30
Sample Collection	Start	0939	30
	10	0949	20
	20	0959	10
End →	30	1009	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1015	5
Post-Test Leak Check	Stop	1025	5

FLOWRATE DATA

Diameter: 6"

Upstream: >48

Downstream: >48

Flow Rate: 5.2 SCFM

Wet bulb: 80

Dry bulb: 83

TEDLAR BAG DATA

Start: 0950

Stop: 1000

Bag ID: TF 6 - 1

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 10/17/24

Unit/Location: TANK FARM 9A Performed By: SS/JF

Barometric Pressure 29.05 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0889	
		Time	Vacuum
Pre-Test Leak Check	Start	0910	29
Pre-Test Leak Check	Stop	0920	29
Sample Collection	Start	1030	29
	10	1040	20
	20	1050	10
END →	30	1100	5
Sample Collection	Stop		
Post-Test Leak Check	Start	1110	5
Post-Test Leak Check	Stop	1120	5

FLOWRATE DATA

Diameter: 12"

Upstream: 796

Downstream: 796

Flow Rate: 240 SCFM

Wet bulb: 75

Dry bulb: 83

TEDLAR BAG DATA

Start: 1040

Stop: 1050

Bag ID: TF 9A-1

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIRQUITA Date: 10/17/24
 Unit/Location: TANK FARM 9B Performed By: ST, JF
 Barometric Pressure 29.05 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0516	
		Time	Vacuum
Pre-Test Leak Check	Start	0910	30
Pre-Test Leak Check	Stop	0920	30
Sample Collection	Start	1030	30
	10	1040	21
	20	1050	12
End →	30	1100	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1110	5
Post-Test Leak Check	Stop	1120	5

FLOWRATE DATA

Diameter: 12"
 Upstream: 796
 Downstream: 796
 Flow Rate: 290 scfm
 Wet bulb: 76
 Dry bulb: 81

TEDLAR BAG DATA

Start: 1050
 Stop: 1100
 Bag ID: TF9B - 1

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHILQUITA Date: 10/17/24

Unit/Location: TANK FARM 2 Performed By: SS/JI

Barometric Pressure 29.05 Ambient Temperature 80°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0553	
		Time	Vacuum
Pre-Test Leak Check	Start	0910	30
Pre-Test Leak Check	Stop	0930	30
Sample Collection	Start	1130	30
	10	1140	20
	20	1150	11
end →	30	1200	5
Sample Collection	Stop		
Post-Test Leak Check	Start	1215	5
Post-Test Leak Check	Stop	1225	5

FLOWRATE DATA

Diameter: 6"

Upstream: 748

Downstream: 748

Flow Rate: 3.7 scfm

Wet bulb: 80

Dry bulb: 85

TEDLAR BAG DATA

Start: 1140

Stop: 1150

Bag ID: TF2 - 1

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIRQUITA Date: 10/17/24

Unit/Location: TANK FARM 7B Performed By: JS/JP

Barometric Pressure 29.05 Ambient Temperature 81°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0592	
		Time	Vacuum
Pre-Test Leak Check	Start	0410	30
Pre-Test Leak Check	Stop	0420	30
Sample Collection	Start	1207	30
	10	1217	21
	20	1227	11
End →	30	1237	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1245	5
Post-Test Leak Check	Stop	1255	5

FLOWRATE DATA

Diameter: 12"

Upstream: 796

Downstream: 796

Flow Rate: 20 SCFM

Wet bulb: 81

Dry bulb: 84

TEDLAR BAG DATA

Start: 1220

Stop: 1230

Bag ID: TF7B-1

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHILQUITA Date: 10/17/24

Unit/Location: TANK FARM 7A Performed By: SS/JS

Barometric Pressure 29.05 Ambient Temperature 82°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0585	
		Time	Vacuum
Pre-Test Leak Check	Start	0910	30
Pre-Test Leak Check	Stop	0920	30
Sample Collection	Start	1300	30
	10	1310	20
	20	1320	10
End →	30	1330	5
Sample Collection	Stop		
Post-Test Leak Check	Start	1340	5
Post-Test Leak Check	Stop	1350	5

FLOWRATE DATA

Diameter: 12"

Upstream: 796

Downstream: 796

Flow Rate: 101 SCFM

Wet bulb: 78

Dry bulb: 86

TEDLAR BAG DATA

Start: 1310

Stop: 1320

Bag ID: TF7A-1



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LABORATORY ANALYSIS REPORT

Permanent Gases Analysis in Silco Canister Samples by Method ASTM D1946-90

Report Date: November 14, 2024
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-044747
Date Received: October 23, 2024
Date Analyzed: November 13, 2024

ANALYSIS DESCRIPTION

Permanent gases were measured by thermal conductivity detection/gas chromatography (TCD/GC), ASTM D1946-90.

AtmAA Lab No.:	22974-25	22974-26	22974-27
Sample I.D.:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B

Components	(Concentration in %,v)		
Nitrogen	0.55	77.45	77.29
Oxygen	0.28	21.35	21.33
Methane	43.05	<0.10	<0.10
Carbon dioxide	46.82	<0.10	<0.10
Hydrogen	5.82	<0.10	<0.10

The reported oxygen concentration includes any argon present in the sample. Calibration is based on a standard atmosphere containing 20.95% oxygen and 0.93% argon. The accuracy of permanent gas analysis by TCD/GC is +/- 2%, actual results are reported. Actual analysis results are reported on a "wet" basis.

Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Location: Chiquita Landfill
Date Received: October 23, 2024
Date Analyzed: November 13, 2024

Components	Sample ID	Repeat Analysis		Mean Conc.	% RPD
		Run #1	Run #2		
		(Concentration in %,v)			
Nitrogen	Tank Farm 6	0.56	0.54	0.55	4.8
Oxygen	Tank Farm 6	0.27	0.29	0.28	4.7
Methane	Tank Farm 6	43.04	43.06	43.05	0.06
Carbon dioxide	Tank Farm 6	46.81	46.83	46.82	0.06
Hydrogen	Tank Farm 6	7.58	7.59	7.59	0.17

Three Silco canister samples, laboratory number 22974-(25-27), were analyzed for permanent gases. Agreement between repeat analyses is a measure of precision and is shown above in the column "% RPD". The average % RPD for 5 repeat measurements from three Silco canister samples is 1.9%.





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LABORATORY ANALYSIS REPORT I

Speciated Hydrocarbons Analysis in Silco Canister Samples

Report Date: November 14, 2024
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-044747
Date Received: October 23, 2024
Date Analyzed: November 13, 2024
Laboratory Temp: 74.5 °F
Barometric Pressure: 29.85 inHg

ANALYSIS DESCRIPTION

Hydrocarbon speciation analysis was performed by flame ionization detection/gas chromatography (FID/GC), modified EPA-18. Methane was measured by thermal conductivity detection/gas chromatography (TCD/GC), ASTM D1946-90

AtmAA Lab No.:	22974-25	22974-26	22974-27
Sample ID:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B
Component	(Concentration in ppmv, component)		
Methane	430500	676	210
Ethene	<0.20	<0.20	<0.20
Acetylene	<0.20	<0.20	<0.20
Ethane	11.3	<0.20	<0.20
Non-methane hydrocarbons analysis by carbon number grouping			
C3	129	0.37	1.38
C4	232	6.38	145
C5	1339	48.3	127
C6	905	32.1	70.2
C7	258	6.86	10.6
C8	388	15.3	7.36
C9	442	23.0	5.41
C10	211	47.0	16.1
C11	30.3	10.6	4.07
C12	7.06	5.85	2.44
C13	0.97	1.22	0.79
C14	<0.03	0.23	0.07
(Concentration in ppmvC)			
TNMHC	24882	1514	2066

TNMHC - total non-methane hydrocarbons as ppmvC.
Actual analysis results are reported on a "wet" basis.


Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY

(Repeat Analyses)

Project Location: Chiquita Landfill
Date Received: October 23, 2024
Date Analyzed: November 13, 2024

Component	Sample ID	Repeat Analysis		Mean Conc.	% RPD
		Run #1	Run #2		
		(Conc. in ppmv, component)			
Methane	Tank Farm 6	430400	430600	430500	0.05
Ethene	Tank Farm 6	<0.20	<0.20	<0.20	---
Acetylene	Tank Farm 6	<0.20	<0.20	<0.20	---
Ethane	Tank Farm 6	11.3	11.4	11.3	0.97
non-methane hydrocarbons analysis by carbon number grouping					
C3	Tank Farm 6	129	129	129	0.08
C4	Tank Farm 6	234	229	232	1.9
C5	Tank Farm 6	1361	1316	1339	3.4
C6	Tank Farm 6	915	894	905	2.3
C7	Tank Farm 6	259	257	258	0.77
C8	Tank Farm 6	389	388	388	0.33
C9	Tank Farm 6	439	444	442	1.1
C10	Tank Farm 6	208	213	211	2.3
C11	Tank Farm 6	29.4	31.2	30.3	5.9
C12	Tank Farm 6	6.67	7.46	7.06	11
C13	Tank Farm 6	0.96	0.97	0.97	0.62
C14	Tank Farm 6	<0.03	<0.03	<0.03	---
(Concentration in ppmvC)					
TNMHC	Tank Farm 6	25016	24748	24882	1.1

Three Silco canister samples, laboratory numbers 22974-(25-27), were analyzed for hydrocarbon speciation, EPA Method 18. Agreement between repeat analyses is a measure of precision and is shown above in the column "% RPD". The average % RPD for 14 repeat measurements from three Silco canister samples is 2.3%.





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LABORATORY ANALYSIS REPORT

Permanent Gases Analysis in Silco Canister Sample by Method ASTM D1946-90

Report Date: November 14, 2024
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-044747
Date Received: October 23, 2024
Date Analyzed: November 13, 2024

ANALYSIS DESCRIPTION

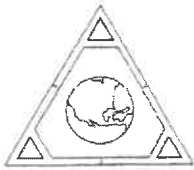
Permanent gases were measured by thermal conductivity detection/gas chromatography (TCD/GC), ASTM D1946-90.

AtmAA Lab No.:	22974-28	22974-29	22974-30
Sample I.D.:	Tank Farm 2	Tank Farm 7B	Tank Farm 7A

Components	(Concentration in %,v)		
Nitrogen	73.24	76.82	77.58
Oxygen	20.30	21.37	21.57
Methane	1.98	<0.10	<0.10
Carbon dioxide	3.43	0.38	<0.10
Hydrogen	<0.10	<0.10	<0.10

The reported oxygen concentration includes any argon present in the sample. Calibration is based on a standard atmosphere containing 20.95% oxygen and 0.93% argon. The accuracy of permanent gas analysis by TCD/GC is +/- 2%, actual results are reported. Actual analysis results are reported on a "wet" basis.


Brian W. Fung
Laboratory Director



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LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in Silco Canister Samples

Report Date: November 14, 2024
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-044747
Date Received: October 23, 2024
Date Analyzed: November 13, 2024
Laboratory Temp: 74.5 °F
Barometric Pressure: 29.85 inHg

ANALYSIS DESCRIPTION

Hydrocarbon speciation analysis was performed by flame ionization detection/gas chromatography (FID/GC), modified EPA-18. Methane was measured by thermal conductivity detection/gas chromatography (TCD/GC), ASTM D1946-90

AtmAA Lab No.:	22974-28	22974-29	22974-30
Sample ID:	Tank Farm 2	Tank Farm 7B	Tank Farm 7A
Component	(Concentration in ppmv, component)		
Methane	9900	2727	1098
Ethene	<0.20	<0.20	<0.20
Acetylene	<0.20	<0.20	<0.20
Ethane	<0.20	<0.20	<0.20
Non-methane hydrocarbons analysis by carbon number grouping			
C3	1.99	0.27	<0.10
C4	230	62.2	82.4
C5	448	105	75.3
C6	441	73.3	56.9
C7	92.6	13.3	9.37
C8	88.4	14.4	10.4
C9	91.1	13.4	10.4
C10	154	50.9	42.3
C11	32.0	22.2	13.57
C12	16.1	10.8	6.09
C13	4.04	4.77	2.12
C14	0.57	0.99	0.74
(Concentration in ppmvC)			
TNMHC	10130	2501	1972

TNMHC - total non-methane hydrocarbons as ppmvC.
Actual analysis results are reported on a "wet" basis.


Brian W. Fung
Laboratory Director

Calculated values for Specific Volume, BTU, and F (factor)

Report Date: November 14, 2024
 Client: Montrose AQS
 Project Location: Chiquita Landfill
 Date Received: October 23, 2024
 Date Analyzed: November 13, 2024
 AtmAA Lab #: 22974-25
 Sample ID: Tank Farm 6

Specific volume, BTU, and F-factor are calculated using normalized laboratory analysis results for methane, carbon dioxide, nitrogen, oxygen, TNMHC, and sulfur compounds in equations that include gross/net heating and specific gas volume values taken from the GPA-2145 Midstream Standard. Heating value factor is a calculated according to ASTM 3588-98 (14.696 psia and 60°F). The F-factor is calculated according to the equation in EPA Method 19.

Component	Mole %	Wt %	C,H,O,N,S, Wt. %	
Methane	43.62	24.43	Carbon	39.21
Carbon dioxide	47.45	72.90	Hydrogen	6.89
Nitrogen	0.56	0.54	Oxygen	53.31
Oxygen	0.27	0.30	Nitrogen	0.54
Argon	0.01	0.02	Argon	0.02
Hydrogen	7.69	0.54	Sulfur	0.00
(CH ₂) _n	0.401	1.26		
Specific Volume		13.247		
BTU/ft3 (Dry @60F, 14.696 psia)		485.4	(HHV)	436.2 (LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)		477.0	(HHV)	428.6 (LHV)
BTU/lb (Dry @60F, 14.696 psia)		6431	(HHV)	5779 (LHV)
F _d (factor)		9427		
F _w (factor)		11494		
F _c (factor)		1957		
Compressibility Factor (@60F, 14.696 psia)		0.9968		
Wobbe Index		488.25		
Specific Gravity		0.9885		

Component	Specific volume reference values *
Methane	23.7 (ft ³ /lb)
Carbon dioxide	8.62
Nitrogen	13.5
Oxygen	11.9
Argon	9.52
Hydrogen	188.2

* reference, Rev. 2016, GPA-2145 Midstream Standard, Selected Hydrocarbons 60°F



Calculated values for Specific Volume, BTU, and F (factor)

Report Date: November 14, 2024
 Client: Montrose AQS
 Project Location: Chiquita Landfill
 Date Received: October 23, 2024
 Date Analyzed: November 13, 2024
 AtmAA Lab #: 22974-26
 Sample ID: Tank Farm 9A

Specific volume, BTU, and F-factor are calculated using normalized laboratory analysis results for methane, carbon dioxide, nitrogen, oxygen, TNMHC, and sulfur compounds in equations that include gross/net heating and specific gas volume values taken from the GPA-2145 Midstream Standard. Heating value factor is calculated according to ASTM 3588-98 (14.696 psia and 60°F). The F-factor is calculated according to the equation in EPA Method 19.

Component	Mole %	Wt %	C,H,O,N,S, Wt. %	
Methane	0.00	0.00	Carbon	0.06
Carbon dioxide	0.00	0.00	Hydrogen	0.01
Nitrogen	78.37	75.79	Oxygen	22.86
Oxygen	20.69	22.86	Nitrogen	75.79
Argon	0.92	1.27	Argon	1.27
Hydrogen	0.00	0.00	Sulfur	0.00
(CH ₂) _n	0.020	0.08		
Specific Volume		13.095		
BTU/ft ³ (Dry @60F, 14.696 psia)		1.199	(HHV)	1.112 (LHV)
BTU/ft ³ (Water Saturated @ 0.25636 psia)		1.178	(HHV)	1.092 (LHV)
BTU/lb (Dry @60F, 14.696 psia)		15.695	(HHV)	14.556 (LHV)
F _d (factor)		14899		
F _w (factor)		16370		
F _c (factor)		1299		
Compressibility Factor (@60F, 14.696 psia)		0.9996		
Wobbe Index		1.2063		
Specific Gravity		0.9872		

Component	Specific volume reference values *
Methane	23.7 (ft ³ /lb)
Carbon dioxide	8.62
Nitrogen	13.5
Oxygen	11.9
Argon	9.52
Hydrogen	188.2

* reference, Rev. 2016, GPA-2145 Midstream Standard, Selected Hydrocarbons 60°F



Calculated values for Specific Volume, BTU, and F (factor)

Report Date: November 14, 2024
 Client: Montrose AQS
 Project Location: Chiquita Landfill
 Date Received: October 23, 2024
 Date Analyzed: November 13, 2024
 AtmAA Lab #: 22974-27
 Sample ID: Tank Farm 9B

Specific volume, BTU, and F-factor are calculated using normalized laboratory analysis results for methane, carbon dioxide, nitrogen, oxygen, TNMHC, and sulfur compounds in equations that include gross/net heating and specific gas volume values taken from the GPA-2145 Midstream Standard. Heating value factor is calculated according to ASTM 3588-98 (14.696 psia and 60°F). The F-factor is calculated according to the equation in EPA Method 19.

Component	Mole %	Wt %	C,H,O,N,S, Wt. %	
Methane	0.00	0.00	Carbon	0.09
Carbon dioxide	0.00	0.00	Hydrogen	0.02
Nitrogen	78.34	75.75	Oxygen	22.88
Oxygen	20.70	22.88	Nitrogen	75.75
Argon	0.92	1.27	Argon	1.27
Hydrogen	0.00	0.00	Sulfur	0.00
(CH ₂) _n	0.040	0.10		
Specific Volume		13.093		
BTU/ft3 (Dry @60F, 14.696 psia)		1.670	(HHV)	1.545 (LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)		1.641	(HHV)	1.518 (LHV)
BTU/lb (Dry @60F, 14.696 psia)		21.87	(HHV)	20.24 (LHV)
F _d (factor)		12605		
F _w (factor)		14122		
F _c (factor)		1274		
Compressibility Factor (@60F, 14.696 psia)		0.9996		
Wobbe Index		1.6813		
Specific Gravity		0.9872		

Component	Specific volume reference values *
Methane	23.7 (ft ³ /lb)
Carbon dioxide	8.62
Nitrogen	13.5
Oxygen	11.9
Argon	9.52
Hydrogen	188.2

* reference, Rev. 2016, GPA-2145 Midstream Standard, Selected Hydrocarbons 60°F



Calculated values for Specific Volume, BTU, and F (factor)

Report Date: November 14, 2024
 Client: Montrose AQS
 Project Location: Chiquita Landfill
 Date Received: October 23, 2024
 Date Analyzed: November 13, 2024
 AtmAA Lab #: 22974-28
 Sample ID: Tank Farm 2

Specific volume, BTU, and F-factor are calculated using normalized laboratory analysis results for methane, carbon dioxide, nitrogen, oxygen, TNMHC, and sulfur compounds in equations that include gross/net heating and specific gas volume values taken from the GPA-2145 Midstream Standard. Heating value factor is calculated according to ASTM 3588-98 (14.696 psia and 60°F). The F-factor is calculated according to the equation in EPA Method 19.

Component	Mole %	Wt %	C,H,O,N,S, Wt. %	
Methane	2.00	1.09	Carbon	2.65
Carbon dioxide	3.46	5.19	Hydrogen	0.36
Nitrogen	73.90	70.62	Oxygen	25.18
Oxygen	19.61	21.41	Nitrogen	70.62
Argon	0.87	1.19	Argon	1.19
Hydrogen	0.00	0.00	Sulfur	0.00
(CH ₂) _n	0.161	0.50		
Specific Volume		12.939		
BTU/ft3 (Dry @60F, 14.696 psia)		28.23	(HHV)	25.63 (LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)		27.74	(HHV)	25.18 (LHV)
BTU/lb (Dry @60F, 14.696 psia)		365.3	(HHV)	331.6 (LHV)
F _d (factor)		10008		
F _w (factor)		11888		
F _c (factor)		2330		
Compressibility Factor (@60F, 14.696 psia)		0.9995		
Wobbe Index		28.228		
Specific Gravity		1.0002		

Component	Specific volume reference values *
Methane	23.7 (ft ³ /lb)
Carbon dioxide	8.62
Nitrogen	13.5
Oxygen	11.9
Argon	9.52
Hydrogen	188.2

* reference, Rev. 2016, GPA-2145 Midstream Standard, Selected Hydrocarbons 60°F



Calculated values for Specific Volume, BTU, and F (factor)

Report Date: November 14, 2024
 Client: Montrose AQS
 Project Location: Chiquita Landfill
 Date Received: October 23, 2024
 Date Analyzed: November 13, 2024
 AtmAA Lab #: 22974-29
 Sample ID: Tank Farm 7B

Specific volume, BTU, and F-factor are calculated using normalized laboratory analysis results for methane, carbon dioxide, nitrogen, oxygen, TNMHC, and sulfur compounds in equations that include gross/net heating and specific gas volume values taken from the GPA-2145 Midstream Standard. Heating value factor is a calculated according to ASTM 3588-98 (14.696 psia and 60°F). The F-factor is calculated according to the equation in EPA Method 19.

Component	Mole %	Wt %	C,H,O,N,S, Wt. %
Methane	0.00	0.00	Carbon 0.26
Carbon dioxide	0.38	0.58	Hydrogen 0.02
Nitrogen	77.91	75.15	Oxygen 23.30
Oxygen	20.75	22.88	Nitrogen 75.15
Argon	0.92	1.27	Argon 1.27
Hydrogen	0.00	0.00	Sulfur 0.00
(CH ₂) _n	0.038	0.12	
Specific Volume		13.062	
BTU/ft3 (Dry @60F, 14.696 psia)		1.996	(HHV) 1.850 (LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)		1.961	(HHV) 1.817 (LHV)
BTU/lb (Dry @60F, 14.696 psia)		26.07	(HHV) 24.16 (LHV)
F _d (factor)		10693	
F _w (factor)		12179	
F _c (factor)		3231	
Compressibility Factor (@60F, 14.696 psia)		0.9996	
Wobbe Index		2.0060	
Specific Gravity		0.9902	

Component	Specific volume reference values *
Methane	23.7 (ft ³ /lb)
Carbon dioxide	8.62
Nitrogen	13.5
Oxygen	11.9
Argon	9.52
Hydrogen	188.2

* reference, Rev. 2016, GPA-2145 Midstream Standard, Selected Hydrocarbons 60°F



Calculated values for Specific Volume, BTU, and F (factor)

Report Date: November 14, 2024
 Client: Montrose AQS
 Project Location: Chiquita Landfill
 Date Received: October 23, 2024
 Date Analyzed: November 13, 2024
 AtmAA Lab #: 22974-30
 Sample ID: Tank Farm 7A

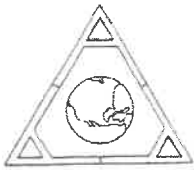
Specific volume, BTU, and F-factor are calculated using normalized laboratory analysis results for methane, carbon dioxide, nitrogen, oxygen, TNMHC, and sulfur compounds in equations that include gross/net heating and specific gas volume values taken from the GPA-2145 Midstream Standard. Heating value factor is a calculated according to ASTM 3588-98 (14.696 psia and 60°F). The F-factor is calculated according to the equation in EPA Method 19.

Component	Mole %	Wt %	C,H,O,N,S, Wt. %	
Methane	0.00	0.00	Carbon	0.08
Carbon dioxide	0.00	0.00	Hydrogen	0.02
Nitrogen	78.22	75.62	Oxygen	23.01
Oxygen	20.83	23.01	Nitrogen	75.62
Argon	0.92	1.28	Argon	1.28
Hydrogen	0.00	0.00	Sulfur	0.00
(CH ₂) _n	0.031	0.10		
Specific Volume		13.091		
BTU/ft3 (Dry @60F, 14.696 psia)		1.569	(HHV)	1.454 (LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)		1.542	(HHV)	1.428 (LHV)
BTU/lb (Dry @60F, 14.696 psia)		20.54	(HHV)	19.03 (LHV)
F _d (factor)		9024		
F _w (factor)		10516		
F _c (factor)		1287		
Compressibility Factor (@60F, 14.696 psia)		0.9996		
Wobbe Index		1.5790		
Specific Gravity		0.9878		

Component	Specific volume reference values *
Methane	23.7 (ft ³ /lb)
Carbon dioxide	8.62
Nitrogen	13.5
Oxygen	11.9
Argon	9.52
Hydrogen	188.2

* reference, Rev. 2016, GPA-2145 Midstream Standard, Selected Hydrocarbons 60°F





AtmAA Inc.

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specialized air assessment laboratory
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LABORATORY ANALYSIS REPORT

SCAQMD Rule 1150.1 Components Analysis in Silco Canister Samples

Report Date: November 14, 2024
Client: Montrose AQS
Project Name: Chiquita Landfill
Project No.: Proj-044747
Date Received: October 23, 2024
Date Analyzed: October 30, 2024

AtmAA Lab No.:	22974-25	22974-26	22974-27
Sample I.D.:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B

(Concentration in ppbv)

Components

Hydrogen sulfide	11135	<150	<150
Benzene	15950	1080	445
Benzyl chloride	<100	<100	<100
Chlorobenzene	267	<100	<100
Dichlorobenzenes*	2620	383	<150
1,1-dichloroethane	<100	<100	<100
1,2-dichloroethane	<100	<100	<100
1,1-dichloroethylene	<100	<100	<100
Dichloromethane	<225	<225	<225
1,2-dibromoethane	<60	<60	<60
Perchloroethylene	<60	<60	<60
Carbon tetrachloride	<125	<125	<125
Toluene	65650	7260	2350
1,1,1-trichloroethane	518	809	493
Trichloroethene	<75	<75	<75
Chloroform	<80	<80	<80
Vinyl chloride	<80	<80	<80
m+p-xylenes	26700	3330	1200
o-xylene	7625	964	344
Bromomethane	<55	<55	<55
1,4-Dioxane	186	<125	<125

Toxic air contaminants (TAC) compounds were analyzed by GC/MS, EPA TO-15.

Hydrogen sulfide was analyzed by SCD/GC, SCAQMD 307.91.

* total amount containing meta, para, and ortho isomers


Brian W. Fung
Laboratory Director



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LABORATORY ANALYSIS REPORT

SCAQMD Rule 1150.1 Components Analysis in Silco Canister Samples

Report Date: November 14, 2024
Client: Montrose AQS
Project Name: Chiquita Landfill
Project No.: Proj-044747
Date Received: October 23, 2024
Date Analyzed: October 30, 2024

AtmAA Lab No.:	22974-28	22974-29	22974-30
Sample I.D.:	Tank Farm 2	Tank Farm 7B	Tank Farm 7A

(Concentration in ppbv)

Components

Hydrogen sulfide	<150	<150	<150
Benzene	11100	1130	690
Benzyl chloride	<100	<100	<100
Chlorobenzene	<100	<100	<100
Dichlorobenzenes*	565	<150	<150
1,1-dichloroethane	<100	<100	<100
1,2-dichloroethane	<100	<100	<100
1,1-dichloroethylene	<100	<100	<100
Dichloromethane	<225	<225	<225
1,2-dibromoethane	<60	<60	<60
Perchloroethylene	<60	<60	<60
Carbon tetrachloride	<125	<125	<125
Toluene	4810	1860	2750
1,1,1-trichloroethane	395	439	654
Trichloroethene	<75	<75	<75
Chloroform	<80	<80	<80
Vinyl chloride	<80	<80	<80
m+p-xylenes	3250	1090	1780
o-xylene	1160	330	532
Bromomethane	<55	<55	<55
1,4-Dioxane	820	152	268

Toxic air contaminants (TAC) compounds were analyzed by GC/MS, EPA TO-15.

Hydrogen sulfide was analyzed by SCD/GC, SCAQMD 307.91.

* total amount containing meta, para, and ortho isomers


Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Name: Chiquita Landfill
Date Received: October 23, 2024
Date Analyzed: October 30, 2024

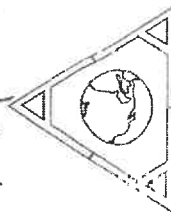
Components	Sample ID	Repeat Analysis		Mean Conc.	% RPD
		Run #1	Run #2		
		(Concentration in ppbv)			
Hydrogen sulfide	Tank Farm 6	11030	11240	11135	1.9
	Tank Farm 2	<150	<150	---	---
Benzene	Tank Farm 6	15700	16200	15950	3.1
Benzyl chloride	Tank Farm 6	<100	<100	---	---
Chlorobenzene	Tank Farm 6	262	272	267	3.7
Dichlorobenzenes	Tank Farm 6	2690	2550	2620	5.3
1,1-dichloroethane	Tank Farm 6	<100	<100	---	---
1,2-dichloroethane	Tank Farm 6	<100	<100	---	---
1,1-dichloroethylene	Tank Farm 6	<100	<100	---	---
Dichloromethane	Tank Farm 6	<225	<225	---	---
1,2-dibromoethane	Tank Farm 6	<60	<60	---	---
Perchloroethylene	Tank Farm 6	<60	<60	---	---
Carbon tetrachloride	Tank Farm 6	<125	<125	---	---
Toluene	Tank Farm 6	64700	66600	65650	2.9
1,1,1-trichloroethane	Tank Farm 6	542	493	518	9.5
Trichloroethene	Tank Farm 6	<75	<75	---	---
Chloroform	Tank Farm 6	<80	<80	---	---
Vinyl chloride	Tank Farm 6	<80	<80	---	---
m+p-xylenes	Tank Farm 6	26600	26800	26700	0.75
o-xylene	Tank Farm 6	7610	7640	7625	0.39
Bromomethane	Tank Farm 6	<55	<55	---	---
1,4-Dioxane	Tank Farm 6	179	192	186	7.0

Six Silco canister samples, laboratory numbers 22974-(25-30), were analyzed for SCAQMD Rule 1150.1 components. Agreement between repeat analyses is a measure of precision and is shown above in the column "% RPD". The average % RPD for 9 repeat measurements from six Silco canister samples is 3.8%.



CHAIN OF CUSTODY RECORD

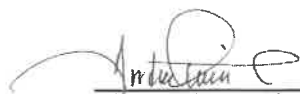
Client Project Name: MONROSE ADS		Project Location: CHICOITA LANDFILL		ANALYSES REQUESTED	
Project Number: 7005-22		Purchase Order Number:		10/15/15 10/16/15 10/17/15 10/18/15 10/19/15 10/20/15 10/21/15 10/22/15 10/23/15 10/24/15 10/25/15 10/26/15 10/27/15 10/28/15 10/29/15 10/30/15 10/31/15 11/01/15 11/02/15 11/03/15 11/04/15 11/05/15 11/06/15 11/07/15 11/08/15 11/09/15 11/10/15 11/11/15 11/12/15 11/13/15 11/14/15 11/15/15 11/16/15 11/17/15 11/18/15 11/19/15 11/20/15 11/21/15 11/22/15 11/23/15 11/24/15 11/25/15 11/26/15 11/27/15 11/28/15 11/29/15 11/30/15 12/01/15 12/02/15 12/03/15 12/04/15 12/05/15 12/06/15 12/07/15 12/08/15 12/09/15 12/10/15 12/11/15 12/12/15 12/13/15 12/14/15 12/15/15 12/16/15 12/17/15 12/18/15 12/19/15 12/20/15 12/21/15 12/22/15 12/23/15 12/24/15 12/25/15 12/26/15 12/27/15 12/28/15 12/29/15 12/30/15 12/31/15	
Sampler: (Signature) 		Turnaround Times: Standard 10 day Expedited: 24hr / 48hr / 72hr / 5 day			
Client Sample Identification	Type of Sample Canister ID	AtmAA Lab Number	Sampling Date	Sampling Time	Special Remarks
TANK FARM 6	CAN-0529	22974-25	10/17/24	0939	
TANK FARM 9A	CAN-0889	-26		1030	
TANK FARM 1B	CAN-0516	-27		1030	
TANK FARM 2	CAN-0553	-28		1130	
TANK FARM 7B	CAN-0592	-29		1207	
TANK FARM 7A	CAN-0585	-30		1300	#581
Relinquished by: (Signature) 		Date 10/24/24	Time 1302	Received by: (Signature)	
Relinquished by: (Signature)		Date	Time	Received by: (Signature)	
Relinquished by: (Signature)		Date	Time	Received for Laboratory by (Signature) 	
Company Info:		Send Report to:		Analytical Laboratory	
Company: MON TAD46 ADS		Company:		AtmAA Inc.	
Street Address 1631 E.		Street Address		23917 Craftsman Rd.	
City/State/Zip:		City/State/Zip:		Calabasas, CA 91302	
Telephone No.:		Project Manager:		TEL: (818) 223-3277	
Email Address:		Email Address:		Email Address: info@atmaa.com	



CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Leachate
LABORATORY NO: 24-1141
SAMPLING DATE: 10/17/24
RECEIVING DATE: 10/18/24
ANALYSIS DATE: 10/18/24
REPORT DATE: 10/21/24

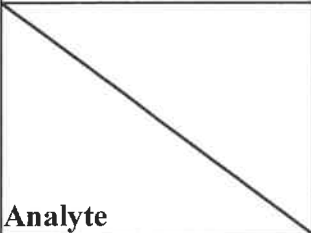
Laboratory Analysis Report (1 of 2)

Analysis Method	SCAQMD 307-91			
Detection Limits	0.05 PPMV			
Analyte	Sample ID	Tank Farm 6	Tank Farm 9A	Tank Farm 9B
	Sample Date	10/17/2024	10/17/2024	10/17/2024
	Sample Time	-	-	-
	Lab ID	29224-1	29224-2	29224-3
	Units	PPMV	PPMV	PPMV
Hydrogen Sulfide		37.64	<0.05	<0.05
Carbonyl Sulfide		<0.05	<0.05	<0.05
Methyl Mercaptan		21.06	<0.05	0.06
Ethyl Mercaptan		0.59	<0.05	<0.05
Dimethyl Sulfide		192.4	0.49	3.18
Unidentified S Compounds		8.80	<0.05	0.14
Total Sulfur as H ₂ S		260.4	0.49	3.38


 Dr. Andrew Kitto
 President

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Leachate
LABORATORY NO: 24-1141
SAMPLING DATE: 10/17/24
RECEIVING DATE: 10/18/24
ANALYSIS DATE: 10/18/24
REPORT DATE: 10/21/24

Laboratory Analysis Report (2 of 2)

Analysis Method	SCAQMD 307-91			
Detection Limits	0.05 PPMV			
 Analyte	Sample ID	Tank Farm 2	Tank Farm 7A	Tank Farm 7B
	Sample Date	10/17/2024	10/17/2024	10/17/2024
	Sample Time	-	-	-
	Lab ID	29224-4	29224-5	29224-6
	Units	PPMV	PPMV	PPMV
Hydrogen Sulfide		0.34	<0.05	0.05
Carbonyl Sulfide		0.38	<0.05	<0.05
Methyl Mercaptan		1.23	<0.05	0.60
Ethyl Mercaptan		<0.05	<0.05	<0.05
Dimethyl Sulfide		78.49	2.08	7.34
Unidentified S Compounds		14.29	0.63	0.74
Total Sulfur as H₂S		94.73	2.71	8.73



Dr. Andrew Kitto
 President

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Leachate
LABORATORY NO: 24-1141
SAMPLING DATE: 10/17/24
RECEIVING DATE: 10/18/24
ANALYSIS DATE: 10/18/24
REPORT DATE: 10/21/24

Quality Assurance Report

Duplicate Analysis

Sample ID: Tank Farm 7B

Lab ID: 29224-6

Analysis Method		SCAQMD 307-91		
Detection Limit		0.05 PPMV		
Analyte	Aver. Conc. PPMV	Dil. Factor Ambient Air	DF*A/CF PPMV	% Sample Recovery*
Hydrogen Sulfide	0.05	1	0.05	104
Carbonyl Sulfide	<0.05	1	<0.05	N/A
Methyl Mercaptan	0.58	1	0.56	97
Ethyl Mercaptan	<0.05	1	<0.05	N/A
Dimethyl Sulfide	7.31	1	7.27	99
Unidentified S Compounds	0.73	1	0.72	99
Total Sulfur as H ₂ S	8.67	1	8.60	99

N/A: Not Applicable

*Must be ±10%



Dr. Andrew Kitto
 President



24-1141

Nº 6428

W002AS-044747-RT-6729

Analytical Services Inc.

310/830-2226 • Fax 310/830-2227 • www.quantumairlab.com

1210 E. 223rd Street, Suite #314 • Carson, California 90745

CHAIN OF CUSTODY

Page: 1 of 7

Client: <u>MONTROSE ADS</u>		Project No.: <u>PD25-044747</u>		Analysis		Turnaround Time: ☐ Same Day ☐ 24 Hours ☐ 48 Hours ☐ Normal
Contact Person: <u>P. SANJUAN</u> tel: <u>626 617 6313</u> fax:		Project Name: <u>CHIQUITA LEACHATE</u> Project Manager: <u>P. SANJUAN</u> P.O. Number: _____				
Client Sample ID	Tag #	Date	Time	Lab ID Number	Remarks	
<u>Dark Green 6</u>		<u>10/17/24</u>		<u>29224-1</u>		
<u>9A</u>				<u>-2</u>		
<u>9B</u>				<u>-3</u>		
<u>2</u>				<u>-4</u>		
<u>7A</u>				<u>-5</u>		
<u>7B</u>				<u>-6</u>		
Relinquished by: (signature) <u>[Signature]</u>						Date/Time <u>10/17/24 3:34pm</u>
Relinquished by: (signature) <u>[Signature]</u>						Date/Time <u>10/18/24 8:30</u>
Relinquished by: (signature) <u>[Signature]</u>						Date/Time <u>10/18/24 8:30</u>

68 of 103

Appendix A.4

Quality Assurance Data

Barometric Pressure Determination

Date: 10/17/24

Time: 9:00

Data By: SJ, KT, JI

Reference:

<https://forecast.weather.gov/MapClick.php?lat=33.6873&lon=118.66712>

Lat: 34.42972°N Lon: 118.66712°W Elev: 1278.0ft.

Reference Barometer ID	DEL VALLE (DLVC1)
Reference Barometer Location	
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	
Reference Barometer Reference Elevation	30.05
Reference Barometer Actual Pressure	1278
	28.77
Test Barometer Location/Site	Chiquita Canyon
Location/Site Elevation	997
Location/Site Barometric Pressure	29.05
Sampling Location Height (above/below site elevation)	1
Sampling Location Barometric Pressure	29.05



THERMOCOUPLE CALIBRATION

Thermocouple ID: 30
Date: 7/3/2024
Performed By: JS

Calibrated Digital Temperature Readout ID: PTC-82
T1 Reference Thermometer ID: 2788
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 2786

T/C I.D. 30	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-82	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~ 212 F)	PTC-82	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-82	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)



THERMOCOUPLE CALIBRATION

Thermocouple ID: TC-WB
 Date: 7/3/2024
 Performed By: JS

Calibrated Digital Temperature Readout ID: PTC-82
 T1 Reference Thermometer ID: 2788
 T2 Reference Thermometer ID: 2736
 T3 Reference Thermometer ID: 2786

T/C I.D. TC-WB	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-82	373	373	373	373	370	370	370	370	3.0	0.4%	Pass
T2 (~ 212 F)	PTC-82	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-82	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

- 1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
 2) Pass if all Differences are less than 1.5% (°R)



THERMOCOUPLE CALIBRATION

Thermocouple ID: TC-DB
 Date: 7/3/2024
 Performed By: JS

Calibrated Digital Temperature Readout ID: PTC-82
 T1 Reference Thermometer ID: 2788
 T2 Reference Thermometer ID: 2736
 T3 Reference Thermometer ID: 2786

T/C I.D. TC-DB	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-82	367	367	367	367	370	370	370	370	3.0	0.4%	Pass
T2 (~ 212 F)	PTC-82	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-82	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

- 1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
- 2) Pass if all Differences are less than 1.5% (°R)



DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: PTC-43
 Readout Description: Handheld
 Date: 7/3/2024
 Performed By: JS

Calibrated Thermocouple ID: TC-Cal
 T1 Reference Thermometer ID: 313010
 T2 Reference Thermometer ID: 2736
 T3 Reference Thermometer ID: 2786

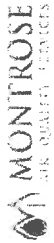
T/C I.D.	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
TC-Cal												
T3 (~370 F)	PTC-43	370	370	370	370	375	375	375	375	5.0	0.6%	Pass
T2 (~212 F)	PTC-43	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~32 F)	PTC-43	29	29	29	29	32	32	32	32	3.0	0.6%	Pass

- 1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
 2) Pass if all Differences are less than 1.5% (°R)

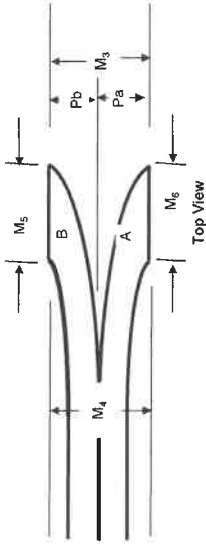
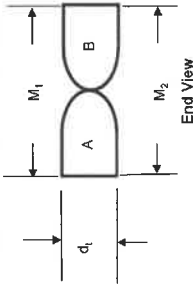
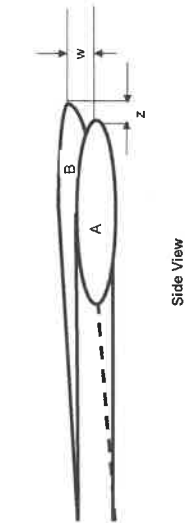
Thermocouple Source Readings

T/C Source S/N		T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	125097	649	649	649	649	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	125097	373	373	373	373	375	375	375	375	2.0	0.2%	Pass
T2 (~212 F)	125097	210	210	210	210	212	212	212	212	2.0	0.3%	Pass
T1 (~32 F)	125097	30	30	30	30	32	32	32	32	2.0	0.4%	Pass

- 1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
 2) Pass if all Differences are less than 1.5% (°R)



S Type Pitot Tube Dimensional Calibration Record



Acceptability Criteria			z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < p < 1.5 Dt	Status	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis		Ratio of P/Dt
030	7/3/24	JAC	Y	Y	Y	0.251	0.538	0.529	0.524	0.563	0.268	0.276	1.0	-4.1	1.1	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975
If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 7/3/2024

Reference Device ID: Microtector
Reference Serial Number: S270
Calibrated By: K. Thomas

Calibration Range		Run 1		Absolute Value	Individual Run Results % Difference	Pass/ Fail
Scale:	inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)			
Target 20%	0.010	0.010	0.010	0.0000	0.00%	Pass
Target 40%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 60%	0.030	0.030	0.030	0.0000	0.00%	Pass
Target 80%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 100%	0.050	0.051	0.050	0.0010	2.00%	Pass

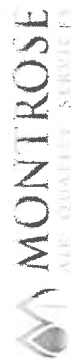
Calibration Range		Run 2		Absolute Value	Individual Run Results % Difference	Pass/ Fail
Scale:	inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)			
Target 20%	0.010	0.010	0.010	0.0000	0.00%	Pass
Target 40%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 60%	0.030	0.030	0.030	0.0000	0.00%	Pass
Target 80%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 100%	0.050	0.050	0.050	0.0000	0.00%	Pass

Calibration Range		Run 3		Absolute Value	Individual Run Results % Difference	Pass/ Fail
Scale:	inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)			
Target 20%	0.010	0.010	0.010	0.0000	0.00%	Pass
Target 40%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 60%	0.030	0.030	0.030	0.0000	0.00%	Pass
Target 80%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 100%	0.050	0.050	0.050	0.0000	0.00%	Pass

Average results for three runs

Average results for three runs	
% Difference	0.13%
Pass/Fail	Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 7/3/2024

Reference Device ID: Microtector
Reference Serial Number: S270
Calibrated By: K. Thomas

Calibration Range		Run 1		Individual Run Results	
Scale:	0 - 0.100 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	Pass
Target 40%	0.040	0.040	0.040	0.0000	Pass
Target 60%	0.060	0.061	0.060	0.0010	Pass
Target 80%	0.080	0.080	0.080	0.0000	Pass
Target 100%	0.100	0.100	0.100	0.0000	Pass

Calibration Range		Run 2		Individual Run Results	
Scale:	0 - 0.100 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	Pass
Target 40%	0.040	0.041	0.040	0.0010	Pass
Target 60%	0.060	0.060	0.060	0.0000	Pass
Target 80%	0.080	0.081	0.080	0.0010	Pass
Target 100%	0.100	0.100	0.100	0.0000	Pass

Calibration Range		Run 3		Individual Run Results	
Scale:	0 - 0.100 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	Pass
Target 40%	0.040	0.040	0.040	0.0000	Pass
Target 60%	0.060	0.061	0.060	0.0010	Pass
Target 80%	0.080	0.080	0.080	0.0000	Pass
Target 100%	0.100	0.100	0.100	0.0000	Pass

Average results for three runs

% Difference	Pass/Fail
0.47%	Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



DIFFERENTIAL PRESSURE CALIBRATION

Semi-annual

Display ID: ADM 9
 Description: Air Data Multimeter (ADM 850)
 Serial Number: M14140
 Calibration Date: 7/3/2024

Reference Device ID: Microtector
 Reference Serial Number: S270
 Calibrated By: K. Thomas

Calibration Range		Run 1		Absolute Value	Individual Run Results	
Scale: 0 - 1,000 inches H ₂ O		Measured Value (inches W.C.)	Reference Value (inches W.C.)		% Difference	Pass/ Fail
Target 20%	0.200	0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400	0.400	0.400	0.0000	0.00%	Pass
Target 60%	0.600	0.610	0.600	0.0100	1.67%	Pass
Target 80%	0.800	0.800	0.800	0.0000	0.00%	Pass
Target 100%	1.000	1.000	1.000	0.0000	0.00%	Pass

Calibration Range		Run 2		Absolute Value	Individual Run Results	
Scale: 0 - 1,000 inches H ₂ O		Measured Value (inches W.C.)	Reference Value (inches W.C.)		% Difference	Pass/ Fail
Target 20%	0.200	0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400	0.410	0.400	0.0100	2.50%	Pass
Target 60%	0.600	0.600	0.600	0.0000	0.00%	Pass
Target 80%	0.800	0.800	0.800	0.0000	0.00%	Pass
Target 100%	1.000	1.000	1.000	0.0000	0.00%	Pass

Calibration Range		Run 3		Absolute Value	Individual Run Results	
Scale: 0 - 1,000 inches H ₂ O		Measured Value (inches W.C.)	Reference Value (inches W.C.)		% Difference	Pass/ Fail
Target 20%	0.200	0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400	0.410	0.400	0.0100	2.50%	Pass
Target 60%	0.600	0.600	0.600	0.0000	0.00%	Pass
Target 80%	0.800	0.800	0.800	0.0000	0.00%	Pass
Target 100%	1.000	1.000	1.000	0.0000	0.00%	Pass

Average results for three runs

% Difference	Pass/Fail
0.44%	Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
 Percent difference of three run average within 5.0 %.



DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 7/3/2024

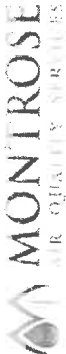
Reference Device ID: Dwyer 0 - 10" Manometer
Reference Serial Number: CC-2
Calibrated By: K. Thomas

Calibration Range		Run 1		Individual Run Results	
Scale: 0 - 10.000 inches H ₂ O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference
Target 20%	2.000	2.005	2.000	0.0050	0.25%
Target 40%	4.000	4.000	4.000	0.0000	0.00%
Target 60%	6.000	6.010	6.000	0.0100	0.17%
Target 80%	8.000	8.000	8.000	0.0000	0.00%
Target 100%	10.000	10.050	10.000	0.0500	0.50%
					Pass
					Pass
					Pass
					Pass
					Pass

Calibration Range		Run 2		Individual Run Results		
Scale: 0 - 10.000 inches H ₂ O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	2.005	2.000	0.0050	0.25%	Pass
Target 40%	4.000		4.000	0.0000	0.00%	Pass
Target 60%	6.000	6.010	6.000	0.0100	0.17%	Pass
Target 80%	8.000	8.000	8.000	0.0000	0.00%	Pass
Target 100%	10.000	10.050	10.000	0.0500	0.50%	Pass

Calibration Range		Run 3		Individual Run Results		Pass/ Fail
Scale:	0 - 10.000 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	
Target 20%	2.000	2.005	2.000	0.0050	0.25%	Pass
Target 40%	4.000	4.000	4.000	0.0000	0.00%	Pass
Target 60%	6.000	6.000	6.000	0.0000	0.00%	Pass
Target 80%	8.000	8.000	8.000	0.0000	0.00%	Pass
Target 100%	10.000	10.050	10.000	0.0500	0.50%	Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



Average results for three runs

% Difference	Pass/Fail
0.17%	Pass

APPENDIX B

GENERAL EMISSIONS CALCULATIONS

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6} \right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528^{\circ}R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

SCS Engineers – Chiquita Canyon Landfill
2024 Leachate and Condensate Vapor Sampling

Nomenclature:

A_s	=	stack area, ft ²
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO_2}$	=	particulate grain loading, gr/dscf corrected to 12% CO ₂
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
D_n	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O ₂
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
		SO ₂ : 64
		NO _x : 46
		CO: 28
		HC: 16
t	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwbg
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft ³ /lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

APPENDIX C QUALITY ASSURANCE

Appendix C.1

Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling Lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO _x Analyzer	Daily	NO ₂ -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	± 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	± 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	± 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	± 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	± 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	± 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements are used.

Appendix C.2

SCAQMD and STAC Certifications

SCS Engineers – Chiquita Canyon Landfill
2024 Leachate and Condensate Vapor Sampling



September 26, 2024

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have completed our review of Montrose Air Quality Services' revised renewal application, which was submitted as notification of Montrose's recent acquisition of AirKinetics, Inc. under the South Coast AQMD Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2024, and ending September 30, 2025, for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4
South Coast AQMD Methods 10.1 and 100.1
South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1 (Sampling and Analysis)
South Coast AQMD Methods 25.1 and 25.3 (Sampling)
Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling
USEPA CTM-030 and ASTM D6522-00

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704
VA Laundry Bldg., Greater LA Healthcare Sys. 508 Constitution Avenue Los Angeles, CA 90049	So Cal Gas – Engr Analysis Ctr, Bldg H 8101 Rosemead Blvd Pico Rivera, CA 90660	

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Colin Eckerle. He may be reached by telephone at (909) 396-2476, or via e-mail at ceckerle@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:CE
Attachment
240926 LapRenewal.doc



American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 27th day of February 2024.



Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2026

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

Appendix C.3

Individual QI Certifications

CERTIFICATE OF COMPLETION	
Pedro SanJuan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
SCAQMD Methods 1.1, 1.2, 2.1, 2.2, 2.3, 3.1, & 4.1	
Certificate Number: <u>002-2022-50</u>	
 Tate Strickler, VP – Quality Systems	DATE OF ISSUE: <u>02/28/2022</u> DATE OF EXPIRATION: <u>02/27/2027</u>
 MONTROSE ENVIRONMENTAL	

CERTIFICATE OF COMPLETION	
Pedro SanJuan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
SCAQMD Methods 25.1, 25.3 & 307-91	
Certificate Number: <u>002-2022-52</u>	
 Tate Strickler, VP – Quality Systems	DATE OF ISSUE: <u>02/28/2022</u>
	DATE OF EXPIRATION: <u>02/27/2027</u>
 MONTROSE ENVIRONMENTAL	

CERTIFICATE OF COMPLETION	
Pedro San Juan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
EPA Method 3C, TO-8, TO-12 & TO-15	
Certificate Number: <u>002-2018-62</u>	
	DATE OF ISSUE: <u>10/22/18</u>
Tate Strickler, Accreditation Director	DATE OF EXPIRATION: <u>10/22/23</u>
	
MONTROSE ENVIRONMENTAL	

Appendix C.4

Statement of No Conflict of Interest

STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Facility ID:	119219
Date(s) Tested:	October 17, 2024
Facility Name:	Chiquita Canyon Landfill
Equipment Address:	29201 Henry Mayo Drive Castaic, California 91384
Equipment Tested:	Leachate and Condensate Sampling System

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm: Montrose Air Quality Services, LLC
Business Address: 1631 E. St. Andrew Pl.
Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in **District Rule 304(k)**:

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

- (1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -*
- (2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;*
- (3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and*
- (4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.*

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature: _____

Date: 11/15/2024

Pete SanJuan

Field Project Manager

(714) 279-6777

11/15/2024

(Name)

(Title)

(Phone)

(Date)

APPENDIX D FACILITY PERMIT



**FACILITY PERMIT TO OPERATE
CHIQUITA CANYON LLC**

PERMIT TO CONSTRUCT/OPERATE

Permit No. G66132
A/N 613131

Equipment Description:

Modification of an existing Landfill Gas Condensate and Leachate Collection/Storage System consisting of:

1. Condensate storage tank, 5,000-gallon capacity, at Canyon B.
2. Condensate storage tank, 10,000-gallon capacity, at Primary Canyon.
3. Condensate storage tanks, three (3), each 6,650-gallon capacity, at flare station.
4. Leachate collection tanks, up to (4), each 10,000-gallon capacity, and one 1,600-gallon capacity, with associated sump pump and transfer pumps.

By removal of:

1. One 1,600-gallon capacity leachate collection tank [under Item 4].

By addition of:

1. One 10,000-gallon capacity leachate collection tank [to Item 4].

Conditions:

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
[Rule 204]
2. This equipment shall be properly maintained and kept in good operating condition at all times.
[Rule 204]
3. This equipment shall be operated and maintained by personnel properly trained in its operation.
[Rule 204]
4. This equipment shall be vented to air pollution control equipment which is in full operation and has been issued a valid Permit to Construct or Operate by the South Coast AQMD.
[Rule 1303(a)(1)-BACT]
5. This equipment shall be used only for the storage of landfill gas condensate and leachate collection.
[Rule 204]
6. All connectors, valves and openings shall be properly sealed or closed at all times to prevent landfill gas condensate vapors from entering into the atmosphere unless disposal of the condensate/leachate is taking place or during maintenance or repairs.
[Rule 204]



FACILITY PERMIT TO OPERATE CHIQUITA CANYON LLC

7. Any breakdown or malfunction of the landfill gas condensate/leachate storage system shall be reported to South Coast AQMD within one hour after occurrence, or within one hour of the time personnel knew or reasonably should have known of its occurrence, per Rule 430 requirements, and remedial measures shall be undertaken to correct the problem and prevent further emissions into the atmosphere in a timely manner.
[Rule 430]
8. The operator shall keep and maintain adequate records for this equipment to verify compliance with the conditions of this permit. These records shall be prepared in a format which is acceptable to the South Coast AQMD. Records shall be kept for at least five years and made available to South Coast AQMD personnel upon request.
[Rule 204]
9. This permit shall expire if construction of this equipment is not complete within one year from the date of issuance of this permit unless an extension is granted by the Executive Officer.
[Rule 204]

APPENDIX E FLARE NO. 1 REPORT

**TEST REPORT FOR
2024 SOURCE TEST AT
CHIQUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)
FACILITY ID: 119219**

Prepared For:

SCS Field Services

3900 Kilroy Airport Way, Ste. 100
Long Beach, California 90806

For Submittal To:

South Coast Air Quality Management District

21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC

1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 279-6777

Pete San Juan

Test Date: **June 27, 2024**
Production Date: **August 21, 2024**
Report Number: **W002AS-040568-RT-6437**

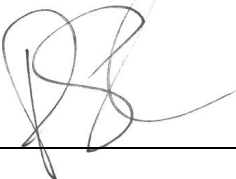


CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.

REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 8/21/2024
Name: Pete San Juan Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 8/21/2024
Name: Surya Adhikari Title: Senior Reporting QC Specialist

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION AND SUMMARY	7
2.0 TEST UNIT DESCRIPTION	9
3.0 TEST DESCRIPTION	10
3.1 TEST CONDITIONS.....	10
3.2 SAMPLE LOCATIONS	10
3.3 TEST PROCEDURES	10
3.3.1 SCAQMD Method 1.1 – Sampling and Velocity Traverses for Stationary Sources	12
3.3.2 SCAQMD Method 2.1 – Velocity and Volumetric Flow Rate	12
3.3.3 SCAQMD Method 3.1 – Gas Analysis for Dry Molecular Weight and Excess Air.....	12
3.3.4 SCAQMD Method 4.1 – Determination of Moisture Content in Stack Gases...	12
3.3.5 SCAQMD Method 5.1 – Particulate Emissions	12
3.3.6 SCAQMD Method 100.1 – Continuous Gaseous Emissions Sampling.....	14
3.3.7 SCAQMD Method 25.3 and EPA Method 18 – Methane and Total Gaseous Non-Methane Organics	15
3.3.8 EPA Method TO-15 – Trace Organic Hydrocarbons	15
3.3.9 SCAQMD Method 307-91 – Hydrogen Sulfide and Reduced Sulfur Compounds.....	15
3.3.10 EPA Method 19 – Calculation of Exhaust Flow Rate from Known F-Factor.....	15
4.0 RESULTS AND OVERVIEW	16
4.1 TEST RESULTS.....	16
4.2 TEST OVERVIEW	18
 LIST OF APPENDICES	
A TEST DATA.....	19
A.1 Sample Location Data	20
A.2 RM CEMS DAS and Strip Chart Data	22
A.3 Particulate Field and Laboratory Data.....	32
A.4 Inlet Flow Rate and Process Data.....	44
A.5 Organics and Sulfur Field and Laboratory Data	53
A.6 Quality Assurance Data.....	150
B GENERAL EMISSIONS CALCULATIONS	172
C SAMPLING AND ANALYTICAL PROCEDURES	176

TABLE OF CONTENTS (CONTINUED)

<u>SECTION</u>	<u>PAGE</u>
D QUALITY ASSURANCE	181
D.1 Quality Assurance Program Summary	182
D.2 SCAQMD and STAC Certifications	188
D.3 Individual QI Certifications.....	191
D.4 Statement of No Conflict of Interest	196
E FACILITY PERMIT	198

LIST OF TABLES

1-1 TEST RESULTS SUMMARY	8
3-1 FLARE INLET TEST PROCEDURES	11
3-2 FLARE EXHAUST TEST PROCEDURES	11
4-1 GENERAL RESULTS	17
4-2 TRACE ORGANIC SPECIES DESTRUCTION EFFICIENCY RESULTS	18

ACRONYMS/ABBREVIATIONS

ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal unit
CEMS	continuous emissions monitoring system
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
dscf	dry standard cubic feet
dscfm	dry standard cubic feet flow rate
DRE	destruction efficiency
EC	Electron Capture
ECD	Electron Capture detector
ELCD	electronic conductivity detector
EPA	Environmental Protection Agency
°F	degrees Fahrenheit
FID	flame ionization detector
GC	gas chromatograph
Gr/dscf	grains per dry standard cubic feet
gr	gram
H ₂ O	Moisture
H ₂ S	Hydrogen Sulfide
HALL ELCD	Hall detector
lb/hr	pounds per hour
lb/MMBtu	pounds per million British thermal units
lb/MMCF	pounds per million cubic feet
MMBtu	one million British thermal units
MMCF	one million cubic feet (landfill gas)
NO _x	Nitrogen Oxides
MS	Mass Spectroscopy
N ₂	Nitrogen
NDIR	Non dispersive infrared
O ₂	Oxygen
PID	photoionization detector
PM	Total Particulate Matter
PM ₁₀	Total Particulate Matter less than 10 microns
ppm	parts per million
scf	standard cubic feet
scfm	standard cubic feet per minute
SCAQMD	South Coast Air Quality Management District
SO _x	Sulfur Oxides
SO ₂	Sulfur Dioxides
SWMD	San Bernardino County Solid Waste Management Division
TCA	Total Combustion Analysis
TCD	Thermal Conductivity Detector
TGNMO	Total Gaseous Non-Methane Organics
TRS	Total Reduced Sulfur Compounds
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted to perform the 2024 annual source testing on the landfill gas fired Flare No. 1 (John Zink) located at the Chiquita Canyon Landfill (CCL). The CCL (SCAQMD Facility ID: 119219) is located in Castaic, California. The annual testing was performed to satisfy requirements delineated by the SCAQMD Permit to Operate No. G73696 (A/N 645450) and the site-specific SCAQMD Rule 1150.1 compliance plan.

Measurements of the flare emissions and operating parameters were conducted at the flare exhaust and at the inlet (landfill gas) of the flare. Table 1-1 provides a test matrix of the parameters tested at each sample location. Testing was conducted according to the source test protocol (MAQS Document W002AS-040568-PP-1013) submitted to SCAQMD on April 25, 2024.

The tests were conducted on June 27, 2024 by Pete San Juan, Allen Dusky, and Jose Iniguez of MAQS. Pete San Juan was the on-site Qualified Individual for MAQS. Mr. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the SCAQMD to conduct testing for criteria pollutants according to District Methods. Cornelius Fong of SCS Engineers coordinated the source test program.

The results of the emission tests are summarized in Table 1-2. The source tests demonstrate that the flare operates with criteria pollutant and VOC emissions below the SCAQMD permit limits with the exception of the Inlet Total Reduced Sulfur as H₂S and the calculated Exhaust SO_x lb/hr as SO₂. Detailed test results are presented in Section 4.0. All raw data, laboratory results, calculations, and QA/QC data can be found in the Appendices.

**TABLE 1-1
TEST MATRIX
CHIQUITA CANYON LANDFILL
GAS FLARE 1
JUNE 27, 2024**

Parameter	Inlet	Exhaust
Oxygen (O ₂)	X	X
Carbon Dioxide (CO ₂)	X	X
Nitrogen (N ₂)	X	X
Carbon Monoxide (CO)		X
Nitrogen Oxides (NO _x)		X
Moisture (H ₂ O)		X
Flow Rate (dscfm)	X	X
Temperature (°F)		X
Total Particulate Matter (PM) as PM ₁₀		X
Methane (CH ₄)	X	X
Total Gaseous Non-Methane Organics (TGNMO)	X	X
Trace Volatile Organics (VOCs)	X	X
Hydrogen Sulfide (H ₂ S)	X	
Reduced Sulfur Compounds (TRS)	X	
Calorific Value (Btu/scf)	X	

**TABLE 1-1
TEST RESULTS SUMMARY
CHIQUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)
JUNE 27, 2024**

Parameter/Units	Inlet Result	Exhaust Result	Limit
NO_x			
ppm	--	8.75	--
ppm @ 3% O ₂	--	18.51	--
lb/hr (as NO ₂)	--	1.53	3.9
lb/day (as NO ₂)	--	36.75	--
lb/MMBtu (as NO ₂)	--	0.025	0.06 (BACT)
lb/MMCF (as NO ₂)	--	9.35	--
CO⁽²⁾			
ppm	--	<20.00	2,000 (Rule 407)
ppm @ 3% O ₂	--	<42.29	--
lb/hr	--	<2.13	5.6
lb/day	--	<51.12	--
lb/MMBtu	--	<0.035	0.06 (BACT)
lb/MMCF	--	<13.01	--
Methane			
ppm	350,595	<2.15	--
lb/hr	2,420	<0.13	--
Destruction Efficiency, % Methane	--	>99.99	≥99
VOC			
ppm (as CH ₄)	41,862	5.23	--
lb/hr (as CH ₄)	289.0	0.32	0.92 (Exhaust)
lb/day (as CH ₄)	6,936	7.65	--
lb/MMBtu (as CH ₄)	--	0.005	--
ppm (as hexane)	6,977	0.87	--
ppm @ 3% O ₂ (as hexane) ⁽¹⁾	6,780	1.58	20 (Exhaust)
lb/MMCF (as hexane)	--	1.75	--
lb/MMBtu (as hexane)	--	0.005	--
lb/hr (as hexane)	258.9	0.29	--
Destruction Efficiency, % Hexane⁽¹⁾	--	99.89	≥98
Particulate Matter			
gr/dscf	--	0.0029	0.057 (Rule 404)
gr/dscf @ 12 % CO ₂	--	0.0038	0.1 (Rule 409)
lb/hr	--	0.59	1.4
lb/day	--	14.22	--
lb/MMBtu	--	0.010	--
lb/MMCF	--	3.64	--
Total Sulfur Compounds			
Total Sulfur as H ₂ S- Inlet, ppm	778.3	--	150 (Rule 431.1)
SO _x Exhaust, lb/hr (as SO ₂) ⁽³⁾	--	21.49	2.5
SO _x Exhaust, lb/day (as SO ₂) ⁽³⁾	--	515.85	--
lb/MMCF	--	131.27	--

(1) SCAQMD Rule 1150.1 and NSPS require that a flare meet the concentration standard or DRE.

(2) Values presented reflect 20% of the selected analyzer range.

(3) The exhaust SO_x lb/hr and lb/day results are calculated from inlet reduced sulfur concentrations.

2.0 TEST UNIT DESCRIPTION

The mailing address for the facility and the physical location of the flare is:

Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, California 91384

The flare is one of the main control devices flaring landfill gas at CCL. The control device (Flare No. 1) installed at CCL is a LFG blower/flare manufactured by the John Zink Company. It is a John Zink Model ZTOF Flare with a 4,000 standard cubic feet per minute (scfm) flow rate capacity and rated at 120 Million British Thermal Units (MMBtu) per hour. The flare receives LFG from two 150 horsepower blowers. The flare is equipped with automatic combustion dampers, three stack thermocouples (lower, middle, and upper), an ultra violet flame scanner, a flame failure detector and automatic shutdown control. The flare also has a condensate injection system. The unit is designed to accommodate inlet and outlet sampling. The flare is described in the permit as 136 inches in diameter and 50 feet in height.

As the refuse in the landfill decomposes, gases are generated in the subsurface, which contain methane, CO₂ and other decomposition products. The landfill gas is collected using vertical and horizontal gas wells located in the landfill.

The ignition burner fires on propane gas. The main burner fires only landfill gas. The flare is equipped with inlet air dampers to control the flow of combustion air to the burners. Thermocouples are installed at various heights to provide temperature indication for control of combustion temperature. Dedicated and calibrated flow meter monitors the flow rate of landfill gas to the flare.

3.0 TEST DESCRIPTION

3.1 TEST CONDITIONS

The flare was operated at the highest possible capacity for available landfill gas throughout the test period without the condensate injection. Temperature and fuel flow rate were monitored and recorded by the automatic operation control system throughout the test period. The landfill gas flow rate averaged 2,713 scfm during the source testing and was below the design capacity of 4,000 scfm.

The flare's temperature set point was set at 1,575°F as monitored from the middle stack thermocouple.

3.2 SAMPLE LOCATIONS

Samples were collected at the flare exhaust and at the inlet (landfill gas fuel) to the flare. The SCAQMD Method 1.1 sample point calculations and a schematic drawing of the exhaust sample locations are included in Appendix A.1. Sample ports were not available for the inlet flow and /or moisture measurements.

At the flare exhaust, a boom lift was used for access to the ports located on the circumference of the flare. The ports are approximately 44 feet above the ground; the stack exit is 50 feet above ground. The flare has an inner diameter of 136 inches. Twenty-four traverse points were used on all particulate, flow rate, and CEMS tests.

3.3 TEST PROCEDURES

The test procedures used for the inlet and flare exhaust measurements are summarized below in Tables 3-1 and 3-2, respectively. The procedures selected are consistent with SCAQMD/EPA source test methods as applicable. Brief discussions of each procedure are given below in Sections 3.3.1 through 3.3.10. A single measurement of each parameter was performed except for exhaust trace organics, which were measured in triplicate.

**TABLE 3-1
FLARE INLET TEST PROCEDURES
CHIQUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)**

Parameter	Sample Medium	Analytical Technique	Reference Method	Number of Replicates
Flow Rate ⁽¹⁾	On-Site Flow Meter	Flow Meter	Facility Meter	1
N ₂ , O ₂ , and CO ₂ Fuel Analysis (F-Factor & Btu/CF)	Tedlar Bag	GC/FID/TCA	SCAQMD 10.1 ASTM D1945/D3588	1-Duplicate
Methane and Total Gaseous Non-Methane Organics	Tedlar Bag	GC/FID/TCA	EPA 18	1-Duplicate
H ₂ S and TRS	Tedlar Bag	GC/SCD	SCAQMD 307-91	1-analyzed in duplicate
Trace Organics (Rule 1150.1 Compounds)	Summa Canister	GC/MS	EPA TO-15	3 / 30 min

(1) Inlet Flow rate was measured by the dedicated facility meter. Facility Fuel Meter calibration is included in this report.

**TABLE 3-2
FLARE EXHAUST TEST PROCEDURES
CHIQUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)**

Parameter	Sample Medium	Analytical Technique	Reference Method	Number of Replicates
Flow Rate	Pitot Tube	Differential Pressure	SCAQMD 2.1/ EPA 19	1 / 72 Min
Moisture	Impinger Train	Gravimetric	SCAQMD 4.1	1 / 72 Min
Particulate Matter (PM)	Impinger Train and Filter	Gravimetric	SCAQMD 5.1	1 / 72 Min
Methane and Total Gaseous Non-Methane Organics	Summa Canister and H ₂ O Vial	GC/FID/TCA/TCD	SCAQMD 25.3	1-Duplicate 60 Min
NO _x	CEM	Chemiluminescence	SCAQMD 100.1	1 / 72 Min
O ₂	CEM	Paramagnetic	SCAQMD 100.1	1 / 72 Min
CO ₂	CEM	NDIR	SCAQMD 100.1	1 / 72 Min
CO	CEM	NDIR/GFC	SCAQMD 100.1	1 / 72 Min
Trace Organics (Rule 1150.1 Compounds)	Summa Canister	GC/MS	EPA TO-15	3 / 30 Min

3.3.1 SCAQMD Method 1.1 – Sampling and Velocity Traverses for Stationary Sources

A preliminary source test site assessment was performed prior to the source test in order to determine applicable sample point traverse locations. The stack diameter, and the distance from sample ports to disturbances, i.e. bends, flanges, etc., both upstream and downstream, were measured. This information was utilized to determine the minimum number of sampling points per traverse, and the distance from the inner stack wall to each sample point location. Additionally, cyclonic flow patterns and in-situ stratified pollutant concentrations were taken into account.

3.3.2 SCAQMD Method 2.1 – Velocity and Volumetric Flow Rate

The velocity of the gas stream is determined by using an "S" type or standard pitot tube, a low flow electronic manometer, and type "K" thermocouple with a digital temperature measuring device. The calibrated pitot tube is connected to the electronic Air Data Multimeter (ADM) manometer and leak checked. A temperature and delta P are obtained at each traverse point, and a duct static pressure is measured and recorded. The dry volumetric flow rate is determined from the gas velocity data, stack pressure, stack gas moisture content, stack gas molecular weight, and cross-sectional area of duct. The outlet gas flow rate was measured in conjunction with the particulate test using a combined pitot/probe system following SCAQMD Method 2.1 and 5.1. The exhaust flow rate was also calculated using EPA Method 19 and landfill gas analysis data and compared with the measured flow rate. A cyclonic flow test was conducted. The inlet landfill gas flow rate was measured by the calibrated facility fuel meter.

3.3.3 SCAQMD Method 3.1 – Gas Analysis for Dry Molecular Weight and Excess Air

A gas sample is extracted from the stack using the Montrose AQS continuous emissions monitoring system. The system is operated in accordance with SCAQMD 100.1. Molecular weight of the stack gas is calculated from the percentages of carbon dioxide (CO₂), oxygen (O₂) and nitrogen (N₂). Inlet N₂, O₂, and CO₂ measurements were acquired from the D-1945 samples of the landfill gas following SCAQMD Method 10.1 and ASTM D-1945/3588. Quantum Analytical analyzed these inlet samples by GC/TCD.

3.3.4 SCAQMD Method 4.1 – Determination of Moisture Content in Stack Gases

Moisture content was determined with the Method 5.1 sampling system. Prior to sampling a leak check of the sampling train is performed to ensure system integrity. Tare weights of the charged individual impingers are recorded prior to the start of the sampling run using a top loading digital balance capable of weighing to the nearest 0.1 gram or less. After sampling, the final weights of each impinger are determined and recorded. Percent moisture content is calculated from the weight of water collected and the dry gas volume sampled.

3.3.5 SCAQMD Method 5.1 – Particulate Emissions

A series of preliminary measurements were made prior to conducting the test. SCAQMD Methods 1.1, 2.1, and 3.1 were performed to determine location and number of traverse points, average gas velocity, and gas molecular weight, respectively. Percent moisture content was estimated using a psychometric chart or combustion analysis of the fixed gases. The results of these measurements were used to determine the appropriate nozzle size for isokinetic sampling.

The apparatus is prepared on-site in our mobile emissions laboratory. The absorption train is charged with freshly prepared chemicals, weighed on a calibrated top loading digital balance to the nearest 0.1 grams, and assembled. The first two impingers contain 100 ml of deionized distilled water (DI H₂O), impinger three is empty, and impinger four contains approximately 300 grams of indicating silica gel. An ambient temperature filter is located between the third and fourth impinger. The probe is brushed out and rinsed with distilled water and acetone.

The sampling apparatus is sealed and transported to the sampling site where it is assembled and leak tested at 15 inches of mercury vacuum. The probe is positioned into the duct at the first traverse point with the nozzle out of the flow.

The nozzle is positioned into the gas flow and the vacuum pump is started immediately and adjusted to obtain an isokinetic sample rate. A complete traverse is performed while sampling for three minutes per sample point. Upon completion of the traverse the vacuum pump is turned off and the probe is transferred into the next sample port where an identical traverse is performed. Duct conditions (temperature, ΔP) and sampling conditions (meter temperature, meter volume, meter pressure, impinger temperature, and absorption train vacuum) are monitored and recorded regularly for each sample point.

Upon completion of the sampling run, the apparatus is leak checked at a vacuum greater than the highest observed vacuum. Any leak is recorded and the apparatus is sealed and transported to the mobile laboratory. The filter-to-impinger Teflon line is rinsed with a known amount of distilled water into the first impinger.

Particulate Analysis

The filter and any loose particulate are carefully removed from the filter holder with tweezers. The filter is then placed into a labeled petri dish and transported to the MAQS laboratory. The nozzle and probe are rinsed and brushed three times with DI H₂O. The sample fractions are combined, bottled, labeled, and fluid levels marked for transportation to MAQS laboratory for analysis. An aliquot of the DI H₂O is similarly treated for blank analysis.

The absorption train is inspected for abnormalities and disassembled. The impingers are weighed on a top loading digital balance for a percent moisture determination. The contents of impingers 1 and 2, and impinger 3 are quantitatively transferred into the probe/nozzle bottle, sealed, labeled, and fluid level marked for transportation to the MAQS laboratory for analysis.

The filter is transferred to an oven and heated at 105°C for 2-3 hours and then placed in a desiccator for 24 hours. The filter is weighed on a digital balance to the nearest 0.1 mg or one percent of the total filtrate weight (weighed to a constant weight).

The contents of the nozzle, probe and impingers are diluted volumetrically to a known volume. Organic extraction was performed on the combined probe and impinger catch. The aqueous fractions are evaporated, desiccated, and weighed to a constant weight.

The net weight of particulate is calculated from all the fractions. Concentrations (gr/dscf) and emissions (lb/hr) are calculated and reported based on the sampling data and the net weight of particulate matter. The particulate matter results are reported as total particulate or PM₁₀ since all the particulate matter emitting from the flare is assumed to be less than 10 microns.

3.3.6 SCAQMD Method 100.1 – Continuous Gaseous Emissions Sampling

Measurements of NO_x, O₂, CO₂, and CO at the exhaust were conducted using SCAQMD Method 100.1 sampling with a continuous emission monitoring system (CEMS).

A continuous sample is extracted from the stack through a stainless-steel probe, heated Teflon line, filter, sample conditioner (moisture removal system), sample pump and then delivered to the analyzers through an unheated Teflon line, sample manifold and dedicated flow meters.

Prior to beginning the test, a system leak check is performed. The leak check is accomplished by plugging the probe tip and drawing >25" Hg vacuum on the entire sampling system. When all flow meters indicate 0.000 scfh flow, the system is proven to be free of all leaks.

An analyzer calibration error (CE) check is performed at the beginning of each sampling day. The CE is performed as follows: After zeroing all analyzers with nitrogen, EPA Protocol 1 gases are used to calibrate each analyzer within 80-95% full scale of the selected range. Each analyzer, individually, is then spanned within 40-60% of the selected range by introducing a second EPA Protocol 1 gas.

A system bias check is performed before and after each sampling run by delivering zero and calibration gases to the three-way valve, located between the probe and sample line, and drawing the gases through the sampling system. The bias for each analyzer will not exceed 5% of the high spanned calibration gas value or the sampling run is repeated.

All concentrations from the NO_x, O₂, CO₂, and CO analyzers are recorded on a Johnson Yokogawa Model DR240 recorder. The data is continuously recorded by a strip chart and an on-site data acquisition system (DAS). The DAS is reduced by computer in the Montrose AQS Laboratory.

A single emissions measurement was performed to determine the concentration of NO_x, O₂, CO₂, and CO. The average concentrations were determined during a test for a period of 72 minutes using a 24-point traverse. This test average was then corrected for measured system bias and drift. Exhaust N₂ data was calculated by the difference from the concentration of the other major exhaust gas components. The NO_x analyzer was on the NO_x mode of operation. A NO₂ converter check was performed on-site and met 90% efficiency criteria.

3.3.7 SCAQMD Method 25.3 and EPA Method 18 – Methane and Total Gaseous Non-Methane Organics

Methane and total gaseous non-methane organics were measured at the inlet and exhaust following EPA Method 18 and Method 25.3, respectively. Quantum Analytical, based in Carson, California and Enthalpy Analytical in Orange, California analyzed the Method 18 and 25.3 samples, respectively, following EPA and SCAQMD Method Procedures.

The exhaust gas measurements were conducted using SCAQMD Method 25.3. The sample is collected using a stainless-steel probe connected by Teflon tubing to a glass impinger containing 2-3 ml of purified H₂O. The condensable organics are captured in the water impinger. Non-condensable organics travel through the water fraction and are collected in an evacuated stainless-steel tank. The probe and sample lines are purged with flue gas continuously for 5 minutes before sampling. The exhaust sampling was conducted simultaneously with the collection of the EPA Method 18 inlet samples for the determination of destruction efficiency. The EPA Bias factor (1.086) is used to correct the SCAQMD 25.3 sample results. Single point sampling was conducted.

3.3.8 EPA Method TO-15 – Trace Organic Hydrocarbons

Trace organic species were collected in triplicate in summa canisters at the inlet and exhaust. The samples were analyzed by Gas Chromatography/Mass Spectroscopy (GC/MS) by Enthalpy Analytical in Orange, California, following EPA Method TO-15 protocol. The flare inlet and exhaust were sampled simultaneously for a thirty-minute period. The flow rate used to calculate the emission rates (lb/hr) are the inlet and outlet measured flows. Single point sampling was conducted.

3.3.9 SCAQMD Method 307-91 – Hydrogen Sulfide and Reduced Sulfur Compounds

A sample for determination of hydrogen sulfide and speciated reduced sulfur compounds was collected in a Tedlar bag. The sample was analyzed by GC/SCD by Quantum Analytical Services, Inc. in Carson, California, following SCAQMD Method 307-91 protocol. The Tedlar bag sample was analyzed in duplicate within 24 hours of sampling. The inlet total sulfur concentration was used along with inlet landfill gas flow rate to calculate the SO_x emissions.

3.3.10 EPA Method 19 – Calculation of Exhaust Flow Rate from Known F-Factor

Landfill gas flow rate was measured using the calibrated facility fuel meter. Inlet landfill gas samples were collected in a Tedlar bag and analyzed for F-Factor (dscf/MMBtu) and high heating value (HHV) Btu/scf by ASTM D1945/3588. Lab result values are used for the calculation of volumetric flow rate. The equation below shows the equation used to calculate volumetric flow rate.

Equations:

$$Q_{sd} = \left(\frac{F_d \times GCV \times FF}{1 \times 10^6} \right) \left(\frac{20.9 - O_2}{20.9} \right)$$

4.0 RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the Chiquita Canyon Landfill Flare No. 1 (John Zink) source test program demonstrate that the criteria pollutant and VOC emissions are below the SCAQMD Permit to Operate No. G73696 (A/N 645450) limits, with the exception of the Inlet Total Reduced Sulfur as H₂S and the Exhaust SO_x lbs/hr as SO₂. Table 1-1 presents the summarized test results and applicable permit limits. Table 4-1 presents detailed test results of each parameter. Table 4-2 presents the test results of the trace organics. The TGNMO destruction efficiency was 99.89% and the average TGNMO exhaust concentration (ppm @ 3% O₂ as hexane) was 1.58 ppm, well below the requirement of 20 ppm @3% O₂ as hexane.

SCS Field Services – Chiquita Canyon Landfill
2024 Gas Flare No. 1 Source Test

**TABLE 4-1
GENERAL RESULTS
CHIKUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)
JUNE 27, 2024**

Parameter/Units	Inlet Result	Exhaust Result	Limit
O ₂ , %	2.48	12.43	--
CO ₂ , %	45.63	8.97	--
N ₂ , %	16.52	78.59	--
H ₂ O, %	--	10.4	--
Flow Rate, wscfm	--	26,860	--
Flow Rate, dscfm	2,729	24,055	4,000 (inlet)
Temperature, °F ⁽³⁾	--	1,473	--
Temperature, °F ⁽⁴⁾	--	1,575	>1400
Btu/scf	374.5	--	--
NO_x			
ppm	--	8.75	--
ppm @ 3% O ₂	--	18.51	--
lb/hr (as NO ₂)	--	1.53	3.9
lb/day (as NO ₂)	--	36.75	--
lb/MMBtu (as NO ₂)	--	0.025	0.06 (BACT)
lb/MMCF (as NO ₂)	--	9.35	--
CO⁽⁵⁾			
ppm	--	<20.00	2,000 (Rule 407)
ppm @ 3% O ₂	--	<42.29	--
lb/hr	--	<2.13	5.6
lb/day	--	<51.12	--
lb/MMBtu	--	<0.035	0.06 (BACT)
lb/MMCF	--	<13.01	--
Methane			
ppm	350,595	<2.15	--
lb/hr	2,420	<0.13	--
Destruction Efficiency, % Methane	--	>99.99	≥99
VOC			
ppm (as CH ₄)	41,862	5.23	--
lb/hr (as CH ₄)	289.0	0.32	0.92 (Exhaust)
lb/day (as CH ₄)	6,936	7.65	--
lb/MMBtu (as CH ₄)	--	0.005	--
ppm (as hexane)	6,977	0.87	--
ppm @ 3% O ₂ (as hexane) ⁽¹⁾	6,780	1.58	20 (Exhaust)
lb/MMCF (as hexane)	--	1.75	--
lb/MMBtu (as hexane)	--	0.005	--
lb/hr (as hexane)	258.9	0.29	--
Destruction Efficiency, % Hexane⁽¹⁾	--	99.89	≥98
Particulate Matter			
gr/dscf	--	0.0029	0.057 (Rule 404)
gr/dscf @ 12% CO ₂	--	0.0038	0.1 (Rule 409)
lb/hr	--	0.59	1.4
lb/day	--	14.22	--
lb/MMBtu	--	0.010	--
lb/MMCF	--	3.64	--
Sulfur Compounds			
H ₂ S, ppm	67.64	--	--
Carbonyl Sulfide, ppm	2.20	--	--
Methyl Mercaptan, ppm	82.91	--	--
Ethyl Mercaptan, ppm	1.97	--	--
Dimethyl Sulfide	466.7	--	--
Unidentified Sulfur Compounds, ppm	156.9	--	--
Total Sulfur Compounds,			
Total Sulfur as H ₂ S- Inlet, ppm	778.3	--	150 (Rule 431.1)
SO _x Exhaust, lb/hr (as SO ₂) ⁽²⁾	--	21.49	2.5
SO _x Exhaust, lb/day (as SO ₂) ⁽²⁾	--	515.85	--
lb/MMCF	--	131.27	--

(1) SCAQMD Rule 1150.1 and NSPS require that a flare meet the concentration standard or DRE.

(2) The exhaust SO_x lb/hr and lb/day results are calculated from inlet reduced sulfur concentrations.

(3) Temperatures taken from the sampling ports.

(4) Temperatures taken from the facility.

(5) Values presented reflect 20% of the selected analyzer range.

TABLE 4-2
TRACE ORGANIC SPECIES DESTRUCTION EFFICIENCY RESULTS
CHIQUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)
JUNE 27, 2024

Sample Location: Test No.: Start Time: Flow Rate, dscfm:		Inlet VOC - AVG 1, 2 & 3 0920, 0955, 1030 2,729		Exhaust VOC - AVG 1, 2 & 3 0920, 0955, 1030 24,055		Destruction Efficiency
Species	ppb	lb/hr	ppb	lb/hr	%	
Benzene:		83,383	2.81	4.40	1.31×10^{-3}	99.95%
Benzyl Chloride:	ND<	78	$< 4.28 \times 10^{-3}$	ND<	$0.36 < 1.74 \times 10^{-4}$	N/A
Chlorobenzene:		440	2.14×10^{-2}	ND<	$0.36 < 1.54 \times 10^{-4}$	> 99.28%
1,2-Dichlorobenzene:	ND<	78	$< 4.97 \times 10^{-3}$	ND<	$0.36 < 2.02 \times 10^{-4}$	N/A
1,4-Dichlorobenzene:		783	4.97×10^{-2}	ND<	$0.36 < 2.02 \times 10^{-4}$	> 99.59%
1,1-Dichloroethane:	ND<	78	$< 3.35 \times 10^{-3}$	ND<	$0.36 < 1.36 \times 10^{-4}$	N/A
1,2-Dichloroethane:		767	3.28×10^{-2}	ND<	$0.36 < 1.36 \times 10^{-4}$	> 99.59%
1,1 Dichloroethene:	ND<	78	$< 3.28 \times 10^{-3}$	ND<	$0.36 < 1.33 \times 10^{-4}$	N/A
Dichloromethane:		367	1.35×10^{-2}	ND<	$0.36 < 1.16 \times 10^{-4}$	> 99.13%
1,2-dibromoethane:	ND<	78	$< 6.36 \times 10^{-3}$	ND<	$0.36 < 2.58 \times 10^{-4}$	N/A
Perchloroethylene:		287	2.05×10^{-2}	ND<	$0.36 < 2.27 \times 10^{-4}$	> 98.89%
Carbon Tetrachloride:	ND<	78	$< 5.21 \times 10^{-3}$	ND<	$0.36 < 2.11 \times 10^{-4}$	N/A
Toluene:		25,667	1.02	<	$1.14 < 4.00 \times 10^{-4}$	> 99.96%
1,1,1-Trichloroethane:	ND<	78	$< 4.51 \times 10^{-3}$	ND<	$0.36 < 1.83 \times 10^{-4}$	N/A
Trichloroethene:		143	8.14×10^{-3}	ND<	$0.36 < 1.80 \times 10^{-4}$	> 97.79%
Chloroform:	ND<	78	$< 4.04 \times 10^{-3}$	ND<	$0.36 < 1.64 \times 10^{-4}$	N/A
Vinyl Chloride:	ND<	78	$< 2.12 \times 10^{-3}$	ND<	$0.36 < 8.57 \times 10^{-5}$	N/A
m+p-Xylene:		14,667	6.73×10^{-1}	ND<	$0.72 < 2.91 \times 10^{-4}$	> 99.96%
o-Xylene:		5,200	2.38×10^{-1}	ND<	$0.36 < 1.46 \times 10^{-4}$	> 99.94%
Total Trace Organics:		<	4.93	<	4.70×10^{-3}	> 99.90%

<- indicates that the species was detected in the sample above the analytical detection limit for the species in one of the test runs.
ND< - indicates that the species was not detected in the sample above the analytical detection limit for this species.
The values reported is the detection limit for the species and the actual concentration is lower.
N/A - indicates that the destruction efficiency cannot be calculated because the inlet concentration is below the detection limit.

4.2 TEST OVERVIEW

Testing was conducted according to the source test protocol (MAQS Document W002AS-040568-PP-1013) submitted to SCAQMD on April 25, 2024 with exception of the metal testing. The test protocol was later approved by the SCAQMD (Ref: S/T ID: P24145). All emissions are below the applicable permit limits with exception of the Inlet Total Reduced Sulfur as H₂S and the Exhaust SO_x lbs/hr as SO₂.

Sample ports were not available at the inlet location for the flow rate and moisture measurements; therefore, the landfill gas inlet flow rate was recorded from the calibrated facility fuel meter. The particulate isokinetic rate was within the allowable range of 100%±10% as defined in the method. All calibration error, system bias, and drift checks were below their allowed tolerance of 2%, 5%, and 3%, respectively. The on-site NO₂ converter check efficiency was 95%, meeting the greater than 90% efficiency criterion. The precision between the two SCAQMD 25.3 samples met the 20% method QA requirement. The results were therefore the average value of the two samples.

APPENDIX A TEST DATA

Appendix A.1

Sample Location Data

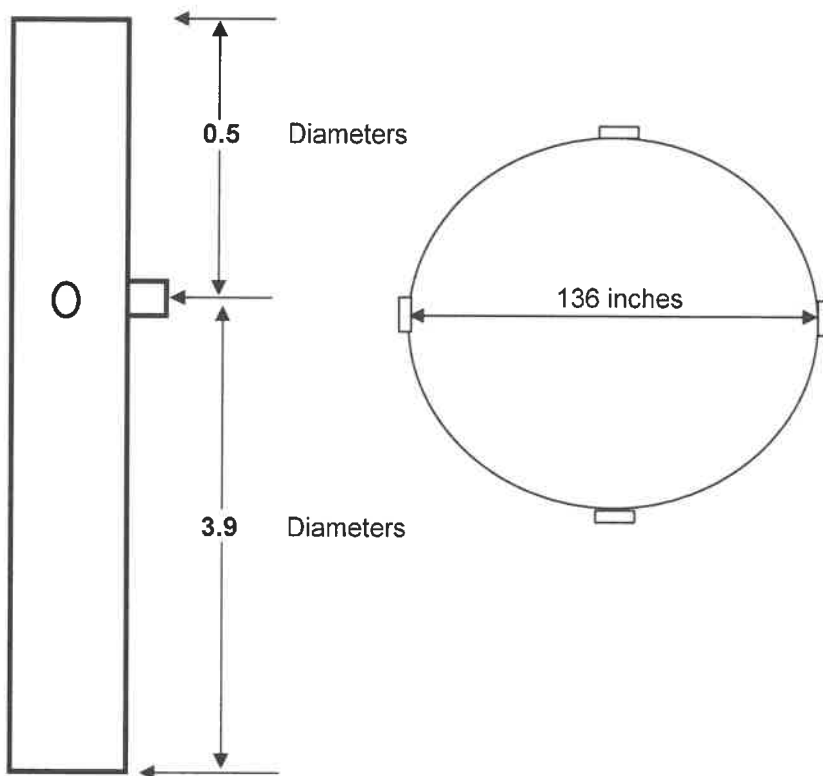
METHOD 1 DATA SHEET EXHAUST SAMPLE LOCATION

Client: Waste Connections

Date: 6/27/24

Location: Flare 1

Performed By: SJ, AD, JI



Diameter (inches)	<u>136.00</u>
Upstream (inches)	<u>530.00</u>
Downstream (inches)	<u>70.00</u>
Coupling (in.)	<u>4.00</u>
Stack Area (ft ²)	<u>100.88</u>

Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
1	2.1	2.9	6.9
2	6.7	9.1	13.1
3	11.8	16.0	20.0
4	17.7	24.1	28.1
5	25.0	34.0	38.0
6	35.6	48.4	52.4
7	64.4	87.6	91.6
8	75.0	102.0	106.0
9	82.3	111.9	115.9
10	88.2	120.0	124.0
11	93.3	126.9	130.9
12	97.9	133.1	137.1

Appendix A.2

RM CEMS DAS and Strip Chart Data

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS					TEST VARIABLES				
Station: Chiquita Canyon Unit: Flare 1 Performed By: SJ, AD, JI Cp: 0.84 T _{ref} : 60 °F Stack Area: 100.88 ft ² Meter Y _g : 0.994					Start Date: 6/27/24 Start/End Time: 9:20 10:36 Test Condition: 1,575 degrees F Barom. Pressure: 28.81 Pstack: -0.02 iwvg Pstack: 28.81 "Hg MW: 28.69 lb/lb-mole				
METHOD 2.1 DATA					METHOD 100.1 DATA				
dP	Temp		Vel.		O ₂	CO ₂	NO _x	CO	
Point	(in. H ₂ O)	sqrt(dP)	°F	(fps)	Analyzer Range	20	20	25	100
					Cal Gas Value	9.09	8.97	11.06	44.95
					Pre-Test Direct Zero	-0.05	0.00	0.01	-0.08
					Pre-Test Direct Span	9.09	9.12	10.97	45.26
					Pre-Test System Zero	-0.05	0.15	0.07	-0.03
					Pre-Test System Span	9.07	9.06	11.05	45.22
					Post-Test System Zero	-0.07	-0.01	0.03	0.08
					Post-Test System Span	9.07	9.05	11.07	45.26
					Post-Test Direct Zero	-0.08	0.00	0.03	-0.10
					Post-Test Direct Span	9.06	9.04	11.04	44.88
					Raw Test Average	12.43	9.05	8.76	4.30
					Cal Corrected Average	12.43	8.97	8.75	4.24
					Average 0.0244 0.1562 1472.7 17.13				
					Pre-test span bias	-0.1%	-0.3%	0.3%	0.0%
					Post-test zero bias	0.1%	0.0%	0.0%	0.2%
					Post-test span bias	0.1%	0.0%	0.1%	0.4%
Stack Flow Rate: 103,679 wacfm					Zero drift	-0.1%	-0.8%	-0.2%	0.1%
Stack Flow Rate: 24,055 dscfm					Span drift	0.0%	0.0%	0.1%	0.0%
METHOD 4.1 DATA									
Dry Gas Meter				Impingers				Meter Pressure: 0.9 iwvg Sample Volume: 38.630 dscf H ₂ O Volume : 4.504 scf Moisture Content: 10.4 %	
Time	Vol.	T _m (in)	T _m (out)	#/Matl.	End	Start	Diff.		
Start				H ₂ O			0.0		
				H ₂ O			0.0		
End				Empty			0.0		
				SG			0.0		
Total	41.606		77.3	Total			96.9		
RESULTS									
		Ref. Meth	Defaulted	As Found					
		O ₂ %		12.43					
		NO _x ppm		8.75					
		NO _x @ 3% O2		18.51					
		NO _x lb/hr		1.53					
		NO _x lb/day		36.75					
		NO _x lb/MMBtu		0.025					
		NO _x lb/MMCF		9.35					
		CO ppm	<20.00	4.24					
		CO @ 3% O2	<42.29	8.97					
		CO lb/hr	<2.13	0.45					
		CO lb/day	<51.12	10.84					
		CO lb/MMBtu	<0.035	0.007					
		CO lb/MMCF	<13.01	2.76					

Note: Moisture and Flow data is from the PM run

"<"- CO concentrations below 20% of the analyzer range. Using 20% of range per Method 100.1.

REFERENCE METHOD 1-MINUTE AVERAGE DATA						
RUN NUMBER 1						
Date	Time	O ₂	CO ₂	NO _x	CO	
6/27/2024	9:21:00 AM	12.53	8.909	8.703	3.527	12
6/27/2024	9:22:00 AM	12.66	8.862	8.822	3.918	12
6/27/2024	9:23:00 AM	12.429	9.063	8.846	3.931	12
6/27/2024	9:24:00 AM	12.449	8.999	8.704	3.275	11
6/27/2024	9:25:00 AM	12.445	9.01	8.756	3.032	11
6/27/2024	9:26:00 AM	12.512	9.022	8.749	3.048	11
6/27/2024	9:27:00 AM	12.338	9.094	8.878	2.996	10
6/27/2024	9:28:00 AM	12.371	9.149	8.944	2.924	10
6/27/2024	9:29:00 AM	12.39	9.08	8.964	3.001	10
6/27/2024	9:30:00 AM	12.31	9.146	9.041	3.142	9
6/27/2024	9:31:00 AM	12.281	9.22	9.109	3.273	9
6/27/2024	9:32:00 AM	12.522	8.92	8.635	3.565	9
6/27/2024	9:33:00 AM	12.842	8.597	8.25	4.268	8
6/27/2024	9:34:00 AM	12.779	8.717	8.328	5.187	8
6/27/2024	9:35:00 AM	12.816	8.602	8.253	5.132	8
6/27/2024	9:36:00 AM	12.796	8.617	8.331	5.092	7
6/27/2024	9:37:00 AM	12.726	8.699	8.425	4.946	7
6/27/2024	9:38:00 AM	12.332	9.107	8.99	4.578	7
6/27/2024	9:39:00 AM	12.172	9.256	9.238	3.347	6
6/27/2024	9:40:00 AM	12.272	9.109	8.948	2.998	6
6/27/2024	9:41:00 AM	12.314	9.099	8.974	3.281	6
6/27/2024	9:42:00 AM	12.206	9.214	9.111	3.644	5
6/27/2024	9:43:00 AM	12.318	9.143	8.977	3.593	5
6/27/2024	9:44:00 AM	12.563	8.867	8.467	4.514	5
6/27/2024	9:45:00 AM	12.43	9.064	8.781	5.336	4
6/27/2024	9:46:00 AM	12.575	8.921	8.59	5.632	4
6/27/2024	9:47:00 AM	12.299	9.155	8.97	4.896	4
6/27/2024	9:48:00 AM	12.382	9.034	8.784	4.043	3
6/27/2024	9:49:00 AM	12.283	9.235	9.06	4.16	3
6/27/2024	9:50:00 AM	12.16	9.29	9.235	4.406	3
6/27/2024	9:51:00 AM	12.061	9.381	9.387	4.227	2
6/27/2024	9:52:00 AM	12.226	9.28	9.155	4.028	2
6/27/2024	9:53:00 AM	12.322	9.155	8.961	4.207	2
6/27/2024	9:54:00 AM	12.333	9.162	8.982	4.41	1
6/27/2024	9:55:00 AM	12.777	8.694	8.254	5.546	1
6/27/2024	9:56:00 AM	12.76	8.729	8.319	9.03	1
6/27/2024	10:01:00 AM	12.439	9.022	8.771	4.027	12
6/27/2024	10:02:00 AM	12.36	9.107	8.909	4.428	12
6/27/2024	10:03:00 AM	12.411	9.07	8.705	4.17	12
6/27/2024	10:04:00 AM	12.337	9.123	8.934	4.384	11
6/27/2024	10:05:00 AM	12.408	9.167	8.901	4.637	11
6/27/2024	10:06:00 AM	12.412	9.119	8.848	4.222	11
6/27/2024	10:07:00 AM	12.298	9.191	8.921	4.154	10
6/27/2024	10:08:00 AM	12.35	9.206	8.855	4.064	10
6/27/2024	10:09:00 AM	12.399	9.085	8.765	4.237	10
6/27/2024	10:10:00 AM	12.547	8.943	8.485	4.33	9
6/27/2024	10:11:00 AM	12.564	8.933	8.507	4.493	9
6/27/2024	10:12:00 AM	12.544	8.908	8.502	4.754	9
6/27/2024	10:13:00 AM	12.511	9.031	8.593	4.715	8
6/27/2024	10:14:00 AM	12.546	8.929	8.494	4.478	8
6/27/2024	10:15:00 AM	12.431	9.07	8.644	4.757	8
6/27/2024	10:16:00 AM	12.508	8.98	8.565	4.221	7
6/27/2024	10:17:00 AM	12.219	9.309	9.029	4.077	7
6/27/2024	10:18:00 AM	12.427	9.104	8.705	3.776	7
6/27/2024	10:19:00 AM	12.296	9.247	8.798	4.071	6
6/27/2024	10:20:00 AM	12.343	9.181	8.724	4.15	6
6/27/2024	10:21:00 AM	12.521	9.051	8.635	4.51	6
6/27/2024	10:22:00 AM	12.459	9.031	8.62	4.68	5
6/27/2024	10:23:00 AM	12.589	8.926	8.538	5.017	5
6/27/2024	10:24:00 AM	12.4	9.126	8.697	4.552	5
6/27/2024	10:25:00 AM	12.507	8.991	8.6	4.551	4
6/27/2024	10:26:00 AM	12.641	8.852	8.405	5.291	4
6/27/2024	10:27:00 AM	12.328	9.182	8.854	5.334	4
6/27/2024	10:28:00 AM	12.316	9.21	8.832	4.834	3
6/27/2024	10:29:00 AM	12.334	9.224	8.855	4.579	3
6/27/2024	10:30:00 AM	12.405	9.093	8.685	4.104	3
6/27/2024	10:31:00 AM	12.393	9.122	8.736	4.263	2
6/27/2024	10:32:00 AM	12.285	9.252	8.904	4.26	2
6/27/2024	10:33:00 AM	12.151	9.38	9.025	4.042	2
6/27/2024	10:34:00 AM	12.601	8.962	8.561	4.159	1
6/27/2024	10:35:00 AM	12.482	9.021	8.591	4.356	1
6/27/2024	10:36:00 AM	12.563	9.03	8.515	4.527	1
Average		12.43	9.05	8.76	4.30	



REFERENCE METHOD DATA LOGGER

Date	Time	O ₂ %	CO ₂ %	NO _x PPM	CO PPM	
6/27/2024	8:10:00	-0.043	-0.002	0.026	-0.293	
6/27/2024	8:11:00	-0.045	-0.005	0.011	-0.264	
6/27/2024	8:12:00	-0.046	-0.002	0.011	-0.288	
6/27/2024	8:13:00	-0.047	0.001	0.014	-0.081	< Zero Cal
6/27/2024	8:14:00	-0.049	0.002	0.014	-0.013	
6/27/2024	8:15:00	-0.05	0	0.015	-0.029	< NO
6/27/2024	8:16:00	16.856	14.69	16.479	22.007	
6/27/2024	8:17:00	18.053	18.293	22.962	82.162	
6/27/2024	8:18:00	18.041	18.311	22.802	90.528	< Span High
6/27/2024	8:19:00	18.04	18.315	22.895	90.253	
6/27/2024	8:20:00	18.039	18.307	22.843	90.129	< NO
6/27/2024	8:21:00	12.81	12.739	16.925	85.569	
6/27/2024	8:22:00	9.098	9.118	10.139	54.995	
6/27/2024	8:23:00	9.09	9.123	10.97	45.255	< Direct Mid
6/27/2024	8:24:00	3.009	2.881	12.039	35.787	
6/27/2024	8:25:00	-0.05	0.173	16.049	6.393	
6/27/2024	8:26:00	-0.053	0.163	16.253	0.09	
6/27/2024	8:27:00	-0.053	0.164	16.303	-0.033	
6/27/2024	8:28:00	-0.054	0.163	16.318	-0.03	< NO2 Audit NOx
6/27/2024	8:29:00	-0.055	0.164	2.754	-0.065	
6/27/2024	8:30:00	-0.057	0.161	0.104	-0.074	< NO2 Audit NO
6/27/2024	8:31:00	-0.056	0.158	0.204	-0.081	
6/27/2024	8:32:00	-0.055	0.158	0.015	-0.077	
6/27/2024	8:33:00	-0.055	0.163	0.107	-0.106	
6/27/2024	8:34:00	-0.057	0.162	0.111	-0.135	
6/27/2024	8:35:00	-0.057	0.158	0.108	-0.14	
6/27/2024	8:36:00	-0.058	0.153	0.105	-0.142	
6/27/2024	8:37:00	-0.059	0.152	0.083	-0.109	
6/27/2024	8:38:00	-0.059	0.155	0.076	-0.093	
6/27/2024	8:39:00	-0.06	0.155	0.07	-0.059	
6/27/2024	8:40:00	-0.061	0.151	0.069	0.03	
6/27/2024	8:41:00	-0.062	0.146	0.055	0.153	
6/27/2024	8:42:00	-0.062	0.145	0.059	0.132	
6/27/2024	8:43:00	-0.063	0.141	0.056	0.035	
6/27/2024	8:44:00	-0.062	0.14	0.059	-0.065	
6/27/2024	8:45:00	-0.063	0.14	0.048	-0.063	
6/27/2024	8:46:00	-0.064	0.14	0.049	-0.064	
6/27/2024	8:47:00	-0.064	0.14	0.053	-0.114	
6/27/2024	8:48:00	-0.063	0.142	0.046	-0.116	
6/27/2024	8:49:00	-0.063	0.147	0.046	-0.082	
6/27/2024	8:50:00	-0.063	0.152	0.04	-0.061	
6/27/2024	8:51:00	-0.064	0.15	0.044	-0.016	
6/27/2024	8:52:00	-0.064	0.146	0.044	-0.04	
6/27/2024	8:53:00	-0.063	0.146	0.042	-0.079	
6/27/2024	8:54:00	-0.063	0.148	0.045	-0.09	



REFERENCE METHOD DATA LOGGER

Date	Time	O ₂ %	CO ₂ %	NO _x PPM	CO PPM	
6/27/2024	8:55:00	-0.064	0.152	0.036	-0.065	
6/27/2024	8:56:00	-0.064	0.153	0.042	0	
6/27/2024	8:57:00	-0.065	0.15	0.033	0.048	
6/27/2024	8:58:00	-0.065	0.146	0.036	0.063	
6/27/2024	8:59:00	-0.066	0.146	0.035	0.072	
6/27/2024	9:00:00	-0.066	0.146	0.035	0.086	
6/27/2024	9:01:00	-0.065	0.146	0.03	0.115	
6/27/2024	9:02:00	-0.065	0.146	0.039	0.142	
6/27/2024	9:03:00	-0.064	0.143	0.036	0.161	
6/27/2024	9:04:00	-0.065	0.14	0.035	0.045	
6/27/2024	9:05:00	1.95	0.149	0.051	0.283	
6/27/2024	9:06:00	17.995	1.958	0.21	0.895	
6/27/2024	9:07:00	9.078	9.045	0.163	0.192	
6/27/2024	9:08:00	9.074	9.055	0.073	-0.025	< System O2, CO2
6/27/2024	9:09:00	10.656	5.757	1.796	-0.045	
6/27/2024	9:10:00	-0.046	0.157	10.561	0.064	
6/27/2024	9:11:00	-0.053	0.152	11.045	0.019	< System NOx
6/27/2024	9:12:00	0.668	0.771	6.107	6.136	
6/27/2024	9:13:00	-0.057	0.152	0.053	35.389	
6/27/2024	9:14:00	-0.058	0.15	0.043	43.561	
6/27/2024	9:15:00	-0.059	0.15	0.042	44.235	
6/27/2024	9:16:00	-0.058	0.15	0.035	45.223	< System CO
6/27/2024	9:17:00	8.515	6.339	5.129	38.045	
6/27/2024	9:18:00	12.566	8.883	8.654	12.014	
6/27/2024	9:19:00	12.652	8.778	8.725	3.653	
6/27/2024	9:20:00	12.548	8.926	8.748	3.262	< Start Test
6/27/2024	9:21:00	12.53	8.909	8.703	3.527	12
6/27/2024	9:22:00	12.66	8.862	8.822	3.918	12
6/27/2024	9:23:00	12.429	9.063	8.846	3.931	12
6/27/2024	9:24:00	12.449	8.999	8.704	3.275	11
6/27/2024	9:25:00	12.445	9.01	8.756	3.032	11
6/27/2024	9:26:00	12.512	9.022	8.749	3.048	11
6/27/2024	9:27:00	12.338	9.094	8.878	2.996	10
6/27/2024	9:28:00	12.371	9.149	8.944	2.924	10
6/27/2024	9:29:00	12.39	9.08	8.964	3.001	10
6/27/2024	9:30:00	12.31	9.146	9.041	3.142	9
6/27/2024	9:31:00	12.281	9.22	9.109	3.273	9
6/27/2024	9:32:00	12.522	8.92	8.635	3.565	9
6/27/2024	9:33:00	12.842	8.597	8.25	4.268	8
6/27/2024	9:34:00	12.779	8.717	8.328	5.187	8
6/27/2024	9:35:00	12.816	8.602	8.253	5.132	8
6/27/2024	9:36:00	12.796	8.617	8.331	5.092	7
6/27/2024	9:37:00	12.726	8.699	8.425	4.946	7
6/27/2024	9:38:00	12.332	9.107	8.99	4.578	7
6/27/2024	9:39:00	12.172	9.256	9.238	3.347	6



REFERENCE METHOD DATA LOGGER

Date	Time	O ₂ %	CO ₂ %	NO _x PPM	CO PPM	
6/27/2024	9:40:00	12.272	9.109	8.948	2.998	6
6/27/2024	9:41:00	12.314	9.099	8.974	3.281	6
6/27/2024	9:42:00	12.206	9.214	9.111	3.644	5
6/27/2024	9:43:00	12.318	9.143	8.977	3.593	5
6/27/2024	9:44:00	12.563	8.867	8.467	4.514	5
6/27/2024	9:45:00	12.43	9.064	8.781	5.336	4
6/27/2024	9:46:00	12.575	8.921	8.59	5.632	4
6/27/2024	9:47:00	12.299	9.155	8.97	4.896	4
6/27/2024	9:48:00	12.382	9.034	8.784	4.043	3
6/27/2024	9:49:00	12.283	9.235	9.06	4.16	3
6/27/2024	9:50:00	12.16	9.29	9.235	4.406	3
6/27/2024	9:51:00	12.061	9.381	9.387	4.227	2
6/27/2024	9:52:00	12.226	9.28	9.155	4.028	2
6/27/2024	9:53:00	12.322	9.155	8.961	4.207	2
6/27/2024	9:54:00	12.333	9.162	8.982	4.41	1
6/27/2024	9:55:00	12.777	8.694	8.254	5.546	1
6/27/2024	9:56:00	12.76	8.729	8.319	9.03	1
6/27/2024	9:57:00	12.403	9.079	8.712	7.482	
6/27/2024	9:58:00	12.413	9.086	8.773	4.345	
6/27/2024	9:59:00	19.746	1.517	1.749	2.61	
6/27/2024	10:00:00	13.301	8.12	7.454	1.691	< Resume
6/27/2024	10:01:00	12.439	9.022	8.771	4.027	12
6/27/2024	10:02:00	12.36	9.107	8.909	4.428	12
6/27/2024	10:03:00	12.411	9.07	8.705	4.17	12
6/27/2024	10:04:00	12.337	9.123	8.934	4.384	11
6/27/2024	10:05:00	12.408	9.167	8.901	4.637	11
6/27/2024	10:06:00	12.412	9.119	8.848	4.222	11
6/27/2024	10:07:00	12.298	9.191	8.921	4.154	10
6/27/2024	10:08:00	12.35	9.206	8.855	4.064	10
6/27/2024	10:09:00	12.399	9.085	8.765	4.237	10
6/27/2024	10:10:00	12.547	8.943	8.485	4.33	9
6/27/2024	10:11:00	12.564	8.933	8.507	4.493	9
6/27/2024	10:12:00	12.544	8.908	8.502	4.754	9
6/27/2024	10:13:00	12.511	9.031	8.593	4.715	8
6/27/2024	10:14:00	12.546	8.929	8.494	4.478	8
6/27/2024	10:15:00	12.431	9.07	8.644	4.757	8
6/27/2024	10:16:00	12.508	8.98	8.565	4.221	7
6/27/2024	10:17:00	12.219	9.309	9.029	4.077	7
6/27/2024	10:18:00	12.427	9.104	8.705	3.776	7
6/27/2024	10:19:00	12.296	9.247	8.798	4.071	6
6/27/2024	10:20:00	12.343	9.181	8.724	4.15	6
6/27/2024	10:21:00	12.521	9.051	8.635	4.51	6
6/27/2024	10:22:00	12.459	9.031	8.62	4.68	5
6/27/2024	10:23:00	12.589	8.926	8.538	5.017	5
6/27/2024	10:24:00	12.4	9.126	8.697	4.552	5
6/27/2024	10:25:00	12.507	8.991	8.6	4.551	4



REFERENCE METHOD DATA LOGGER

Date	Time	O ₂ %	CO ₂ %	NO _x PPM	CO PPM	
6/27/2024	10:26:00	12.641	8.852	8.405	5.291	4
6/27/2024	10:27:00	12.328	9.182	8.854	5.334	4
6/27/2024	10:28:00	12.316	9.21	8.832	4.834	3
6/27/2024	10:29:00	12.334	9.224	8.855	4.579	3
6/27/2024	10:30:00	12.405	9.093	8.685	4.104	3
6/27/2024	10:31:00	12.393	9.122	8.736	4.263	2
6/27/2024	10:32:00	12.285	9.252	8.904	4.26	2
6/27/2024	10:33:00	12.151	9.38	9.025	4.042	2
6/27/2024	10:34:00	12.601	8.962	8.561	4.159	1
6/27/2024	10:35:00	12.482	9.021	8.591	4.356	1
6/27/2024	10:36:00	12.563	9.03	8.515	4.527	1
6/27/2024	10:37:00	12.636	8.933	8.756	6.495	End Run
6/27/2024	10:38:00	13.944	7.586	7.581	8.009	
6/27/2024	10:39:00	20.828	0.282	0.14	2.504	
6/27/2024	10:40:00	20.839	0.254	0.093	0.361	
6/27/2024	10:41:00	20.84	0.245	0.089	0.304	
6/27/2024	10:42:00	15.162	4.114	0.082	0.345	
6/27/2024	10:43:00	9.081	9.045	0.048	0.256	
6/27/2024	10:44:00	9.074	9.048	0.034	0.083	< System O2, CO2
6/27/2024	10:45:00	9.36	6.086	0.883	0.157	
6/27/2024	10:46:00	-0.05	0.079	10.714	0.281	
6/27/2024	10:47:00	-0.066	-0.011	11.065	-0.088	< System NOx
6/27/2024	10:48:00	5.698	0.002	3.802	9.692	
6/27/2024	10:49:00	-0.063	-0.018	0.037	38.832	
6/27/2024	10:50:00	-0.066	-0.019	0.027	44.898	
6/27/2024	10:51:00	-0.072	-0.014	0.028	45.255	< System CO
6/27/2024	10:52:00	11.79	10.995	11.933	39.949	
6/27/2024	10:53:00	17.996	18.218	22.815	77.107	
6/27/2024	10:54:00	17.998	18.3	22.74	90.703	< Direct High
6/27/2024	10:55:00	11.34	11.746	18.8	83.668	
6/27/2024	10:56:00	9.148	9.055	11.029	44.744	
6/27/2024	10:57:00	9.082	9.046	11.029	35.75	
6/27/2024	10:58:00	9.059	9.041	11.031	43.937	
6/27/2024	10:59:00	9.058	9.039	11.035	44.884	< Direct Mid
6/27/2024	11:00:00	4.121	3.923	5.599	39.509	
6/27/2024	11:01:00	-0.072	0.009	0.032	8.412	
6/27/2024	11:02:00	-0.075	0.001	0.025	-0.397	
6/27/2024	11:03:00	-0.076	-0.004	0.026	-0.104	< Direct Zero
6/27/2024	11:04:00	-0.076	-0.007	0.024	-0.159	

SPAN GAS RECORD

CLIENT/LOCATION: Waste Connections Flare 1
 TRUCK/CEM I.D.: T4

DATE: 6/27/24
 BY: SJ, AD, JI

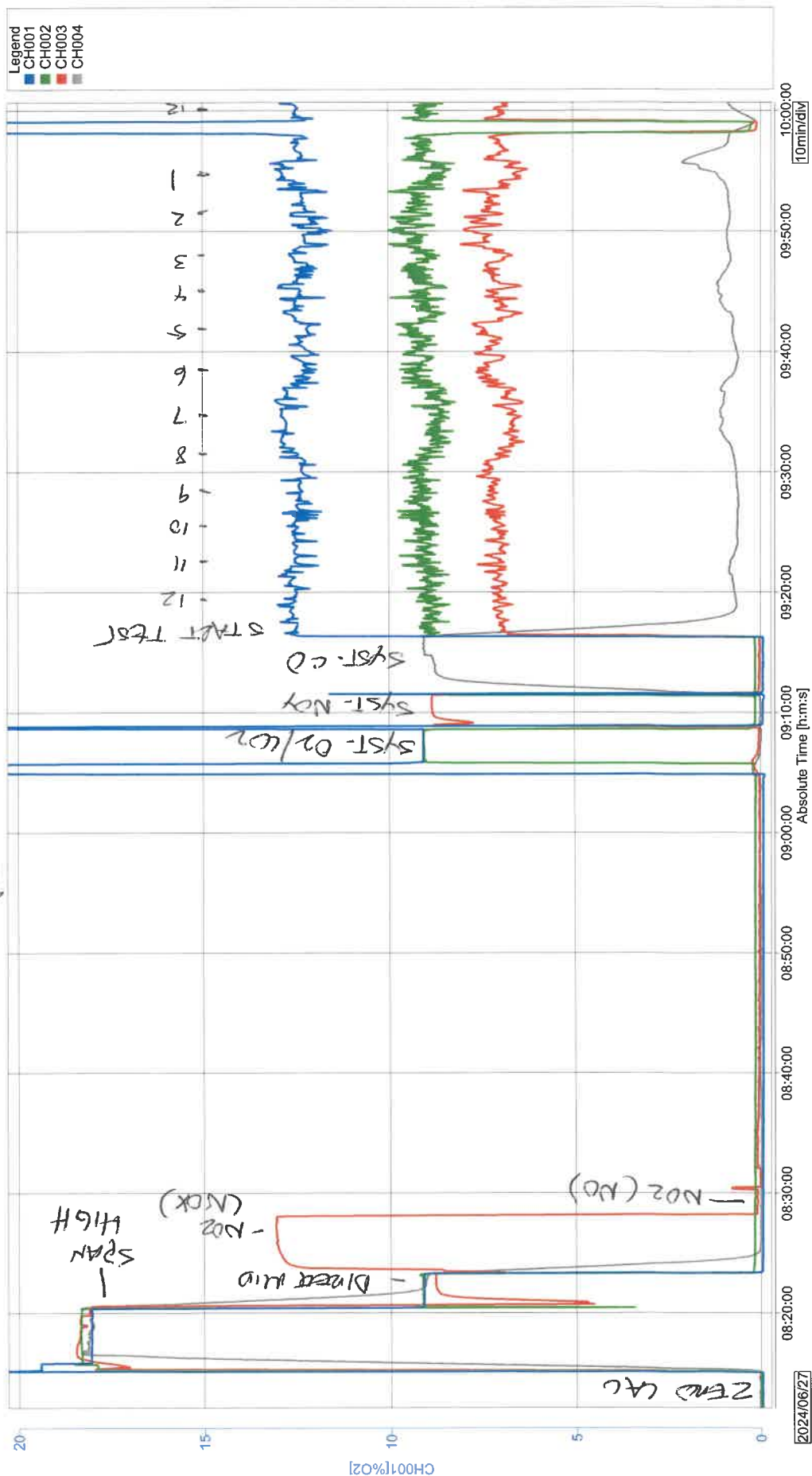
	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	EB0153454	0.0	1/19/32	B32024	
O₂	Mid	CC203715	9.09	11/20/31	B32023	45.5%
O₂	High	CC505326	18.05	11/15/31	B32023	90.3%
CO₂	Mid	CC203715	8.97	11/20/31	B32023	44.9%
CO₂	High	CC505326	18.28	11/15/31	B32023	91.4%
NO_x	Mid	EB0108976	11.06	8/16/26	B32023	44.2%
NO_x	High	CC755218	22.60	9/7/25	F22022	90.4%
NO₂	NO₂	CC504061	17.04	8/17/26	B32023	
CO	Mid	CC146055	44.95	3/25/32	B32024	45.0%
CO	High	CC1442	90.18	9/13/30	B32023	90.2%

File Name : 62708120.DEV
 File Message : T4
 Device Type : DX200
 Serial No. : S5E205126
 Time Correct : None
 Starting Cond. : Manual
 Dividing Cond. : Manual
 Meas Ch. : 7
 Math Ch. : 0

Print Groups : T4
 Print Range : 2024/06/27 08:12:06.000 - 2024/06/27 11:16:54.000
 Comment :

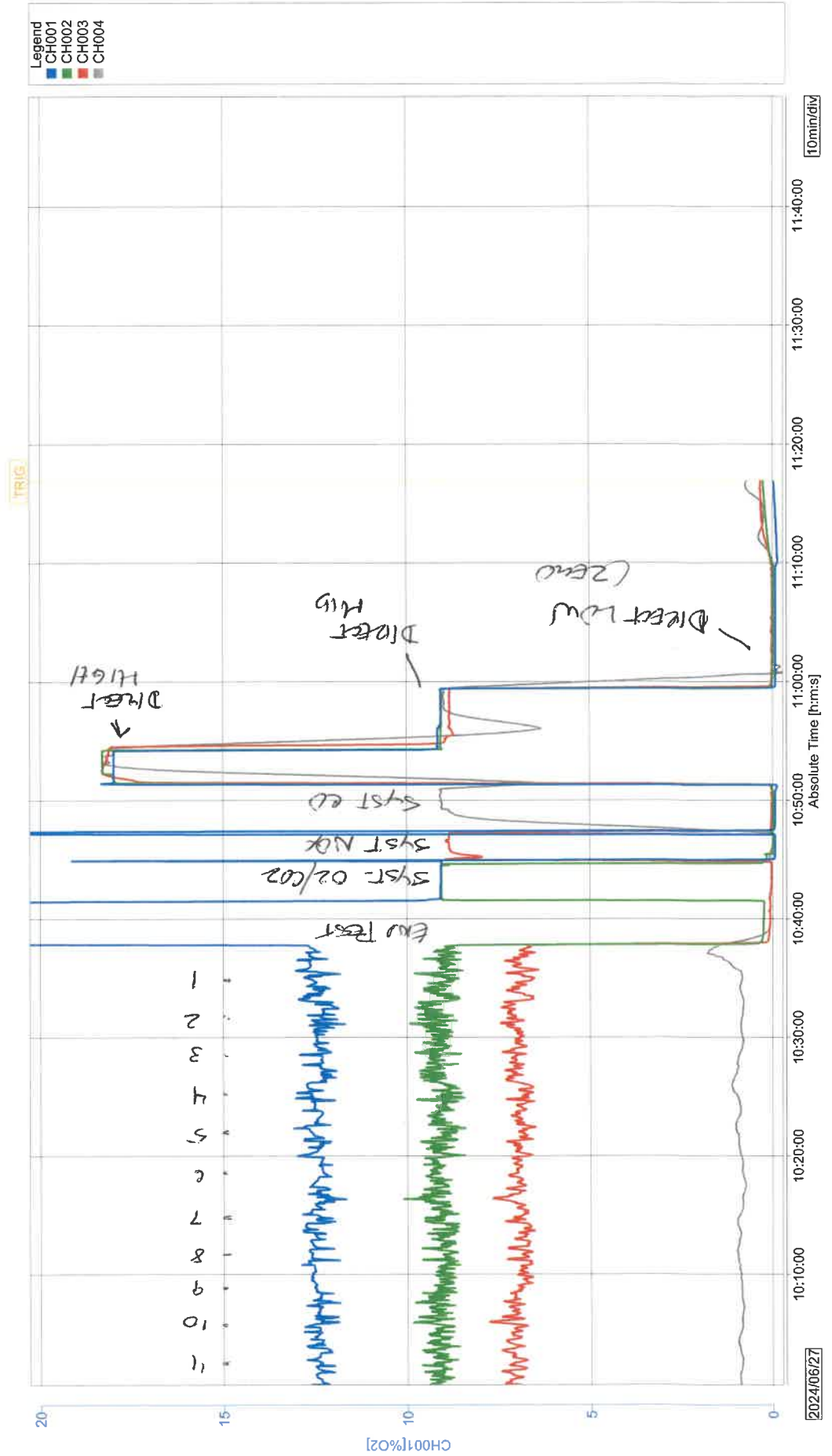
Data Count : 5545
 Sampling Int. : 2.000 sec
 Start Time : 2024/06/27 08:12:06.000
 Stop Time : 2024/06/27 11:16:54.000
 Trigger Time : 2024/06/27 11:16:54.000
 Trigger No. : 5544
 Damage Check : Not Damaged

CH20176 FIVE 1 6/27/24



File Name : 62708120.DEV
File Message : T4
Device Type : DX200
Serial No. : S5E205126
Time Correct. : None
Starting Cond. : Manual
Dividing Cond. : Manual
Meas Ch. : 7
Math Ch. : 0
Print Groups : T4
Print Range : 2024/06/27 08:12:06.000 - 2024/06/27 11:16:54.000
Comment :

Data Count : 5545
Sampling Int. : 2.000 sec
Start Time : 2024/06/27 08:12:06.000
Stop Time : 2024/06/27 11:16:54.000
Trigger Time : 2024/06/27 11:16:54.000
Trigger No. : 5544
Damage Check : Not Damaged



Appendix A.3

Particulate Field and Laboratory Data

PARTICULATE DATA AND CALCULATIONS

Client/Location.....	Waste Connections	Reference Temp (F).....	60
Unit.....	Flare 1	Fuel.....	Landfill gas
Sample Location.....	Stack	Data By.....	SJ, AD, JI
Operating Condition, deg F.....	1,575		
Test No.....	F1-1-PM		
Date.....	6/27/2024		
Test Method.....	SCAQMD 5.1		
Sample Train.....	48-WCS		
Pitot Factor	0.84		
Meter Cal Factor.....	0.994		
Stack Area (ft ²).....	100.88		
Sample Time (Minutes).....	72		
Bar Press ("Hg).....	28.81		
Nozzle Diam (inches).....	0.648		
Fuel Flow Rate (sdcfm).....	2,729	From Fuel Flow Inlet	
F-Factor (dscf/MMBTu).....	9,971		
Start/Stop Time.....	0920/1036		
Stack Press (iwg).....	-0.017		
Stack Temp (°F).....	1472.7		
Velocity Head (iwg).....	0.0244		
Stack O ₂ (%).....	12.43		
Stack CO ₂ (%).....	8.97		
Meter Vol (acf).....	41.606		
Meter Temp (°F).....	77.3		
Meter Press (iwg).....	0.9		
Liquid Vol (ml).....	96.9		
Std Sample Vol (SCF).....	38.630		
Std Sample Vol (Nm ³).....	1.019		
Moisture Fraction.....	0.104		
Stack Gas Mol Wt.....	28.69		
Stack Gas Velocity (ft/sec).....	17.13		
Stack Flow Rate (wacfm).....	103,679		
Stack Flow Rate (dscfm).....	24,055		
Isokinetic Ratio (%).....	98.2		
			Limit
Particulate Catch, mg.....	7.2		
Grain Loading, gr/dscf.....	0.0029		0.057 (Rule 404)
Grain Loading @ 3% O ₂	0.0061		--
Grain Loading @ 12% CO ₂	0.0038		0.1 (Rule 409)
Mass Emissions, lb/hr.....	0.59		1.4
Emission rate, lb/day.....	14.22		--
Emission factor, lb/MMBTu.....	0.010		--
Emission factor, lb/MMSCF.....	3.62		--

Test 1

	Vm	Ts	dP	dP^0.5	dH	Tmi	Tmo
12	587.280	1477	0.023	0.1517	0.9		70
11		1472	0.020	0.1414	0.8		70
10		1476	0.026	0.1612	1.0		71
9		1475	0.021	0.1449	0.8		71
8		1471	0.019	0.1378	0.7		71
7		1469	0.022	0.1483	0.8		74
6		1466	0.018	0.1342	0.7		75
5		1475	0.021	0.1449	0.8		75
4		1463	0.025	0.1581	1.0		76
3		1468	0.027	0.1643	1.0		77
2		1469	0.029	0.1703	1.1		77
1		1472	0.025	0.1581	1.0		78
12		1471	0.029	0.1703	1.1		78
11		1477	0.031	0.1761	1.2		78
10		1476	0.019	0.1378	0.7		79
9		1474	0.026	0.1612	1.0		80
8		1473	0.024	0.1549	0.9		81
7		1478	0.028	0.1673	1.1		81
6		1471	0.019	0.1378	0.7		81
5		1477	0.022	0.1483	0.8		81
4		1472	0.026	0.1612	1.0		82
3		1476	0.027	0.1643	1.0		83
2		1475	0.033	0.1817	1.3		83
1	628.886	1471	0.030	0.1732	1.1		83
	41.606	1472.7	0.0244	0.1562	0.94	77.3	

Impingers		
Post	Pre	Diff
0	100	-100
904.2	735.4	168.8
724.4	719.4	5.0
643.6	641.9	1.7
896.6	875.2	21.4
	3071.9	96.9

Waste Connections
Flare 1
June 27, 2024
SUMMARY OF EPA M-19 SOURCE TEST DATA AND CALCULATIONS

PARAMETER	UNITS	Run 1A	Run 1B	Average	
DATE		6/27/2024	6/27/2024	6/27/2024	
FUEL FLOW	SCFM	--	--	2,729	from facility meter
CALORIFIC VALUE	BTU/CF	376.0	373.0	374.5	from fuel analysis
F FACTOR (Fd)	DSCF/MMBTU	9,965	9,977	9,971	from fuel analysis
EXHAUST O2 CONCENTRATION	%VD	--	--	12.43	
HEAT INPUT - LANDFILL GAS	MMBTU/MIN	--	--	1.0220	
EXHAUST VOLUME FLOW RATE	DSCFM	--	--	25,160	

Values stated based on a standard temperature of: 60 °F

RAA compared to measured flow rate: -4.59 % <20%

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: ~~WLC~~ WLC CH1001TALOCATION: ~~FLAME - 1~~

DATE: 6/27/24

RUN NO: 1-PM

OPERATOR: AD, JI

METER BOX NO: 44WCS

METER ΔH@: 1.850

METER Yd: 0.944

STACK AREA, FT²:

TRAVERSE POINTS, MIN/POINT: 24X3

ΔH= 27.92 X ΔP:

Probe Condition, pre/post test: ✓

Silica Gel Expended, YdP: ✓

Filter Condition after Test: ✓

Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 75°

BAROMETRIC PRESSURE: 28.81

ASSUMED MOISTURE: 10%

PITOT TUBE COEFF, Cp: 0.84

PROBE ID NO/MATERIAL: 85 / QT2

PROBE LENGTH: 12'

NOZZLE ID NO/MATERIAL: 246T / QT2

NOZZLE DIAMETER: 0.648

FILTER NO/TYPE: GF-55-8010

PRE-TEST LEAK RATE: <0.005 CFM@ 16 in. Hg.

POST-TEST LEAK RATE: <0.005 CFM@ 16 in. Hg.

PITOT LEAK CHECK - PRE: ✓ POST: ✓

CHAIN OF CUSTODY: SAMPLE CUSTODIAN: ADM #50 #10

SAMPLER: ADM

SAMPLE CUSTODIAN: ADM

Imp. # Contents Post-Test - Pre-Test = Difference

1 DI 420 9042 7354

2 11 7244 7194

3 MT 6436 6419

4 SG 8966 8752

- 10012

Total:

Point	Time	Meter Volume, ft ³	ΔP in. H ₂ O	ΔH in. H ₂ O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In Out	Vacuum in. Hg.	O ₂ %	Pstatic in. H ₂ O
12	0920	587.280	0.023	0.9	1477	N/A	N/A	54	N/A	3	N/A	0.017
11	0923	589.08	0.020	0.8	1472			51		3		
10	0926	590.15	0.026	1.0	1476			50		3		
9	0929	592.74	0.021	0.8	1475			50		3		
8	0932	594.56	0.019	0.7	1471			50		3		
7	0935	595.22	0.022	0.8	1469			50		3		
6	0938	597.14	0.018	0.7	1466			50		3		
5	0941	599.39	0.021	0.8	1475			51		3		
4	0944	601.48	0.025	1.0	1463			51		3		
3	0947	602.95	0.027	1.0	1468			51		3		
2	0950	604.29	0.029	1.1	1469			51		3		
1	0953	606.68	0.028	1.0	1471			51		3		
13	0956	606.151	0.029	1.1	1471			52		3		
11	1003	609.89	0.031	1.2	1477			52		3		
10	1006	611.70	0.019	0.7	1476			52		3		
9	1009	613.03	0.026	1.0	1474			53		3		
8	1012	615.17	0.024	0.9	1473			53		3		
7	1015	616.24	0.028	1.1	1478			53		3		
6	1018	618.39	0.019	0.7	1471			54		3		
5	1021	620.66	0.022	0.8	1477			54		3		
4	1024	621.40	0.026	1.0	1472			54		3		
3	1027	623.11	0.027	1.0	1476			54		3		
2	1030	625.31	0.033	1.3	1475			55		3		
1	1033	627.54	0.030	1.1	1471			56		3		
Average:		1030	628.86									

Comments:



WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET - STANDARD

CLIENT: WC CHAQUITA
LOCATION: FLAKE-1
DATE: 6/27/24
RUN NO: FB
OPERATOR: ADOT
METER BOX NO: 4812CS
METER ΔH@: 1.850
METER Yd: 6.994
STACK AREA, FT²: —
TRAVERSE POINTS, MIN/POINT: —
ΔH= — X ΔP: —
Probe Condition, pre/post test: —
Silica Gel Expended, Y/N: —
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE: _____
 BAROMETRIC PRESSURE: _____
 ASSUMED MOISTURE: _____
 PITOT TUBE COEFF. Cp: _____
 PROBE ID NO/MATERIAL: _____
 PROBE LENGTH: _____
 NOZZLE ID NO/MATERIAL: _____
 NOZZLE DIAMETER: _____
 FILTER NO/TYPE: _____
 PRE-TEST LEAK RATE: : ~~4~~ _____
 POST-TEST LEAK RATE: : ~~4~~ _____
 PITOT LEAK CHECK - PRE: _____
 CHAIN OF CUSTODY: SA _____
 SA _____
 SA _____

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	DI420	117.9	122.6	
2	"	73.4	73.4	
3	"	628.9	628.9	
4	SB	871.0	871.0	
		-1022		
	Total:			

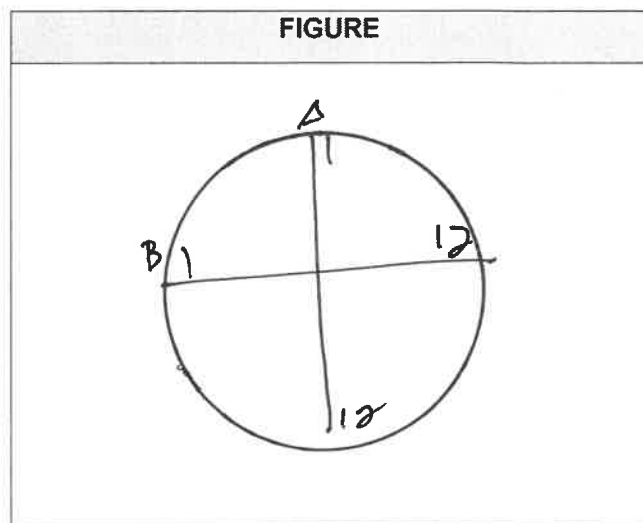
[illegible]

Comments:

MONTROSE AQS
 1631 E. ST ANDREW PLACE
 SANTA ANA, CA 92705

CYCLONIC FLOW VERIFICATION DATA SHEET

FACILITY	CHIBUITA
SOURCE	FLARE 1
DATE	6/27/24
PROJECT NUMBER	040568
STACK DIAMETER/DIMENSION	136"
BAROMETRIC PRESSURE	28.81
STATIC PRESSURE	-0.017
RUN NUMBER	2002
TOTAL TRAVERSE POINTS	24
OPERATOR	ADJTI



SAMPLE POINT	DISTANCE FROM SAMPLE PORT (INCHES)	NULL POINT ROTATION ANGLE	
		NORTH/SOUTH	EAST/WEST
1	6.9	2°	5°
2	13.1	3°	2
3	20.0	4°	1
4	28.1	2	3
5	38.0	2	0
6	52.4	1	4
7	91.6	6	2
8	106.0	4	1
9	115.9	5	0
10	124.0	1	7
11	130.9	2	1
12	137.1	3	2
		AVERAGE	

PARTICULATE

SCAQMD 5.1, WET IMPINGEMENT

Project # PROJ-040568
Client/Location: Waste Connections
Sample Location: Flare 1 Exhaust
Test # 1-PM

Sample Date: 6/27/2024
Analysis Date: 7/2/2024
Analyst: PR

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter	55-8010	0.1703	0.1679	2.4	-----	2.4	-----
2. Insoluble Particulate Filter	55-8209	0.1670	0.1669	0.1	-----	0.1	-----
3. Impingers and Probe Catches a. Water Fraction	1069	29.3940	29.3904	3.6	355	3.6	1.0
					355		
b. Organic Fraction 125 ml MeCl ₂ (5x25mL)	1070	29.0415	29.0404	1.1	355	1.1	0.2
					355		

Total Particulate = 7.2

Method of Sample Prep/Analysis Notes

PARTICULATE SCAQMD 5.1, WET IMPINGEMENT

Project #	PROJ-040568		
Client/Location:	Waste Connections	Sample Date:	6/27/2024
Sample Location:	Flare 1 Exhaust	Analysis Date:	7/2/2024
Test #	FB	DI H₂O Blank (mg/ml)	0.0027
		MeCl₂ Blank (mg/ml)	0.0013
		Analyst:	PR

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter	55-8014	0.1679	0.1679	0.0	-----	0.0	-----
2. Insoluble Particulate Filter	55-8208	0.1661	0.1660	0.1	-----	0.1	-----
3. Impingers and Probe Catches a. Water Fraction	1067	29.2986	29.2981	0.5	285	0.5	0.8
					285		
b. Organic Fraction 125 ml MeCl ₂ (5x25mL)	1068	29.5718	29.5716	0.2	285	0.2	0.2
					285		
DI H ₂ O Blank	1051	29.7657	29.7653	0.4	150	-----	-----
					150		
MeCl ₂ Blank	1052	30.2496	30.2494	0.2	150	-----	-----
					150		

Total Particulate = 0.8

Method of Sample Prep/Analysis Notes

PARTICULATE

SCAQMD 5.1, WET IMPINGEMENT

Project # 040568
Client/Location: Waste Connections
Sample Location: Flare 1 Exhaust
Test # 1-PM

Sample Date: 6/27/2024
Analysis Date: 7/2/2024
Analyst: PR

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter	55-8010	0.1703	0.1679	2.4	-----	2.4	-----
2. Insoluble Solids Filter	55-8209	0.1670	0.1669	0.1	-----	0.1	-----
3. Impingers and Probe Catches	1069	29.3940	29.3904	3.6	355	3.6	1.0
a. Water Fraction					355		
b. Organic Fraction	1070	29.0415	29.0404	1.1	355	1.1	0.2
125 ml MeCl ₂ (5x25mL)					355		

Total Particulate = 7.2

Method of Sample Prep/Analysis Notes

PARTICULATE SCAQMD 5.1, WET IMPINGEMENT

Project # 040568
 Client/Location: Waste Connections
 Sample Location: Flare 1 Exhaust
 Test # FB
 DI H₂O Blank (mg/ml) 0.0027
 MeCl₂ Blank (mg/ml) 0.0013
 Sample Date: 6/27/2024
 Analysis Date: 7/2/2024
 Analyst: PR

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter	55-8014	0.1679	0.1679	0.0	-----	0.0	-----
2. Insoluble Solids Filter	55-8208	0.1661	0.1660	0.1	-----	0.1	-----
3. Impingers and Probe Catches							
a. Water Fraction	1067	29.2986	29.2981	0.5	285 285	0.5	0.8
b. Organic Fraction 125 ml MeCl ₂ (5x25mL)	1068	29.5718	29.5716	0.2	285 285	0.2	0.2
DI H ₂ O Blank	1051	29.7657	29.7653	0.4	150 150	-----	-----
MeCl ₂ Blank	1052	30.2496	30.2494	0.2	150 150	-----	-----

Total Particulate = 0.8

Method of Sample Prep/Analysis Notes

०५०६८७६

PROJECT # 040458 070224/TEST DATE(S): 6/27/2024

SAMPLER(S): AD, JI

PROJECT MANAGER: Pete San Juan

DATE DUE: 7/12/2024

COMPLIANCE TEST?: Yes

[illegible]

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	6/28/24 12:30	Ratnas Lubro Co	07/02/24 0007

ANALYSIS REQUIRED: SCAQMD 5.1 with Organics extraction



MONTROSE

Date of Last Revision 9/1/2017

Chain of Custody - DS834001 - Excel
Master Document Storage\Forms\Datasheets\Lab Forms

Appendix A.4

Inlet Flow Rate and Process Data

**DATA AND WORKSHEET
RUN NUMBER 1**

TEST CONSTANTS			
Station: Chiquita Canyon			
Unit: Flare 1			
Performed By: SJ, AD, JI			
T _{ref} :	60	°F	
TEST VARIABLES			
Start Date:		6/27/24	
Start/End Time:		9:20	10:36
Test Condition:		1,575	degrees F
Barom. Pressure:		28.81	
Fuel Gas Composition Data			
O ₂ :	2.48 %	From Inlet Fuel	
CO ₂ :	45.63 %	From Inlet Fuel	
N ₂ :	16.52 %	From Inlet Fuel	
CH ₄ :	34.90 %	From Inlet Fuel	
Fuel Flow Rate:	2,729	dscfm	From Facility Meter

Fuel Gas Inputs

	F1 Inlet 1A	F1 Inlet 1B
O ₂ :	2.48	2.48
CO ₂ :	45.62	45.64
N ₂ :	16.47	16.57
CH ₄ :	34.93	34.86

CHIQUITA CANYON LANDFILL FLARE NO. 1 (FL-1995, formerly FL-150)

DAQSTANDARD R9.03.06
Data Viewer R9.03.06
SCS Engineers Cornelius Fong
Device Type DX1000
Serial No. S5LA04465
Sampling Interval 60.000 sec
Damage Check Not Damaged

Date	Time	Ch.	CH003		CH004	
		Tag	FL-150 INST FLOW		FL-150 TEMP	
		Unit	SCFM		°F	
		sec	MIN	MAX	MIN	MAX
2024/06/27	09:21:00	0.000	2694	2743	1583	1585
2024/06/27	09:22:00	0.000	2694	2728	1580	1584
2024/06/27	09:23:00	0.000	2698	2725	1574	1580
2024/06/27	09:24:00	0.000	2690	2723	1572	1575
2024/06/27	09:25:00	0.000	2695	2725	1570	1572
2024/06/27	09:26:00	0.000	2695	2739	1568	1570
2024/06/27	09:27:00	0.000	2710	2743	1566	1568
2024/06/27	09:28:00	0.000	2707	2739	1567	1568
2024/06/27	09:29:00	0.000	2699	2733	1568	1573
2024/06/27	09:30:00	0.000	2701	2734	1573	1579
2024/06/27	09:31:00	0.000	2695	2734	1578	1583
2024/06/27	09:32:00	0.000	2688	2740	1583	1586
2024/06/27	09:33:00	0.000	2689	2736	1586	1587
2024/06/27	09:34:00	0.000	2699	2732	1581	1587
2024/06/27	09:35:00	0.000	2701	2747	1576	1582
2024/06/27	09:36:00	0.000	2698	2729	1570	1576
2024/06/27	09:37:00	0.000	2685	2736	1567	1571
2024/06/27	09:38:00	0.000	2687	2728	1565	1568
2024/06/27	09:39:00	0.000	2692	2738	1564	1566
2024/06/27	09:40:00	0.000	2688	2749	1566	1569
2024/06/27	09:41:00	0.000	2701	2741	1569	1575
2024/06/27	09:42:00	0.000	2699	2725	1575	1580
2024/06/27	09:43:00	0.000	2701	2739	1580	1583
2024/06/27	09:44:00	0.000	2702	2742	1582	1584
2024/06/27	09:45:00	0.000	2700	2731	1582	1585
2024/06/27	09:46:00	0.000	2694	2736	1571	1582
2024/06/27	09:47:00	0.000	2698	2735	1562	1572
2024/06/27	09:48:00	0.000	2695	2747	1558	1562
2024/06/27	09:49:00	0.000	2694	2739	1559	1564
2024/06/27	09:50:00	0.000	2697	2742	1563	1568
2024/06/27	09:51:00	0.000	2701	2747	1568	1572
2024/06/27	09:52:00	0.000	2704	2735	1571	1579
2024/06/27	09:53:00	0.000	2709	2742	1579	1587
2024/06/27	09:54:00	0.000	2710	2736	1586	1589
2024/06/27	09:55:00	0.000	2706	2734	1588	1589
2024/06/27	09:56:00	0.000	2709	2737	1575	1588
2024/06/27	09:57:00	0.000	2698	2746	1561	1575
2024/06/27	09:58:00	0.000	2706	2753	1556	1561
2024/06/27	09:59:00	0.000	2710	2739	1557	1564
2024/06/27	10:00:00	0.000	2714	2747	1564	1570
2024/06/27	10:01:00	0.000	2702	2755	1570	1573

Run

CHIQUITA CANYON LANDFILL FLARE NO. 1 (FL-1995, formerly FL-150)

DAQSTANDARD R9.03.06
Data Viewer R9.03.06
SCS Engineers Cornelius Fong
Device Type DX1000
Serial No. S5LA04465
Sampling Interval 60.000 sec
Damage Check Not Damaged

Date	Time	Ch.	CH003		CH004	
		Tag	FL-150 INST FLOW		FL-150 TEMP	
		Unit	SCFM		°F	
		sec	MIN	MAX	MIN	MAX
2024/06/27	10:02:00	0.000	2713	2755	1572	1576
2024/06/27	10:03:00	0.000	2712	2749	1575	1576
2024/06/27	10:04:00	0.000	2708	2748	1576	1578
2024/06/27	10:05:00	0.000	2719	2756	1577	1579
2024/06/27	10:06:00	0.000	2715	2749	1577	1579
2024/06/27	10:07:00	0.000	2705	2744	1577	1579
2024/06/27	10:08:00	0.000	2712	2751	1579	1580
2024/06/27	10:09:00	0.000	2712	2743	1579	1581
2024/06/27	10:10:00	0.000	2714	2747	1579	1581
2024/06/27	10:11:00	0.000	2698	2745	1577	1580
2024/06/27	10:12:00	0.000	2710	2752	1574	1578
2024/06/27	10:13:00	0.000	2707	2747	1571	1574
2024/06/27	10:14:00	0.000	2715	2759	1568	1571
2024/06/27	10:15:00	0.000	2720	2759	1568	1569
2024/06/27	10:16:00	0.000	2707	2766	1567	1569
2024/06/27	10:17:00	0.000	2727	2759	1568	1571
2024/06/27	10:18:00	0.000	2729	2759	1571	1574
2024/06/27	10:19:00	0.000	2731	2770	1573	1576
2024/06/27	10:20:00	0.000	2722	2761	1576	1578
2024/06/27	10:21:00	0.000	2730	2761	1576	1578
2024/06/27	10:22:00	0.000	2734	2770	1577	1578
2024/06/27	10:23:00	0.000	2719	2775	1577	1578
2024/06/27	10:24:00	0.000	2723	2759	1576	1579
2024/06/27	10:25:00	0.000	2714	2759	1576	1578
2024/06/27	10:26:00	0.000	2738	2773	1577	1579
2024/06/27	10:27:00	0.000	2734	2781	1570	1577
2024/06/27	10:28:00	0.000	2729	2767	1563	1570
2024/06/27	10:29:00	0.000	2735	2778	1562	1563
2024/06/27	10:30:00	0.000	2731	2771	1562	1568
2024/06/27	10:31:00	0.000	2724	2773	1566	1573
2024/06/27	10:32:00	0.000	2732	2767	1573	1577
2024/06/27	10:33:00	0.000	2742	2778	1577	1581
2024/06/27	10:34:00	0.000	2731	2776	1581	1583
2024/06/27	10:35:00	0.000	2739	2770	1583	1585
2024/06/27	10:36:00	0.000	2747	2786	1582	1584

Stop

Average during Run:	2729	1575
Minimum during Run:	2685	1556
Maximum during Run:	2786	1589

Data File:L:\CAM\DATA\2010435.0

COMPONENT VALUES DETERMINED AT CALIBRATION

Integral Transducer

PCB	PCB 100385	PCB	PCB 100389
R5	800	R-GAIN	4420
R7	800		
R8	100		
R9	909		
R15	5760		
FLOW SENSOR - 50 OHMS NI @75 DEG F			
TEMP SENSOR - 100 OHMS NI @75 DEG F			

CALIBRATION POTENTIOMETERS

TA	548	TC	579
----	-----	----	-----

OPERATING RANGE

	minimum	maximum	units
FLOW	0	4500	SCFM LANDFILL GAS MIX
TEMPERATURE	40	200	F
PRESSURE	0	15	PSIG

COMMENTS

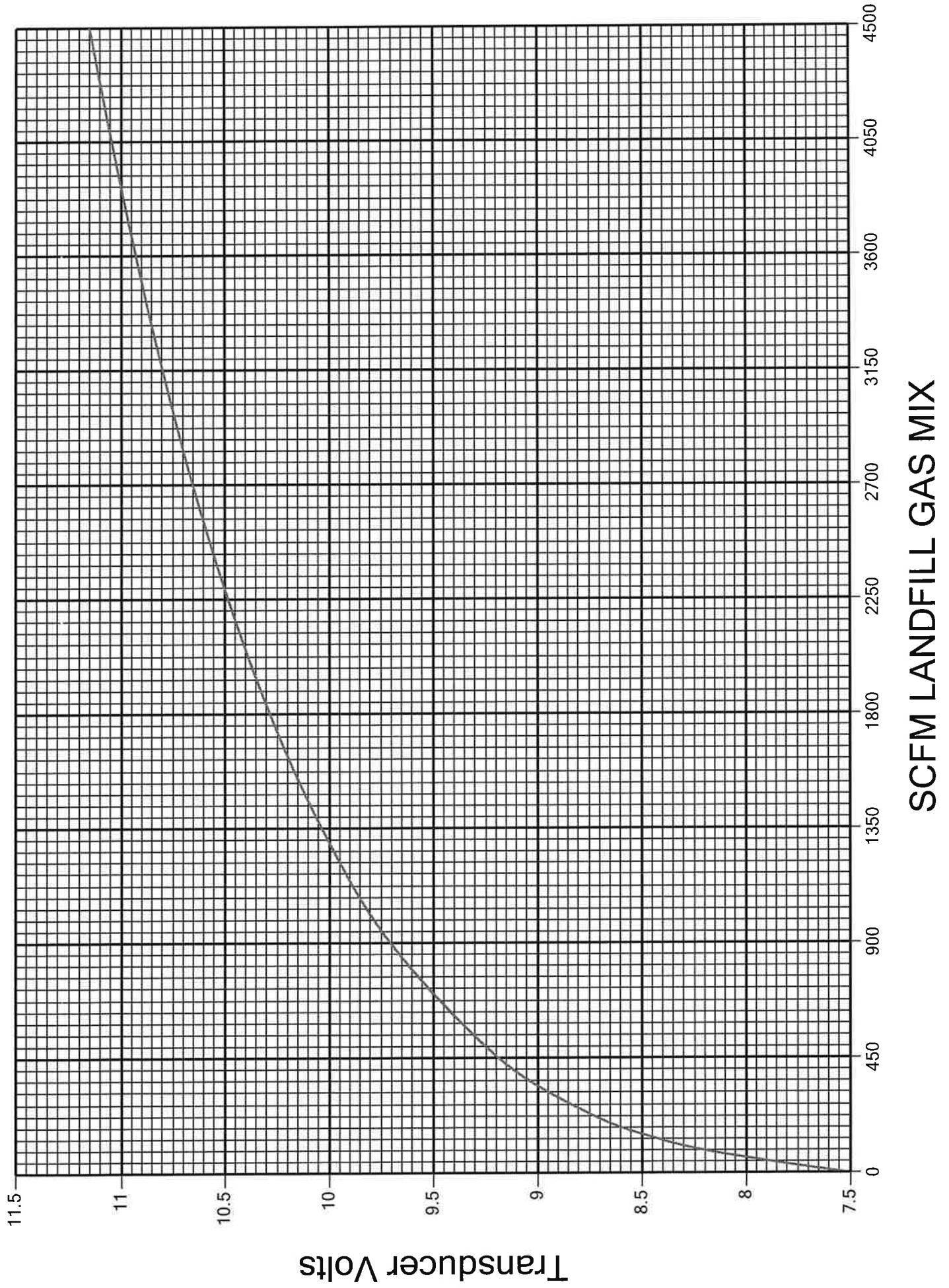
16" FIBERGLASS LINE
LFG MIX: 40% CH4, 50% CO2, 1.5% O2

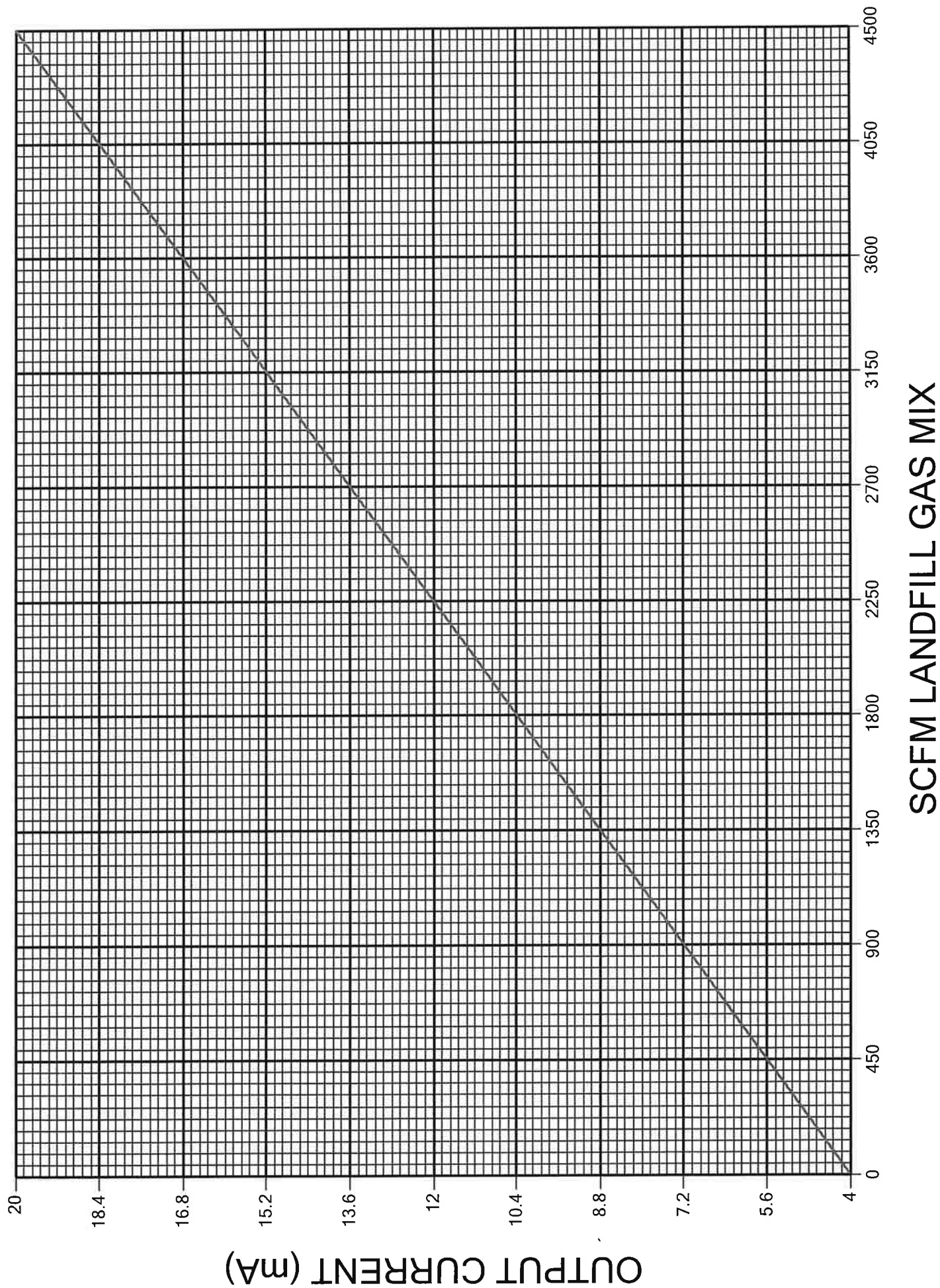
METER OUTPUT SIGNAL CALIBRATION

mA	SCFM LANDFILL GAS MIX	Volts
4.00	0.000	7.5150
4.16	45.000	7.8830
4.32	90.000	8.1790
4.80	225.000	8.7470
5.60	450.000	9.1940
7.20	900.000	9.7060
8.80	1350.000	10.0370
10.40	1800.000	10.2840
12.00	2250.000	10.4830
13.60	2700.000	10.6520
15.20	3150.000	10.7980
16.80	3600.000	10.9280
18.40	4050.000	11.0450
20.00	4500.000	11.1510

9500 EEPROM SETUP DATA

Maximum Flow Range	4500	SCFM LANDFILL GAS MIX
Flow FS at 20 mA	4500	SCFM LANDFILL GAS MIX
Flow Full Scale Displayed	4500	SCFM LANDFILL GAS MIX
Totalizer Counts	450	per/Min
Totalizer Decimal Point	0	
Display Cutoff	3	% FS
Filter Time Constant	2 SEC	





Thermal Instrument Company

METER CONFIGURATION PAGE

Serial Number **2010435**

Firmware 9500

Meter Type

Revision

Build

Parameter	Value
Flow Full Scale	4500.000
Flow at 20 mA	4500.000
Totalizer Count/minute	450
Totalizer Decimal Point	0
Zero Cutoff	3 % FS
Filter Time Constant	2 sec
Totalizer	0
Offset	0

Tech Initials AG

CALIBRATION CERTIFICATION

We certify that the calibration accuracies listed below are obtained on equipment, and with methods, that can be traced directly to the US National Institute of Standards and Technology.

FLOWRATE READOUT ACCURACY: $\pm$ 1% Full Scale

PRESSURE TESTED AT:

METER SERIAL NUMBER: **2010435**

MODEL NUMBER: **62-9/9500I**

The calibration listed above was performed under the following conditions:

0 - 4500 SCFM LANDFILL GAS MIX
40 - 200 DEG F
0 - 15 PSIG
16" FIBERGLASS LINE
LFG MIX: 40% CH₄, 50% CO₂, 1.5% O₂

Standard Conditions: 60Deg. F @ 1 ATM

Signature



Date

December 14, 2023

THERMAL INSTRUMENT COMPANY, INC.

217 Sterner Mill Road, Trevoose, PA 19053

Phone: 215-355-8400 Fax: 215-355-1789

Web: www.thermalinstrument.com

Appendix A.5

Organics and Sulfur Field and Laboratory Data

METHOD 25.3 DATA

Client/Location.....	Waste Connections	Reference Temp (F).....	60	
Unit.....	Flare 1	Fuel.....	Landfill Gas	
Sample Location.....	Stack	Data By.....	SJ, AD, JI	
Operating Condition (°F).....	1,575			
Test No.....	C-F1-1A	C-F1-1B	Average	Limit
Date.....	6/27/2024	6/27/2024		
Test Method.....	SCAQMD 25.3	SCAQMD 25.3		
Stack Area (ft²).....	100.88	100.88		
Sample Time (Minutes).....	60	60		
Bar. Press (in. Hg.).....	28.81	28.81		
Start/Stop Time.....	0920-1020	0920-1020		
Stack O ₂ (%).....	11.0	11.0	(from canister analysis)	
O ₂ Correction Factor.....	3	3		
Stack Flow Rate (dscfm).....	24,055	24,055	(from PM)	
Methane (ppm).....	< 2.10	< 2.20	< 2.15	
Methane (lb/hr).....	< 0.128	< 0.134	< 0.131	
Canister VOC (ppm).....	0.62	0.65	0.64	
Water Vial VOC (ppm).....	4.27	4.10	4.19	
Total VOC (ppm)	4.89	4.75	4.82	
Method 25.3 Multiplier.....	1.086	1.086		
VOC as Methane (ppm)	5.31	5.16	5.23	
VOC as Methane (ppm @ 3% O ₂)....	9.60	9.33	9.46	
VOC as Methane (lb/hr).....	0.32	0.31	0.32	
VOC as Methane (lb/MMBtu).....	0.005	0.005	0.005	
VOC as Hexane (ppm)	0.89	0.86	0.87	
VOC as Hexane (ppm @ 3% O ₂)....	1.600	1.554	1.58	
VOC as Hexane (lb/hr).....	0.290	0.281	0.285	
VOC as Hexane (lb/MMBtu).....	0.005	0.005	0.005	

INLET- VOC TEST RESULTS

Test Number	1-VOC-1
Reference Temperature, F	60
Test Date	6/27/2024
Test Method	EPA 18
Inlet O ₂ (%)	2.48
Inlet Flow Rate, dscfm	2,729
O ₂ Correction Factor (%)	3
F-Factor	9,971

Lab Results, ppm component			
Compound	Carbon Atoms	Run 1A	Run 1B
Methane	1	350,970	350,220
Ethane + Ethylene	2	18.51	18.52
Propane + Propylene	3	203.2	203.0
Butanes	4	977.2	1003
Pentanes	5	1048	1028
Hexanes	6	594.9	594.6
C6+	6	4423	5076

TGNMOC, ppm as Methane	Avg Results
ppm	41,862.23
ppm @3% O ₂	40,680.45
lb/hr	288.99

TGNMOC, ppm as Hexane	Avg Results
ppm	6977.0
ppm @3% O ₂	6780.08
lb/hr	258.89

Methane	Avg Results
ppm	350,595.00
ppm @3% O ₂	340,697.64
lb/hr	2,420.30

Inlet Run 1			
Analyte	Result	Units	Reporting Limit
Benzene	120000	ppbv	640
Benzyl chloride	ND	ppbv	80
Chlorobenzene	400	ppbv	80
1,2-Dichlorobenzene	ND	ppbv	80
1,4-Dichlorobenzene	650	ppbv	80
1,1-Dichloroethane	ND	ppbv	80
1,2-Dichloroethane	740	ppbv	80
1,1-Dichloroethene	ND	ppbv	80
Methylene Chloride	350	ppbv	80
1,2-Dibromoethane	ND	ppbv	80
Tetrachloroethene	250	ppbv	80
Carbon Tetrachloride	ND	ppbv	80
Toluene	24000	ppbv	80
1,1,1-Trichloroethane	ND	ppbv	80
Trichloroethene	130	ppbv	80
Chloroform	ND	ppbv	80
Vinyl Chloride	ND	ppbv	80
m,p-Xylenes	13000	ppbv	160
o-Xylene	4600	ppbv	80

Inlet Run 2			
Analyte	Result	Units	Reporting Limit
Benzene	130000	ppbv	640
Benzyl chloride	ND	ppbv	80
Chlorobenzene	430	ppbv	80
1,2-Dichlorobenzene	ND	ppbv	80
1,4-Dichlorobenzene	750	ppbv	80
1,1-Dichloroethane	ND	ppbv	80
1,2-Dichloroethane	720	ppbv	80
1,1-Dichloroethene	ND	ppbv	80
Methylene Chloride	370	ppbv	80
1,2-Dibromoethane	ND	ppbv	80
Tetrachloroethene	310	ppbv	80
Carbon Tetrachloride	ND	ppbv	80
Toluene	24000	ppbv	80
1,1,1-Trichloroethane	ND	ppbv	80
Trichloroethene	140	ppbv	80
Chloroform	ND	ppbv	80
Vinyl Chloride	ND	ppbv	80
m,p-Xylenes	14000	ppbv	160
o-Xylene	5000	ppbv	80

Inlet Run 3			
Analyte	Result	Units	Reporting Limit
Benzene	150	ppbv	600
Benzyl chloride	ND	ppbv	75
Chlorobenzene	490	ppbv	75
1,2-Dichlorobenzene	ND	ppbv	75
1,4-Dichlorobenzene	950	ppbv	75
1,1-Dichloroethane	ND	ppbv	75
1,2-Dichloroethane	840	ppbv	75
1,1-Dichloroethene	ND	ppbv	75
Methylene Chloride	380	ppbv	75
1,2-Dibromoethane	ND	ppbv	75
Tetrachloroethene	300	ppbv	75
Carbon Tetrachloride	ND	ppbv	75
Toluene	29000	ppbv	75
1,1,1-Trichloroethane	ND	ppbv	75
Trichloroethene	160	ppbv	75
Chloroform	ND	ppbv	75
Vinyl Chloride	ND	ppbv	75
m,p-Xylenes	17000	ppbv	150
o-Xylene	6000	ppbv	75

Outlet Run 1			
Analyte	Result	Units	Reporting Limit
Benzene	7.6	ppbv	0.36
Benzyl chloride	ND	ppbv	0.36
Chlorobenzene	ND	ppbv	0.36
1,2-Dichlorobenzene	ND	ppbv	0.36
1,4-Dichlorobenzene	ND	ppbv	0.36
1,1-Dichloroethane	ND	ppbv	0.36
1,2-Dichloroethane	ND	ppbv	0.36
1,1-Dichloroethene	ND	ppbv	0.36
Methylene Chloride	ND	ppbv	0.36
1,2-Dibromoethane	ND	ppbv	0.36
Tetrachloroethene	ND	ppbv	0.36
Carbon Tetrachloride	ND	ppbv	0.36
Toluene	2.7	ppbv	0.36
1,1,1-Trichloroethane	ND	ppbv	0.36
Trichloroethene	ND	ppbv	0.36
Chloroform	ND	ppbv	0.36
Vinyl Chloride	ND	ppbv	0.36
m,p-Xylenes	ND	ppbv	0.72
o-Xylene	ND	ppbv	0.36

Analyte	Outlet Run 2		
	Result	Units	Reporting Limit
Benzene	4.2	ppbv	0.36
Benzyl chloride	ND	ppbv	0.36
Chlorobenzene	ND	ppbv	0.36
1,2-Dichlorobenzene	ND	ppbv	0.36
1,4-Dichlorobenzene	ND	ppbv	0.36
1,1-Dichloroethane	ND	ppbv	0.36
1,2-Dichloroethane	ND	ppbv	0.36
1,1-Dichloroethene	ND	ppbv	0.36
Methylene Chloride	ND	ppbv	0.36
1,2-Dibromoethane	ND	ppbv	0.36
Tetrachloroethene	ND	ppbv	0.36
Carbon Tetrachloride	ND	ppbv	0.36
Toluene	ND	ppbv	0.36
1,1,1-Trichloroethane	ND	ppbv	0.36
Trichloroethene	ND	ppbv	0.36
Chloroform	ND	ppbv	0.36
Vinyl Chloride	ND	ppbv	0.36
m,p-Xylenes	ND	ppbv	0.72
o-Xylene	ND	ppbv	0.36

Outlet Run 3			
Analyte	Result	Units	Reporting Limit
Benzene	1.4	ppbv	0.36
Benzyl chloride	ND	ppbv	0.36
Chlorobenzene	ND	ppbv	0.36
1,2-Dichlorobenzene	ND	ppbv	0.36
1,4-Dichlorobenzene	ND	ppbv	0.36
1,1-Dichloroethane	ND	ppbv	0.36
1,2-Dichloroethane	ND	ppbv	0.36
1,1-Dichloroethene	ND	ppbv	0.36
Methylene Chloride	ND	ppbv	0.36
1,2-Dibromoethane	ND	ppbv	0.36
Tetrachloroethene	ND	ppbv	0.36
Carbon Tetrachloride	ND	ppbv	0.36
Toluene	ND	ppbv	0.36
1,1,1-Trichloroethane	ND	ppbv	0.36
Trichloroethene	ND	ppbv	0.36
Chloroform	ND	ppbv	0.36
Vinyl Chloride	ND	ppbv	0.36
m,p-Xylenes	ND	ppbv	0.72
o-Xylene	ND	ppbv	0.36

**SCAQMD METHOD 25.3
EVACUATED CANISTER SAMPLING DATA**

Client/Facility: Chiquita Date: 6/27/24
 Unit/Location: Flavel Performed By: JJ
 Probe Material SS Probe Length 3ft
 Connecting Tubing Material N/A Connecting Tubing Length N/A
 Barometric Pressure 20.81 Ambient Temperature 87.5

Test No.		17A		17B			
Vial ID		17A		17B			
Canister ID		C80242		C80224			
		Time	Vacuum	Time	Vacuum	Time	Vacuum
Pre-Test Leak Check	Start	800	30	800	30		
Pre-Test Leak Check	Stop	810	30	810	30		
Sample Collection	Start	0920	30	920	30		
		0930	27	0930	27		
		0940	23	0940	24		
		0950	20	0950	20		
		1000	17	1000	17		
		1010	13	1010	13		
Sample Collection	Stop	1020	10	1020	10		
Post-Test Leak Check	Start	1050	10	1050	10		
Post-Test Leak Check	Stop	1100	10	1100	10		
Line Rinse Volume							

Comments: _____

**EPA METHOD TO-15
EVACUATED CANISTER SAMPLING DATA**

Client/Facility: SCS Chiquita Date: 6-27-24
 Unit/Location: Flare 1 (Inlet) Performed By: AD
 Probe Material SS Probe Length 2'
 Connecting Tubing Material NA Connecting Tubing Length NA
 Barometric Pressure 28.81 Ambient Temperature 75°

Test No.		1		2		3	
Canister ID		C80027		C80044		C80156	
		Time	Vacuum	Time	Vacuum	Time	Vacuum
Pre-Test Leak Check	Start	0830	30	0830	30	0830	30
Pre-Test Leak Check	Stop	0840	30	0840	30	0840	30
Sample Collection	Start	0920	30	0955	30	1030	30
		0930	20	1005	21	1040	20
		0940	12	1015	11	1050	11
		0950	5	1025	5	1100	5
Sample Collection	Stop	0950	5	1025	5	1100	5
Post -Test Leak Check	Start	1105	5	1105	5	1105	5
Post-Test Leak Check	Stop	1115	5	1115	5	1115	5

Comments: _____

**EPA METHOD TO-15
EVACUATED CANISTER SAMPLING DATA**

Client/Facility: Chiquita Date: 6/27/24
 Unit/Location: flave 1 - outdoor Performed By: JI
 Probe Material: SS Probe Length: 3^{ft}
 Connecting Tubing Material: TEF N/A Connecting Tubing Length: _____
 Barometric Pressure: 28.81 Ambient Temperature: 87.5°

Test No.		1		2		3	
Canister ID		C80182		C80194		C80263	
		Time	Vacuum	Time	Vacuum	Time	Vacuum
Pre-Test Leak Check	Start	800	30	800	30	800	29
Pre-Test Leak Check	Stop	810	30	810	30	810	29
Sample Collection	Start	920	30	955	30	1030	29
		930	27	1005	21	1040	20
		940	14	1015	14	1050	12
Sample Collection	Stop	950	5	1025	5	1100	5
Post-Test Leak Check	Start	1120	5	1120	5	1120	5
Post-Test Leak Check	Stop	1130	5	1130	5	1130	5

Comments: _____

TEDLAR BAG SAMPLING DATA SHEET

CLIENT: WASTE CONNECTIONS PERFORMED BY: ST

LOCATION: FLARE 1 CHILQUITA UNIT: FLARE 1 IN 13t

Test #	1A	1B			
Date	6/27	6/27			
Time (start/stop)	0920/ 0950	0920/ 0950			
Bag #	IN 1A	IN 1B			

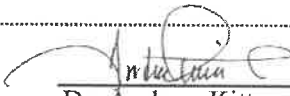
Comments: _____

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Flare 1
LABORATORY NO: 24-703
SAMPLING DATE: 06/27/24
RECEIVING DATE: 06/28/24
ANALYSIS DATE: 06/28/24
REPORT DATE: 07/03/24

Laboratory Analysis Report

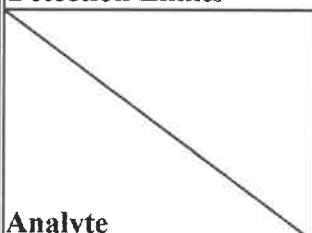
Analysis Method: ASTM 1945-03 ; HHV Calculations: ASTM 3588-98

	Sample ID	Chiquita Flare 1	Chiquita Flare 1
	Sample Date	Inlet 1A	Inlet 1B
	Sample Time	06/27/24	06/27/24
	Lab ID	18024-9	18024-10
Analyte, Units	Units	Mole %	Mole %
Methane, %		34.93	34.86
Ethane, %		<0.01	<0.01
Ethylene, %		<0.01	<0.01
Propane, %		<0.01	<0.01
Propylene, %		<0.01	<0.01
i-Butane, %		<0.01	<0.01
n-Butane, %		<0.01	<0.01
1-Butene, %		<0.01	<0.01
i-Butylene, %		<0.01	<0.01
trans-2-Butene, %		<0.01	<0.01
cis-2-Butene, %		<0.01	<0.01
i-Pentane, %		<0.01	<0.01
n-Pentane, %		<0.01	<0.01
2,2-Dimethyl Butane, %		<0.01	<0.01
2,3-Dimethyl Butane, %		<0.01	<0.01
2-Methyl Pentane, %		<0.01	<0.01
3-Methyl Pentane, %		<0.01	<0.01
n-Hexane, %		<0.01	<0.01
C6+, %		0.50	0.45
CO ₂ , %		45.62	45.64
CO, %		<0.01	<0.01
O ₂ , %		2.48	2.48
N ₂ , %		16.47	16.57
H ₂ , %		<0.01	<0.01
H ₂ S, %		<0.01	<0.01
Average Molecular Weight		31.518	31.501
Total Wt.% Adjusted Sp. Gravity		1.0881	1.0876
Compressibility Factor (14.696 Psi, 60 F)		0.9975	0.9975
NET BTU/Cub. Ft		340	337
GROSS BTU/Cub. Ft		376	373
CHONS		%	%
Carbon		31.83	31.72
Hydrogen		4.69	4.66
Oxygen		48.83	48.89
Nitrogen		14.64	14.73
Sulfur		<0.01	<0.01
Dry F Factor (60 F, 1 Atm);		9965	9977
SDCF/MMBTU, ASTM 3588			


 Dr. Andrew Kitto
 President

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Flare 1
LABORATORY NO: 24-703
SAMPLING DATE: 06/27/24
RECEIVING DATE: 06/28/24
ANALYSIS DATE: 06/28/24
REPORT DATE: 07/03/24

Laboratory Analysis Report

Analysis Method	SCAQMD 307-91	
Detection Limits	0.05 PPMV	
 Analyte	Sample ID	Chiquita Flare 1 Inlet 1A
	Sample Date	06/27/24
	Sample Time	-
	Lab ID	18024-9
	Units	PPMV
Hydrogen Sulfide		67.64
Carbonyl Sulfide		2.20
Methyl Mercaptan		82.91
Ethyl Mercaptan		1.97
Dimethyl Sulfide		466.7
Unidentified S Compounds		156.9
Total Sulfur as H₂S		778.3


 Dr. Andrew Kitto
 President

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Flare 1
LABORATORY NO: 24-703
SAMPLING DATE: 06/27/24
RECEIVING DATE: 06/28/24
ANALYSIS DATE: 06/28/24
REPORT DATE: 07/03/24

Quality Assurance Report

Duplicate Analysis

Sample ID: Chiquita Flare 1 Inlet 1A

Lab ID: 18024-9

Analysis Method		SCAQMD 307-91		
Detection Limit		0.05 PPMV		
Analyte	Aver. Conc. PPMV	Dil. Factor Ambient Air	DF*A/CF PPMV	% Sample Recovery*
Hydrogen Sulfide	70.20	20	72.76	104
Carbonyl Sulfide	2.26	20	2.32	103
Methyl Mercaptan	85.49	20	88.08	103
Ethyl Mercaptan	1.95	20	1.93	99
Dimethyl Sulfide	460.6	20	454.5	99
Unidentified S Compounds	141.4	20	126.0	89
Total Sulfur as H ₂ S	761.9	20	745.5	98

N/A: Not Applicable

*Must be ±10%



Dr. Andrew Kitto
 President

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Flare 1
LABORATORY NO: 24-703
SAMPLING DATE: 06/27/24
RECEIVING DATE: 06/28/24
ANALYSIS DATE: 06/28/24
REPORT DATE: 07/03/24

Laboratory Analysis Report

Analysis Method	EPA 18		
Detection Limits	0.5 PPMV		
	Sample ID	Chiquita Flare 1 Inlet 1A	Chiquita Flare 1 Inlet 1B
	Sample Date	06/27/24	06/27/24
	Sample Time	-	-
	Lab ID	18024-9	18024-10
	Units	PPMV	PPMV
C1 - Methane		350,970	350,220
C2 - Ethane, Ethylene		18.51	18.52
C3 - Propane, Propylene		203.2	203.0
C4 - Butanes		977.2	1003
C5 - Pentanes		1048	1028
C6 - Hexanes		594.9	594.6
C6+		4423	5076
Total VOCs as Methane including ethane		39,905	43,818



Dr. Andrew Kitto
 President

CLIENT: Montrose AQS
CLIENT PROJ NO: Chiquita Flare 1
LABORATORY NO: 24-703
SAMPLING DATE: 06/27/24
RECEIVING DATE: 06/28/24
ANALYSIS DATE: 06/28/24
REPORT DATE: 07/03/24

Standard Verification

I - Blank

Lab ID	Results PPMV
C1 - Methane	<0.5
C2 - Ethane	<0.5
C3 - Propane	<0.5
C4 - Butane	<0.5
C5 - Pentane	<0.5
C6 - Hexane	<0.5

II - Initial Calibration Verification Standard - C1-C6

Lab ID	Theoretical Value PPMV	Tested Value PPMV	% Recovery*
C1 - Methane	100.0	108.0	108%
C2 - Ethane	100.0	107.4	107%
C3 - Propane	100.0	107.5	107%
C4 - Butane	100.0	108.6	109%
C5 - Pentane	100.0	108.5	109%
C6 - Hexane	100.0	110.3	110%

*Must be $\pm 10\%$



Dr. Andrew Kitto
 President



No. 6428

310/830-2226 • Fax 310/830-2227 • www.quantumairlab.com

1210 E. 223rd Street, Suite #314 • Carson, California 90745

CHAIN OF CUSTODY

Page: 1 of: 1



Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number : 511226
Report Level : II
Report Date : 07/16/2024

Analytical Report *prepared for:*

Pete San Juan
Montrose Air Quality Services
1631 E. St Andrew Pl
Santa Ana, CA 92705

Location: Chiquita Flare 1 PROJ-040458

Authorized for release by:

Richard Villafania, Project Manager
richard.villafania@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

Sample Summary

Pete San Juan	Lab Job #:	511226
Montrose Air Quality	Location:	Chiquita Flare 1 PROJ-040458
Services	Date Received:	06/28/24
1631 E. St Andrew Pl		
Santa Ana, CA 92705		

Sample ID	Lab ID	Collected	Matrix
CHIQUITA FLARE 1 EXH (C80242)	511226-001	06/27/24 10:20	Air
CHIQUITA FLARE 1 EXH (C80224)	511226-002	06/27/24 10:20	Air
CHIQUITA FLARE 1 IN-1	511226-003	06/27/24 09:50	Air
CHIQUITA FLARE 1 IN-2	511226-004	06/27/24 10:25	Air
CHIQUITA FLARE 1 IN-3	511226-005	06/27/24 11:00	Air
CHIQUITA FLARE 1 EXH-1	511226-006	06/27/24 09:50	Air
CHIQUITA FLARE 1 EXH-2	511226-007	06/27/24 10:25	Air
CHIQUITA FLARE 1 EXH-3	511226-008	06/27/24 11:00	Air

Case Narrative

Montrose Air Quality Services
1631 E. St Andrew Pl
Santa Ana, CA 92705
Pete San Juan

Lab Job 511226

Number:

Location: Chiquita Flare 1 PROJ-
040458

Date Received: 06/28/24

This data package contains sample and QC results for eight air samples, requested for the above referenced project on 06/28/24. The samples were received intact.

Volatile Organics in Air by MS (EPA TO-15):

No analytical problems were encountered.

Non-Methane Non-Ethane Organic Compounds (SCAQMD 25.3):

- This data package contains the raw instrument data for the samples and QA/QC as well as the ICAL and MDL/PQL summary. Supporting field documentation (if supplied by the client) follows the COC and receipt documentation. Samples were analyzed by SCAQMD method 25.3 and 10.1 modified (% and ppm level fixed gases).
- No analytical problems were encountered.

ENTHALPY										Air Chain of Custody Record										Lab Use Only									
Instructions to assist filling out the COC are on the next tab										Request for Analysis										work order # 51774									
lab name Enthalpy - Orange										CUSTOMER INFORMATION										PROJECT INFORMATION									
address 931 W. Barkley Ave., Orange, CA 92668										company: Montrose AQS										project name: Chiquita Flare 1									
phone Orange 714-771-6900										contact/report to: Pete San Juan										submit invoice to									
special instructions:										email: psanjuan@montrose-env.com										project #: PROJ-040458									
										cc emails:										P.O. #: PO-066298									
										address: 1631 E St Andrew Pl										site name: Chiquita Landfill									
										phone: 626-617-6313										site state: CA									
turnaround time request (pre-approval required for TAT less than standard, surcharges will apply)										data deliverable type: ☒ STANDARD ☐ other										Analysis Requested									
☒ STANDARD ☐ 5 day ☐ 2 day ☐ 1 day ☐ other										EDD required (Y/N)?										Retention requirements:									
*matrix code: (A) ambient, (O) other, badge, (BT) bottle, (C) canister, (F) filter, (O) other, (T) tube, (TD) thermal desorption tube										units for reporting:										regulatory program, as applicable (i.e., CAA, CAA8, etc.):									
☒ compliance ☐ engineering																													
Sampling Information										Equipment Information										Start Sampling Information									
Matrix Sample Code* Type										Container ID# Flow Cont. # Size										Initial Pressure ("Hg) Date Time									
Sample ID										Type** (media type)										Final Pressure ("Hg) Date Time									
1 Chiquita Flare 1 Exh S INTE(										C80242 Vial 17A 6L										30 6/27/24 10:20 10 JI/AD									
2 Chiquita Flare 1 Exh S INTE(										C80224 Vial 17B 6L										30 6/27/24 10:20 10 JI/AD									
3 Chiquita Flare 1 In -1 S INTE(										C80027 6L										30 6/27/24 09:50 5 SJ									
4 Chiquita Flare 1 In -2 S INTE(										C80044 6L										30 6/27/24 10:25 5 SJ									
5 Chiquita Flare 1 In -3 S INTE(										C80156 6L										30 6/27/24 11:00 5 SJ									
6 Chiquita Flare 1 Exh-1 S INTE(										C80182 6L										30 6/27/24 09:50 5 JI/AD									
7 Chiquita Flare 1 Exh-2 S INTE(										C80194 6L										30 6/27/24 10:25 5 JI/AD									
8 Chiquita Flare 1 Exh-3 S INTE(										C80263 6L										29 6/27/24 11:00 5 JI/AD									
9																													
10																													
11																													
12																													
13																													
14																													
15																													
note sampler, courier, and tracking # below										Print Name										Company / Title									
Signature										Date (MM/DD/YYYY)										Time (24:00)									
1 Relinquished By: [Signature]										MAGS E.A.										6/28/24 10:27									
2 Relinquished By:																													
3 Relinquished By:																													
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5 Relinquished By:																													
6 Relinquished By:																													
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13 Relinquished By:																													
14 Relinquished By:																													
15 Relinquished By:																													
Field sampling conditions (notes)										rain/snow during deployment/pick-up										continuous rain during samp. period									
snow or melt during sampling period																													
Reset Form										Page 1 of 1																			



SAMPLE ACCEPTANCE CHECKLIST

Section 1
Client: MAQS Project: Chiquita Flare 1
Date Received: 6/28/24 Sampler's Name Present: ☐ Yes ☒ No

Section 2
Sample(s) received in a cooler? ☐ Yes, How many? _____ ☒ No (skip section 2) Sample Temp (°C) : Amb.
(No Cooler) : _____
Sample Temp (°C), One from each cooler: #1: _____ #2: _____ #3: _____ #4: _____
(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)
Shipping Information: _____

Section 3
Was the cooler packed with: ☐ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam
☐ Paper ☐ None ☐ Other _____
Cooler Temp (°C): #1: _____ #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments
Canisters ambient.

Section 6
For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time: _____
☐ Email (email sent to/on): _____ / _____
Project Manager's response: _____

Completed By: [Signature] Date: Jul 28 2024

Analysis Results for 511226

Pete San Juan
Montrose Air Quality Services
1631 E. St Andrew Pl
Santa Ana, CA 92705

Lab Job #: 511226
Location: Chiquita Flare 1 PROJ-040458
Date Received: 06/28/24

Sample ID: CHIQUITA FLARE 1 EXH (C80242)	Lab ID: 511226-001 Matrix: Air	Collected: 06/27/24 10:20
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511226-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SCAQMD 25.3									
Methane	<2.1		ppmC	2.1	2.1	344111	07/01/24	07/01/24	MPD
Carbon Monoxide	31.5		ppmC	2.1	2.1	344111	07/01/24	07/01/24	MPD
Ethene/Ethane	<2.1		ppmC	2.1	2.1	344111	07/01/24	07/01/24	MPD
Carbon Dioxide	9.7		%v/v	0.0002	2.1	344111	07/01/24	07/01/24	MPD
Oxygen	11.0		%v/v	0.2	2.1	344111	07/01/24	07/01/24	MPD
TNMNEOC	5.3		ppmC	0.7	2.1	344111	07/01/24	07/01/24	MPD

Sample ID: CHIQUITA FLARE 1 EXH (C80224)	Lab ID: 511226-002 Matrix: Air	Collected: 06/27/24 10:20
--	---	----------------------------------

511226-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SCAQMD 25.3									
Methane	<2.2		ppmC	2.2	2.2	344111	07/01/24	07/01/24	MPD
Carbon Monoxide	7.0		ppmC	2.2	2.2	344111	07/01/24	07/01/24	MPD
Ethene/Ethane	<2.2		ppmC	2.2	2.2	344111	07/01/24	07/01/24	MPD
Carbon Dioxide	9.7		%v/v	0.0002	2.2	344111	07/01/24	07/01/24	MPD
Oxygen	11.0		%v/v	0.2	2.2	344111	07/01/24	07/01/24	MPD
TNMNEOC	5.2		ppmC	0.7	2.2	344111	07/01/24	07/01/24	MPD

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 IN-1	Lab ID: 511226-003 Matrix: Air	Collected: 06/27/24 09:50
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511226-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA TO-15 Prep Method: METHOD									
Benzene	120,000		ppbv	640	3200	345088	07/15/24 18:15	07/15/24 18:15	MBC
Benzene	400,000		ug/m3	2,000	3200	345088	07/15/24 18:15	07/15/24 18:15	MBC
Benzyl chloride	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Benzyl chloride	ND		ug/m3	410	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Chlorobenzene	400		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Chlorobenzene	1,800		ug/m3	370	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,2-Dichlorobenzene	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,2-Dichlorobenzene	ND		ug/m3	480	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,4-Dichlorobenzene	650		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,4-Dichlorobenzene	3,900		ug/m3	480	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,1-Dichloroethane	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,1-Dichloroethane	ND		ug/m3	320	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,2-Dichloroethane	740		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,2-Dichloroethane	3,000		ug/m3	320	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,1-Dichloroethene	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,1-Dichloroethene	ND		ug/m3	320	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Methylene Chloride	350		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Methylene Chloride	1,200		ug/m3	280	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,2-Dibromoethane	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,2-Dibromoethane	ND		ug/m3	610	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Tetrachloroethene	250		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Tetrachloroethene	1,700		ug/m3	540	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Carbon Tetrachloride	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Carbon Tetrachloride	ND		ug/m3	500	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Toluene	24,000		ppbv	320	1600	345027	07/13/24 21:34	07/13/24 21:34	ZNZ
Toluene	91,000		ug/m3	1,200	1600	345027	07/13/24 21:34	07/13/24 21:34	ZNZ
1,1,1-Trichloroethane	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
1,1,1-Trichloroethane	ND		ug/m3	440	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Trichloroethene	130		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Trichloroethene	700		ug/m3	430	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Chloroform	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Chloroform	ND		ug/m3	390	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Vinyl Chloride	ND		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Vinyl Chloride	ND		ug/m3	200	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
m,p-Xylenes	13,000		ppbv	160	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
m,p-Xylenes	57,000		ug/m3	690	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
o-Xylene	4,600		ppbv	80	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
o-Xylene	20,000		ug/m3	350	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ
Surrogates				Limits					
Bromofluorobenzene	108%		%REC	60-140	400	345027	07/13/24 21:01	07/13/24 21:01	ZNZ

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 IN-2	Lab ID: 511226-004 Matrix: Air	Collected: 06/27/24 10:25
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511226-004 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA TO-15 Prep Method: METHOD									
Benzene	130,000		ppbv	640	3200	345088	07/15/24 18:48	07/15/24 18:48	MBC
Benzene	420,000		ug/m3	2,000	3200	345088	07/15/24 18:48	07/15/24 18:48	MBC
Benzyl chloride	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Benzyl chloride	ND		ug/m3	410	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Chlorobenzene	430		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Chlorobenzene	2,000		ug/m3	370	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,2-Dichlorobenzene	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,2-Dichlorobenzene	ND		ug/m3	480	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,4-Dichlorobenzene	750		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,4-Dichlorobenzene	4,500		ug/m3	480	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,1-Dichloroethane	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,1-Dichloroethane	ND		ug/m3	320	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,2-Dichloroethane	720		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,2-Dichloroethane	2,900		ug/m3	320	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,1-Dichloroethene	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,1-Dichloroethene	ND		ug/m3	320	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Methylene Chloride	370		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Methylene Chloride	1,300		ug/m3	280	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,2-Dibromoethane	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,2-Dibromoethane	ND		ug/m3	610	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Tetrachloroethene	310		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Tetrachloroethene	2,100		ug/m3	540	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Carbon Tetrachloride	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Carbon Tetrachloride	ND		ug/m3	500	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Toluene	24,000		ppbv	320	1600	345027	07/13/24 22:44	07/13/24 22:44	ZNZ
Toluene	89,000		ug/m3	1,200	1600	345027	07/13/24 22:44	07/13/24 22:44	ZNZ
1,1,1-Trichloroethane	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
1,1,1-Trichloroethane	ND		ug/m3	440	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Trichloroethene	140		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Trichloroethene	740		ug/m3	430	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Chloroform	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Chloroform	ND		ug/m3	390	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Vinyl Chloride	ND		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Vinyl Chloride	ND		ug/m3	200	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
m,p-Xylenes	14,000		ppbv	160	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
m,p-Xylenes	63,000		ug/m3	690	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
o-Xylene	5,000		ppbv	80	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
o-Xylene	22,000		ug/m3	350	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ
Surrogates				Limits					
Bromofluorobenzene	100%		%REC	60-140	400	345027	07/13/24 22:11	07/13/24 22:11	ZNZ

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 IN-3	Lab ID: 511226-005 Matrix: Air	Collected: 06/27/24 11:00
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511226-005 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA TO-15 Prep Method: METHOD									
Benzene	150,000		ppbv	600	3000	345088	07/15/24 19:22	07/15/24 19:22	MBC
Benzene	470,000		ug/m3	1,900	3000	345088	07/15/24 19:22	07/15/24 19:22	MBC
Benzyl chloride	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Benzyl chloride	ND		ug/m3	390	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Chlorobenzene	490		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Chlorobenzene	2,300		ug/m3	350	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,2-Dichlorobenzene	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,2-Dichlorobenzene	ND		ug/m3	450	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,4-Dichlorobenzene	950		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,4-Dichlorobenzene	5,700		ug/m3	450	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,1-Dichloroethane	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,1-Dichloroethane	ND		ug/m3	300	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,2-Dichloroethane	840		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,2-Dichloroethane	3,400		ug/m3	300	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,1-Dichloroethene	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,1-Dichloroethene	ND		ug/m3	300	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Methylene Chloride	380		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Methylene Chloride	1,300		ug/m3	260	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,2-Dibromoethane	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,2-Dibromoethane	ND		ug/m3	580	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Tetrachloroethene	300		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Tetrachloroethene	2,000		ug/m3	510	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Carbon Tetrachloride	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Carbon Tetrachloride	ND		ug/m3	470	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Toluene	29,000		ppbv	300	1500	345027	07/13/24 23:55	07/13/24 23:55	ZNZ
Toluene	110,000		ug/m3	1,100	1500	345027	07/13/24 23:55	07/13/24 23:55	ZNZ
1,1,1-Trichloroethane	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
1,1,1-Trichloroethane	ND		ug/m3	410	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Trichloroethene	160		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Trichloroethene	860		ug/m3	400	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Chloroform	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Chloroform	ND		ug/m3	370	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Vinyl Chloride	ND		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Vinyl Chloride	ND		ug/m3	190	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
m,p-Xylenes	17,000		ppbv	150	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
m,p-Xylenes	73,000		ug/m3	650	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
o-Xylene	6,000		ppbv	75	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
o-Xylene	26,000		ug/m3	330	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ
Surrogates				Limits					
Bromofluorobenzene	106%		%REC	60-140	380	345027	07/13/24 23:21	07/13/24 23:21	ZNZ

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 EXH-1	Lab ID: 511226-006 Matrix: Air	Collected: 06/27/24 09:50
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511226-006 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA TO-15 Prep Method: METHOD									
Benzene	7.6		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Benzene	24		ug/m3	1.2	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Benzyl chloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Benzyl chloride	ND		ug/m3	1.9	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Chlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Chlorobenzene	ND		ug/m3	1.7	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,2-Dichlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,2-Dichlorobenzene	ND		ug/m3	2.2	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,4-Dichlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,4-Dichlorobenzene	ND		ug/m3	2.2	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,1-Dichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,1-Dichloroethane	ND		ug/m3	1.5	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,2-Dichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,2-Dichloroethane	ND		ug/m3	1.5	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,1-Dichloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,1-Dichloroethene	ND		ug/m3	1.4	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Methylene Chloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Methylene Chloride	ND		ug/m3	1.3	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,2-Dibromoethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,2-Dibromoethane	ND		ug/m3	2.8	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Tetrachloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Tetrachloroethene	ND		ug/m3	2.4	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Carbon Tetrachloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Carbon Tetrachloride	ND		ug/m3	2.3	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Toluene	2.7		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Toluene	10		ug/m3	1.4	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,1,1-Trichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
1,1,1-Trichloroethane	ND		ug/m3	2.0	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Trichloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Trichloroethene	ND		ug/m3	1.9	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Chloroform	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Chloroform	ND		ug/m3	1.8	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Vinyl Chloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Vinyl Chloride	ND		ug/m3	0.92	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
m,p-Xylenes	ND		ppbv	0.72	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
m,p-Xylenes	ND		ug/m3	3.1	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
o-Xylene	ND		ppbv	0.36	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
o-Xylene	ND		ug/m3	1.6	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ
Surrogates	Limits								
Bromofluorobenzene	113%		%REC	60-140	1.8	345027	07/13/24 19:00	07/13/24 19:00	ZNZ

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 EXH-2	Lab ID: 511226-007 Matrix: Air	Collected: 06/27/24 10:25
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511226-007 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA TO-15									
Prep Method: METHOD									
Benzene	4.2		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Benzene	13		ug/m3	1.2	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Benzyl chloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Benzyl chloride	ND		ug/m3	1.9	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Chlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Chlorobenzene	ND		ug/m3	1.7	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,2-Dichlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,2-Dichlorobenzene	ND		ug/m3	2.2	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,4-Dichlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,4-Dichlorobenzene	ND		ug/m3	2.2	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,1-Dichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,1-Dichloroethane	ND		ug/m3	1.5	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,2-Dichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,2-Dichloroethane	ND		ug/m3	1.5	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,1-Dichloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,1-Dichloroethene	ND		ug/m3	1.4	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Methylene Chloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Methylene Chloride	ND		ug/m3	1.3	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,2-Dibromoethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,2-Dibromoethane	ND		ug/m3	2.8	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Tetrachloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Tetrachloroethene	ND		ug/m3	2.4	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Carbon Tetrachloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Carbon Tetrachloride	ND		ug/m3	2.3	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Toluene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Toluene	ND		ug/m3	1.4	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,1,1-Trichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
1,1,1-Trichloroethane	ND		ug/m3	2.0	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Trichloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Trichloroethene	ND		ug/m3	1.9	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Chloroform	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Chloroform	ND		ug/m3	1.8	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Vinyl Chloride	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Vinyl Chloride	ND		ug/m3	0.92	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
m,p-Xylenes	ND		ppbv	0.72	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
m,p-Xylenes	ND		ug/m3	3.1	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
o-Xylene	ND		ppbv	0.36	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
o-Xylene	ND		ug/m3	1.6	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ
Surrogates				Limits					
Bromofluorobenzene	98%		%REC	60-140	1.8	345027	07/13/24 19:42	07/13/24 19:42	ZNZ

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 EXH-3	Lab ID: 511226-008 Matrix: Air	Collected: 06/27/24 11:00
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511226-008 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA TO-15 Prep Method: METHOD									
Benzene	1.4		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Benzene	4.5		ug/m3	1.2	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Benzyl chloride	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Benzyl chloride	ND		ug/m3	1.9	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Chlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Chlorobenzene	ND		ug/m3	1.7	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,2-Dichlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,2-Dichlorobenzene	ND		ug/m3	2.2	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,4-Dichlorobenzene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,4-Dichlorobenzene	ND		ug/m3	2.2	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,1-Dichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,1-Dichloroethane	ND		ug/m3	1.5	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,2-Dichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,2-Dichloroethane	ND		ug/m3	1.5	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,1-Dichloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,1-Dichloroethene	ND		ug/m3	1.4	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Methylene Chloride	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Methylene Chloride	ND		ug/m3	1.3	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,2-Dibromoethane	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,2-Dibromoethane	ND		ug/m3	2.8	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Tetrachloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Tetrachloroethene	ND		ug/m3	2.4	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Carbon Tetrachloride	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Carbon Tetrachloride	ND		ug/m3	2.3	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Toluene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Toluene	ND		ug/m3	1.4	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,1,1-Trichloroethane	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
1,1,1-Trichloroethane	ND		ug/m3	2.0	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Trichloroethene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Trichloroethene	ND		ug/m3	1.9	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Chloroform	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Chloroform	ND		ug/m3	1.8	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Vinyl Chloride	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Vinyl Chloride	ND		ug/m3	0.92	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
m,p-Xylenes	ND		ppbv	0.72	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
m,p-Xylenes	ND		ug/m3	3.1	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
o-Xylene	ND		ppbv	0.36	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
o-Xylene	ND		ug/m3	1.6	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ
Surrogates	Limits								
Bromofluorobenzene	93%		%REC	60-140	1.8	345027	07/13/24 20:24	07/13/24 20:24	ZNZ

< Value is less than indicated concentration
ND Not Detected

Batch QC

Type: Lab Control Sample	Lab ID: QC1169142	Batch: 345027
Matrix: Air	Method: EPA TO-15	Prep Method: METHOD

QC1169142 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Benzene	8.707	10.00	ppbv	87%		70-130
Benzyl chloride	10.16	10.00	ppbv	102%		70-130
Chlorobenzene	9.620	10.00	ppbv	96%		70-130
1,2-Dichlorobenzene	10.28	10.00	ppbv	103%		70-130
1,4-Dichlorobenzene	9.815	10.00	ppbv	98%		70-130
1,1-Dichloroethane	9.129	10.00	ppbv	91%		70-130
1,2-Dichloroethane	8.555	10.00	ppbv	86%		70-130
1,1-Dichloroethene	8.561	10.00	ppbv	86%		70-130
Methylene Chloride	8.696	10.00	ppbv	87%		70-130
1,2-Dibromoethane	9.193	10.00	ppbv	92%		70-130
Tetrachloroethene	11.12	10.00	ppbv	111%		70-130
Carbon Tetrachloride	8.611	10.00	ppbv	86%		70-130
Toluene	9.445	10.00	ppbv	94%		70-130
1,1,1-Trichloroethane	8.739	10.00	ppbv	87%		70-130
Trichloroethene	9.548	10.00	ppbv	95%		70-130
Chloroform	8.883	10.00	ppbv	89%		70-130
Vinyl Chloride	8.801	10.00	ppbv	88%		70-130
m,p-Xylenes	22.18	20.00	ppbv	111%		70-130
o-Xylene	11.40	10.00	ppbv	114%		70-130
Surrogates						
Bromofluorobenzene	11.16	10.00	ppbv	112%		60-140

Batch QC

Type: Lab Control Sample Duplicate	Lab ID: QC1169143	Batch: 345027
Matrix: Air	Method: EPA TO-15	Prep Method: METHOD

QC1169143 Analyte	Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim
Benzene	8.816	10.00	ppbv	88%		70-130	1	25
Benzyl chloride	9.314	10.00	ppbv	93%		70-130	9	25
Chlorobenzene	9.559	10.00	ppbv	96%		70-130	1	25
1,2-Dichlorobenzene	10.19	10.00	ppbv	102%		70-130	1	25
1,4-Dichlorobenzene	9.728	10.00	ppbv	97%		70-130	1	25
1,1-Dichloroethane	9.116	10.00	ppbv	91%		70-130	0	25
1,2-Dichloroethane	8.639	10.00	ppbv	86%		70-130	1	25
1,1-Dichloroethene	8.820	10.00	ppbv	88%		70-130	3	25
Methylene Chloride	8.837	10.00	ppbv	88%		70-130	2	25
1,2-Dibromoethane	9.201	10.00	ppbv	92%		70-130	0	25
Tetrachloroethene	9.958	10.00	ppbv	100%		70-130	11	25
Carbon Tetrachloride	8.749	10.00	ppbv	87%		70-130	2	25
Toluene	9.367	10.00	ppbv	94%		70-130	1	25
1,1,1-Trichloroethane	8.841	10.00	ppbv	88%		70-130	1	25
Trichloroethene	9.526	10.00	ppbv	95%		70-130	0	25
Chloroform	8.956	10.00	ppbv	90%		70-130	1	25
Vinyl Chloride	8.918	10.00	ppbv	89%		70-130	1	25
m,p-Xylenes	21.44	20.00	ppbv	107%		70-130	3	25
o-Xylene	10.75	10.00	ppbv	108%		70-130	6	25
Surrogates								
Bromofluorobenzene	11.14	10.00	ppbv	111%		60-140		

Batch QC

Type: Blank	Lab ID: QC1169144	Batch: 345027
Matrix: Air	Method: EPA TO-15	Prep Method: METHOD

QC1169144 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Benzene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Benzyl chloride	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Chlorobenzene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,2-Dichlorobenzene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,4-Dichlorobenzene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,1-Dichloroethane	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,2-Dichloroethane	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,1-Dichloroethene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Methylene Chloride	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,2-Dibromoethane	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Tetrachloroethene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Carbon Tetrachloride	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Toluene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
1,1,1-Trichloroethane	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Trichloroethene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Chloroform	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Vinyl Chloride	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
m,p-Xylenes	ND		ppbv	0.40	07/13/24 16:27	07/13/24 16:27
o-Xylene	ND		ppbv	0.20	07/13/24 16:27	07/13/24 16:27
Surrogates	Limits					
Bromofluorobenzene	94%		%REC	60-140	07/13/24 16:27	07/13/24 16:27

Type: Lab Control Sample	Lab ID: QC1169396	Batch: 345088
Matrix: Air	Method: EPA TO-15	Prep Method: METHOD

QC1169396 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Benzene	9.243	10.00	ppbv	92%		70-130
Surrogates						
Bromofluorobenzene	10.93	10.00	ppbv	109%		60-140

Type: Lab Control Sample Duplicate	Lab ID: QC1169397	Batch: 345088
Matrix: Air	Method: EPA TO-15	Prep Method: METHOD

QC1169397 Analyte	Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim
Benzene	9.621	10.00	ppbv	96%		70-130	4	25
Surrogates								
Bromofluorobenzene	10.91	10.00	ppbv	109%		60-140		

Type: Blank	Lab ID: QC1169398	Batch: 345088
Matrix: Air	Method: EPA TO-15	Prep Method: METHOD

QC1169398 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Benzene	ND		ppbv	0.20	07/15/24 16:59	07/15/24 16:59
Surrogates	Limits					
Bromofluorobenzene	90%		%REC	60-140	07/15/24 16:59	07/15/24 16:59

Batch QC

ND Not Detected



Results

SCAQMD 25.3/10.1 Results Summary

Parameter	Units	Nomenclature	Sample 1	Sample 2
Enthalpy LR/Sample ID #	none	Eid	511226-001	511226-002
Client Sample ID#	none	Cid	CHIQUITA FLARE 1 EXH (C80242)	CHIQUITA FLARE 1 EXH (C80224)
Sample Data				
Canister ID #	none	Tid	C80242	C80224
Canister Volume	Liters (L)	Vc	6.0	6.0
Initial Canister Pressure	mmHg (A)	Pi	0.0	0.0
Initial Canister Pressure Check Date	mm/dd/yy	none	6/24/2024	6/24/2024
Post Sampling Canister Pressure	mmHg (A)	Pr	434.4	420.2
Post Purge Final Canister Pressure	mmHg (A)	Pf	900.80	904.20
Canister Receipt Date	mm/dd/yy	none	6/28/2024	6/28/2024
Atmospheric Pressure	mmHg (A)	Pa	760.0	760.0
Canister Dilution Factor	none	Dftank	2.07	2.15
Sample Volume	Liters (L)	Vsample	3.43	3.32
Aqueous Impinger Volume	Milliliters (ml)	Vi	3.214	3.245
TOC Analysis Dilution Factor	none	Dftoc	4.0	4.0
Ideal Gas Volume	Liters/mole	Vid	24.47	24.47
Atomic Weight of Carbon	grams/mole	Ac	12.01	12.01
Bias Correction Factor	none	CFb	1.086	1.086
Results and Calculations				
Avg Raw TOC Result	ppmC	Ci	0.60	0.56
TOC Trip Blank Result	ppmC	Cb	0.05	0.05
Final Gaseous TOC Result = (((Ci - Cb) x TOCdf) x Vi xPa xVid)/(Vc x Pr xAc)	ppmC	Cw	4.27	4.10
Avg Raw NMNEOC Result	ppmC	Cm	0.30	0.30
Final NMNEOC Result = Cm x (Pf/Pr-Pi)	ppmC	Cc	0.62	0.65
Final Methane Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cmt	< 2.1	< 2.2
Final Carbon Monoxide Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cco	31.5	7.0
Final Ethene/Ethane Result = Avg Conc x (Pf/Pr-Pi)	ppmC	Cet	< 2.1	< 2.2
Final Carbon Dioxide Result = Avg Conc x (Pf/Pr-Pi)	%v/v	Cco2	9.7	9.7
Final Oxygen Result = Avg Conc x (Pf/Pr-Pi)	%v/v	Co2	11.0	11.0
Final TNMNEOC Result = (Cc +Cw) x CFb	ppmC	Cvoc	5.3	5.2



Sample Data

	Sample 1	Sample 2
Enthalpy ID	511226-001	511226-002
Client ID	CHIQUITA FLARE 1 EXH (C80242)	CHIQUITA FLARE 1 EXH (C80224)
LIMS Batch ID:	344111	344111
Canister ID #	C80242	C80224
Canister Cleaning Date	6/19/2024	6/11/2024
Canister Volume	6.0	6.0
Initial Canister Pressure	0	0
Canister Pressure Check Date	6/24/2024	6/24/2024
Post Sampling Canister Pressure	-325.6	-339.8
Post Purge Final Canister Pressure	140.8	144.2
Canister Receipt and Purge Date	6/28/2024	6/28/2024
Analysis Date/Time	07/01/2024 14:54	07/01/2024 15:45
Reagent Water ID	062424A	062424A
Vial ID#	17A	17B
TOC final return Volume	3.2144	3.2452
TOC Analytical Dilution Factor	4.00	4.00
Result 1	0.00	0.00
Result 2	0.00	0.00
RPD %	#DIV/0!	#DIV/0!
Avg Methane Result	0.00	0.00
Result 1	15.20	3.20
Result 2	15.20	3.30
RPD %	0.00	3.08
Avg Carbon Monoxide Result	15.20	3.25
Result 1	0.30	0.30
Result 2	0.30	0.30
RPD %	0.00	0.00
Avg TNMNEOC Result	0.30	0.30
Result 1	46628.10	45098.10
Result 2	46589.30	45126.40
RPD %	0.08	0.06
Avg Carbon Dioxide Result	46608.70	45112.25
Result 1	0.00	0.00
Result 2	0.00	0.00
RPD %	#DIV/0!	#DIV/0!
Avg Ethene/Ethane Result	0.0	0.0
Result 1	5.30	5.10
Result 2	5.30	5.10
RPD %	0.00	0.00
Avg Oxygen Result	5.30	5.10
Result 1	37.50	36.10
Result 2	37.40	36.10
RPD %	0.27	0.00
Avg Nitrogen Result	37.45	36.10
Avg raw TOC	0.6043	0.5599
TOC Blank	0.0456	0.0456
Fixed Gases Total %	98.3	98.4

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 14-54-44 511226-001 inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\sw\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : 511226-001
Sample ID : 511226-001

Injection Date: 2024-07-01 14:54 Calculation Date: 2024-07-02 12:37

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCM#1
Channel : Middle = FID
Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		5.896					
2	Carbon Monox	15.2	8.285	-0.056	93853	BB	19.2	M
3	NNNEOC	0.3	15.055	0.504	9021	BB	19.7	
Totals:			15.5	0.448	102874			

Status Codes:
M - Missing peak

Total Unidentified Counts : 68450 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 34 microVolts - monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 14-54-44 511226-001 inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-001

Injection Date: 2024-07-01 14:54 Calculation Date: 2024-07-02 15:15

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCM#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	46628.1	4.609	-0.391	490018272	BB	16.8	M
2	Ethane	9.239						
Totals:			46628.1	-0.391	490018272			

Status Codes:
M - Missing Peak

Total Unidentified Counts : 34931 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 15 microVolts - monitored before this run

Manual injection

Print Date: Tue Jul 02 14:59:18 2024 Page 1 of 1

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 14-54-44 511226-001 inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 14-54-44 511226-001 inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-001

Injection Date: 2024-07-01 14:54 Calculation Date: 2024-07-02 14:59

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	5.3	3.446	-0.002	1737374	BV	4.0	
3	Nitrogen	37.5	4.098	-0.302	9604869	VB	9.6	
4	Methane		5.848					M
5	Carbon Monox		7.979					M
Totals:					42.8	-0.304	11342243	

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 103300 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 178 microVolts

Manual injection

Print Date: Tue Jul 02 12:37:58 2024 Page 1 of 1

Title : c:\bruker\msdata\2024\070124 25.3\2024-07-01 15-20-16 511226-001 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\msdata\2024\070124 25.3\2024-07-01 15-20-16 511226-001 inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\bruker\msdata\2024\070124 25.3\2024-07-01 15-20-16 511226-001 inj 2 - master scaqmd 253 analysis 100923.run
Sample ID : 511226-001

Injection Date: 2024-07-01 15:20 Calculation Date: 2024-07-02 12:37

Operator : NPD
Workstation : Windows
Instrument : Bruker GC/TCA#1
Channel : Middle = FID
Run Time : 23.000 min

** MSWS B.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		5.896					
2	Carbon Monox	15.2	8.288	-0.053	94117	BB	19.2	M
3	NMNEOC	0.3	15.062	0.511	9004	BB	18.5	
Totals:					15.5		103121	

Status Codes:
N - Missing peak

Total Unidentified Counts : 67100 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 38 microVolts - monitored before this run

Manual injection

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Print Date: Tue Jul 02 15:15:54 2024                               Page 1 of 1

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 15-20-16 511226-001 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 15-20-16 511226-001 inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-001

Injection Date: 2024-07-01 15:20      Calculation Date: 2024-07-02 15:15

Operator : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows      Bus Address : 44
Instrument : Bruker GC/TCR#1      Sample Rate : 5.00 Hz
Channel : Front == FID      Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No. Peak Name Result ppmCarbon Ret. Time Offset (min) Area (counts) Width 1/2 Status Codes
-----
1 Carbon Diox1 46589.3 4.609 -0.391 489667040 BB 16.8 M
2 Ethane 9.239
-----
Totals: 46589.3 -0.391 489667040

Status Codes:
M - Missing peak

Total Unidentified Counts : 34088 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 2
Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts USB: 1 microVolts
Noise (used): 20 microVolts - monitored before this run
Manual injection
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Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 15-20-16 511226-001 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-001

Injection Date: 2024-07-01 15:20 Calculation Date: 2024-07-02 14:59

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					
2	Oxygen	5.3	3.446	-0.002	1732761	BV	4.0	M
3	Nitrogen	37.4	4.098	-0.302	9590930	VB	9.6	M
4	Methane		5.848					M
5	Carbon Monox		7.979					M
Totals:		42.7		-0.304	11323691			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 102483 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 328 microVolts

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 15-45-54 511226-002 inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 15-45-54 511226-002 inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-002

Injection Date: 2024-07-01 15:45 Calculation Date: 2024-07-02 12:38

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		5.896					
2	Carbon Monox	3.2	8.300	-0.041	19493	BB	19.4	M
3	NNNEOC	0.3	15.028	0.477	6918	BB	17.6	
Totals:		3.5		0.436	26411			

Status Codes:
M - Missing peak

Total Unidentified Counts : 64722 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 32 microVolts - monitored before this run

Manual injection

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Print Date: Tue Jul 02 15:16:07 2024                               Page 1 of 1

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 15-45-54 511226-002 inj 1 ~ master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-002

Injection Date: 2024-07-01 15:45      Calculation Date: 2024-07-02 15:16

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCM#1
Channel : Front = FID
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.      Peak Name      Result      ppmCarbon      Ret. Time      Time Offset      Area      Sep. 1/2      Status
-----
1 Carbon Dioxi 45098.1      4.614      -0.386      476108160      BB      16.6      M
2 Ethane      9.239
-----
Totals:      45098.1      -0.386      476108160

Status Codes:
M - Missing peak

Total Unidentified Counts :      35045 counts

Detected Peaks: 3      Rejected Peaks: 0      Identified Peaks: 2
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts      LSB:      1 microVolts

Noise (used): 26 microVolts - monitored before this run

Manual injection
*****

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Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 15-45-54 511226-002 inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 15-45-54 511226-002 inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 15-45-54 511226-002 inj 1 - master scaqmd 253 analysis 100923.run
Sample ID : 511226-002

Injection Date: 2024-07-01 15:45 Calculation Date: 2024-07-02 15:00

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	5.1	3.445	-0.003	1682563	BB	4.0	
3	Nitrogen	36.1	4.101	-0.299	9248675	VB	9.7	M
4	Methane		5.848					M
5	Carbon Monox		7.979					
Totals:			41.2	-0.302	10931238			

Status Codes:
M - Missing peak

Total Unidentified Counts : 270 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 102188 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 198 microVolts

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-002

Injection Date: 2024-07-01 16:11 Calculation Date: 2024-07-02 12:39

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TC#1
Channel : Middle = FID
Detector Type: 4XX-GC (1000 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis

Peak Measurement: Peak Area

Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		5.896					
2	Carbon Monox	3.3	8.303	-0.038	20153	BB	19.5	M
3	NMNEOC	0.3	15.022	0.471	7230	BB	19.3	
Totals:			3.6	0.433	27383			

Status Codes:

M - Missing peak

Total Unidentified Counts : 66700 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 20 microVolts - monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 511226-002

Injection Date: 2024-07-01 16:11 Calculation Date: 2024-07-02 15:16

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCD#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. 1/2 Code (sec)	Width Code (sec)	Status Codes
1	Carbon Dioxi	45126.4	4.613	-0.387	476367424	BB	16.6	M
2	Ethane		9.239					
Totals:		45126.4	-0.387		476367424			

Status Codes:
M - Missing peak

Total Unidentified Counts : 33971 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 18 microVolts - monitored before this run

Manual injection

Title : c:\bruker\work\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\work\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\bruker\work\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 inj 2 - master scaqmd 253 analysis 100923.run
Sample ID : 511226-002

Injection Date: 2024-07-01 16:11 Calculation Date: 2024-07-02 15:00

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen	2.884	2.884	-0.003	1691701	BV	4.1	M
2	Oxygen	3.445	3.445	-0.300	9264330	VB	9.8	M
3	Nitrogen	5.1	4.100	-0.300	9264330	VB	9.8	M
4	Methane	36.1	5.848					M
5	Carbon Monox	7.979	7.979					M
Totals:		41.2		-0.303	10956031			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 102578 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 324 microVolts

Manual injection

General Info
 Analysis Name 20240711A.adb
 Template Name 071124.tdb
 Operator Administrator
 Date 7/11/2024
 Time 8:28:54 AM

Element	Integration Time	Samples	Template Settings		Volume	Max Conc.
			Extra Samples	Max. CV		
Carbon	75	3	2	5	200	20
Nitrogen	100	2	2	2	200	20
Sample Time	300					

CurveNo	Type	FileName:	Calibration Info		R-squared	A0:	A1:	A2:
			Volume	Correlation				
1	IC	20230801B.adb	200	0.999335761	0.99867	260,676	483,869	0
2	TC	20230802A.adb	200	0.999822357	0.99964	88,855	473,969	0

Identification	Inj. Type	Sample Info		CV	Inj. Volume
		Conc.	Area		
System Rinse	TOC	0.2557	-	-	
	TC	0.2557	210026	4.0	200
	IC	-0.3599	86550	9.9	200
MB 071124	TOC	0.0178	-	-	
	TC	0.0178	97288	13.3	200
	IC	-0.4010	88667	9.7	200
RL check 1.0 ug/ml S20449	TOC	0.9109	-	-	
	TC	0.9109	520588	4.1	200
	IC	-0.1447	190636	2.0	200
CCV 10ug/ml S20450	TOC	9.7105	-	-	
	TC	9.7105	4891317	1.5	200
	IC	-0.2162	156068	3.1	200
H2O blank	TOC	0.2095	-	-	
	TC	0.2095	188136	6.8	200
	IC	-0.3489	91873	2.7	200
511226 Trip Blank	TOC	0.0456	-	-	
	TC	0.0456	110446	3.0	200
	IC	-0.3975	68333	2.2	200
511226-001 4x	TOC	0.6043	-	-	
	TC	1.1329	625833	0.9	200
	IC	0.5286	516448	3.2	200
511226-002 4x	TOC	0.5599	-	-	
	TC	0.7757	458529	3.3	200
	IC	0.2159	365120	2.5	200
H2O blank	TOC	0.2676	-	-	
	TC	0.2676	215689	5.6	200
	IC	-0.2955	117702	6.0	200
RL check 1.0 ug/ml S20449	TOC	0.5443	-	-	
	TC	0.5443	346830	1.8	200
	IC	-0.1635	181556	2.9	200
CCV 10ug/ml S20450	TOC	9.7488	-	-	
	TC	9.7488	4709474	0.9	200
	IC	-0.2109	158608	3.2	200



QA/QC Data

SCAQMD 25.3/10.1 QAQC Summary

Opening TNMNEOC CV's				
Analyte	Target	Result	% rec	Rec Limit
TNMNEOC Low	1.0	0.9	90.0	90-110
TNMNEOC High	10.0	9.5	95.0	90-110

Opening FG's CV's				
Analyte	Target	Result	% rec	Rec Limit
Oxygen	21.5	20.7	96.3	85-115
Nitrogen	78.1	78.6	100.6	85-115
Carbon Monoxide	5.00	5.1	102.0	85-115
Methane	5.02	5.0	99.6	85-115
Carbon Dioxide	4.99	4.5	91.1	85-115

Opening TOC CV's				
Analyte	Target	Result	% rec	Rec Limit
TOC	10.00	9.7	97.1	90-110

Closing TNMNEOC CV's				
Analyte	Target	Result	% rec	Rec Limit
TNMNEOC Low	1.0	0.9	90.0	90-110
TNMNEOC High	10.0	9.6	96.0	90-110

Closing FG's CV's				
Analyte	Target	Result	% rec	Rec Limit
Oxygen	21.5	20.7	96.3	85-115
Nitrogen	78.1	78.2	100.1	85-115
Carbon Monoxide	5.00	5.0	100.0	85-115
Methane	5.02	5.1	101.6	85-115
Carbon Dioxide	4.99	4.5	91.2	85-115

Closing TOC CV's				
Analyte	Target	Result	% rec	Rec Limit
TOC	10.00	9.7	97.5	90-110

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 08-56-23 argon blank inj 1 - master scagmd 253 analysis 100923.run
Method File : c:\bruker\sw\methods\active gc methods 2023\master scagmd 253 quant 100923.mth
Sample ID : Argon Blank

Injection Date: 2024-07-01 08:56 Calculation Date: 2024-07-02 12:25

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane		5.896					M
2	Carbon Monox		7.938					M
3	NMNEOC		14.551					M
Totals:			0.0	0.000	0			

Status Codes:
M - Missing Peak

Total Unidentified Counts : 71275 counts

Detected Peaks: 10 Rejected Peaks: 9 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: -6 microVolts LSB: 1 microVolts

Noise (used): 10 microVolts - monitored before this run

Manual injection

```

Print Date: Tue Jul 02 15:12:26 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25.3\2024-07-01 08-56-23 argon blank inj 1 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25.3\2024-07-01 08-56-23 argon blank inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID  : Argon Blank

Injection Date: 2024-07-01 08:56      Calculation Date: 2024-07-02 15:12
Operator    : MPD                    Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows                Bus Address : 44
Instrument   : Bruker GC/TCA#1        Sample Rate : 5.00 Hz
Channel     : Front = FID             Run Time    : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.  Peak Name  Result  Ret. Time  Time Offset  Area  Sep.  Width  Status
-----  -
1 Carbon Dioxi  5.000      5.000      0.000      0.000      0.000      0.000      0.000      M
2 Ethane       9.239      9.239      0.000      0.000      0.000      0.000      0.000      M
-----  -
Totals:      0.0      0.000      0.000      0.000      0.000      0.000      0.000      0

Status Codes:
M - Missing Peak

Total Unidentified Counts : 31885 counts
Detected Peaks: 2         Rejected Peaks: 0         Identified Peaks: 2
Multiplier: 1             Divisor: 1             Unidentified Peak Factor: 0
Baseline Offset: -24 microVolts      LSB: 1 microVolts
Noise (used): 9 microVolts - monitored before this run
Manual injection

*****

```

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 08-56-23 argon blank inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 08-56-23 argon blank inj 1 - master scaqmd 253 quant 100923.mth
Method File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 08-56-23 argon blank inj 1 - master scaqmd 253 quant 100923.mth
Sample ID : Argon Blank

Injection Date: 2024-07-01 08:56 Calculation Date: 2024-07-02 14:55

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-45SD **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen		3.448					M
3	Nitrogen	0.0	4.217	-0.183	2699	BB	2.9	
4	Methane		5.848					M
5	Carbon Monox	0.0	7.586	-0.393	2274	BB	0.0	
Totals:		0.0		-0.576	4973			

Status Codes:

M - Missing peak

Total Unidentified Counts : 2402 counts

Detected Peaks: 5 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 107849 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 157 microVolts

Manual injection

```

Print Date: Tue Jul 02 12:26:43 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25.3\2024-07-01 09-22-00 argon blank inj 2 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25.3\2024-07-01 09-22-00 argon blank inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID  : Argon Blank DMP

Injection Date: 2024-07-01 09:22      Calculation Date: 2024-07-02 12:26
Operator    : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows   Bus Address  : 44
Instrument   : Bruker GC/TCA#1   Sample Rate : 5.00 Hz
Channel     : Middle = FID      Run Time  : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.  Peak Name  Result  Ret. Time  Time Offset  Area  Sep. 1/2  Status
-----  -
1 Methane  5.896      (min)      (min)      (counts)  Code (sec)  Codes
2 Carbon Monox 7.938      (min)      (min)      (counts)  Code (sec)  Codes
3 NMNEOC    14.551     (min)      (min)      (counts)  Code (sec)  Codes

Totals: 0.0 0.000 0

Status Codes:
M - Missing peak

Total Unidentified Counts : 6911 counts
Detected Peaks: 1 Rejected Peaks: 0 Identified Peaks: 3
Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts LSB: 1 microVolts
Noise (used): 18 microVolts - monitored before this run
Manual injection
*****

```



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Print Date: Tue Jul 02 15:12:40 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124_25_3\2024-07-01_09-22-00_argon_blank_inj_2 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124_25_3\2024-07-01_09-22-00_argon_blank_inj_2 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\method\active_gc_methods\2023\master_scaqmd_253_quant_100923.mth
Sample ID  : Argon Blank Dup

Injection Date: 2024-07-01 09:22      Calculation Date: 2024-07-02 15:12

Operator   : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows  Bus Address : 44
Instrument  : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel    : Front == FID Run Time    : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak No.  Peak Name  Result  Ret. Time  Time Offset  Area  Sep. 1/2  Status
  -----  -
  1 Carbon Dioxl  ppmCarbon  5.000      0.000      0.000      0.000      0.000      0.000      M
  2 Ethane      ppmCarbon  9.239      0.000      0.000      0.000      0.000      0.000      M
  Totals:      0.000      0.000      0.000      0.000      0.000      0.000      0.000

Status Codes:
M - Missing peak

Total Unidentified Counts : 29078 counts
Detected Peaks: 2      Rejected Peaks: 0      Identified Peaks: 2
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts      LSB: 1 microVolts
Noise (used): 16 microVolts ~ monitored before this run
Manual injection
*****

```

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 09-22-00 argon blank inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\sw\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\bruker\sw\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : Argon Blank **DPD**

Injection Date: 2024-07-01 09:22 Calculation Date: 2024-07-02 14:55

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (mV)	Ret. Time (min)	Time Offset (min)	Area (counts)	Width Sep. 1/2 Code (sec)	Status Codes
1	Hydrogen		2.884				M
2	Oxygen		3.448				M
3	Nitrogen		4.400				M
4	Methane		5.848				M
5	Carbon Monox	0.0	7.445	-0.534	2748	BB 2.2	
Totals:				-0.534	2748		

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 1 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 105826 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 403 microVolts

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 09-47-40 1.0 ppmc s20864 inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 1.0 ppmc S20864

Injection Date: 2024-07-01 09:47 Calculation Date: 2024-07-02 12:29

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width i/2 (sec)	Status Codes
1	Methane	0.9	5.778	-0.118	5327	BB	11.2	
2	Carbon Monox	0.9	8.309	0.371	5365	BB	19.0	
3	NNNEOC	0.9	15.052	0.301	23805	BB	16.5	
Totals:		2.7	0.754		34497			

Total Unidentified Counts : 69157 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 32 microVolts - monitored before this run

Manual injection

Title : c:\brukerwa\data\2024\070124_25_3\2024-07-01_09-47-40_1.0_ppmc_s20864.inj 1 - master scaqmd 253 analysis 100923.run
 Method File : c:\brukerwa\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Sample ID : 1.0 ppmc S20864

Injection Date: 2024-07-01 09:47 Calculation Date: 2024-07-02 15:06

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/MS#1 Sample Rate : 5.00 Hz
 Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	1.1	4.768	-0.232	12719	BB	15.5	
2	Ethane	1.0	9.545	0.306	12148	BB	27.2	
Totals:			0.074		24867			

Total Unidentified Counts : 30896 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 17 microVolts - monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 10-13-12 1.0 ppmc s20864 inj 2 - master scaqmd 253 analysis 100923.run
 Run File : c:\brukerws\method\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Method File : c:\brukerws\method\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Sample ID : 1.0 ppmc S20864 **DUP**

Injection Date: 2024-07-01 10:13 Calculation Date: 2024-07-02 12:29

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
 Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	1.0	5.780	-0.116	5759	BB	11.6	
2	Carbon Monox	0.8	8.310	0.372	5105	BB	19.7	
3	NMNEOC	0.9	15.055	0.504	23214	BB	16.3	
Totals:		2.7	0.760		34078			

Total Unidentified Counts : 63537 counts

Detected Peaks: 5 Rejected Peaks: 1 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 16 microVolts ~ monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 10-13-12 1.0 ppmc s20864 ind 2 - master scaqmd 253 analysis 100923.run
 Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mch
 Method File : 1.0 ppmc s20864
 Sample ID : 1.0 ppmc s20864

Injection Date: 2024-07-01 10:13 Calculation Date: 2024-07-02 15:06

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TCM#1 Sample Rate : 5.00 Hz
 Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	1.1	4.775	-0.225	12840	BB	15.5	
2	Ethane	1.0	9.545	0.306	12117	BB	27.8	
Totals:		2.1		0.061	24957			

Total Unidentified Counts : 27926 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 30 microVolts - monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 10-38-50 10 ppmc s16946.inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 10-38-50 10 ppmc s16946.inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 10 ppmc S16946

Injection Date: 2024-07-01 10:38 Calculation Date: 2024-07-02 12:30

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis

Peak Measurement: Peak Area

Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	9.3	5.780	-0.116	56407	BB	11.4	
2	Carbon Monox	8.4	8.288	0.350	52026	BB	18.1	
3	NMNEOC	9.5	15.050	0.499	258267	BB	16.1	
Totals:					27.2	0.733	366700	

Total Unidentified Counts : 66748 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 20 microVolts - monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 10-38-50 10 ppmc sl6946 inj 1 - master scaqmd 253 analysis 100923.run
 Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Sample ID : 10 ppmc sl6946

Injection Date: 2024-07-01 10:38 Calculation Date: 2024-07-02 15:07

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TCH#1 Sample Rate : 5.00 Hz
 Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Offset (min)	Area (counts)	Sep. Code	Width 1/2	Status Codes
1	Carbon Diox	10.5	4.768	-0.232	125457	BB	15.4	
2	Ethane	10.4	9.555	0.316	126207	BB	28.0	
Totals:		20.9	0.084		251664			

Total Unidentified Counts : 37119 counts

Detected Peaks: 12 Rejected Peaks: 8 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 6 microVolts - monitored before this run

Manual Injection

Title : c:\brukerws\data\2024\070124 25_3\2024-07-01 11-04-24 10 ppmc s16946 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : 10 ppmc s16946
Sample ID : 10 ppmc s16946

Injection Date: 2024-07-01 11:04 Calculation Date: 2024-07-02 12:30

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Middle w FID Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	9.3	5.779	-0.117	56373	BB	11.3	
2	Carbon Monox	8.4	8.289	0.351	51802	BB	19.1	
3	NMNEOC	9.5	15.049	0.498	259359	BB	16.1	
Totals:		27.2	0.732		367534			

Total Unidentified Counts : 63636 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 13 microVolts - monitored before this run

Manual Injection

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 11-04-24 10 ppmc s16946 inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\bruker\sw\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : 10 ppmc S16946 *dup*

Injection Date: 2024-07-01 11:04 Calculation Date: 2024-07-02 15:11

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	10.4	4.768	-0.232	125051	BB	15.4	
2	Ethane	10.3	9.548	0.309	125437	BB	27.8	
Totals:		20.7	0.077		250488			

Total Unidentified Counts : 27841 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 21 microVolts - monitored before this run

Manual injection

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Print Date: Tue Jul 02 15:09:22 2024                               Page 1 of 1

Title      : c:\brukerwa\data\2024\070124_25_3\2024-07-01_11-29-59_fgscv_s18115_inj_1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerwa\methods\active_gc_methods_2023\master scaqmd 253 quant 100923.mth
Sample ID   : FGS CCV S18115

Injection Date: 2024-07-01 11:29      Calculation Date: 2024-07-02 15:09

Operator    : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows  Bus Address  : 44
Instrument   : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel      : Front = FID Run Time    : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.  Peak Name  Result  ppmCarbon  Ret. Time  Offset  Area  Sep.  Width  Status
-----  -
1 Carbon Diox1  45439.0  4.608  -0.392  479220128  BB  17.0  M
2 Ethane       9.239
-----  -
Totals:      45439.0  -0.392  479220128

Status Codes:
M - Missing peak

Total Unidentified Counts : 35444 counts

Detected Peaks: 3      Rejected Peaks: 0      Identified Peaks: 2

Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts      LSB: 1 microVolts

Noise (used): 26 microVolts - monitored before this run

Manual injection

*****

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Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 11-29-59 fgs ccv s18115 in4 1 -master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : FGS CCV S18115

Injection Date: 2024-07-01 11:29 Calculation Date: 2024-07-01 13:11

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCH#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884	-0.008	1094738	BB	4.5	M
2	Oxygen	3.3	3.440	-0.187	1249354	BB	7.0	
3	Nitrogen	4.9	4.213	-0.192	3966670	BB	11.6	
4	Methane	5.0	5.636	0.064	1341117	BB	19.8	
5	Carbon Monox	5.1	8.043	-0.323	7651879			
Totals:		18.3						

Status Codes:
M - Missing Peak

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 106379 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 116 microVolts

Manual Injection

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 11-55-30 fgs ccv sl8115 inj 2 - master scaqmd 253 analysis 100923.run
 Run File : c:\bruker\sw\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Method File : fgs ccv sl8115
 Sample ID : fgs ccv sl8115 **Dup**

Injection Date: 2024-07-01 11:55 Calculation Date: 2024-07-02 15:09

Operator : MPD
 Workstation: Windows
 Instrument : Bruker GC/TCM#1
 Channel : Front == FID
 Detector Type: 4XX-GC (1000 Volts)
 Bus Address : 44
 Sample Rate : 5.00 Hz
 Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Ret. Time (min)	Result ppmCarbon	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Diox	4.607	45419.1	-0.393	479038752	BB	17.1	M
2	Ethane	9.239						
Totals:		45419.1		-0.393	479038752			

Status Codes:
 M - Missing peak

Total Unidentified Counts : 35572 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 33 microVolts - monitored before this run

Manual injection

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 11-55-30 fgs ccv s18115 inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 11-55-30 fgs ccv s18115 inj 2 - master scaqmd 253 quant 100923.mth
Method File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 11-55-30 fgs ccv s18115 inj 2 - master scaqmd 253 quant 100923.mth
Sample ID : FGS CCV S18115 *Dup*

Injection Date: 2024-07-01 11:55 Calculation Date: 2024-07-02 12:45

Operator : MPD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					
2	Oxygen	3.3	3.441	-0.007	1095328	BB	4.5	M
3	Nitrogen	4.9	4.213	-0.187	1253854	BB	6.9	
4	Methane	5.1	5.656	-0.192	4038165	BB	11.7	
5	Carbon Monox	5.0	8.043	0.064	1327443	BB	19.8	
Totals:		18.3		-0.322	7714790			

Status Codes:

M - Missing Peak

Total Unidentified Counts : 161 counts

Detected Peaks: 5 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 105321 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - Fixed value

Noise (monitored before this run): 193 microVolts

Manual Injection

Title : c:\brukerws\data\2024\070124 25_3\2024-07-01 12-21-12 lab air inj 1 -- master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25_3\2024-07-01 12-21-12 lab air inj 1 -- master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : Lab Air

Injection Date: 2024-07-01 12:21 Calculation Date: 2024-07-02 12:32

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TCD#1 Sample Rate : 5.00 Hz
Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	2.1	5.783	-0.113	12587	BB	11.2	
2	Carbon Monox	0.6	8.335	0.397	4007	BB	20.5	
3	NMNEOC	0.3	15.089	0.538	7811	BB	23.7	
Totals:		3.0		0.822	24405			

Total Unidentified Counts : 71002 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 49 microVolts - monitored before this run

Manual injection

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Print Date: Tue Jul 02 15:13:54 2024                               Page 1 of 1

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 12-21-12 lab air inj 1 - master sceqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master sceqmd 253 quant 100923.mth
Sample ID : Lab Air

Injection Date: 2024-07-01 12:21      Calculation Date: 2024-07-02 15:13
Operator : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows      Bus Address : 44
Instrument : Bruker GC/PCA#1      Sample Rate : 5.00 Hz
Channel : Front = FID      Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard


```

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	478.8	4.771	-0.229	5726379	BB	15.3	M
2	Ethane	9.239	9.239	-0.229	5726379			
Totals:					478.8		5726379	

```

Status Codes:
M - Missing peak

Total Unidentified Counts : 33834 counts

Detected Peaks: 3      Rejected Peaks: 0      Identified Peaks: 2

Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts      LSB: 1 microVolts

Noise (used): 9 microVolts - monitored before this run

Manual injection

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```


Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 12-21-12 lab air inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 12-21-12 lab air inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : Lab Air

Injection Date: 2024-07-01 12:21 Calculation Date: 2024-07-02 14:56

Operator : MFD Detector Type: 4XX-GC (10 Volts)
Workstation: Windows Bus Address : 44
Instrument : Bruker GC/TGA#1 Sample Rate : 5.00 Hz
Channel : Rear w TCD Run Time : 23.000 min

** MWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code (sec)	Width 1/2	Status Codes
1	Hydrogen		2.884					
2	Oxygen	20.7	3.447	-0.001	6791188	BV 3.7		M
3	Nitrogen	78.6	4.007	-0.393	20158832	VB 12.7		M
4	Methane		5.848					M
5	Carbon Monox		7.979					M
Totals:		99.3		-0.394	26950020			

Status Codes:

M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 104864 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 179 microVolts

Manual injection

```

Print Date: Tue Jul 02 12:32:39 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25_3\2024-07-01 12-46-43 lab air inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID   : Lab Air
Injection Date: 2024-07-01 12:46 DWP      Calculation Date: 2024-07-02 12:32
Operator    : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows  Bus Address : 44
Instrument   : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
Channel     : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak  Peak  Result  Ret.  Time  Area  Sep.  Width  Status
  No.   Name   ppmCarbon (min) (min) (counts) Code (sec) Codes
  ---  -
1 Methane      1.9    5.782 -0.114 11682 BB 11.2
2 Carbon Monox 0.6    8.351 0.413 1028 BB 20.7
3 NMNEOC       0.2   15.076 0.525 6129 BB 19.4
  ---  -
Totals:      2.7      0.924 21439

Total Unidentified Counts : 65881 counts
Detected Peaks: 4         Rejected Peaks: 0   Identified Peaks: 3
Multiplier: 1             Divisor: 1          Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts
Noise (used): 30 microVolts - monitored before this run
Manual injection
*****

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Print Date: Tue Jul 02 15:14:08 2024          Page 1 of 1

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 12-46-43 lab air inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 12-46-43 lab air inj 2 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID : Lab Air DWP

Injection Date: 2024-07-01 12:46      Calculation Date: 2024-07-02 15:14
Operator : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows      Bus Address : 44
Instrument : Bruker GC/TCA#1      Sample Rate : 5.00 Hz
Channel : Front = FID      Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak No.   Peak Name   Result   Ret. Time   Offset   Area   Sep.   Width   Status
  -----   -
  1 Carbon Dioxi   478.0   4.770   -0.230   5717040   BB   15.3   M
  2 Ethane        9.239
  -----   -
  Totals:         478.0   -0.230   5717040

Status Codes:
M - Missing peak

Total Unidentified Counts : 33868 counts
Detected Peaks: 3      Rejected Peaks: 0      Identified Peaks: 2
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts      LSB: 1 microVolts
Noise (used): 20 microVolts - monitored before this run
Manual injection
*****

```

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 12-46-43 lab air inj 2 - master scaqmd 253 analysis 100923.run
Run File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 analysis 100923.run
Sample ID : Lab Air

Injection Date: 2024-07-01 12:46 Calculation Date: 2024-07-02 14:56

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TC#1
Channel : Rear = TCD

Detector Type: 4XX-GC (10 Volts)
Bus Address : 44
Sample Rate : 5.00 Hz
Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.	Peak Name	Result (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. i/2 (sec)	Width (sec)	Status Codes
1	Hydrogen	20.7	2.884	-0.002	6792109	BV	3.7	M
2	Oxygen	78.7	3.446	-0.394	20164840	VB	12.7	
3	Nitrogen	0.0	4.006	-0.348	253	TS	0.0	
4	Methane		5.500					
5	Carbon Monox		7.979					M
Totals:		99.4		-0.744	26957202			

Status Codes:

M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 3 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 103455 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 132 microVolts

Manual injection

```

Print Date: Tue Jul 02 12:27:32 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25.3\2024-07-01 21-18-32 argon blank inj 1 - master sragmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25.3\2024-07-01 21-18-32 argon blank inj 1 - master sragmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master sragmd 253 quant 100923.mth
Sample ID  : Argon Blank

Injection Date: 2024-07-01 21:18      Calculation Date: 2024-07-02 12:27
Operator   : MPD                      Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows                  Bus Address   : 44
Instrument  : Bruker GC/TCA#1          Sample Rate   : 5.00 Hz
Channel    : Middle = FID              Run Time      : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.      Peak Name      Result      Ret. Time      Time Offset      Area      Sep. 1/2      Width      Status
-----      -
1 Methane      ppmCarbon      5.896      (min)      (min)      (counts)      Code      Codes
2 Carbon Monox      7.938
3 NMNEOC      14.531
Totals:      0.0      0.000      0

Status Codes:
M - Missing peak

Total Unidentified Counts : 64436 counts
Detected Peaks: 1      Rejected Peaks: 0      Identified Peaks: 3
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts      LSB: 1 microVolts
Noise (used): 27 microVolts - monitored before this run
Manual injection
*****

```

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 21-18-32 argon blank inj 1 - master scaqmd 253 analysis 100923.run
 Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 21-18-32 argon blank inj 1 - master scaqmd 253 quant 100923.mth
 Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Sample ID : Argon Blank

Injection Date: 2024-07-01 21:18 Calculation Date: 2024-07-02 15:13

Operator : MPD Detector Type: 4XX-GC (1000 volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
 Channel : Front = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxide		5.000					M
2	Ethane		9.239					M
Totals:			0.0	0.000	0			

Status Codes:
 M - Missing peak

Total Unidentified Counts : 28532 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 31 microVolts - monitored before this run

Manual injection

```

Print Date: Tue Jul 02 14:56:21 2024          Page 1 of 1

Title : c:\brukerws\data\2024\070124_25_3\2024-07-01_21-18-32_argon_blank_inj_1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active_gc_methods_2023\master_scaqmd_253_quant_100923.mth
Sample ID : Argon Blank

Injection Date: 2024-07-01 21:18      Calculation Date: 2024-07-02 14:56
Operator : MPD      Detector Type: 4XX-GC (10 Volts)
Workstation: Windows      Bus Address : 44
Instrument : Bruker GC/TCD#1      Sample Rate : 5.00 Hz
Channel : Rear = TCD      Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01197-6211-BB0-455D **

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

Peak No.  Peak Name  Result (8V)  Ret. Time (min)  Time Offset (min)  Area (counts)  Sep. 1/2 Code  Status Codes
-----
1 Hydrogen  2.884
2 Oxygen   3.448
3 Nitrogen 4.400
4 Methane  5.848
5 Carbon Monox 7.975
-----
Totals: 0.0 0.000 0

Status Codes:
M ~ Missing Peak

Total Unidentified Counts : 0 counts      Rejected Peaks: 0      Identified Peaks: 5
Detected Peaks: 0

Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: 102666 microVolts      LSB: 1 microVolts
Noise (used): 200 microVolts - fixed value
Noise (monitored before this run): 146 microVolts
Manual injection
Data Handling: No peaks
*****

```

Print Date: Tue Jul 02 12:31:26 2024 Page 1 of 1

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-09-46 1.0 ppmc s20864 inj 1 - master scaqmd 253 analysis 100923.run
 Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-09-46 1.0 ppmc s20864 inj 1 - master scaqmd 253 analysis 100923.run
 Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
 Sample ID : 1.0 ppmc S20864

Injection Date: 2024-07-01 22:09 Calculation Date: 2024-07-02 12:31

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TGA#1 Sample Rate : 5.00 Hz
 Channel : Middle = FID Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01197-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	0.9	5.783	-0.113	5551	BB	11.4	
2	Carbon Monox	0.8	8.323	0.385	462	BB	12.4	
3	NMNEOC	0.9	15.038	0.487	23402	BB	15.9	
Totals:		2.6	0.759		33615			

Total Unidentified Counts : 67331 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 3

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 41 microVolts - monitored before this run

Manual injection

Title : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-09-46 1.0 ppmc s20864 inj 1 - master scaqmd 253 analysis 100923.run
 Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-09-46 1.0 ppmc s20864 inj 1 - master scaqmd 253 analysis 100923.run
 Method File : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-09-46 1.0 ppmc s20864 inj 1 - master scaqmd 253 analysis 100923.run
 Sample ID : 1.0 ppmc S20864

Injection Date: 2024-07-01 22:09 Calculation Date: 2024-07-02 15:08

Operator : MPD Detector Type: 4XX-GC (1000 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
 Channel : Front = FID Run time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Diox1	1.1	4.785	-0.205	12593	BB	15.8	
2	Ethane	1.0	9.552	0.313	11919	BB	27.3	
Totals:		2.1	0.108		24512			

Total Unidentified Counts : 29835 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 2

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 0 microVolts LSB: 1 microVolts

Noise (used): 12 microVolts - monitored before this run

Manual injection

```

Print Date: Tue Jul 02 12:31:50 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-35-28 10 ppmc s16946 inj 1 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25.3\2024-07-01 22-35-28 10 ppmc s16946 inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID   : 10 ppmc S16946

Injection Date: 2024-07-01 22:35      Calculation Date: 2024-07-02 12:31

Operator    : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows  Bus Address  : 44
Instrument   : Bruker GC/TCA#1      Sample Rate : 5.00 Hz
Channel      : Middle = FID         Run Time   : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak No.  Peak Name  Result  Ret. Time  Time Offset  Area  Sep.  Width  Status
  -----  -
  1 Methane      9.4      5.782    -0.114    57163    BB    11.4
  2 Carbon Monox  8.5      8.295     0.357    52840    PB    15.2
  3 NMNEOC       9.6     15.035     0.484    261826    BB    15.8
  -----  -
  Totals:      27.5      0.727    371629

Total Unidentified Counts : 67616 counts
Detected Peaks: 8      Rejected Peaks: 4      Identified Peaks: 3
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts      LSB: 1 microVolts
Noise (used): 13 microVolts - monitored before this run
Manual injection
*****

```



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Print Date: Tue Jul 02 15:09:57 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25_3\2024-07-01 23-01-06 fgs ccv s18115 in3 1 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25_3\2024-07-01 23-01-06 fgs ccv s18115 in3 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID  : FGS CCV S18115

Injection Date: 2024-07-01 23:01      Calculation Date: 2024-07-02 09:37
Operator    : MPD                    Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows                Bus Address : 44
Instrument   : Bruker GC/TCA#1        Sample Rate : 5.00 Hz
Channel     : Front = FID             Run Time    : 23.000 min

*** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak No.  Peak Name  Result ppmCarbon  Ret. Time (min)  Time Offset (min)  Area (counts)  Sep. Code (sec)  Width 1/2 (sec)  Status Codes
  -----
    1 Carbon Dioxi  45488.1      4.613      -0.387  479667584      BB  17.0      M
    2 Ethane                9.239
  -----
Totals:                45488.1      -0.387  479667584

Status Codes:
M - Missing Peak

Total Unidentified Counts : 35670 counts
Detected Peaks: 3         Rejected Peaks: 0         Identified Peaks: 2
Multiplier: 1             Divisor: 1             Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts          LSB: 1 microVolts
Noise (used): 10 microVolts - monitored before this run
Manual injection

*****

```

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 23-01-06 fgs ccv s18115 inj 1 - master sscqmd 253 analysis 100923.run
 Run File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 23-01-06 fgs ccv s18115 inj 1 - master sscqmd 253 analysis 100923.run
 Method File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 23-01-06 fgs ccv s18115 inj 1 - master sscqmd 253 analysis 100923.run
 Sample ID : fgs CCV S18115

Injection Date: 2024-07-01 23:01 Calculation Date: 2024-07-02 12:46

Operator : MPD Detector Type: 4XX-GC (10 Volts)
 Workstation: Windows Bus Address : 44
 Instrument : Bruker GC/TCA#1 Sample Rate : 5.00 Hz
 Channel : Rear = TCD Run Time : 23.000 min

** MSWS 8.0.1 for SCIION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis
 Peak Measurement: Peak Area
 Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen	3.3	2.884	-0.003	1099838	BB	4.4	M
2	Oxygen	4.9	3.445	-0.181	1261898	BP	7.0	
3	Nitrogen	5.1	4.219	-0.185	4020150	BP	11.6	
4	Methane	5.0	5.563	0.074	1329530	BB	19.8	
5	Carbon Monox							
Totals:		18.3		-0.295	7711416			

Status Codes:
 M - Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 103650 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts - fixed value

Noise (monitored before this run): 468 microVolts

Manual injection

```

Print Date: Tue Jul 02 12:33:07 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25_3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25_3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID  : Lab Air

Injection Date: 2024-07-01 23:52      Calculation Date: 2024-07-02 12:32
Operator    : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation : Windows   Bus Address : 44
Instrument   : Bruker GC/TCA#1      Sample Rate : 5.00 Hz
Channel     : Middle = FID      Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak  Peak  Result  Ret.  Time  Area  Sep.  Width  Status
  No    Name    ppmCarbon  Time  Offset  (counts)  Code  (sec)  Codes
  ---  -
1 Methane      2.0    5.783  -0.113  12335  BB  11.2
2 Carbon Monox 0.7    8.339   0.401   4137  BB  19.9
3 NMNEOC       0.4   15.099   0.548  10560  BB  27.8
-----
Totals:          3.1          0.836          27032

Total Unidentified Counts : 70366 counts
Detected Peaks: 4      Rejected Peaks: 0      Identified Peaks: 3
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: -11 microVolts      LSB: 1 microVolts
Noise (used): 34 microVolts - monitored before this run
Manual injection
*****

```

```

Print Date: Tue Jul 02 15:14:24 2024                               Page 1 of 1

Title      : c:\brukerws\data\2024\070124 25.3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Run File   : c:\brukerws\data\2024\070124 25.3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\brukerws\methods\active gc methods 2023\master scaqmd 253 quant 100923.mth
Sample ID  : Lab Air

Injection Date: 2024-07-01 23:52      Calculation Date: 2024-07-02 15:14
Operator    : MPD      Detector Type: 4XX-GC (1000 Volts)
Workstation: Windows   Bus Address : 44
Instrument  : Bruker GC/TCH#1      Sample Rate : 5.00 Hz
Channel    : Front = FID      Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode      : Analysis
Peak Measurement: Peak Area
Calculation Type: External Standard

  Peak   Peak   Ret.   Time   Area   Width   Status
  No.    Name    Time  Offset (counts) 1/2      Codes
  ---    ---    ---    ---    ---    ---    ---
    1   Carbon Dioxi  4.769  -0.231  5094946  15.2    M
    2   Ethane       9.239           BB
  ---    ---    ---    ---    ---    ---    ---
Totals:      425.9      -0.231  5094946

Status Codes:
M - Missing Peak

Total Unidentified Counts : 33820 counts
Detected Peaks: 3      Rejected Peaks: 0      Identified Peaks: 2
Multiplier: 1      Divisor: 1      Unidentified Peak Factor: 0
Baseline Offset: 0 microVolts      LSB: 1 microVolts
Noise (used): 12 microVolts - monitored before this run
Manual injection
*****

```

Title : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Run File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Method File : c:\bruker\sw\data\2024\070124 25.3\2024-07-01 23-52-27 lab air inj 1 - master scaqmd 253 analysis 100923.run
Sample ID : Lab Air

Injection Date: 2024-07-01 23:52 Calculation Date: 2024-07-02 14:57

Operator : MFD
Workstation: Windows
Instrument : Bruker GC/TCA#1
Channel : Rear = TCD
Run Time : 23.000 min

** MSWS 8.0.1 for SCION Version 8.0.1 ** 01187-6211-BB0-455D **

Run Mode : Analysis

Peak Measurement: Peak Area

Calculation Type: External Standard

Peak No.	Peak Name	Result (%)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen	20.7	2.894	-0.001	6795170	BV	3.7	M
2	Oxygen	78.2	3.447	-0.391	20037468	VB	12.9	M
3	Nitrogen		4.009					
4	Methane		5.848					
5	Carbon Monox		7.979					
Totals:		98.9		-0.392	26832638			

Status Codes:

M -- Missing peak

Total Unidentified Counts : 0 counts

Detected Peaks: 2 Rejected Peaks: 0 Identified Peaks: 5

Multiplier: 1 Divisor: 1 Unidentified Peak Factor: 0

Baseline Offset: 102833 microVolts LSB: 1 microVolts

Noise (used): 200 microVolts -- fixed value

Noise (monitored before this run): 201 microVolts

Manual injection



ICAL Data

Print Date: 12 Oct 2023 08:16:15

Calibration Curves Report

File: c:\... \active gc methods 2023\master scaqmd 253 quant 100923.mth

Detector: 45X-GC, Address: 44, Channel ID: Middle

Methane

External Standard Analysis - Locked

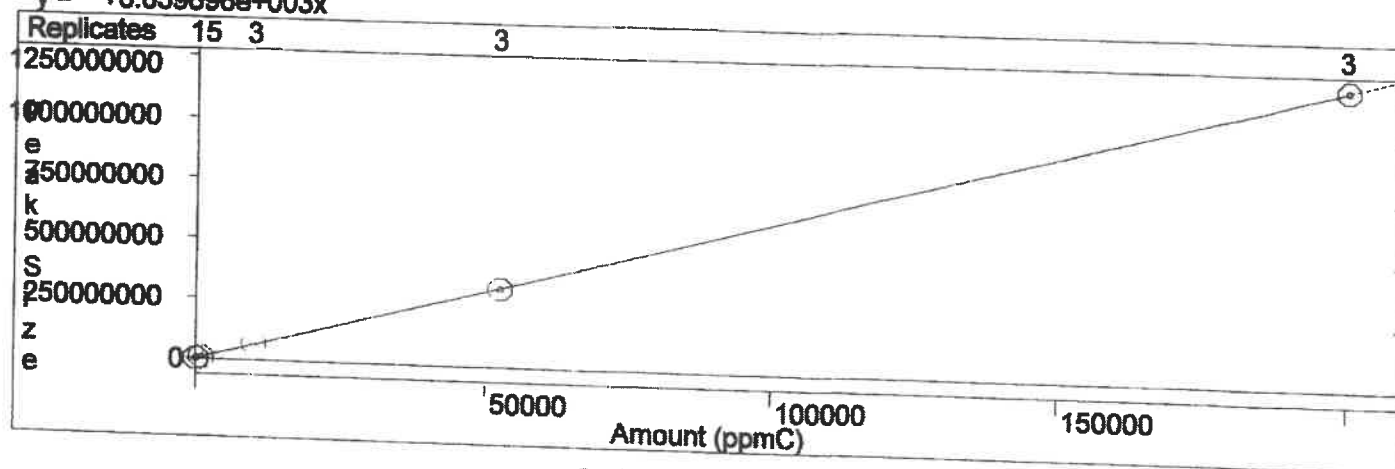
Curve Type: Linear

Origin: Force (Edited)

$$y = +6.059696e+003x$$

Resp. Fact. RSD: 4.643%

Coeff. Det.(r²): 0.999987



Carbon Monoxide

External Standard Analysis - Locked

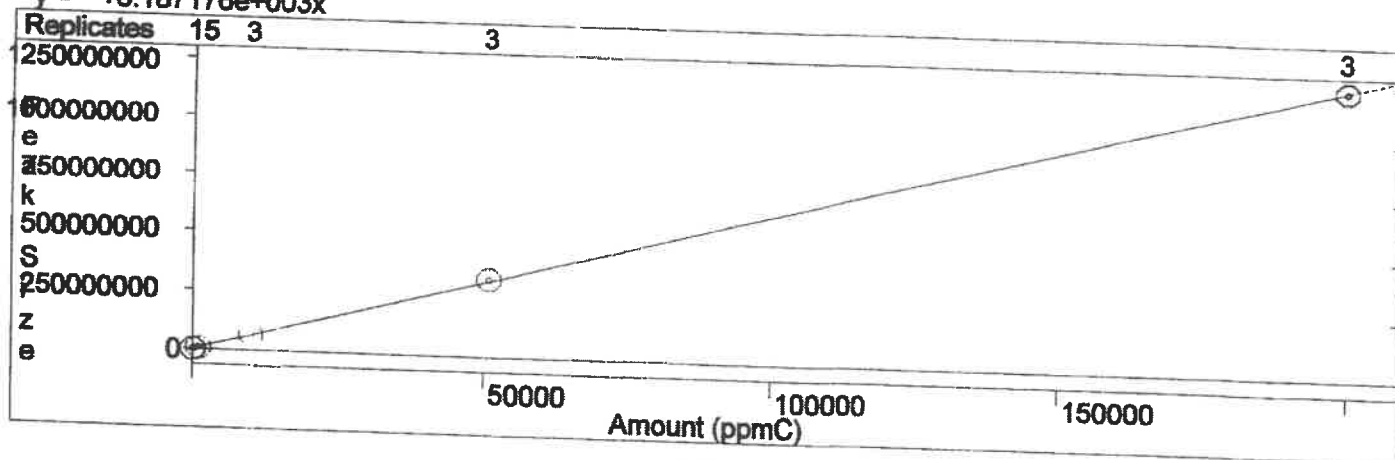
Curve Type: Linear

Origin: Force (Edited)

$$y = +6.187176e+003x$$

Resp. Fact. RSD: 10.13%

Coeff. Det.(r²): 0.999941



NMNEOC

External Standard Analysis - Locked

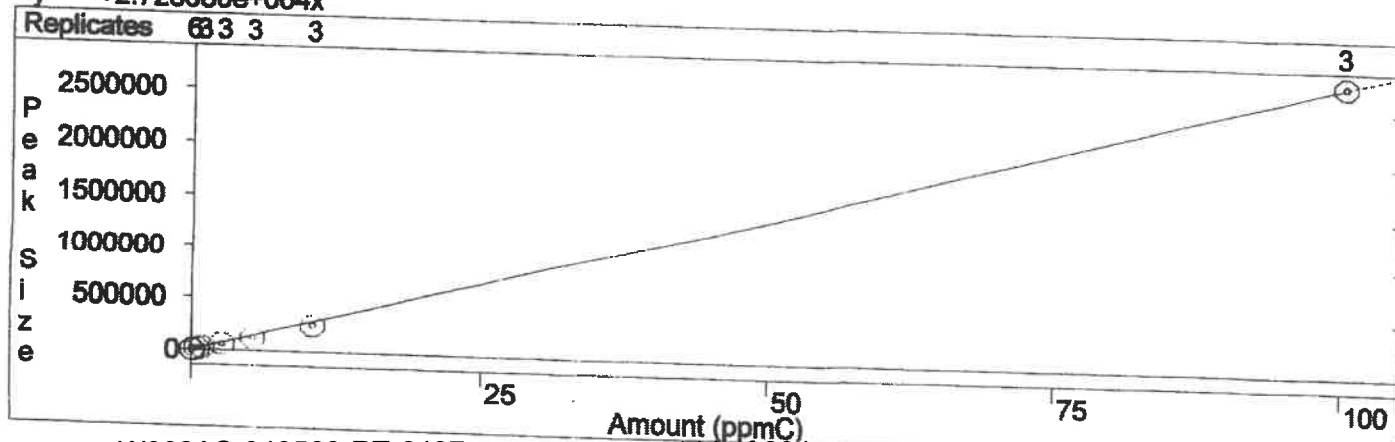
Curve Type: Linear

Origin: Force (Edited)

$$y = +2.728680e+004x$$

Resp. Fact. RSD: 6.437%

Coeff. Det.(r²): 0.999789



Print Date: 12 Oct 2023 08:14:26

Calibration Curves Report

File: c:\... \active gc methods 2023\master scaqmd 253 quant 100923.mth

Detector: 45X-GC, Address: 44, Channel ID: Front

Carbon Dioxide

External Standard Analysis - Locked

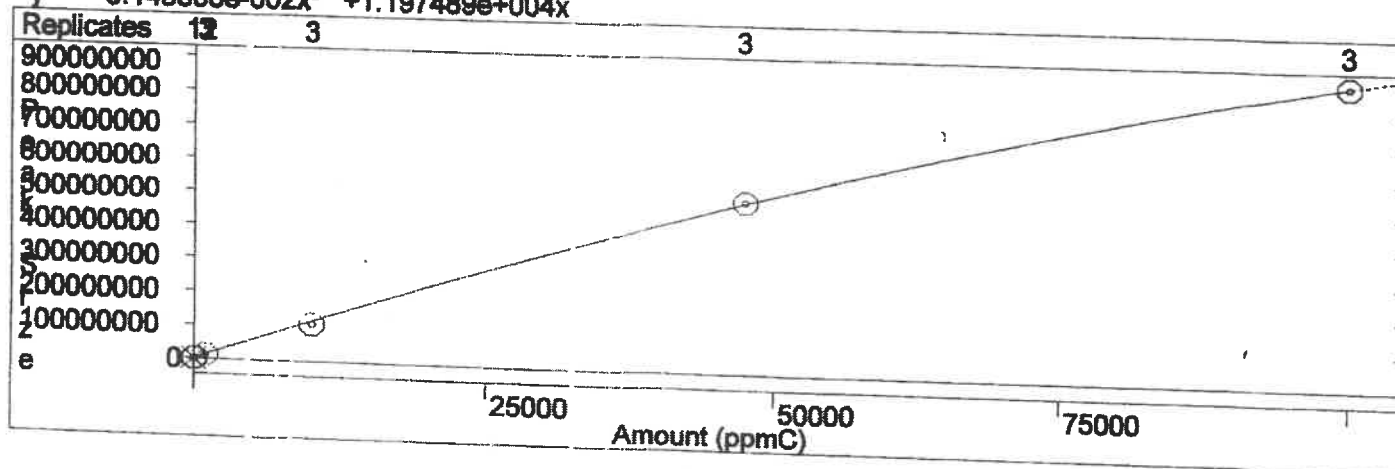
Curve Type: Quadratic (Edited)

Origin: Force (Edited)

$$y = -3.143638e-002x^2 + 1.197489e+004x$$

Resp. Fact. RSD: 10.28%

Coeff. Det. (r^2): 0.999882



Ethane

External Standard Analysis - Locked

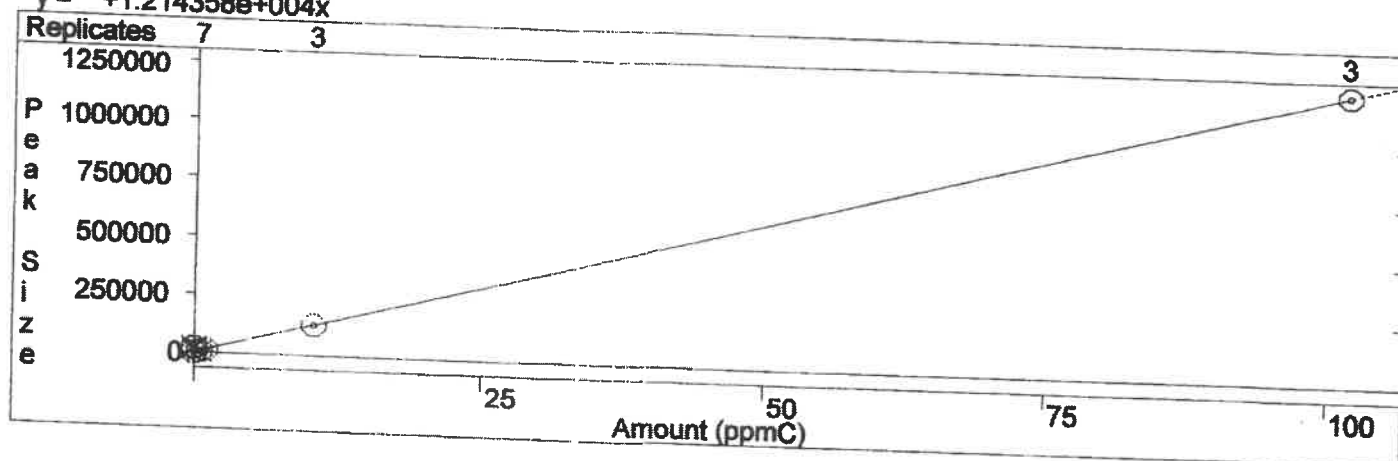
Curve Type: Linear

Origin: Force (Edited)

$$y = +1.214358e+004x$$

Resp. Fact. RSD: 1.827%

Coeff. Det. (r^2): 0.999996



Print Date: 12 Oct 2023 08:18:17

Calibration Curves Report - Page 1

File: c:\... \active gc methods 2023\master scaqmd 253 quant 100923.mth

Detector: 45X-GC, Address: 44, Channel ID: Rear

External Standard Analysis - Locked

Curve Type: Linear

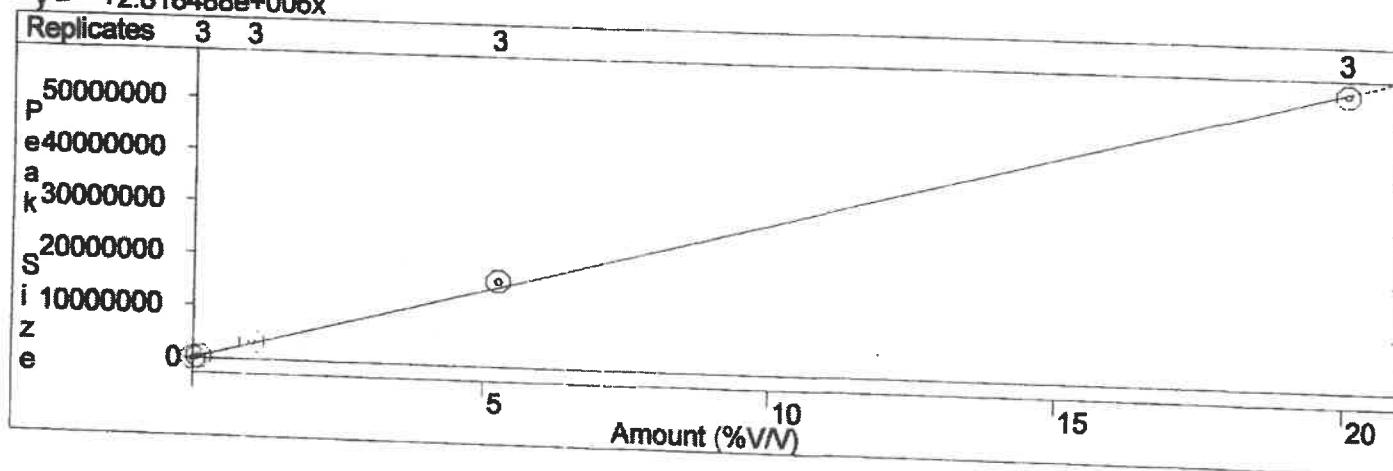
Origin: Force (Edited)

$y = +2.818488e+006x$

Hydrogen

Resp. Fact. RSD: 5.254%

Coeff. Det.(r^2): 0.999456



External Standard Analysis - Locked

Curve Type: Linear

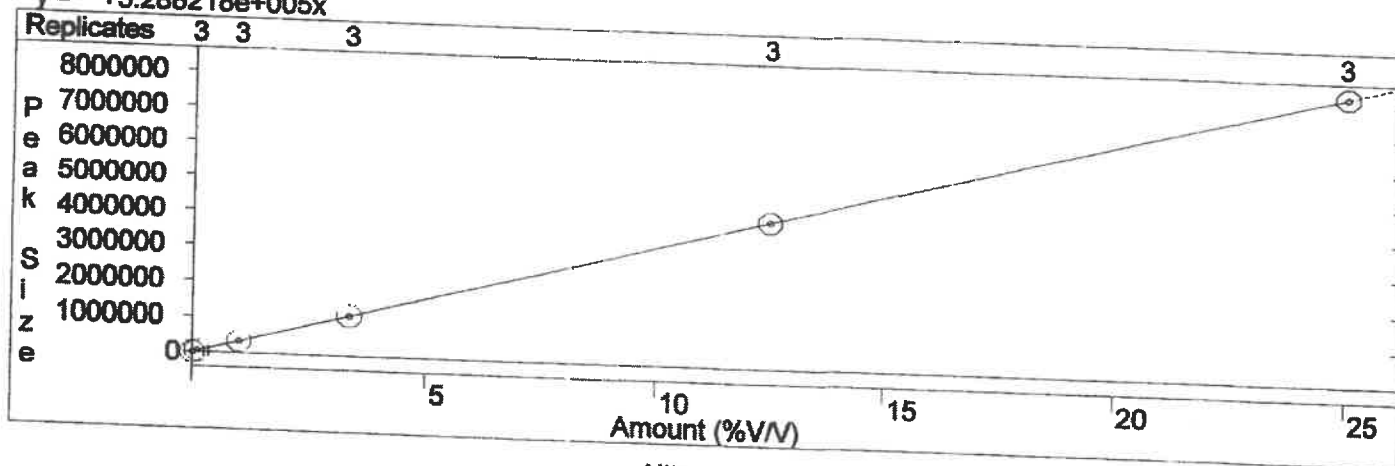
Origin: Force (Edited)

$y = +3.288218e+005x$

Oxygen

Resp. Fact. RSD: 1.293%

Coeff. Det.(r^2): 0.999994



External Standard Analysis - Locked

Curve Type: Linear

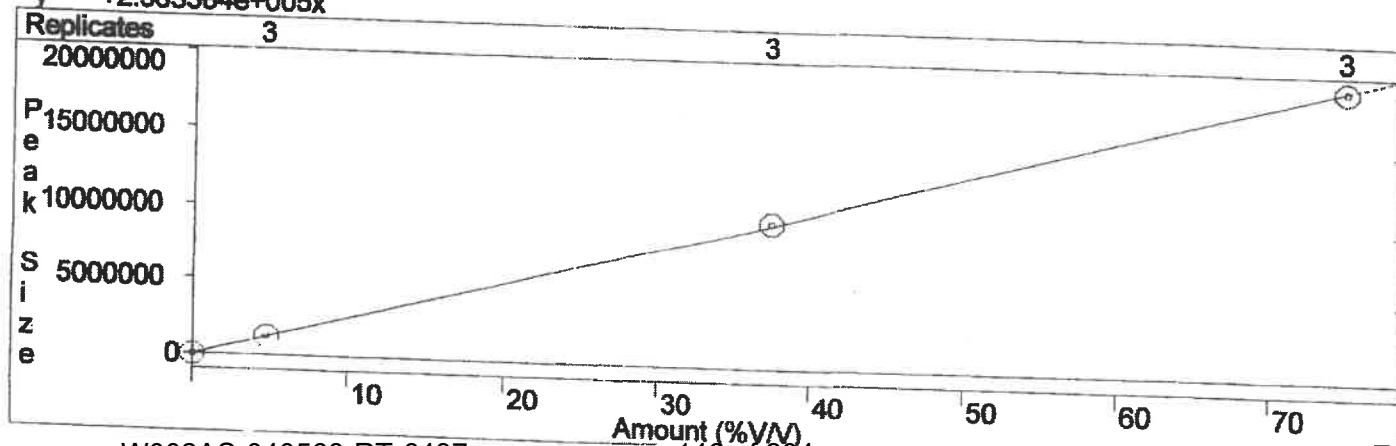
Origin: Force (Edited)

$y = +2.563384e+005x$

Nitrogen

Resp. Fact. RSD: 1.779%

Coeff. Det.(r^2): 0.999898



Print Date: 12 Oct 2023 08:18:17

Calibration Curves Report - Page 2

File: c:\... \active gc methods 2023\master scaqmd 253 quant 100923.mth

Detector: 45X-GC, Address: 44, Channel ID: Rear

Methane

External Standard Analysis - Locked

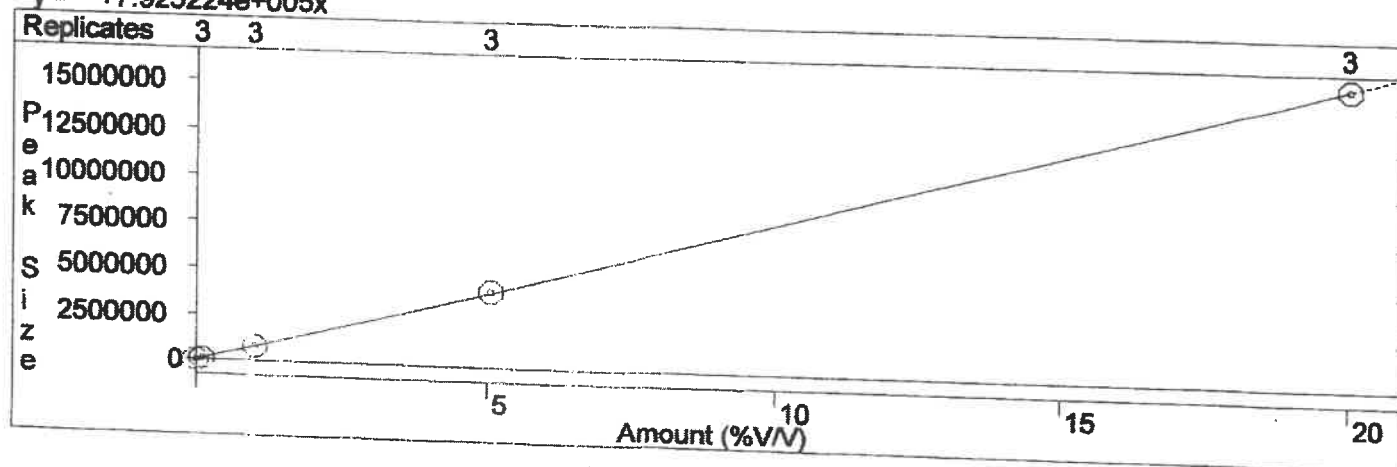
Curve Type: Linear

Origin: Force (Edited)

$y = +7.925224e+005x$

Resp. Fact. RSD: 0.9599%

Coeff. Det.(r^2): 0.999973



Carbon Monoxide

External Standard Analysis - Locked

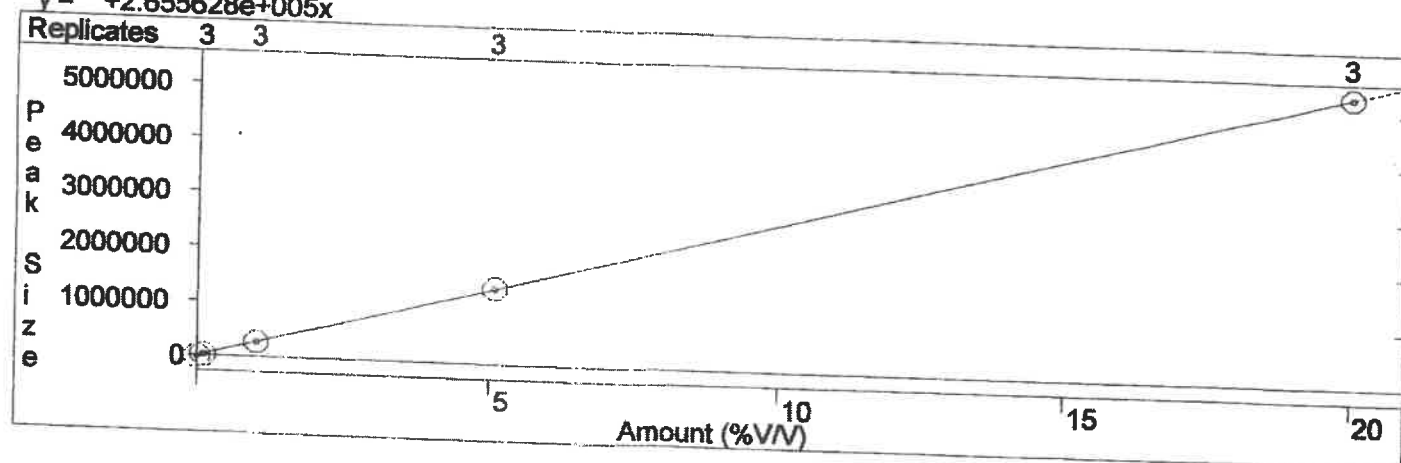
Curve Type: Linear

Origin: Force (Edited)

$y = +2.655628e+005x$

Resp. Fact. RSD: 7.486%

Coeff. Det.(r^2): 0.999984



General Info

Analysis Name 20230802A.adb
 Type TC

Calibration Info

R ² :	0.99964	Correlation	0.99982
A2:	0	Volume	200
A1:	473,969	Curve Order	1st Order
A0:	88,855		

Single Info:

Conc. Templ.	Area	Selected
0.00	128,820	No
0.00	116,153	Yes
0.00	106,193	Yes
0.00	104,903	Yes
0.00	133,408	No
0.25	272,844	No
0.25	261,226	Yes
0.25	241,927	Yes
0.25	239,165	Yes
0.50	260,534	Yes
0.50	330,027	No
0.50	254,313	Yes
0.50	266,705	Yes
1.00	576,177	Yes
1.00	540,108	Yes
1.00	608,473	No
1.00	530,643	Yes
5.00	2,415,002	Yes
5.00	2,437,735	Yes
5.00	2,376,409	Yes
10.00	4,989,918	Yes
10.00	4,924,273	Yes
10.00	4,894,049	Yes
20.00	9,586,046	Yes
20.00	9,515,950	Yes
20.00	9,483,644	Yes

General Info

Analysis Name 20230801B.adb
Type IC

Calibration Info

R²: 0.99867
A2: 0
A1: 483,869
A0: 260,676

Correlation 0.99934
Volume 200
Curve Order 1st Order

Single Info:

Conc. Templ.	Area	Selected
0.00	4,205,618	No
0.00	192,656	No
0.00	91,947	Yes
0.00	94,337	Yes
0.00	95,353	Yes
0.25	329,202	Yes
0.25	313,969	Yes
0.25	325,881	Yes
0.50	475,495	Yes
0.50	466,245	Yes
0.50	472,721	Yes
1.00	815,990	Yes
1.00	810,491	Yes
1.00	814,524	Yes
5.00	2,821,698	Yes
5.00	2,806,482	Yes
5.00	2,817,790	Yes
10.00	5,276,943	Yes
10.00	5,265,985	Yes
10.00	5,282,510	Yes
20.00	9,767,954	Yes
20.00	9,797,747	Yes
20.00	9,877,473	Yes

Appendix A.6

Quality Assurance Data

CEMS PERFORMANCE DATA SHEET

Client: <u>Waste Connections</u>	Date: <u>6/27/2024</u>
Location: <u>Flare 1</u>	Performed By: <u>SJ, AD, JI</u>
CEMS ID#: <u>T4</u>	

Analyzer:	O ₂	CO ₂	NO _x	CO		
Manufacturer:	CAI	Sevomex	CAI	TECO		
Serial Number:	U08069	2745	B04012	JC1227100397		
CEMS Probe:	Material:	Titanium	Length:	13'	Gas Temp:	1,473 °F
Heated Line	Material:	Teflon	Length:	15'		260 °F
Sample Conditioner:			Type:	Universal		33 °F
CEMS Line:	Material:	Teflon	Length:	100'		
Bias Line:	Material:	Teflon	Length:	100'		
Upscale Response Time:	23	Downscale Response Time:	25	seconds		
Sample Pressure (psi):	6	Sample Flow Rate:	5	LPM		

SPAN GAS RECORD AND SCAQMD CALIBRATION ERROR/LINEARITY

CLIENT/LOCATION: Waste Connections Flare 1

DATE: 6/27/24

TRUCK/CEM I.D.: T4

BY: SJ, AD, JI

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	Low	EB0153454	0.0	1/19/32	B32024	
O₂	Mid	CC203715	9.09	11/20/31	B32023	45.5%
O₂	High	CC505326	18.05	11/15/31	B32023	90.3%
CO₂	Mid	CC203715	8.97	11/20/31	B32023	44.9%
CO₂	High	CC505326	18.28	11/15/31	B32023	91.4%
NO_x	Mid	EB0108976	11.06	8/16/26	B32023	44.2%
NO_x	High	CC755218	22.60	9/7/25	F22022	90.4%
NO₂	NO₂	CC504061	17.04	8/17/26	B32023	
CO	Mid	CC146055	44.95	3/25/32	B32024	45.0%
CO	High	CC1442	90.18	9/13/30	B32023	90.2%

PRE-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O ₂	CO ₂	NO _x	CO		
Analyzer Range	20	20	25	100		
Zero Gas Value	0.0	0.0	0.0	0.0		--
Analyzer Reads	-0.05	0.00	0.01	-0.08		--
Error (% of scale)	-0.2%	0.0%	0.1%	-0.1%		PASS
High Gas Value	18.05	18.28	22.60	90.18		--
Analyzer Reads	18.04	18.31	22.80	90.53		--
Error (% of scale)	0.0%	0.2%	0.8%	0.3%		PASS
Mid Gas Value	9.09	8.97	11.06	44.95		--
Analyzer Reads	9.09	9.12	10.97	45.26		--
Error (% of scale)	0.0%	0.8%	-0.4%	0.3%		PASS
Linearity at Mid Point	0.1%	0.7%	-0.8%	0.2%		PASS

POST-TEST INSTRUMENT CALIBRATION ERROR

	ANALYZER					STATUS
	O ₂	CO ₂	NO _x	CO	SO ₂	
Analyzer Range	20	20	25	100		
Zero Gas Value	0.0	0.0	0.0	0.0		--
Analyzer Reads	-0.08	0.00	0.0	-0.10		--
Error (% of scale)	-0.4%	0.0%	0.1%	-0.1%		PASS
High Gas Value	18.05	18.28	22.60	90.18		--
Analyzer Reads	18.00	18.30	22.74	90.70		--
Error (% of scale)	-0.3%	0.1%	0.6%	0.5%		PASS
Mid Gas Value	9.09	8.97	11.06	44.95		--
Analyzer Reads	9.06	9.04	11.04	44.88		--
Error (% of scale)	-0.2%	0.3%	-0.1%	-0.1%		PASS
Linearity at Mid Point	0.2%	0.3%	-0.4%	-0.3%		PASS

NO₂ to NO Converter Efficiency Test

Analyzer Manufacturer: CAI	NO Cal Gas Value: 22.60
Analyzer Model: 600	NO ₂ Cal Gas Value: 17.04
Analyzer Serial Number: B04012	Performed By: SJ, AD, JI
Date: 6/27/24	CEMS ID#: T4

GAS	ANALYZER MODE	ANALYZER RESPONSE	CAL CORRECTED	LABEL
Zero	NO _x	0.01	--	--
Zero	NO	0.02	--	--
NO	NO _x	22.80	--	--
NO	NO	22.84	--	--
NO ₂	NO	0.10	0.1	C ₁
NO ₂	NO _x	16.32	16.2	C ₂

		Label	Requirement
Abs. Value C ₀ -C ₁ :	17.0	D ₁	--
Abs. Value C ₂ -C ₁ :	16.1	D ₂	--
C ₁ /C ₂	1%	D ₃	< 5%
CE = D ₂ /D ₁ * 100%:	95%	--	> 90%

Cylinder #	Exp. Date
NO bottle: CC755218	9/7/2025
NO ₂ bottle: CC504061	8/17/2026

CERTIFICATE OF BATCH ANALYSIS

Grade of Product: CEM-CAL ZERO

Part Number:	NI CZ15A	Reference Number:	48-402947391-1
Cylinder Analyzed:	EB0149403	Cylinder Volume:	142.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2000 PSIG
Analysis Date:	Jan 19, 2024	Valve Outlet:	580
Lot Number:	48-402947391-1		

Expiration Date: Jan 19, 2032

ANALYTICAL RESULTS

Component	Requested Purity	Certified Concentration
NITROGEN	99.9995 %	99.9995 %
NOx	0.1 PPM	<LDL 0.018 PPM
SO2	0.1 PPM	<LDL 0.095 PPM
THC	0.1 PPM	<LDL 0.006 PPM
CARBON MONOXIDE	0.5 PPM	<LDL 0.012 PPM
CARBON DIOXIDE	1.0 PPM	<LDL 0.016 PPM

Cylinders in Batch:

EB0149403, EB0153444, EB0153453, EB0153454, EB0153464, EB0153490, EB0153492, EB0153499, EB0153527, EB0153539

Impurities verified against analytical standards traceable to NIST by weight and/or analysis.



N₂
EB0153454
EXP. 1-19-32

[Signature]

Approved for Release

LO 2/22/24

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI64E15AC041	Reference Number:	48-402893526-1
Cylinder Number:	CC505326	Cylinder Volume:	158.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32023	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Nov 15, 2023

Expiration Date: Nov 15, 2031

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	18.00 %	18.28 %	G1	+/- 0.6% NIST Traceable	11/15/2023
OXYGEN	18.00 %	18.05 %	G1	+/- 0.4% NIST Traceable	11/15/2023
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12061520	CC354777	19.87 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Jan 11, 2024
NTRM	08010228	K016648	23.20 % OXYGEN/NITROGEN	+/- 0.2%	Jun 01, 2024

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SIEMENS 6E CO2	NDIR	Oct 23, 2023
SIEMENS OXYMAT 6	PARAMAGNETIC	Nov 01, 2023

Triad Data Available Upon Request

O₂ 18.05%
CO₂ 18.28%
CC505326
EXP. NOV 15, 2031
B32023



[Signature]
Approved for Release

LO 12/15/2023

Page 1 of 1

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03N182E15A0220	Reference Number:	48-402896444-1
Cylinder Number:	CC203715	Cylinder Volume:	140.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32023	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Nov 20, 2023

Expiration Date: Nov 20, 2031

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	9.000 %	8.970 %	G1	+/- 0.6% NIST Traceable	11/20/2023
OXYGEN	9.000 %	9.090 %	G1	+/- 1.0% NIST Traceable	11/20/2023
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	13060432	CC413737	7.469 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	May 14, 2025
NTRM	98051113	SG9163010BAL	9.507 % OXYGEN/NITROGEN	+/- 0.7%	Mar 22, 2030

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SIEMENS 6E CO2	NDIR	Oct 23, 2023
SIEMENS OXYMAT 6	PARAMAGNETIC	Nov 01, 2023

Triad Data Available Upon Request

O₂ 9.090%
CO₂ 8.970%
CC203715
EXP. NOV 20, 2031
B32023



[Signature]
Approved for Release

Lo 12/5/2023



Making our world
more productive

DocNumber: 502201



Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

MONY ROSE AIR QUALITY SERVICES
1631 E ST ANDREWS PLACE
SANTA ANA CA 92705

Certificate Issuance Date: 09/07/2022

Linde Order Number: 78164652

Part Number: NI NO22.5ME-AS

Customer PO Number: LUIS OLIVARES

Fill Date: 08/24/2022

Lot Number: 70066223-002

Cylinder Style & Outlet: AS

Cylinder Pressure and Volume: 2000 psi

CGA 8601

140 R3

Certified Concentration

Expiration Date:	09/07/2025	NIST Traceable
Cylinder Number:	CC755218	Expanded Uncertainty
22.6 ppm	Nitric oxide	± 0.2 ppm
Balance	Nitrogen	

ProSpec EZ Cert



For Reference Only:

NOx 22.6 ppm

Certification Information:

Certification Date: 09/07/2022

Term: 36 Months

Expiration Date: 09/07/2025

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/031, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

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

1. Component:

Nitric oxide

Requested Concentration: 22.5 ppm

Certified Concentration: 22.6 ppm

Instrument Used: Thermo Electron 42i-LS S/N 1030645077

Analytical Method: Chemiluminescence

Test Multipoint Calibration: 08/11/2022

First Analysis Data:				Date
Z:	R:	C:	Conc:	
0	47.5	22.5	22.5	09/07/2022
47.5	0	22.6	22.6	
0	22.6	47.4	22.6	
UOM: ppm				Mean Test Assay: 22.6 ppm

Reference Standard:

Type / Cylinder #: QMIS / ND8750

Concentration / Uncertainty: 47.5 ppm ± 0.2 ppm

Expiration Date: 06/02/2025

Traceable to: SRM # / Sample # / Cylinder #: PRM / C1765710.01 / APEX13249323

SRM Concentration / Uncertainty: 50.04 ppm / ± 0.20 ppm

SRM Expiration Date: 12/09/2022

Second Analysis Data:				Date
Z:	R:	C:	Conc:	
0	47.5	22.6	22.6	09/07/2022
47.5	0	22.6	22.6	
0	22.7	47.5	22.7	
UOM: ppm				Mean Test Assay: 22.6 ppm

Analyzed By

Henry Koung

Certified By

Lissette Morales

NOx 22.6
CC755218
EXP 9-7-25
F22022

Information contained herein has been prepared at your request by qualified experts within Linde Gas & Equipment Inc. 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 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 of Linde Gas & Equipment Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.



MONT ROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E02NI99E15AC006	Reference Number:	48-402812562-1
Cylinder Number:	EB0108976	Cylinder Volume:	144.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32023	Valve Outlet:	660
Gas Code:	NO,NOX,BALN	Certification Date:	Aug 16, 2023

Expiration Date: Aug 16, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	11.00 PPM	11.06 PPM	G1	+/- 1.0% NIST Traceable	08/08/2023, 08/16/2023
NITRIC OXIDE	11.00 PPM	10.92 PPM	G1	+/- 1.0% NIST Traceable	08/08/2023, 08/16/2023
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	16010107	KAL004113	9.95 PPM NITRIC OXIDE/NITROGEN	+/- 1.0%	Jun 07, 2026
PRM	12402	APEX1324263-NOx	10.01 PPM NOx/NITROGEN	+/- 0.5%	Dec 23, 2022
GMIS	16010107	KAL004113-NOX	9.95 PPM NOx/NITROGEN	+/- 0.6%	May 14, 2024

The SRM, NTRM, PRM, or RGM noted above is only in reference to the GMIS used in the assay and not part of the analysis.

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
nCLD 844 S 844N0213 NO	Chemiluminescence	Aug 07, 2023
nCLD 844 S 844N0213 NOx	Chemiluminescence	Aug 07, 2023

Triad Data Available Upon Request



NO_x 11.06 ppm

EB0108976

Exp. 08/16/26

B32023

Approved for Release

Page 1 of 1

JS 9/1/23



MONTROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E02AI99E15W0062	Reference Number:	48-402812564-1
Cylinder Number:	CC504061	Cylinder Volume:	146.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32023	Valve Outlet:	660
Gas Code:	NO2,BALA	Certification Date:	Aug 17, 2023

Expiration Date: Aug 17, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NITROGEN DIOXIDE AIR	17.00 PPM Balance	17.04 PPM	G1	+/- 1.7% NIST Traceable	08/10/2023, 08/17/2023

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
GMIS	1534012021301	ND73004	15.05 PPM NITROGEN DIOXIDE/NITROGEN	+/- 1.6%	Jun 15, 2025
PRM	12409	D913660	15.01 PPM NITROGEN DIOXIDE/AIR	+/- 1.5%	Feb 17, 2023

The SRM, NTRM, PRM, or RGM noted above is only in reference to the GMIS used in the assay and not part of the analysis.

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
MKS FTIR NO2 018335821	FTIR	Aug 03, 2023

Triad Data Available Upon Request



NO₂ 17.04 ppm

CC504061

Exp. 08/17/26

B32023

Approved for Release

JS 9/20/23

Page 1 of 1



MONTROSE

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, CA 92705

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number: E02NI99E15AC672
Cylinder Number: CC1442
Laboratory: 124 - Los Angeles (SAP) - CA
PGVP Number: B32022
Gas Code: CO,BALN

Reference Number: 48-402541563-1
Cylinder Volume: 144.0 CF
Cylinder Pressure: 2015 PSIG
Valve Outlet: 350
Certification Date: Sep 13, 2022

Expiration Date: Sep 13, 2030

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	90.00 PPM	90.18 PPM	G1	+/- 1.0% NIST Traceable	09/13/2022
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	09010248	KAL004905	98.48 PPM CARBON MONOXIDE/NITROGEN	+/- 0.5%	Oct 16, 2024

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet iS50 AUP2110317 CO	FTIR	Aug 17, 2022

Triad Data Available Upon Request



CO 90.18 ppm

CC1442

Exp. 09/13/30

B32022

Approved for Release

JS 9/15/23

Page 1 of 1

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E02NI99E15AC055	Reference Number:	48-403001706-1
Cylinder Number:	CC146055	Cylinder Volume:	144.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32024	Valve Outlet:	350
Gas Code:	CO, BALN	Certification Date:	Mar 25, 2024

Expiration Date: Mar 25, 2032

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	45.00 PPM	44.95 PPM	G1	+/- 0.7% NIST Traceable	03/25/2024
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12011237	KAL004585	49.24 PPM CARBON MONOXIDE/	+/- 0.6%	Aug 31, 2024

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet iS50 AUP2110317 CO	FTIR	Mar 07, 2024

Triad Data Available Upon Request



CO 44.95 PPM
CC146055
Exp. 03/25/2032
B32024

Approved for Release

LO 05/07/2024

Barometric Pressure Determination

Date: 06/27/24

Time: 7:00

Data By: SJ, AD, JI

Reference:

<https://forecast.weather.gov/MapClick.php?lat=33.6873&lon=118.66712>

Lat: 34.42972°N Lon: 118.66712°W Elev: 1278.0ft.

Reference Barometer ID	DEL VALLE (DLVC1)
Reference Barometer Location	
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	
Reference Barometer Reference Elevation	29.85
Reference Barometer Actual Pressure	1278
	28.57
Test Barometer Location/Site	Chiquita Canyon
Location/Site Elevation	997
Location/Site Barometric Pressure	28.85
Sampling Location Height (above/below site elevation)	45
Sampling Location Barometric Pressure	28.81

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Model #: C-5000
 ID #: 48-WCS
 Date: 4/24/2024
 Bar. Pressure: 29.96 (in. Hg)
 Performed By: L. Olivares
 Reviewed By: Surya Adhikari

CRITICAL ORIFICE READINGS									
dH (in H ₂ O)	Time (min)	Volume		Initial Temps.		Final Temps.		Orifice Serial# (number)	K Orifice Coefficient (see above)
		Initial (cu ft)	Final (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)		
0.15	26.00	879.700	885.240	75.0	75.0	75.0	75.0	14742-33	0.1618
0.15	26.00	885.240	890.780	75.0	75.0	75.0	75.0	14742-33	0.1618
0.15	26.00	890.780	896.320	75.0	75.0	75.0	75.0	14742-33	0.1618
0.66	12.00	882.600	888.060	72.0	72.0	73.0	73.0	PK-48	0.3452
0.66	12.00	888.060	893.520	73.0	73.0	74.0	74.0	PK-48	0.3452
0.66	12.00	893.520	898.980	74.0	74.0	75.0	75.0	PK-48	0.3452
1.80	7.00	846.700	851.905	70.0	70.0	70.0	70.0	PK-63	0.5666
1.80	7.00	851.905	857.120	70.0	70.0	71.0	71.0	PK-63	0.5666
1.80	7.00	857.120	862.335	71.0	71.0	72.0	72.0	PK-63	0.5666
3.50	5.00	830.800	835.975	68.0	68.0	68.0	68.0	PK-732	0.7871
3.50	5.00	835.975	841.145	68.0	68.0	69.0	69.0	PK-732	0.7871
3.50	5.00	841.145	846.285	69.0	69.0	70.0	70.0	PK-732	0.7871

CRITICAL ORIFICE READINGS									
dH (in H ₂ O)	Time (min)	Volume		Initial Temps.		Final Temps.		Orifice Serial# (number)	K Orifice Coefficient (see above)
		Initial (cu ft)	Final (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)		
0.15	26.00	879.700	885.240	75.0	75.0	75.0	75.0	14742-33	0.1618
0.15	26.00	885.240	890.780	75.0	75.0	75.0	75.0	14742-33	0.1618
0.15	26.00	890.780	896.320	75.0	75.0	75.0	75.0	14742-33	0.1618
0.66	12.00	882.600	888.060	72.0	72.0	73.0	73.0	PK-48	0.3452
0.66	12.00	888.060	893.520	73.0	73.0	74.0	74.0	PK-48	0.3452
0.66	12.00	893.520	898.980	74.0	74.0	75.0	75.0	PK-48	0.3452
1.80	7.00	846.700	851.905	70.0	70.0	70.0	70.0	PK-63	0.5666
1.80	7.00	851.905	857.120	70.0	70.0	71.0	71.0	PK-63	0.5666
1.80	7.00	857.120	862.335	71.0	71.0	72.0	72.0	PK-63	0.5666
3.50	5.00	830.800	835.975	68.0	68.0	68.0	68.0	PK-732	0.7871
3.50	5.00	835.975	841.145	68.0	68.0	69.0	69.0	PK-732	0.7871
3.50	5.00	841.145	846.285	69.0	69.0	70.0	70.0	PK-732	0.7871

Average Yd: 0.994 dH@: 1.850
 Q @ dH = 1: 0.551

Performed by signature:

Reviewed by signature:

Note: Control box not equipped with meter inlet temperature reading.

04/24/2024
 04/24/2024



DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 48-WCS
 Readout Description: Control box
 Date: 1/2/2024
 Performed By: JS

Calibrated Thermocouple ID: TC-295
 T1 Reference Thermometer ID: 313010
 T2 Reference Thermometer ID: 2736
 T3 Reference Thermometer ID: 2786

T/C I.D. TC-295	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	48-WCS	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~212 F)	48-WCS	215	215	215	215	212	212	212	212	3.0	0.4%	Pass
T1 (~ 32 F)	48-WCS	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

- 1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
 2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

T/C Source S/N		T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	125097	653	653	653	653	650	650	650	650	3.0	0.3%	Pass
T3 (~370 F)	125097	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~212 F)	125097	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	125097	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

- 1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
 2) Pass if all Differences are less than 1.5% (°R)



THERMOCOUPLE CALIBRATION

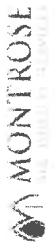
Thermocouple ID: 85
Date: 1/4/2024
Performed By: JS

Calibrated Digital Temperature Readout ID: PTC-83
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 805002770

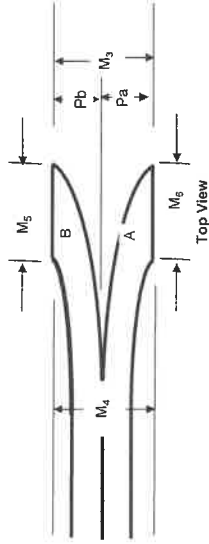
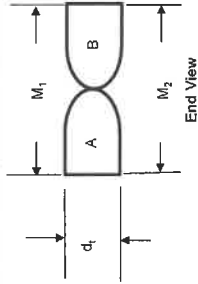
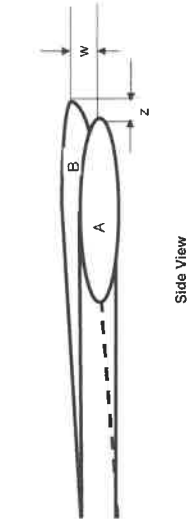
T/C I.D. 85	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-83	375	375	375	375	370	370	370	370	5.0	0.6%	Pass
T2 (~ 212 F)	PTC-83	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-83	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)

2) Pass if all Differences are less than 1.5% (°R)



S Type Pitot Tube Dimensional Calibration Record



Acceptability Criteria			Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	Status		
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	
085	1/4/24	JAC	Y	Y	Y	0.375	0.905	0.916	0.916	0.910	0.420	0.405	-0.8	0.4	1.2	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975
If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

DIFFERENTIAL PRESSURE CALIBRATION

Semi-annual

Reference Device ID: Microtector
Reference Serial Number: S270
Calibrated By: P. Whitman

Display ID: ADM 10
Description: Air Data Multimeter (ADM 850)
Serial Number: M05569
Calibration Date: 1/2/2024

Calibration Range	Run 1	Individual Run Results	Pass/ Fail
Scale: 0 - 0.050 inches H ₂ O	Measured Value (inches W.C.)	Absolute Value	% Difference
Target 20%	0.010	0.0000	0.00%
Target 40%	0.020	0.0000	0.00%
Target 60%	0.030	0.0010	3.33%
Target 80%	0.040	0.0010	2.50%
Target 100%	0.050	0.0020	4.00%

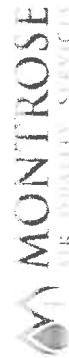
Calibration Range	Run 2	Individual Run Results	Pass/ Fail
Scale: 0 - 0.050 inches H ₂ O	Measured Value (inches W.C.)	Absolute Value	% Difference
Target 20%	0.010	0.0000	0.00%
Target 40%	0.020	0.0000	0.00%
Target 60%	0.030	0.0010	3.33%
Target 80%	0.040	0.0010	2.50%
Target 100%	0.050	0.0010	2.00%

Calibration Range	Run 3	Individual Run Results	Pass/ Fail
Scale: 0 - 0.050 inches H ₂ O	Measured Value (inches W.C.)	Absolute Value	% Difference
Target 20%	0.010	0.0000	0.00%
Target 40%	0.020	0.0000	0.00%
Target 60%	0.030	0.0010	3.33%
Target 80%	0.040	0.0010	2.50%
Target 100%	0.050	0.0020	4.00%

Average results for three runs

% Difference	Pass/Fail
1.83%	Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 10
Description: Air Data Multimeter (ADM 850)
Serial Number: M05569
Calibration Date: 1/2/2024

Reference Device ID: Microfector
Reference Serial Number: S270
Calibrated By: P. Whitman

Calibration Range		Run 1		Absolute Value	Individual Run Results	
Scale:	0 - 0.100 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)		% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.041	0.040	0.0010	2.50%	Pass
Target 60%	0.060	0.059	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.078	0.080	0.0020	2.50%	Pass
Target 100%	0.100	0.097	0.100	0.0030	3.00%	Pass

Calibration Range		Run 2		Absolute Value	Individual Run Results	
Scale:	0 - 0.100 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)		% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.041	0.040	0.0010	2.50%	Pass
Target 60%	0.060	0.059	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.082	0.080	0.0020	2.50%	Pass
Target 100%	0.100	0.101	0.100	0.0010	1.00%	Pass

Calibration Range		Run 3		Absolute Value	Individual Run Results	
Scale:	0 - 0.100 inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)		% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.041	0.040	0.0010	2.50%	Pass
Target 60%	0.060	0.062	0.060	0.0020	3.33%	Pass
Target 80%	0.080	0.082	0.080	0.0020	2.50%	Pass
Target 100%	0.100	0.102	0.100	0.0020	2.00%	Pass

Average results for three runs

Average results for three runs	
% Difference	Pass/Fail
1.84%	Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 10
Description: Air Data Multimeter (ADM 850)
Serial Number: M05569
Calibration Date: 1/2/2024

Reference Device ID: Microtector
Reference Serial Number: S270
Calibrated By: P. Whitman

Calibration Range Scale: 0 - 1.000 inches H ₂ O		Run 1 Measured Value (inches W.C.)		Reference Value (inches W.C.)	Absolute Value	Individual Run Results % Difference	Pass/ Fail
Target 20%	0.200		0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400		0.402	0.400	0.0020	0.50%	Pass
Target 60%	0.600		0.604	0.600	0.0040	0.67%	Pass
Target 80%	0.800		0.802	0.800	0.0020	0.25%	Pass
Target 100%	1.000		0.998	1.000	0.0020	0.20%	Pass

Calibration Range Scale: 0 - 1.000 inches H ₂ O		Run 2 Measured Value (inches W.C.)		Reference Value (inches W.C.)	Absolute Value	Individual Run Results % Difference	Pass/ Fail
Target 20%	0.200		0.202	0.200	0.0020	1.00%	Pass
Target 40%	0.400		0.400	0.400	0.0000	0.00%	Pass
Target 60%	0.600		0.601	0.600	0.0010	0.17%	Pass
Target 80%	0.800		0.800	0.800	0.0000	0.00%	Pass
Target 100%	1.000		0.999	1.000	0.0010	0.10%	Pass

Calibration Range Scale: 0 - 1.000 inches H ₂ O		Run 3 Measured Value (inches W.C.)		Reference Value (inches W.C.)	Absolute Value	Individual Run Results % Difference	Pass/ Fail
Target 20%	0.200		0.201	0.200	0.0010	0.50%	Pass
Target 40%	0.400		0.404	0.400	0.0040	1.00%	Pass
Target 60%	0.600		0.599	0.600	0.0010	0.17%	Pass
Target 80%	0.800		0.797	0.800	0.0030	0.38%	Pass
Target 100%	1.000		1.001	1.000	0.0010	0.10%	Pass

Average results for three runs		
% Difference		Pass/Fail
0.34%		Pass

Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 10
Description: Air Data Multimeter (ADM 850)
Serial Number: M05569
Calibration Date: 1/2/2024

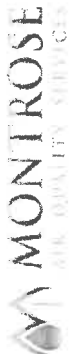
Reference Device ID: Dwyer 0 - 10" Manometer
Reference Serial Number: CC-2
Calibrated By: P. Whitman

Calibration Range		Run 1		Individual Run Results	
Scale:	inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	Pass/ Fail
Target 20%	2.000	2.020	2.000	0.0200	Pass
Target 40%	4.000	4.040	4.000	0.0400	Pass
Target 60%	6.000	6.020	6.000	0.0200	Pass
Target 80%	8.000	8.090	8.000	0.0900	Pass
Target 100%	10.000	10.250	10.000	0.2500	Pass

Calibration Range		Run 2		Individual Run Results	
Scale:	inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	Pass/ Fail
Target 20%	2.000	2.050	2.000	0.0500	Pass
Target 40%	4.000	4.120	4.000	0.1200	Pass
Target 60%	6.000	6.110	6.000	0.1100	Pass
Target 80%	8.000	8.100	8.000	0.1000	Pass
Target 100%	10.000	10.110	10.000	0.1100	Pass

Calibration Range		Run 3		Individual Run Results	
Scale:	inches H ₂ O	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	Pass/ Fail
Target 20%	2.000	2.010	2.000	0.0100	Pass
Target 40%	4.000	4.160	4.000	0.1600	Pass
Target 60%	6.000	6.150	6.000	0.1500	Pass
Target 80%	8.000	8.120	8.000	0.1200	Pass
Target 100%	10.000	10.090	10.000	0.0900	Pass

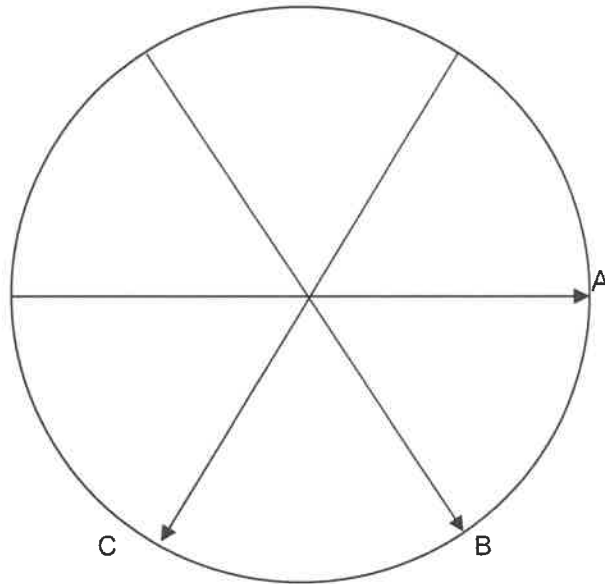
Criteria: Each individual measured value within + or - 5.0% of reference value.
Percent difference of three run average within 5.0 %.



Average results for three runs

% Difference	Pass/Fail
1.67%	Pass

FACILITY: CHICUITA
 SOURCE TESTED: FLADE 1
 CALIBRATED BY: JD
 DATE: 6/27/24



NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
260T	0.648	0.648	0.648	0.648

JD

Calibrated by:

[Signature]

Measuring Device Used : Mitutoyo Digital Calipers
 Serial Number : 0247955
 Model Number : CD-6" CS
 Resolution : 0.01mm or 0.0005"/0.01mm
 Accuracy : $\pm 0.02\text{mm}$ or $\pm 0.001"/\pm 0.02\text{mm}$

APPENDIX B

GENERAL EMISSIONS CALCULATIONS

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \% CO_2 + 0.32 * \% O_2 + 0.28 * \% N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6} \right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528^\circ R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{\text{ppm} * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Gaseous Concentrations, corrected (Ccorr @ 3%O₂.)

$$C_{corr @ 3\%O_2} = \frac{\text{ppm} * (20.9 - 3.0)}{(20.9 - \%O_2)}$$

VI. Destruction Efficiency (DE), %

$$DE, \% = \left(\frac{M_{in} - M_{out}}{M_{in}} \right) (100\%) \quad \text{based on mass emission rates}$$

VII. Emission Rates, lb/MMBtu

$$\frac{\text{lb}}{\text{MMBtu}} = \frac{\text{ppm} * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%O_2}$$

VIII. Emission Rates, lb/MMBtu

$$\frac{\text{lb}}{\text{MMBtu}} = \frac{\text{lb/hr}}{\text{MMBtu/hr}}$$

IX. Percent Isokinetic

$$I = \frac{17.32 * T_s (V_{mstd})}{(1 - B_{w0}) * V_s * P_s * Dn^2} * \frac{520^\circ R}{T_{ref}}$$

X. Particulate Emissions

(a) Grain loading, gr/dscf
 $C = 0.01543 (M_n / V_m \text{ std})$

(b) Grain loading at 12% CO₂, gr/dscf
 $C_{12\% CO_2} = C (12\% CO_2)$

(c) Mass emissions, lb/hr
 $M = C * Q_{sd} * (60 \text{ min/hr}) / (7000 \text{ gr/lb})$

(d) Particulate emission factor

$$\text{lb}/10^6 \text{ Btu} = Cx \frac{1 \text{ lb}}{7000 \text{ gr}} * F * \frac{20.9}{20.9 - \%O_2}$$

SCS Field Services – Chiquita Canyon Landfill
2024 Gas Flare No. 1 Source Test

Nomenclature:

A_s	=	stack area, ft ²
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO_2}$	=	particulate grain loading, gr/dscf corrected to 12% CO ₂
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
D_n	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O ₂
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
		SO ₂ : 64
		NO _x : 46
		CO: 28
		HC: 16
t	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwbg
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft ³ /lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

APPENDIX C

SAMPLING AND ANALYTICAL PROCEDURES

SAMPLING AND ANALYTICAL PROCEDURES

SCAQMD METHOD 1.1 - SAMPLING AND VELOCITY TRAVERSE FOR STATIONARY SOURCES

A preliminary source test site assessment was performed prior to the source test in order to determine applicable testing port locations and sample point traverse locations. The stack diameter, and the distance from sample ports to disturbances, i.e. bends, flanges, etc., both upstream and downstream, were measured. This information was utilized to determine the minimum number of sampling points per traverse, and the distance from the inner stack wall to each sample point location.

SCAQMD METHOD 2.1 - VELOCITY AND VOLUMETRIC FLOW RATE

The velocity of the gas stream was determined by using an "S" type pitot tube, a digital low flow manometer differential pressure gauge, and type "K" thermocouple with a digital temperature measuring device. The calibrated pitot tube was connected to the electronic micro manometer gauge and leak checked. A temperature and differential pressure were obtained at each traverse point, and a duct static pressure was measured and recorded. The dry volumetric flow rate was determined from the gas velocity data, stack pressure, stack gas moisture content, stack gas molecular weight, and cross-sectional area of the duct.

SCAQMD METHOD 3.1 - GAS ANALYSIS FOR DRY MOLECULAR WEIGHT CALCULATION

Oxygen, carbon dioxide and nitrogen concentrations were determined at the exhaust utilizing the continuous emissions monitoring system in accordance with SCAQMD Method 100.1. The inlet concentrations of gases are determined by using GC/NDIR and GC/TCD analysis on grab samples following SCAQMD Method 10.1.

SCAQMD METHOD 4.1 - DETERMINATION OF MOISTURE CONTENT IN STACK GASES

Moisture content at the exhaust was determined using a sampling train consisting of a stainless steel probe, teflon line, four impingers in an ice water bath, leak free pump, vacuum gauge, and temperature compensated dry gas meter. Prior to sampling, a leak check of the sampling train was performed to insure system integrity. Additionally, tare weights of the charged individual impingers were recorded using an electronic top loader balance capable of weighing to the nearest 0.1 grams or less. After sampling, the final weights of each impinger were determined and recorded. Percent moisture content was calculated from the weight of water collected and the dry gas volume sampled.

CALCULATIONS

$$\text{Moisture (B}_{ws}) = \frac{V_{wstd}}{V_{mstd} + V_{wstd}} \times 100$$

$$\text{Where: } V_{wstd} = \frac{0.0464 \text{ ft}^3}{\text{ml}} \times \text{Vol H}_2\text{O Collected (ml)}$$

$$V_{mstd} = Y \text{ Meter} \times \frac{520^\circ\text{R}}{29.92 \text{ in. Hg}} \times \frac{\text{Vol Metered}}{\text{Meter Temp}} \times \text{Pres Meter}$$

SCAQMD METHOD 5.1 - PARTICULATE EMISSIONS

A series of preliminary measurements were made prior to conducting the particulate test. SCAQMD Methods 1, 2, and 3 were performed to determine location and number of traverse points, average gas velocity, and gas molecular weight, respectively. Percent moisture content was estimated using a psychrometric chart or combustion analysis of the fixed gases. The results of these measurements were used to determine the appropriate nozzle size for isokinetic sampling.

The SCAQMD Method 5.1 apparatus was prepared on site in our mobile emissions laboratory. The absorption train was charged with freshly prepared chemicals (see Field Data Sheets for actual contents), weighed on a calibrated top loader balance to the nearest 0.1 grams, and assembled. The probe was brushed out and rinsed with distilled water and the filter placed in the filter holder. The sampling apparatus was sealed and transported to the sampling site where it was assembled and leak-tested at 15 inches of mercury vacuum. The probe was positioned into the duct at the first traverse point with the nozzle out of the flow path.

The nozzle was positioned into the gas flow and the vacuum pump was started immediately and adjusted to obtain an isokinetic sample rate. A complete traverse was performed while sampling at a minimum of three minutes per sample point (see Field Data Sheets for actual duration). Upon completion of the traverse the vacuum pump was turned off and the probe was transferred into the next sample port where an identical traverse was performed. Duct conditions (temperature, differential pressure) and sampling conditions (meter temperature, meter volume, meter pressure, impinger temperature, and absorption train vacuum) were monitored and recorded regularly for each sample point.

Upon completion of sampling, the apparatus was leak-checked at a vacuum greater than the highest observed vacuum. Any leak was recorded and the apparatus was sealed and transported to the mobile laboratory. The probe-to-impinger line was rinsed with a known amount of distilled water into the first impinger.

ANALYSIS

The nozzle and probe were washed as per SCAQMD Method 5.1 and quantitatively transferred to a clean, labeled bottle.

The filter and any loose particulate were carefully removed from the filter holder with tweezers. The filter was then placed into a labeled petri dish and transported to the Montrose AQS laboratory. The nozzle and probe were rinsed and brushed three times with distilled water. The sample fractions were combined, bottled, labeled, and fluid levels marked for transportation to MAQS laboratory for analysis. Aliquots of distilled water were similarly treated for blank analysis.

The aqueous sample was filtered through the sample filter. The filter was then transferred to an oven and heated at 105°C for 2-3 hours and then placed in a desiccator for 24 hours. The filter was then weighed on a digital analytical balance to the nearest 0.1 mg or one percent of the total filtrate weight (weighed to a constant weight).

An organic extraction was performed on the combined probe and impinger catch. The nozzle and probe wash and impinger sample was transferred to an evaporative dish. The inorganic sample

was then evaporated at an elevated temperature - below the boiling point of the wash. The dish and wash residue was then desiccated and weighed to a constant weight.

The net weight of particulate was calculated from the two fractions. Concentrations (gr/dscf) and emissions (lb/hr) or other applicable units were then calculated and reported.

SCAQMD METHOD 25.3

INTRODUCTION

The SCAQMD Method 25.3 is used to collect and analyze low concentrations of volatile organic compounds using a knock-out/canisters for sample collection and analyzed by TCA/FID.

SAMPLING PROCEDURE

The sampling apparatus consists of a stainless steel probe connected by Teflon line to a midjet impinger with water (outlet). Upon opening of the flow controller on the canisters, sample gas is drawn through the trap or impinger then into the canister.

On completion of each run, the sample was sealed and immediately transported to the laboratory. The analysis performed by total carbon analysis/flame ionization detector (TCA/FID) gives results of CH₄, CO₂ and total gaseous non-methane organics (TGNMO) as CH₄. All non-methane organics are oxidized to CO₂ then reduced back to CH₄ and then measured by flame ionization. All carbon contained in the original non-methane portion is therefore converted to CH₄ and the results are reported as TGNMO as CH₄.

CALCULATIONS

$$\text{TGNMO lb/hr} = \text{TGNMO PPMv} \times \text{DSCFM} \times \text{M.W.} \times \text{C.F.}$$

Where:

TGNMO PPMv = Total Gaseous Non-Methane Organics Parts Per Million (Volume)

DSCFM = Dry Standard Cubic Feet Per Minute

M.W. = Molecular Weight, Methane 16.04 (lb/lb mole)

C.F. = Conversion Factor = 1.583×10^{-7} @ 60°F Std.

= 1.558×10^{-7} @ 68°F Std.

SCAQMD METHOD 100.1 CONTINUOUS GASEOUS EMISSIONS SAMPLING

Ref: South Coast Air Quality Management District (SCAQMD), Office of Operations Technical Services Division, March 1989, Method 100.1.

A continuous sample is extracted from the stack through a stainless-steel probe, heated Teflon line, filter, sample conditioner (moisture removal system), sample pump and then delivered to the analyzers through an unheated Teflon line, sample manifold and dedicated flow meters.

Prior to beginning the test, a system leak check is performed. The leak check is accomplished by plugging the probe tip and drawing >25" Hg vacuum on the entire sampling system. When all flow meters indicate 0.000 scfh flow, the system is proven to be free of all leaks.

An analyzer calibration error (CE) check is performed at the beginning of each sampling day. The CE is performed as follows: After zeroing all analyzers with nitrogen, EPA Protocol 1 gases are used to calibrate each analyzer within 80-95% full scale of the selected range. Each analyzer, individually, is then spanned within 40-60% of the selected range by introducing a second EPA Protocol 1 gas.

A system bias check is performed before and after each sampling run by delivering zero and calibration gases to the three-way valve, located between the probe and sample line, and drawing the gases through the sampling system. The bias for each analyzer shall not exceed 5% of the high spanned calibration gas value or the sampling run shall be repeated.

All concentrations from the NO_x, O₂, CO₂, and CO analyzers are recorded on a Yokogawa Model DR240 recorder. The data is continuously recorded by a strip chart and an on-site data acquisition system (DAS). The DAS is reduced by computer in the Montrose AQS Laboratory.

CEMS probe was traversed across the stack in conjunction with particulate testing. A total of 24 points were sampled with 12 points per port by utilizing two test ports.

EQUATIONS:

$$\text{CO ppm} = (\text{CO \% FS} - \text{Average CO Zero}) \times \frac{\text{CO Cal Gas Value}}{\text{Average CO Span} - \text{Average CO Zero}}$$

$$\text{ppm @ 3\% O}_2 = \text{ppm obsv.} \times 17.9 / (20.9 - \% \text{O}_2 \text{ obsv.})$$

$$\text{ppm @ 15\% O}_2 = \text{ppm obsv.} \times 5.9 / (20.9 - \% \text{O}_2 \text{ obsv.})$$

$$\text{lb/hr (NO}_x\text{/CO/NMHC)} = \text{ppm obsv.} \times 1.581 \times 10^{-7} \times \text{DSCFM calc.} \times \text{MW (@ 60}^\circ\text{F)}$$

$$\text{lb/MMBtu} = (\text{ppm} \times \text{MW} \times \text{Fd Factor/SV} \times 10^6 \times 20.9 / (20.9 - \% \text{O}_2)) \text{ Or, } = \text{lb/hr/MMBtu/hr}$$

Molecular Weight (MW)

NO_x = 46

CO = 28

NMHC as CH₄ = 16

SV = 379.5 @ 60°F

APPENDIX D QUALITY ASSURANCE

Appendix D.1

Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of MAQS QA efforts. The manual is revised upon periodic review and as MAQS adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. MAQS training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the MAQS QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of MAQS emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO _x Analyzer	Daily	NO ₂ → NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	± 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	± 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	± 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	± 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	± 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	± 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements are used.

Appendix D.2

SCAQMD and STAC Certifications

SCS Field Services – Chiquita Canyon Landfill
2024 Gas Flare No. 1 Source Test



South Coast
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 14, 2023

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have completed our review of Montrose Air Quality Services' revised renewal application, which was submitted as notification of Montrose's recent acquisition of AirKinetics, Inc. under the South Coast AQMD Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2023, and ending September 30, 2024, for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4
South Coast AQMD Methods 10.1 and 100.1
South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1 (Sampling and Analysis)
South Coast AQMD Methods 25.1 and 25.3 (Sampling)
Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling
USEPA CTM-030 and ASTM D6522-00

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2
Protocols includes satellite facilities located at:

McKenna Boiler
1510 North Spring Street
Los Angeles, CA 90012

Noritz America Corp.
11160 Grace Avenue
Fountain Valley, CA 92708

Ajax Boiler, Inc.
2701 S. Harbor Blvd.
Santa Ana, CA 92704

VA Laundry Bldg., Greater LA Healthcare Sys.
508 Constitution Avenue
Los Angeles, CA 90049

So Cal Gas – Engr Analysis Ctr, Bldg H
8101 Rosemead Blvd
Pico Rivera, CA 90660

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Colin Eckerle. He may be reached by telephone at (909) 396-2476, or via e-mail at ceckerle@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:CE
Attachment

230914 LapRenewal.doc



American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 – Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 27th day of February 2024.




Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2026

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

Appendix D.3

Individual QI Certifications

CERTIFICATE OF COMPLETION	
Pedro SanJuan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
SCAQMD Methods 1.1, 1.2, 2.1, 2.2, 2.3, 3.1, & 4.1	
Certificate Number: <u>002-2022-50</u>	
 Tate Strickler, VP – Quality Systems	DATE OF ISSUE: <u>02/28/2022</u>
	DATE OF EXPIRATION: <u>02/27/2027</u>
 MONTROSE ENVIRONMENTAL	

CERTIFICATE OF COMPLETION	
Pedro SanJuan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
SCAQMD Methods 5.1, 5.2, 5.3, 5.4, & 6.1	
Certificate Number: <u>002-2022-51</u>	
 Tate Strickler, VP – Quality Systems	DATE OF ISSUE: <u>02/28/2022</u>
	DATE OF EXPIRATION: <u>02/27/2027</u>
 MONTROSE ENVIRONMENTAL	

CERTIFICATE OF COMPLETION	
Pedro SanJuan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
SCAQMD Methods 25.1, 25.3 & 307-91	
Certificate Number: <u>002-2022-52</u>	
	DATE OF ISSUE: 02/28/2022
Tate Strickler, VP – Quality Systems	DATE OF EXPIRATION: 02/27/2027
	

CERTIFICATE OF COMPLETION	
Pedro SanJuan	
This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):	
SCAQMD Method 100.1	
Certificate Number: <u>002-2022-55</u>	
 Tate Strickler, VP – Quality Systems	DATE OF ISSUE: <u>03/07/2022</u>
	DATE OF EXPIRATION: <u>03/06/2027</u>
	

Appendix D.4

Statement of No Conflict of Interest

**STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING
LABORATORY**

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Facility ID:	119219
Date(s) Tested:	June 27, 2024
Facility Name:	Chiquita Canyon Landfill
Equipment Address:	29201 Henry Mayo Drive
	Castaic, California 91384
Equipment Tested:	Gas Flare No. 1 (John Zink)
Device ID, A/N, P/N:	P/N G73696

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm: Montrose Air Quality Services, LLC

Business Address: 1631 E. St. Andrew Pl.

Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in **District Rule 304(k)**:

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

- (1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -*
- (2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;*
- (3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and*
- (4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.*

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature: _____

Date: 8/21/2024

Pete SanJuan

Client Project Manager

(714) 279-6777

8/21/2024

(Name)

(Title)

(Phone)

(Date)

APPENDIX E FACILITY PERMIT



FACILITY PERMIT TO OPERATE CHIQUITA CANYON LLC

PERMIT TO OPERATE

Permit No. G73696
A/N 645450

Equipment Description:

Landfill gas flare system consisting of:

1. Two (2) HDPE Moisture Separators, One (1) 5'-0" Dia. x 10'-6" H and One (1) 4'-0" Dia. x 10'-0" H, Common with Flare no.1, Flare no.2, and Flare no. 3 (A/N 624296).
2. Two (2) Landfill Gas Blowers, 6,000 scfm each, 250 HP each and Two (2) Multi-stage Centrifugal Blowers, 4,000 scfm each, 150 HP each, Common with Flare no.1, Flare no.2, and Flare no. 3 (A/N 624296).
3. Condensate injection system with 1 GPM per Nozzle, Electric Condensate Pumps, Common with Flare no.1, Flare no.2, and Flare no. 3 (A/N 624296).
4. Automated ignition system with propane gas pilot assembly, ignition transformer, and two 5-gallon capacity propane tanks. Common with Flare no. 1 and Flare no. 2.
5. Flare, no. 1, John Zink, Model ZTOF, 11'-4" Dia. x 50'-0" H., rated at 4000 scfm capacity, 120 mmBTU per hour with a flame arrestor, UV scanner, four automatic combustion air dampers and flare alarm system.
6. Enclosed flare, no. 2, John Zink, Zink ultra-low emission (ZULE), 12'-0" Dia. x 50'-0" H., maximum heat input of 120 mmBTU per hour of landfill gas, with a combustion air blower, combustion air/LFG mixing chamber, a flame arrestor, UV scanner, electric igniter, propane gas pilot, louvers, automatic landfill gas flow and flare temperature control system, and an automatic flare shutdown and alarm system.

Conditions:

1. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
[Rule 204]
2. This equipment shall be properly maintained and kept in good operating condition at all times.
[Rule 204]
3. This equipment shall be operated and maintained by personnel properly trained in its operation.
[Rule 204]
4. Each flare shall be equipped with a temperature indicator and recorder which measures and records the exhaust gas temperature in each flare stack. The temperature indicator and recorder shall operate whenever the flare is in operation. The temperature shall be measured at a location above the flame zone, at least 0.6 second downstream of the burner, and not less than three (3) feet below the top of each stack.
[Rule 1303(a)(1)-BACT, 3004(a)(4)]



FACILITY PERMIT TO OPERATE CHIQUITA CANYON LLC

5. Whenever the flare(s) is (are) in operation, a temperature of not less than 1400 degrees Fahrenheit, 15 minute average, as measured by the temperature indicator and recorder shall be maintained except during periods of startup and shutdown. Startup is defined as the period from flare ignition to the time when 1400 degrees Fahrenheit is achieved, not to exceed 30 minutes. Shutdown is the period from when the gas valve begins to be shut and completely shuts off, not to exceed 30 minutes.
[Rule 1303(a)(1)-BACT]
6. A flow indicator and recording device shall be maintained in the landfill gas supply line to each flare to measure and record the quantity of landfill gas (in scfm) being burned in each flare.
[Rule 1303(b)(2)-Offset, 3004(a)(4)]
7. All recording devices shall be synchronized with respect to time of the day.
[Rule 204]
8. The total volume of landfill gas burned in each flare shall not exceed 4,000 standard cubic feet per minute (scfm).
[Rule 1303(b)(1) and (b)(2)-Modeling and Offset, 1401]
9. The maximum heat input rate to each flare shall not exceed 120 mmBTU per hour. A log shall be kept indicating the total heating value of landfill gas burned in each flare based on the recorded flow rate (scfm) and the latest weekly BTU content (BTU/scf) reading.
[Rule 1303(b)(1) and (b)(2)-Modeling and Offset, 1401]
10. The automatic shutdown safety system shall be tested monthly for proper operation of each flare and the results recorded.
[Rule 1303(a)(1)-BACT]
11. Condensate injection total flow rate and heat input rate (BTU/hr), for all of the nozzles, shall be recorded and records shall be maintained on file. Calculated injection rate for each nozzle shall not exceed 0.077 gpm/BTU/hr.
[Rule 204]
12. The operator shall conduct annual performance source test for each of the flares (within 12 months of the prior source test), at maximum heat input rate, in accordance with South Coast AQMD approved source test protocol. Written notification of the scheduled test date shall be provided to the South Coast AQMD at least seven (7) days prior to the date so that the testing may be observed by South Coast AQMD personnel. The testing shall be conducted when the equipment is in full operation, and shall include, but not limited to, a test of the inlet to the flare and the flare exhaust for:
 - A. Methane
 - B. Total non-methane organic compounds (TNMOC)
 - C. Carcinogenic and toxic air contaminants (inlet and exhaust) including, but not limited to, compounds listed under Rule 1150.1, Table-1 (Core Group)
 - D. NOx, as NO2 (exhaust only)
 - E. SOx, as SO2 (exhaust only)
 - F. CO (exhaust only)
 - G. PM10 reported as total PM (exhaust only)
 - H. Oxygen
 - I. Moisture content
 - J. Temperature



**FACILITY PERMIT TO OPERATE
CHIQUITA CANYON LLC**

K. Flow rate
[Rule 1303(b)(1) and (b)(2)-Modeling and Offset, 1401, 3004(a)(4)]

13. The source test report, for each flare shall include,

A. Emissions of CO, NO_x, TNMOCs, PM₁₀ (total PM) and SO_x, in units of lbs/hr and ppmv (except PM₁₀), overall methane and TNMOC destruction efficiency (wt. %) and TNMOC emissions (ppmv), on a dry basis, as hexane at 3% oxygen.

B. The test shall be performed by a testing laboratory certified to meet the criteria in South Coast AQMD Rule 304(k) (conflict of interest).

C. Sampling facilities shall comply with South Coast AQMD "Guidelines for Construction of Sampling and Testing Facilities" pursuant to Rule 217.

[Rule 204, 217, 1150.1, 40 CFR 60 Subpart XXX, 40 CFR 63 Subpart AAAA]

14. The maximum flare skin temperature at any location shall not exceed 250 degrees Fahrenheit.
[Rule 217]

15. All landfill gas collected shall be directed to a processing facility, which can adequately process the volume of LFG collected, or to the combustion equipment that has been issued a valid Permit to Construct or Operate by the South Coast AQMD.

[Rule 1150.1, 1303(a)(1)-BACT, 40 CFR 60 Subpart XXX, 40 CFR 63 Subpart AAAA]

16. Emissions from flare no. 1 shall not exceed the following:

Pollutant	lbs. /hr
CO	5.6
NO _x as NO ₂	3.9
PM ₁₀	1.4
ROG	0.92
SO _x as SO ₂	2.5

[Rule 1303(a)(1)-BACT, 1303(b)(1) and (b)(2)-Modeling and Offset, 1401]

17. Emissions from flare no. 2 shall not exceed the following:

Pollutant	lbs. /hr
CO	7.2
NO _x as NO ₂	2.4
PM ₁₀	1.4
ROG	1.33
SO _x as SO ₂	2.5

[Rule 1303(a)(1)-BACT, 1303(b)(1) and (b)(2)-Modeling and Offset, 1401]



FACILITY PERMIT TO OPERATE CHIQUITA CANYON LLC

18. The operator shall operate and maintain this equipment according to the following requirements:

The exhaust temperature shall be maintained at a minimum of 1,400 degrees Fahrenheit (for F-1 & F-2) whenever the equipment it serves is in operation.

Continuous exhaust temperature monitoring and recording system shall be pursuant to the operation and maintenance requirements specified in 40 CFR Part 64.7. Such a system shall have an accuracy of within $\pm 1\%$ of the temperature being monitored and shall be inspected, maintained, and calibrated on an annual basis in accordance with the manufacturer's specifications using an applicable South Coast AQMD or EPA approved method.

For the purpose of this condition, a deviation shall be defined as when a temperature of less than 1,400 degrees Fahrenheit (for F-1 & F-2) occurs during normal operation except during startups or shutdowns, not to exceed 30 minutes. The exhaust temperature shall be averaged over a 15-minute period.

And hourly average shall be computed from such data points. The operator shall review the records of temperature on a daily basis to determine if a deviation occurs or shall install an alarm system to alert the operator when a deviation occurs.

Semi-annual reporting specified in Condition No. 23 in Section K, whenever a deviation occurs in which the temperature of the flare falls below 1,400 degrees Fahrenheit, the operator shall take necessary corrective actions as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Records of the duration and cause (including unknown cause, if applicable) of the deviation and the corrective actions taken shall be included in the semi-annual reporting.

All deviations shall be reported to the South Coast AQMD on a semi-annual basis pursuant to the requirements specified in 40 CFR Part 64.9 and Condition Nos. 22 and 23 in Section K of this permit.

The operator shall submit an application with a quality improvement plan (QIP) in accordance with 40 CFR Part 64.8 to the South Coast AQMD if an accumulation of deviations exceeds 5 percent duration of this equipment's total operating time for any semi-annual reporting period specified in Condition No. 23 in Section K of this permit. The required QIP shall be submitted to the South Coast AQMD within 90 calendar days after the due date for the semi-annual monitoring report.

The operator shall keep adequate records in a format that is acceptable to the South Coast AQMD to demonstrate compliance with all applicable requirements specified in this condition and 40 CFR Part 64.9 for a minimum of five years.

[40 CFR Part 64]

19. Operation of this equipment shall not result in the release of raw landfill gas into the atmosphere. Any breakdown or malfunction of this equipment resulting in the emission of raw landfill gas shall be reported to the South Coast AQMD within twenty four hours after occurrence and immediate remedial measures shall be undertaken to correct the problem and prevent further emissions into the atmosphere.
[Rule 430]



**FACILITY PERMIT TO OPERATE
CHIQUITA CANYON LLC**

20. The applicant shall conduct a gas leak detection program with a combustible detector calibrated for methane by inspecting the blowers and all equipment downstream of the blowers. This inspection program shall be conducted once a week. All leaks detected above 500 ppm shall be reported to the South Coast AQMD within 24 hours of detection and repaired within 3 working days of detection. A log showing the results of each inspection shall be maintained and shall be available to South Coast AQMD personnel upon request.
[Rule 1303(a)(1)-BACT, 402]
21. All records shall be kept and maintained for at least five years and shall be made available to South Coast AQMD personnel upon request.
[Rule 3004(a)(4)]

Emissions and Requirements:

22. This equipment is subject to the applicable requirements of the following rules and regulations:
- CO: 2000 ppmv, Rule 407
 - CO: 0.06 lb/mmBTU heat input - BACT/LAER, flare no. 2
 - NOx: 0.06 lb/mmBTU heat input- BACT/LAER, flare no. 1
 - NOx: 0.025 lb/mmBTU heat input- BACT/LAER, flare no. 2
 - PM: Rule 404, see Appendix B for emissions limits
 - PM: 0.1 gr/scf, Rule 409
 - Methane: 99 wt. % destruction efficiency, Rule 1150.1
 - NMOC: 98 wt. % destruction efficiency or < 20 ppmv, hexane, 3% O2 dry, Rule 1150.1, 40 CFR 60 Subpart XXX, 40 CFR 63 Subpart AAAA

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If you have any questions, please contact one of the following individuals by email or phone.

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