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 Q TO DECLARATION OF PATRICK SULLIVAN, BCES, CPP, REPA

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

Hearing Date:	June 4 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

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 SanJuan 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

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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_2S 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 O_2 and CO_2.

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
H_2S 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_2O, %	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_2S, 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

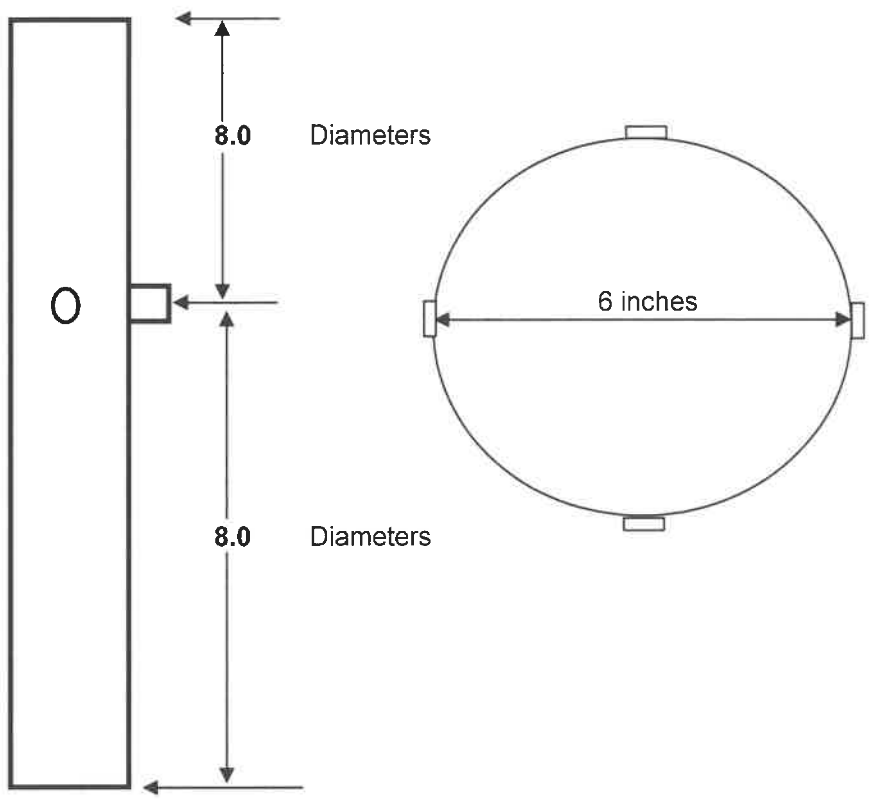
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 6

Performed By: SJ, JI



Diameter (inches)	**6.00**
Upstream (inches)	**48.00**
Downstream (inches)	**48.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.20**

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

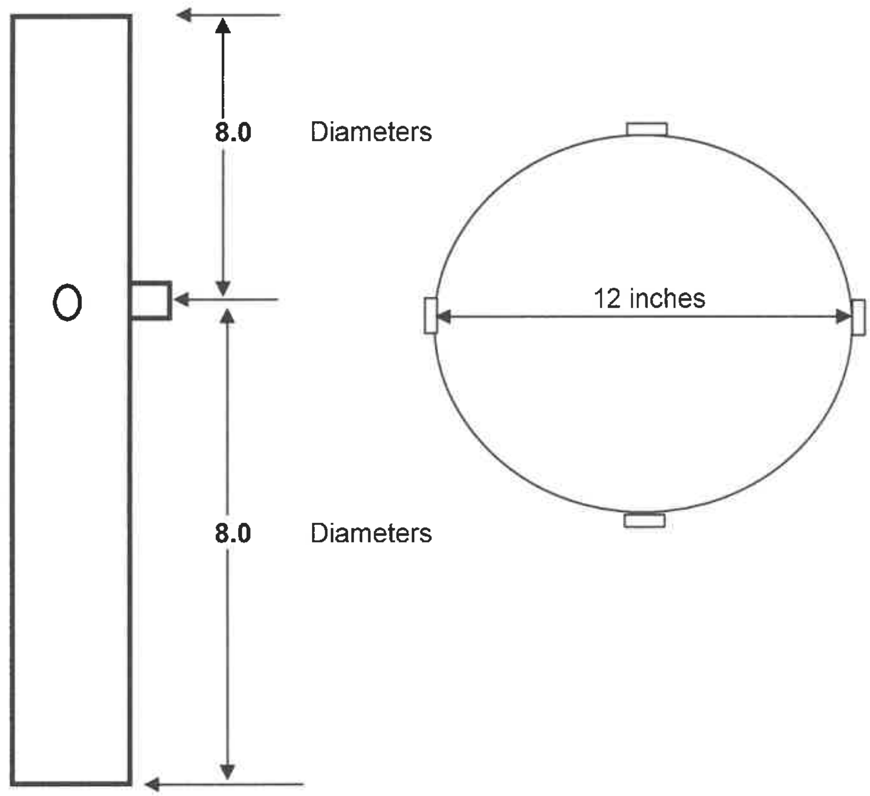
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 9A

Performed By: SJ, JI



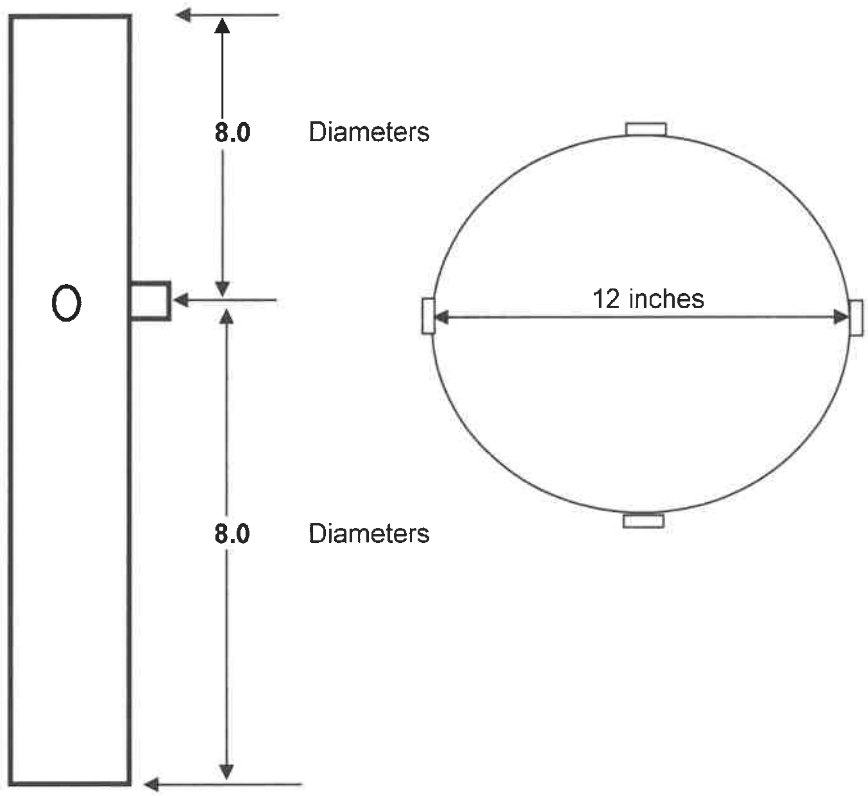
Diameter (inches)	**12.00**
Upstream (inches)	**96.00**
Downstream (inches)	**96.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.79**

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 9B Performed By: SJ, JI



Diameter (inches)	**12.00**
Upstream (inches)	**96.00**
Downstream (inches)	**96.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.79**

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

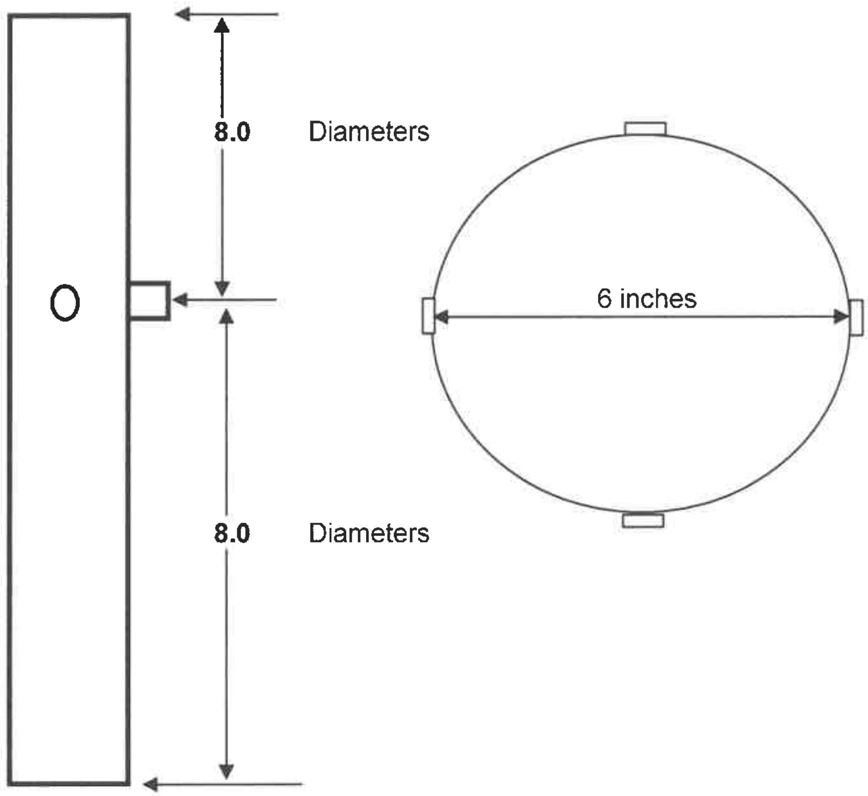
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 2

Performed By: SJ, JI



Diameter (inches)	**6.00**
Upstream (inches)	**48.00**
Downstream (inches)	**48.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.20**

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

MONTROSE

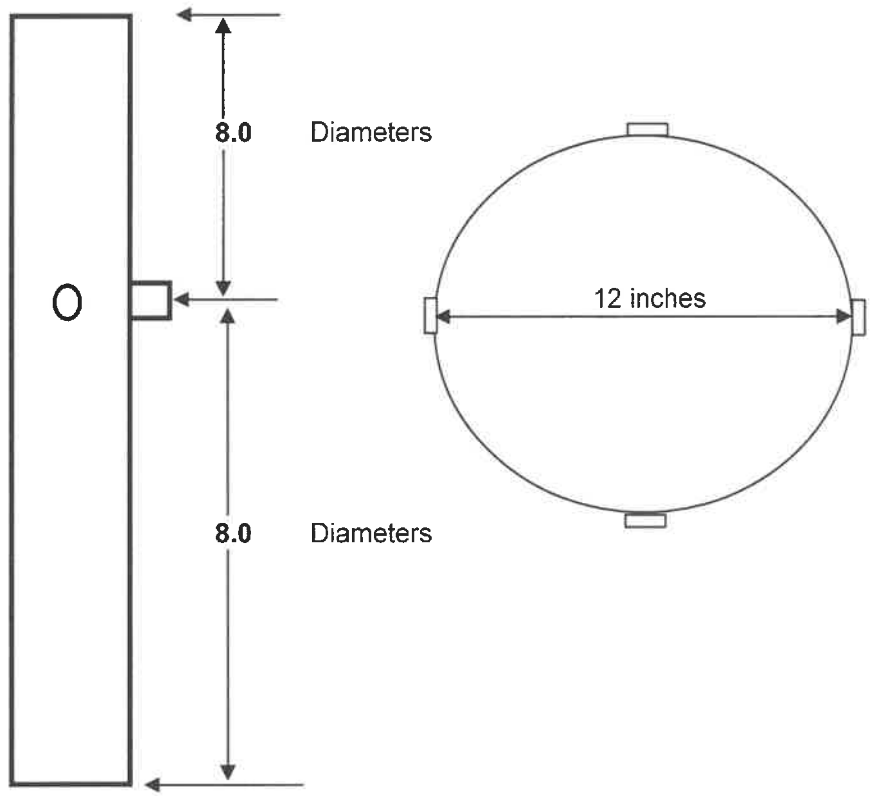
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

Location: Chiquita TF 7B

Performed By: SJ, JI



Diameter (inches)	**12.00**
Upstream (inches)	**96.00**
Downstream (inches)	**96.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.79**

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

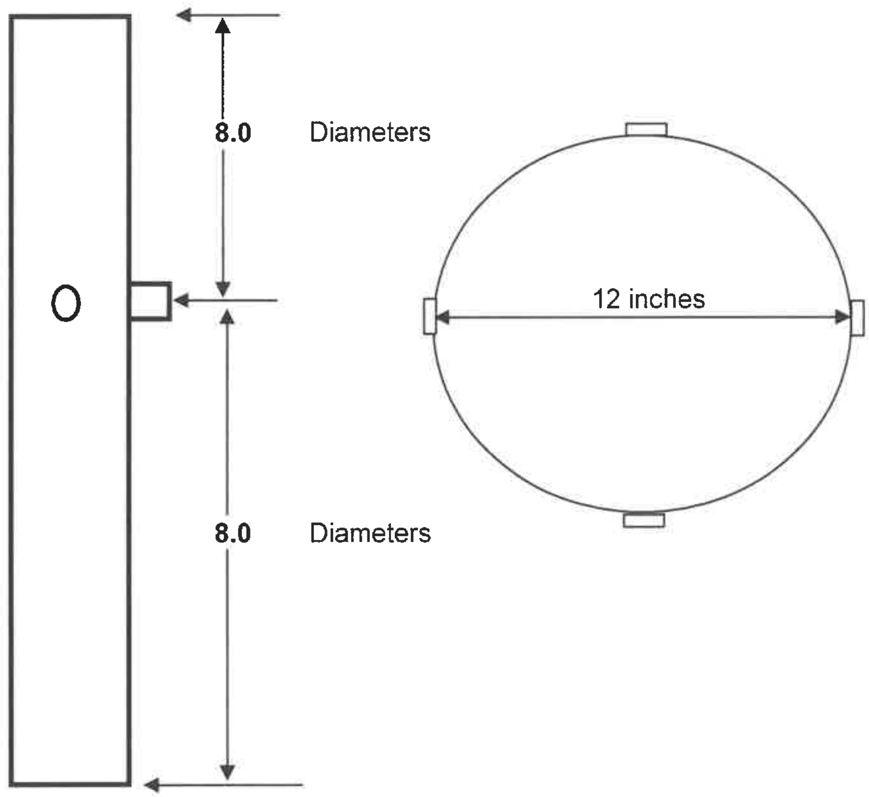
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 10/17/24

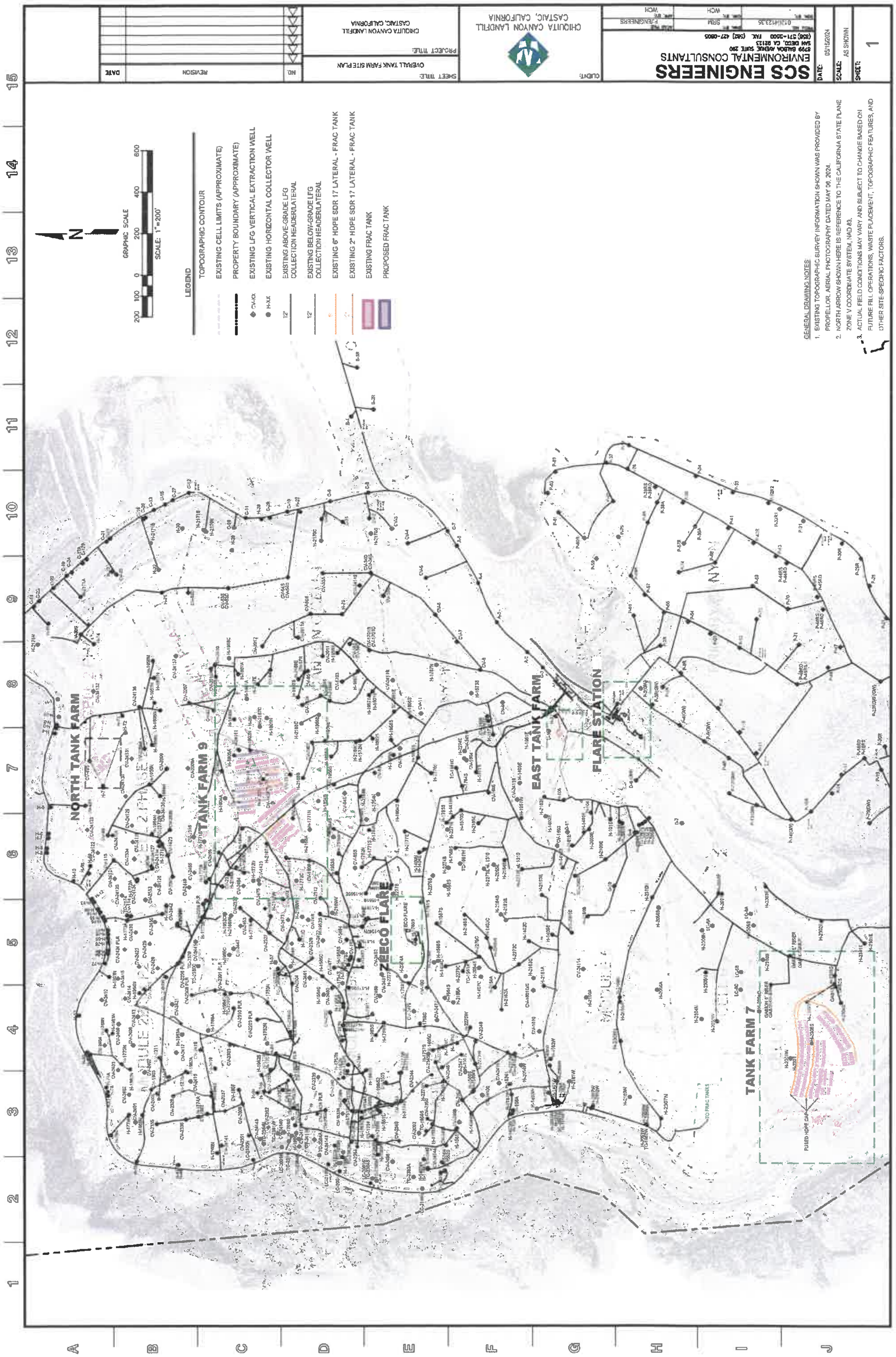
Location: Chiquita TF 7A

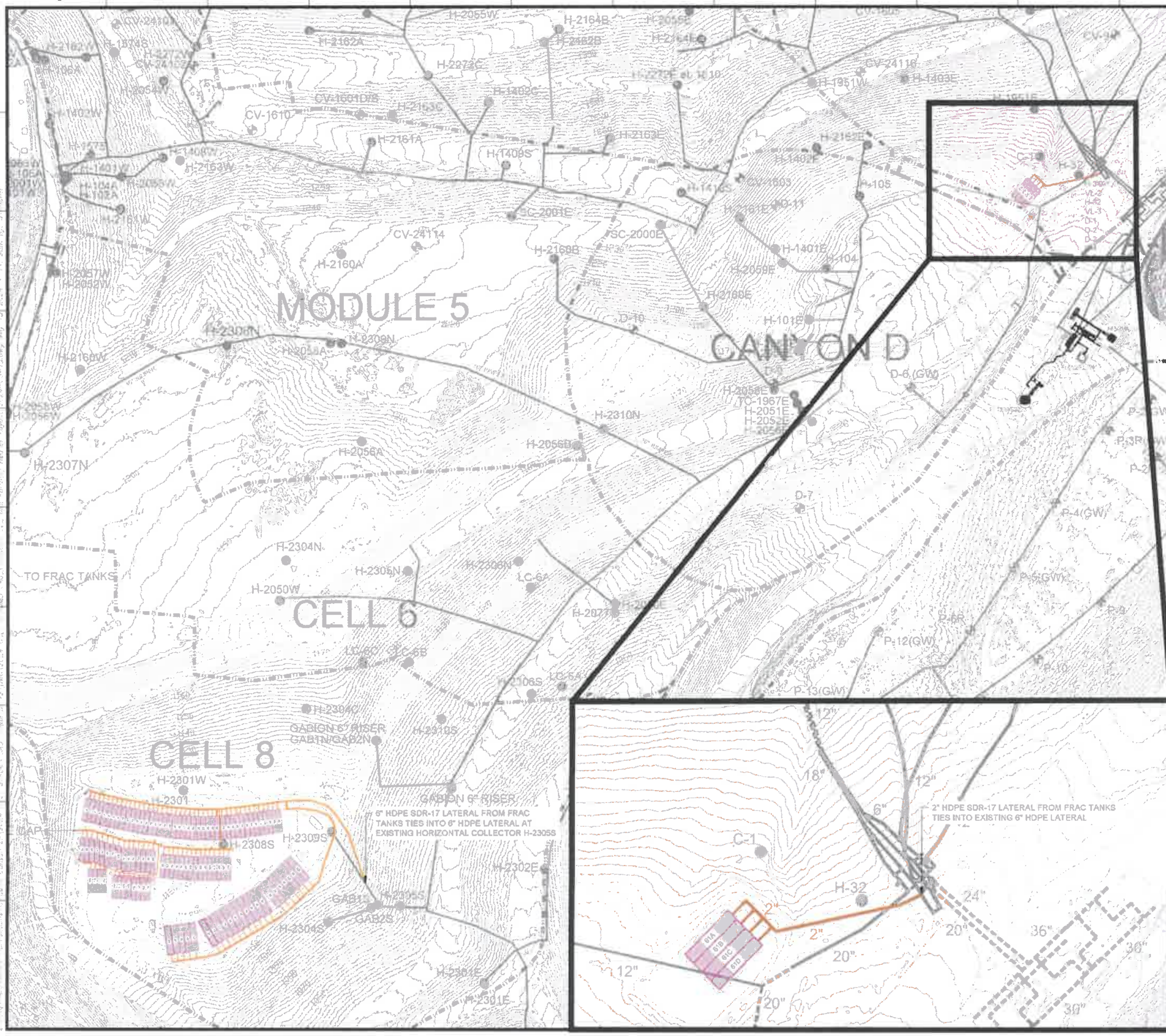
Performed By: SJ, JI



Diameter (inches)	**12.00**
Upstream (inches)	**96.00**
Downstream (inches)	**96.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.79**

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


SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA
PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA
SHEET TITLE: OVERALL TANK FARM SITE PLAN
DATE: 05/15/2024
SCALE: AS SHOWN
SHEET: 1
GRAPHIC SCALE
SCALE: 1"=200'
LEGEND
TOPOGRAPHIC CONTOUR
EXISTING CELL LIMITS (APPROXIMATE)
PROPERTY BOUNDARY (APPROXIMATE)
EXISTING LFG VERTICAL EXTRACTION WELL
EXISTING HORIZONTAL COLLECTOR WELL
EXISTING ABOVE-GRADE LFG COLLECTION HEADER/LATERAL
EXISTING BELOW-GRADE LFG COLLECTION HEADER/LATERAL
EXISTING 6" HDPE SDR 17 LATERAL - FRAC TANK
EXISTING 2" HDPE SDR 17 LATERAL - FRAC TANK
EXISTING FRAC TANK
PROPOSED FRAC TANK
GENERAL DRAWING NOTES:
1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLOR, AERIAL PHOTOGRAPHY DATED MAY 06, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
3. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.
NORTH TANK FARM
TANK FARM 9
EAST TANK FARM
FLARE STATION
ZEECO FLARE
TANK FARM 7



N

GRAPHIC SCALE

90 45 0 90 180 270

SCALE: 1"= 90'

LEGEND

- TOPOGRAPHIC CONTOUR
- EXISTING CELL LIMITS (APPROXIMATE)
- EXISTING LFG VERTICAL EXTRACTION WELL
- EXISTING HORIZONTAL COLLECTOR WELL
- EXISTING ABOVE-GRADE LFG COLLECTION HEADER/LATERAL
- EXISTING BELOW-GRADE LFG COLLECTION HEADER/LATERAL
- EXISTING 6" HDPE SDR 17 LATERAL - FRAC TANK
- EXISTING 2" HDPE SDR 17 LATERAL - FRAC TANK
- EXISTING FRAC TANK
- PROPOSED FRAC TANK

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLOR, AERIAL PHOTOGRAPHY DATED MAY 08, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
3. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

NO.	REVISION	DATE

SHEET TITLE: TANK FARM SITE PLAN - SOUTH

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

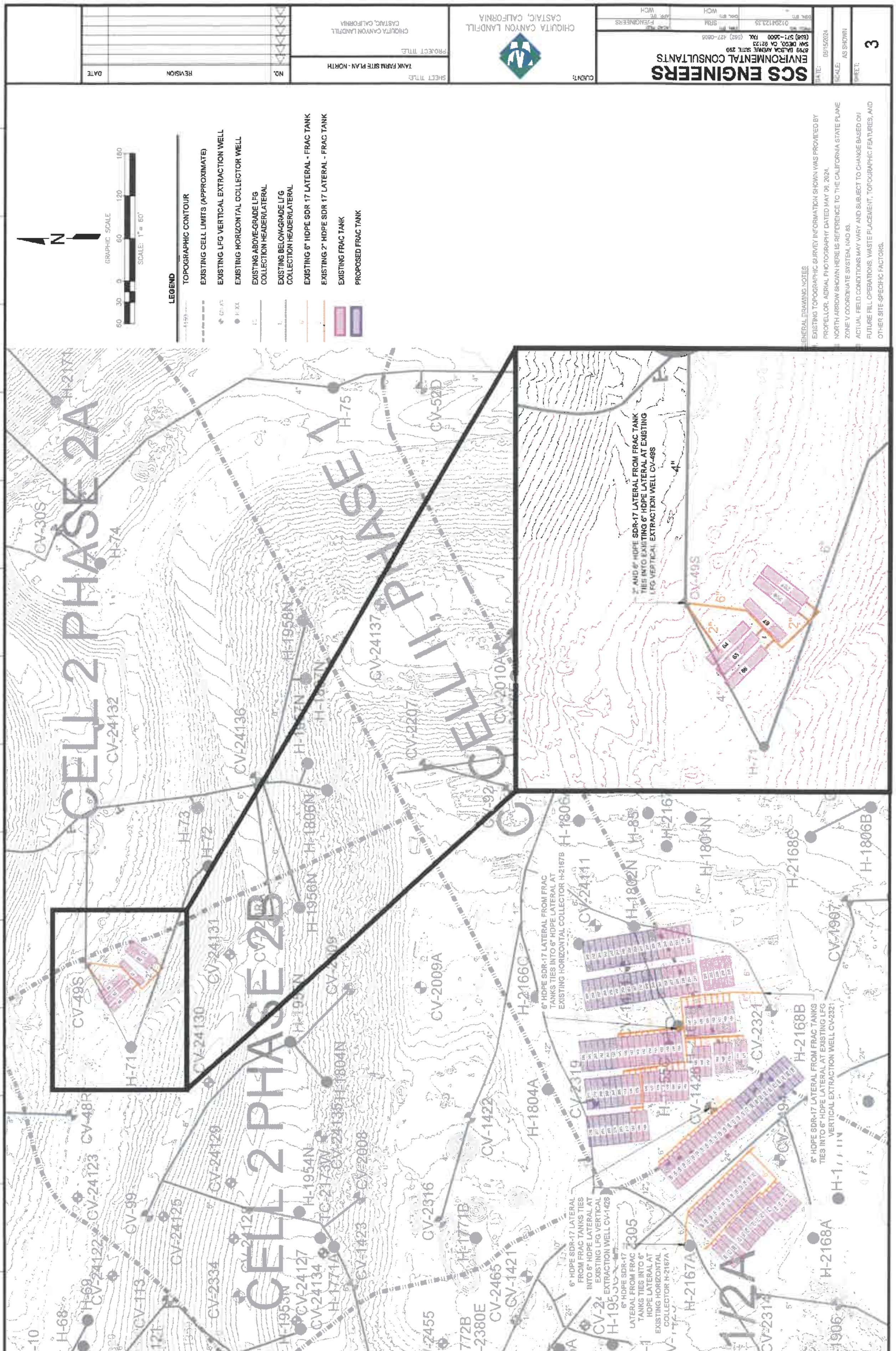
SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO.: 01204123.35 | DSN. BY: SRM | CHK. BY: WCH | DWG. BY: WCH | PROJ. MGR: P/ENGINEERS

DATE: 05/15/2024

SCALE: AS SHOWN

SHEET: 2


SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE, SUITE 290
SAN DIEGO, CA 92123
CHIQUITA CANYON LANDFILL
CASTAIC, CALIFORNIA
TANK FARM SITE PLAN - NORTH
LEGEND
TOPOGRAPHIC CONTOUR
EXISTING CELL LIMITS (APPROXIMATE)
EXISTING LFG VERTICAL EXTRACTION WELL
EXISTING HORIZONTAL COLLECTOR WELL
EXISTING ABOVE-GRADE LFG COLLECTION HEADER/LATERAL
EXISTING BELOW-GRADE LFG COLLECTION HEADER/LATERAL
EXISTING 6" HDPE SDR 17 LATERAL - FRAC TANK
EXISTING 2" HDPE SDR 17 LATERAL - FRAC TANK
EXISTING FRAC TANK
PROPOSED FRAC TANK
CELL 2 PHASE 2A
CELL 2 PHASE 2B
CELL II, PHASE 1
2" AND 6" HDPE SDR-17 LATERAL FROM FRAC TANK TIES INTO EXISTING 6" HDPE LATERAL AT EXISTING LFG VERTICAL EXTRACTION WELL CV-49S
6" HDPE SDR-17 LATERAL FROM FRAC TANKS TIES INTO 6" HDPE LATERAL AT EXISTING HORIZONTAL COLLECTOR H-2167B
6" HDPE SDR-17 LATERAL FROM FRAC TANKS TIES INTO 6" HDPE LATERAL AT EXISTING LFG VERTICAL EXTRACTION WELL CV-2321
CV-49S
H-71
H-74
H-75
CV-24132
CV-24136
CV-24137
CV-2010A
CV-2009A
H-2166C
H-1804A
H-2168B
H-2168A
H-2167A
H-1806B

TANK FARM 6


ADLER
1-800-421-747
www.adlertankrentals.com
SCS ENGINEERS
REMOTE MONITORING AND CONTROLS

TANK FARM 9A


TANK FARM 9B


TANK FARM 2
STAR


TANK FARM 7B
SCS FIELD SERVICES
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 Composistion 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_2O)	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 Composistion 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_2O)	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 Composistion 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_2O)	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 Composistion 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_2O)	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 Composistion 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_2O)	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	
Pstack:	0.00	iwg
Pstack:	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 Composistion 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_2O)	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

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

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

	P_{bar}	Static Pressure (in. of H_2O)	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

MONTROSE
AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: CHIQUITA
UNIT: TF 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 / JI
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: ✓

cycl. ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp., °F	cycl. ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp, °F
N/A	T	1	NO-Flow	83	N/A	S	1	NO-Flow	83
		2					2		
		3					3		
		4					4		
		5					5		
		6					6		
			WB=80						
			DB=83						

Comments:

MONTROSE
AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: CHIQUITA
UNIT: TE 9A
TEST DATE: 10/17/24
TEST NUMBER: 1
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: ELECTRONIC
ΔP INDICATOR ID: AOM 850 #9

PERFORMED BY: SJ, JI
BAR. PRESSURE: 29.05
STATIC PRESSURE: 0.0
TC READOUT ID: PTC43
TC ID: 30
PITOT TUBE ID: 30
PITOT TUBE COEFFICIENT: 0.84
ZERO: ✓ LEVEL: ✓

CYCL ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp., °F	CYCL ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp, °F
0	T	1	0.008	83	0	S	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: ANGLE FINDER - AF-1

MONTROSE AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: CHIQUITA
UNIT: TF 9B
TEST DATE: 10/17/24
TEST NUMBER: 1
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: ELECTRONIC
ΔP INDICATOR ID: ADM850#9

PERFORMED BY: SJ, JI
BAR. PRESSURE: 29.05
STATIC PRESSURE: 0.0
TC READOUT ID: PTC43
TC ID: 30
PITOT TUBE ID: 30
PITOT TUBE COEFFICIENT: 0.84
ZERO: ✓ LEVEL: ✓

Cyc ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp., °F	Cyc ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp, °F
0		1	0.009	81	0		1	0.009	81
		2	0.011				2	0.013	
		3	0.012				3	0.012	
		4	0.009				4	0.011	
		5	0.008				5	0.016	
		6	0.010				6	0.009	
			WB=76						
			DB=81						

Comments: ANGLEFINDER - AF-1

MONTROSE
AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: CHIQUITA
UNIT: TE-2
TEST DATE: 10/17/24
TEST NUMBER: 1
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: ELECTRONIC
ΔP INDICATOR ID: ADM 850 #9

PERFORMED BY: SS / JI
BAR. PRESSURE: 29.05
STATIC PRESSURE: 0.0
TC READOUT ID: PTC43
TC ID: 32
PITOT TUBE ID: 30
PITOT TUBE COEFFICIENT: 0.84
ZERO: ✓ LEVEL: ✓

Cycl ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp., °F	Cycl. ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp. °F
N/A	T	1	NO-FLOW	85	N/A	S	1	NO Flow	~~85~~ 85
		2					2		
		3					3		
		4					4		
		5					5		
		6					6		
			WB=80						
			DB=85						

Comments:

MONTROSE
AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: CHIQUITA
UNIT: TF 7B
TEST DATE: 10/17/24
TEST NUMBER: 1
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: ELECTRONIC
ΔP INDICATOR ID: ADM 850 #4

PERFORMED BY: SJ/JI
BAR. PRESSURE: 29.05
STATIC PRESSURE: 0.0
TC READOUT ID: PTL 43
TC ID: 30
PITOT TUBE ID: 30
PITOT TUBE COEFFICIENT: 0.84
ZERO: ✓ LEVEL: ✓

~~Time~~ Cycl	Port	Point	Vel. Head in. H_2O	Temp., °F	~~Time~~ Cycl	Port	Point	Vel. Head in. H_2O	Temp, °F
N/A	T	1	NO FLOW	84	N/A	S	1	NO FLOW	84
		2					2		
		3					3		
		4					4		
		5					5		
		6					6		
			WB=81						
			DB=84						

Comments:

MONTROSE
AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: SCS ENGINEERS
LOCATION: CHIQUITA
UNIT: TF-7A
TEST DATE: 10/17/24
TEST NUMBER: 1
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: ELECTRONIC
ΔP INDICATOR ID: ADM 850 #9

PERFORMED BY: SJ / JF
BAR. PRESSURE: 29.05
STATIC PRESSURE: 0.0
TC READOUT ID: PTC 43
TC ID: 30
PITOT TUBE ID: 30
PITOT TUBE COEFFICIENT: 0.84
ZERO: ✓ LEVEL: ✓

Cycl ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp., °F	Cycl ~~Time~~	Port	Point	Vel. Head in. H_2O	Temp, °F
0°	T	1	0.002	86	0°	S	1	0.001	86
		2	0.002				2	0.002	
		3	0.001				3	0.001	
		4	0.002				4	0.001	
		5	0.002				5	0.001	
		6	0.001				6	0.002	
			WB = 78						
			DB = 86						

Comments: ANGLE FINDER - AF-1

Appendix A.3
Organics and Sulfur Field and Laboratory Data

LEACHATE TANK HEADSPACE SAMPLING DATA

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

Unit/Location: TANK FARM 6 Performed By: SJ, 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: TANKFARM 9A Performed By: SS / JI

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: CHIQUITA Date: 10/17/24

Unit/Location: TANK FARM 9B Performed By: SJ, 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: >96

Downstream: >96

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: CHIQUITA Date: 10/17/24

Unit/Location: TANKFARM 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	0920	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: >48

Downstream: >48

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: CHIQUITA Date: 10/17/24

Unit/Location: TANK FARM 7B Performed By: SJ/JF

Barometric Pressure 29.05 Ambient Temperature 81°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0592	
		Time	Vacuum
Pre-Test Leak Check	Start	0910	30
Pre-Test Leak Check	Stop	0920	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: CHIQUITA Date: 10/17/24

Unit/Location: TANK FARM 7A Performed By: SJ/JI

Barometric Pressure 29.05 Ambient Temperature 82°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		0585	
		Time	Vacuum
Pre-Test Leak Check	Start	0410	30
Pre-Test Leak Check	Stop	0420	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: >96

Downstream: >96

Flow Rate: 101 SCFM

Wet bulb: 78

Dry bulb: 86

TEDLAR BAG DATA

Start: 1310

Stop: 1320

Bag ID: TF 7A - 1

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specialized air assessment laboratory
atmaa com

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 Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(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

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	6.80	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 Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(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 labortatory 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 labtoratory 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	0.06
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/ft3 (Dry @60F, 14.696 psia)	1.199	(HHV)	1.112	(LHV)
BTU/ft3 (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 labortatory 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	0.09
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 labortatory 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	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 labortatory 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 labortatory 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

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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*

B Fung

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 Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(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: MONTROSE AQS

Project Location: CHIQUITA LANDFILL

Project Number: PROJ -

Purchase Order Number:

Sampler: (Signature)

Turnaround Times: Standard 10 day
Expedited: 24hr / 48hr / 72hr / 5 day

ANALYSES REQUESTED

Client Sample Identification	Type of Sample Canister ID	AtmAA Lab Number	Sampling Date	Sampling Time	EPA TO-15	Fixed Gases ASTM-1946 / Pure CO2					Special Remarks
TANK FARM 6	CAN-0529	22974-25	10/17/24	0939	X	X					
TANK FARM 9A	CAN-0889	-26		1030	X	X					#589
TANK FARM 9B	CAN-0516	-27		1030	X	X					
TANK FARM 2	CAN-0553	-28		1130	X	X					
TANK FARM 7B	CAN-0592	-29		1207	X	X					
TANK FARM 7A	CAN-0585	-30		1300	X	X					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	10/21/24	1302			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date 10/23/24	Time 1:09

Company Info:

Company: MONTROSE AQS
Street Address: 1631 E.
City/State/Zip:
Telephone No.:
Email Address:

Send Report to:

Company:
Street Address
City/State/Zip:
Project Manager:
Email Address:

Analytical Laboratory

AtmAA Inc.
23917 Craftsman Rd.
Calabasas, CA 91302
TEL: (818) 223-3277
Email Address: info@atmaa.com

Quantum Analytical Services Inc.
www.quantumairlab.com
1210 E. 223rd Street, Suite #314 • Carson, California 90745 • 310/830-2226 • Fax 310/830-2227

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**			
	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**
Analyte	**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_2S		**260.4**	**0.49**	**3.38**

Dr. Andrew Kitto
President

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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			
	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
Analyte	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 H_2S		**94.73**	**2.71**	**8.73**

Dr. Andrew Kitto
President

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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_2S	**8.67**	**1**	**8.60**	**99**

N/A: Not Applicable *Must be ±10%

Dr. Andrew Kitto
President

Quantum Analytical Services Inc.

№ 6428

24-1141

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CHAIN OF CUSTODY

Page: 1 of: 1

Client: MONTROSE AQS

Contact Person: P. SANJUAN
tel: 626 617 6313
fax:

Project No.: PR05-044747
Project Name: CHIQUITA LEACHATE
Project Manager: P. SANJUAN
P.O. Number:

Analysis: SCAQMD 307-91

Turnaround Time:
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☐ Normal

Client Sample ID	Tag #	Date	Time	Lab ID Number	SCAQMD 307-91						Remarks
TANK FARM 6		10/17/24		29224-1	X						
" 9A				-2	X						
" 9B				-3	X						
" 2				-4	X						
" 7A				-5	X						
" 7B				-6	X						

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
[signature]	10/17/24 3:34 pm	[signature]	10/17/24 3:34 pm
Relinquished by: (signature)	Date/Time	Received by: (signature) [signature]	Date/time 10/18/24 8:30
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

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&l

Lat: 34.42972°NLon: 118.66712°WElev: 1278.0ft.

Reference Barometer ID	DEL VALLE (DLVC1)
Reference Barometer Location	
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	30.05
Reference Barometer Reference Elevation	1278
Reference Barometer Actual Pressure	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

MONTROSE
AIR QUALITY SERVICES

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 Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °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)

July 2024 Calibrations SNA
7:16 AM
11/14/2024

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 Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °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)

MONTROSE AIR QUALITY SERVICES

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.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-DB	I.D.	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)

MONTROSE
AIR QUALITY SERVICES

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. TC-Cal	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-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)

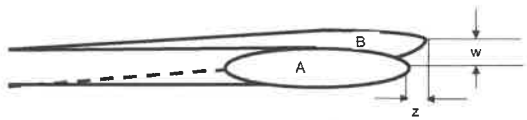
Thermocouple Source Readings

	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

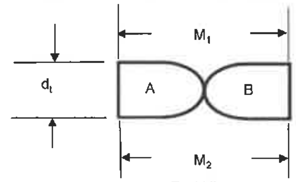
1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

MONTROSE AIR QUALITY SERVICES

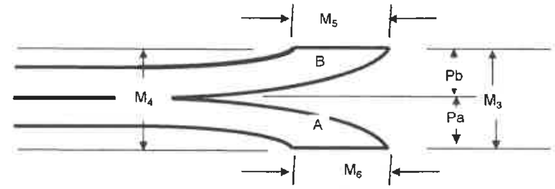
S Type Pitot Tube Dimensional Calibration Record



Side View



End View



Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	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	
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	Status
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

July 2024 Calibrations SNA
7:17 AM
11/14/2024

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 Scale: 0 - 0.050 inches H_2O		Run 1 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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 Scale: 0 - 0.050 inches H_2O		Run 2 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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 Scale: 0 - 0.050 inches H_2O		Run 3 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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

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
0.13%	Pass

MONTROSE AIR QUALITY SERVICES

July 2024 Calibrations SNA
7:17 AM
11/14/2024

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: inches H_2O	0 - 0.100	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 60%	0.060	0.061	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.080	0.080	0.0000	0.00%	Pass
Target 100%	0.100	0.100	0.100	0.0000	0.00%	Pass

Calibration Range		Run 2		Individual Run Results		
Scale: inches H_2O	0 - 0.100	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% 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	0.060	0.060	0.0000	0.00%	Pass
Target 80%	0.080	0.081	0.080	0.0010	1.25%	Pass
Target 100%	0.100	0.100	0.100	0.0000	0.00%	Pass

Calibration Range		Run 3		Individual Run Results		
Scale: inches H_2O	0 - 0.100	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 60%	0.060	0.061	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.080	0.080	0.0000	0.00%	Pass
Target 100%	0.100	0.100	0.100	0.0000	0.00%	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
0.47%	Pass

MONTROSE AIR QUALITY SERVICES

July 2024 Calibrations SNA
7:17 AM
11/14/2024

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 Scale: 0 - 1.000 inches H_2O		Run 1 Measured Value (inches W.C.)	Run 1 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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 Scale: 0 - 1.000 inches H_2O		Run 2 Measured Value (inches W.C.)	Run 2 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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 Scale: 0 - 1.000 inches H_2O		Run 3 Measured Value (inches W.C.)	Run 3 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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 %.

MONTROSE AIR QUALITY SERVICES

July 2024 Calibrations SNA
7:17 AM
11/14/2024

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 Scale: 0 - 10.000 inches H_2O		Run 1 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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	6.010	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 Scale: 0 - 10.000 inches H_2O		Run 2 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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	6.010	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 Scale: 0 - 10.000 inches H_2O		Run 3 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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

MONTROSE
AIR QUALITY SERVICES

July 2024 Calibrations SNA
7:17 AM
11/14/2024

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

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

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

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

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	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
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $\left(\sqrt{\Delta P}\right)^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
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 $\Delta H@$	--
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

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

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

STAC
STACK TESTING ACCREDITATION COUNCIL

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.

MONTROSE AIR QUALITY SERVICES

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: 002-2022-50

DATE OF ISSUE: 02/28/2022

DATE OF EXPIRATION: 02/27/2027

Tate Strickler, VP – Quality Systems

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: 002-2022-52

Tate Strickler, VP – Quality Systems

Date of Issue: 02/28/2022

Date of Expiration: 02/27/2027

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: 002-2018-62

Tate Strickler, Accreditation Director

DATE OF ISSUE: 10/22/18

DATE OF EXPIRATION: 10/22/23

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)

FORM ST-110 :stevforl.doc (Revised 11/18/98

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]

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**

MONTROSE AIR QUALITY SERVICES

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

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

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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_2O	Moisture
H_2S	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 H_2S and the calculated Exhaust SO_x lb/hr as SO_2. 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_2O)		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_2S)	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_2S- 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, CO_2 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_2S 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_2O 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 (CO_2), oxygen (O_2) and nitrogen (N_2). Inlet N_2, O_2, and CO_2 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 H_2O), 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 H_2O. The sample fractions are combined, bottled, labeled, and fluid levels marked for transportation to MAQS laboratory for analysis. An aliquot of the DI H_2O 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 PM_{10} 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, O_2, CO_2, 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, O_2, CO_2, 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, O_2, CO_2, 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 N_2 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 NO_2 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 H_2O. 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 SOx 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 valve (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.

<u>Equations:</u>

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

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 H_2S and the Exhaust SO_x lbs/hr as SO_2. 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% O_2 as hexane) was 1.58 ppm, well below the requirement of 20 ppm @3% O_2 as hexane.

**TABLE 4-1
GENERAL RESULTS
CHIQUITA 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_2O, %	--	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_2S, 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_2S- 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 EFFICIENTY RESULTS
CHIQUITA CANYON LANDFILL
GAS FLARE NO. 1 (JOHN ZINK)
JUNE 27, 2024

Sample Location:	**Inlet**		**Exhaust**		
Test No.:	VOC - AVG 1, 2 & 3		VOC - AVG 1, 2 & 3		
Start Time:	0920, 0955, 1030		0920, 0955, 1030		**Destruction**
Flow Rate, dscfm:	2,729		24,055		**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	< 4.28×10^{-3}	ND< 0.36	< 1.74×10^{-4}	N/A
Chlorobenzene:	440	2.14×10^{-2}	ND< 0.36	< 1.54×10^{-4}	> 99.28%
1,2-Dichlorobenzene:	ND< 78	< 4.97×10^{-3}	ND< 0.36	< 2.02×10^{-4}	N/A
1,4-Dichlorobenzene:	783	4.97×10^{-2}	ND< 0.36	< 2.02×10^{-4}	> 99.59%
1,1-Dichloroethane:	ND< 78	< 3.35×10^{-3}	ND< 0.36	< 1.36×10^{-4}	N/A
1,2-Dichloroethane:	767	3.28×10^{-2}	ND< 0.36	< 1.36×10^{-4}	> 99.59%
1,1 Dichloroethene:	ND< 78	< 3.28×10^{-3}	ND< 0.36	< 1.33×10^{-4}	N/A
Dichloromethane:	367	1.35×10^{-2}	ND< 0.36	< 1.16×10^{-4}	> 99.13%
1,2-dibromoethane:	ND< 78	< 6.36×10^{-3}	ND< 0.36	< 2.58×10^{-4}	N/A
Perchloroethylene:	287	2.05×10^{-2}	ND< 0.36	< 2.27×10^{-4}	> 98.89%
Carbon Tetrachloride:	ND< 78	< 5.21×10^{-3}	ND< 0.36	< 2.11×10^{-4}	N/A
Toluene:	25,667	1.02	< 1.14	< 4.00×10^{-4}	> 99.96%
1,1,1-Trichloroethane:	ND< 78	< 4.51×10^{-3}	ND< 0.36	< 1.83×10^{-4}	N/A
Trichloroethene:	143	8.14×10^{-3}	ND< 0.36	< 1.80×10^{-4}	> 97.79%
Chloroform:	ND< 78	< 4.04×10^{-3}	ND< 0.36	< 1.64×10^{-4}	N/A
Vinyl Chloride:	ND< 78	< 2.12×10^{-3}	ND< 0.36	< 8.57×10^{-5}	N/A
m+p-Xylene:	14,667	6.73×10^{-1}	ND< 0.72	< 2.91×10^{-4}	> 99.96%
o-Xylene:	5,200	2.38×10^{-1}	ND< 0.36	< 1.46×10^{-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 H_2S and the Exhaust SO_x lbs/hr as SO_2.

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 NO_2 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

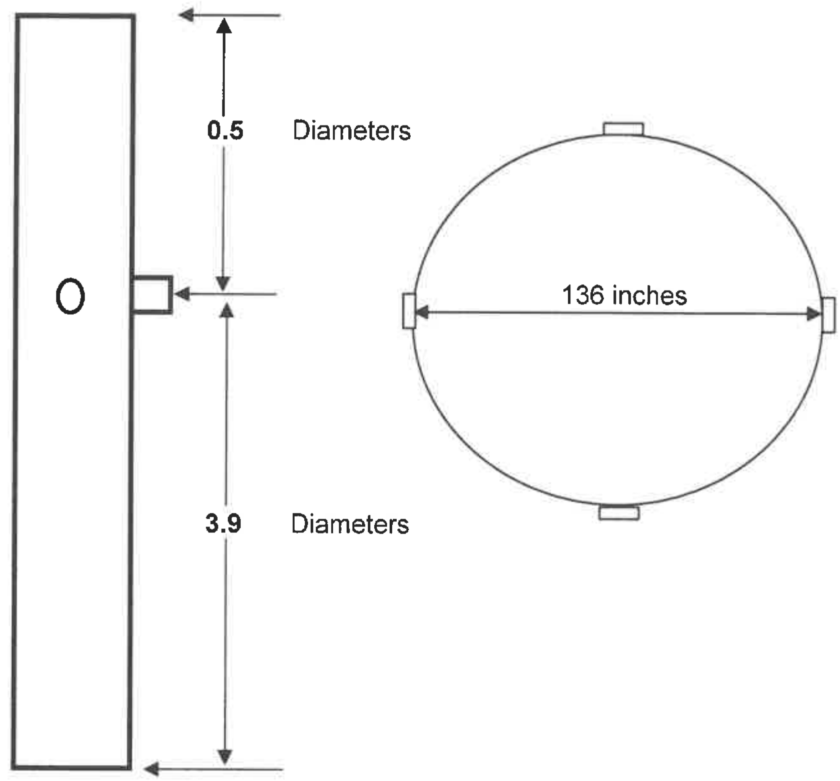
METHOD 1 DATA SHEET
EXHAUST SAMPLE LOCATION

Client: Waste Connections

Date: 6/27/24

Location: Flare 1

Performed By: SJ, AD, JI



Diameter (inches)	**136.00**
Upstream (inches)	**530.00**
Downstream (inches)	**70.00**
Coupling (in.)	**4.00**
Stack Area (ft^2)	**100.88**

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		Start Date:	6/27/24	
Unit:	Flare 1		Start/End Time:	9:20	10:36
Performed By:	SJ, AD, JI		Test Condition:	1,575	degrees F
Cp:	0.84		Barom. Pressure:	28.81	
T_{ref}:	60	°F	Pstack:	-0.02	iwg
Stack Area:	100.88	ft^2	Pstack:	28.81	"Hg
Meter Y_d:	0.994		MW:	28.69	lb/lb-mole

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
Average	0.0244	0.1562	1472.7	17.13

Stack Flow Rate: 103,679 wacfm
Stack Flow Rate: 24,055 dscfm

METHOD 100.1 DATA

	O_2	CO_2	NO_x	CO
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
Pre-test zero bias	0.0%	0.8%	0.2%	0.1%
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%
Zero drift	-0.1%	-0.8%	-0.2%	0.1%
Span drift	0.0%	0.0%	0.1%	0.0%

METHOD 4.1 DATA

Time	Dry Gas Meter Vol.	T_m(in)	T_m(out)	Impingers #/Matl.	End	Start	Diff.
Start				H_2O			0.0
				H_2O			0.0
End				Empty			0.0
				SG			0.0
Total	41.606		77.3	Total			96.9

Meter Pressure:	0.9	iwg
Sample Volume:	38.630	dscf
H_2O Volume :	4.504	scf
Moisture Content:	10.4	%

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	

MONTROSE AIR QUALITY SERVICES

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	

MONTROSE
AIR QUALITY SERVICES

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

MONTROSE AIR QUALITY SERVICES

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		

MONTROSE

SPAN GAS RECORD

CLIENT/LOCATION: Waste Connections Flare 1 DATE: 6/27/24

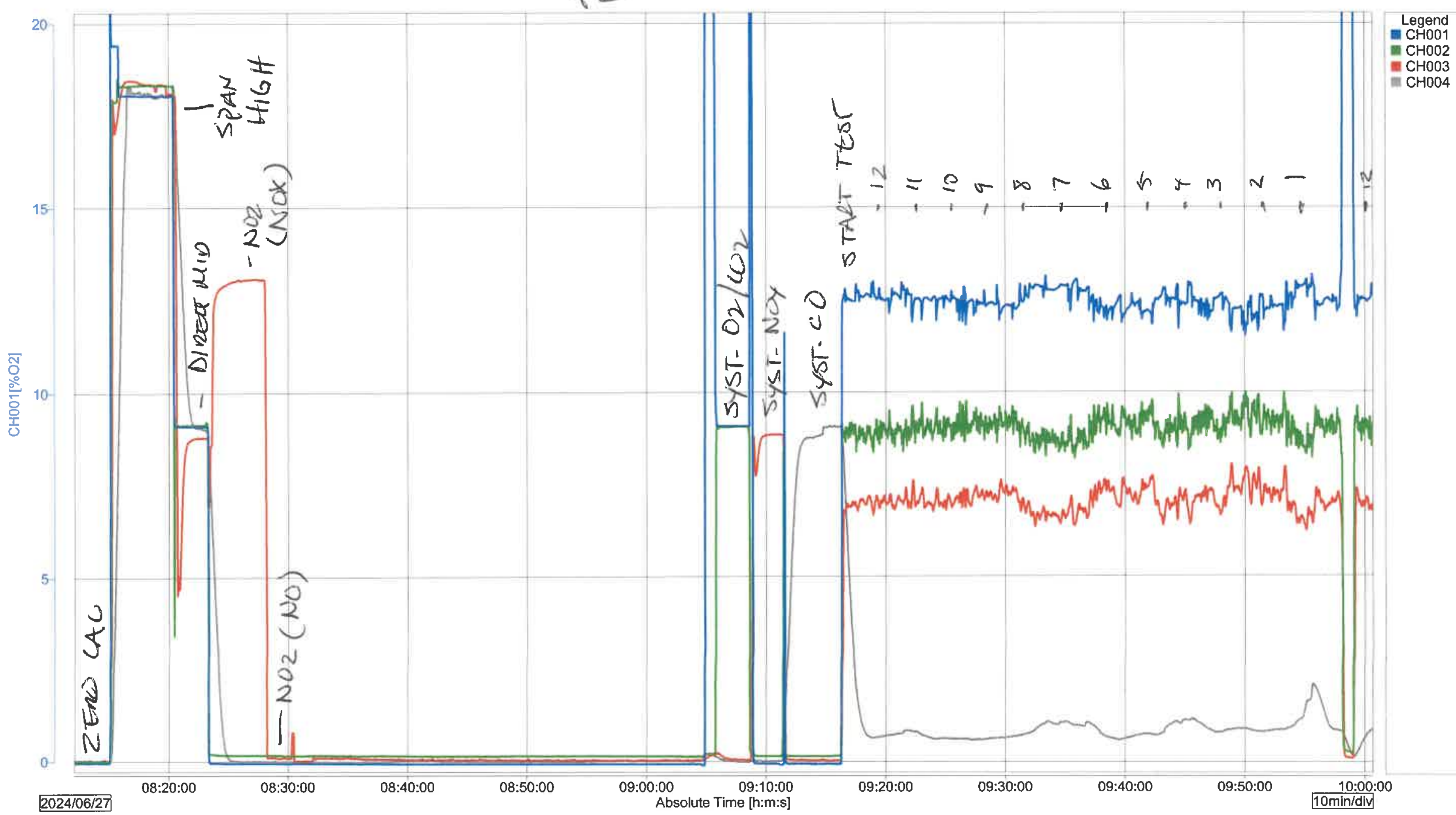
TRUCK/CEM I.D.: T4 BY: SJ, AD, JI

	Gas	Cylinder #	Value	Exp. Date	Vendor ID	% of Range
ZERO	**Low**	EB0153454	0.0	1/19/32	B32024	
O_2	**Mid**	CC203715	9.09	11/20/31	B32023	45.5%
O_2	**High**	CC505326	18.05	11/15/31	B32023	90.3%
CO_2	**Mid**	CC203715	8.97	11/20/31	B32023	44.9%
CO_2	**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%
NO_2	**NO_2**	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	Data Count	: 5545
File Message	: T4	Sampling Int.	: 2.000 sec
Device Type	: DX200	Start Time	: 2024/06/27 08:12:06.000
Serial No.	: S5E205126	Stop Time	: 2024/06/27 11:16:54.000
Time Correct.	: None	Trigger Time	: 2024/06/27 11:16:54.000
Starting Cond.	: Manual	Trigger No.	: 5544
Dividing Cond.	: Manual	Damage Check	: Not Damaged
Meas Ch.	: 7		
Math Ch.	: 0		

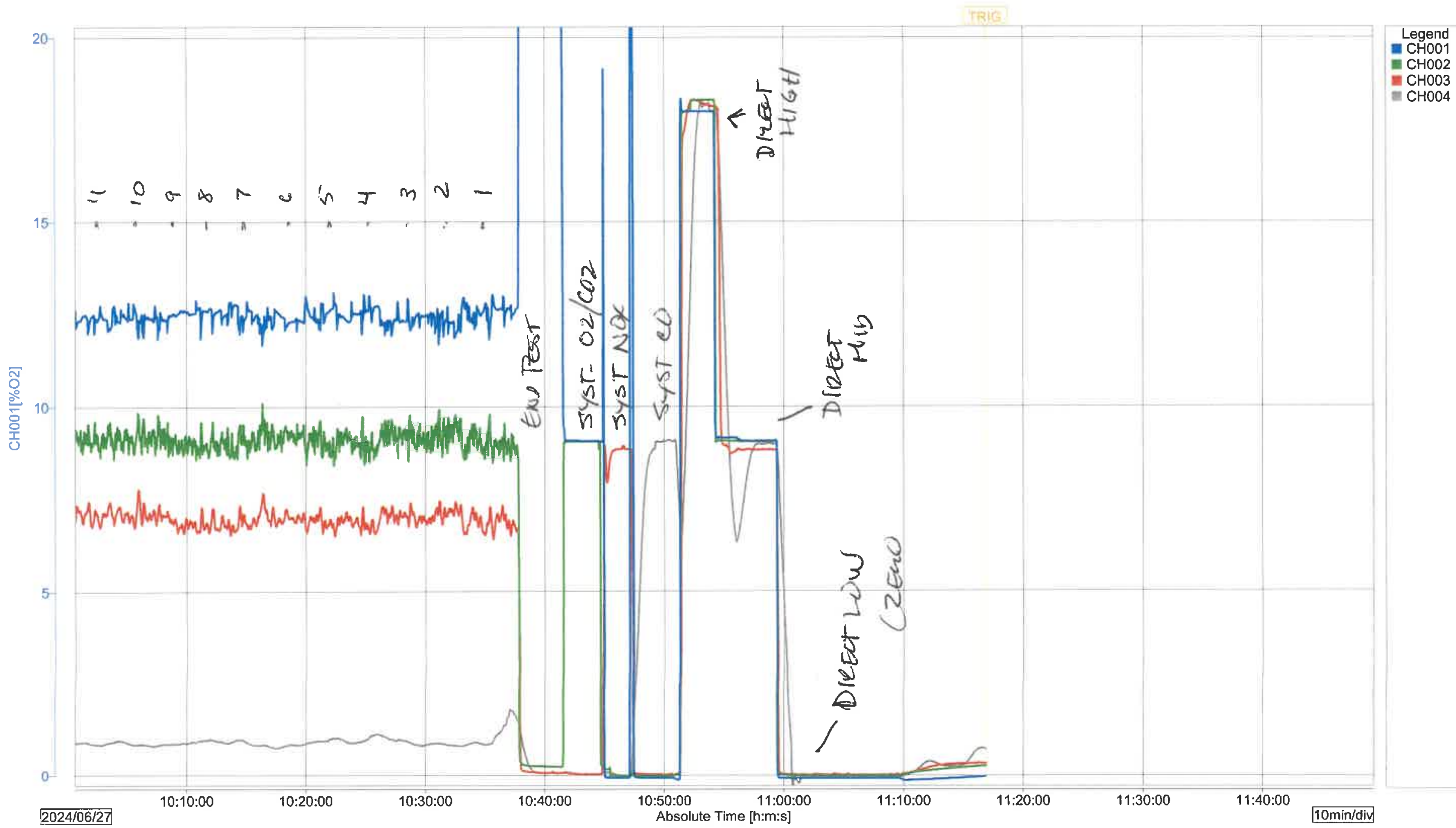
Print Groups : T4
Print Range : 2024/06/27 08:12:06.000 - 2024/06/27 11:16:54.000
Comment :

CHIQUITA FLAKE 1 6/27/24



File Name	: 62708120.DEV		
File Message	: T4		
Device Type	: DX200	Data Count	: 5545
Serial No.	: S5E205126	Sampling Int.	: 2.000 sec
Time Correct.	: None	Start Time	: 2024/06/27 08:12:06.000
Starting Cond.	: Manual	Stop Time	: 2024/06/27 11:16:54.000
Dividing Cond.	: Manual	Trigger Time	: 2024/06/27 11:16:54.000
Meas Ch.	: 7	Trigger No.	: 5544
Math Ch.	: 0	Damage Check	: Not Damaged

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



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 (^oF)	1472.7				
Velocity Head (iwg)	0.0244				
Stack O_2 (%)	12.43				
Stack CO_2 (%)	8.97				
Meter Vol (acf)	41.606				
Meter Temp (^oF)	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 ^oF

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

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: ~~SES~~ WC CHIQUITA
LOCATION: FLARE - 1
DATE: 6/27/24
RUN NO: 1-PM
OPERATOR: AP, JI
METER BOX NO: 4KWCS
METER ΔH@: 1.850
METER Yd: 0.994
STACK AREA, FT^2:
TRAVERSE POINTS, MIN/POINT: 24X3
ΔH= 37.82 X ΔP:
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: ✓
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 / QTZ
PROBE LENGTH: 12'
NOZZLE ID NO/ MATERIAL: 260T / QTZ
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: ADM850 #10
SAMPLE CUSTODIAN
SAMPLER AD
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test - Pre-Test = Difference		
1	DI H2O	904.2	735.4	
2	"	724.4	719.4	
3	MT	643.6	641.9	
4	SG	896.6	875.2	
		- 100 LR		
Total:				

Point	Time	Meter Volume, ft^3	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
12	0920	587.280	0.023	0.9	1477	N/A	n/A	54	n/A	70	3	n/a	-0.017
11	0923	589.08	0.020	0.8	1472			51		70	3		
10	0926	590.13	0.026	1.0	1476			51		71	4		
9	0929	592.74	0.021	0.8	1475			50		71	3		
8	0932	594.56	0.019	0.7	1471			50		71	3		
7	0935	595.22	0.022	0.8	1469			50		74	3		
6	0938	597.14	0.018	0.7	1466			50		75	3		
5	0941	599.39	0.021	0.8	1475			61		75	3		
4	0944	601.48	0.025	1.0	1463			51		76	4		
3	0947	602.95	0.027	1.0	1468			51		77	4		
2	0950	604.29	0.029	1.1	1469			51		77	4		
1	0953	606.68	0.025	1.0	1472			51		78	4		
12	0956/1000	606.181	0.029	1.1	1471			52		78	4		
11	1003	609.89	0.031	1.2	1477			52		78	5		
10	1006	611.30	0.019	0.7	1476			52		79	3		
9	1009	613.03	0.026	1.0	1474			53		80	4		
8	1012	615.17	0.024	0.9	1473			53		81	3		
7	1015	616.24	0.028	1.1	1478			53		81	4		
6	1018	618.39	0.019	0.7	1471			54		81	3		
5	1021	620.46	0.022	0.8	1477			54		81	3		
4	1024	621.40	0.026	1.0	1472			54		82	4		
3	1027	623.11	0.027	1.0	1476	✓		54		83	4		
2	1030	625.31	0.033	1.3	1475		✓	55		83	5	✓	
1	1033	627.54	0.030	1.1	1471			56		83	4		
Average:	1036	628.886											

Comments:

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: WC CHIQUITA
LOCATION: FLARE-1
DATE: 6/27/24
RUN NO: FB
OPERATOR: AD JI
METER BOX NO: 48WCS
METER ΔH@: 1.850
METER Yd: 0.994
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:
F/B
PRE-TEST LEAK RATE: : <0.005 CFM@ 14 in. Hg.
POST-TEST LEAK RATE: <0.005 CFM@ 14 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER AD, JI
SAMPLE CUSTODIAN

Imp. #	Contents	Post-Test	- Pre-Test	= Difference
1	DI H2O	717.9	720.6	
2	"	736.4	736.4	
3	mt	628.9	628.9	
4	SG	871.0	871.0	
		-100R		
Total:				

Point	Time	Meter Volume, ft^3	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	P. static in. H_2O
	0	629.100	–	–	–	–	–	–	–	–	–	–	
	1	629.473	End										
Average:													

Comments:

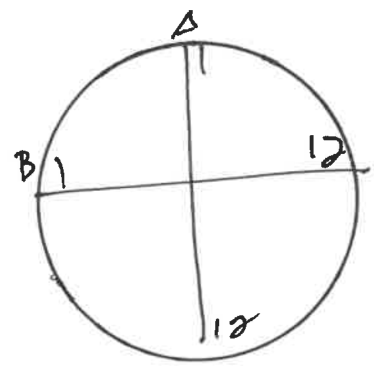
MONTROSE AIR QUALITY SERVICES

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

CYCLONIC FLOW VERIFICATION DATA SHEET

FACILITY	CHIQUITA
SOURCE	FLARE 1
DATE	6/27/24
PROJECT NUMBER	040568
STACK DIAMETER/DIMENSION	136"
BAROMETRIC PRESSURE	28.81
STATIC PRESSURE	-0.017
RUN NUMBER	Pre
TOTAL TRAVERSE POINTS	24
OPERATOR	AD, JI

FIGURE



SAMPLE POINT	DISTANCE FROM SAMPLE PORT (INCHES)	NULL POINT ROTATION ANGLE	
		A NORTH/SOUTH	B EAST/WEST
1	6.9	7°	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 / 355	3.6	1.0
b. Organic Fraction 125 ml $MeCl_2$ (5x25mL)	1070	29.0415	29.0404	1.1	355 / 355	1.1	0.2

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	**DI H_2O Blank (mg/ml)**	0.0027	**Analysis Date:**	7/2/2024
Test #	FB	**$MeCl_2$ 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 / 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_2O 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 # PROJ-~~040458~~ 040568 PR 07/02/24
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 a. Water Fraction	1069	29.3940	29.3904	3.6	355 / 355	3.6	1.0
b. Organic Fraction 125 ml $MeCl_2$ (5x25mL)	1070	29.0415	29.0404	1.1	355 / 355	1.1	0.2

Total Particulate = 7.2

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
SCAQMD 5.1, WET IMPINGEMENT

Project # PROJ-~~040458~~ 040568 PR 07/02/24
Client/Location: Waste Connections
Sample Location: Flare 1 Exhaust
Test # FB
DI H_2O Blank (mg/ml) 0.0027
$MeCl_2$ 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_2O 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

CHAIN OF CUSTODY

CLIENT: Waste Connections — PROJECT # ~~040458~~ 040568 PR 07 02 24 — TEST DATE(S): 6/27/2024

LOCATION: Chiquita Landfill — SAMPLER(S): AD, JI

SAMPLE LOCATION: Flare 1 Exhaust — PROJECT MANAGER: Pete San Juan

TEST METHOD(S): SCAQMD 5.1 — DATE DUE: 7/12/2024

OUTSIDE LAB REQUIRED?: No — COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
6/27/2024		1-PM	Chiquita Flare 1 Exhaust	2	AD, JI	
6/27/2024	--	FB	Field Blank	2	AD, JI	
	--					

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	6/28/24 1230	Patrick Rubio	07/02/24 0007

ANALYSIS REQUIRED: SCAQMD 5.1 with Organics extraction

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 Composistion 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	Run
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	

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**

SERIAL NUMBER: 2010435

12/14/2023

Data File:L:\CAM\DATA\2010435.0

COMPONENT VALUES DETERMINED AT CALIBRATION

Integral Transducer

PCB PCB 100385

R5	800
R7	800
R8	100
R9	909
R15	5760

PCB PCB 100389

R-GAIN 4420

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% CH_4, 50% CO_2, 1.5% O_2

METER OUTPUT SIGNAL CALIBRATION

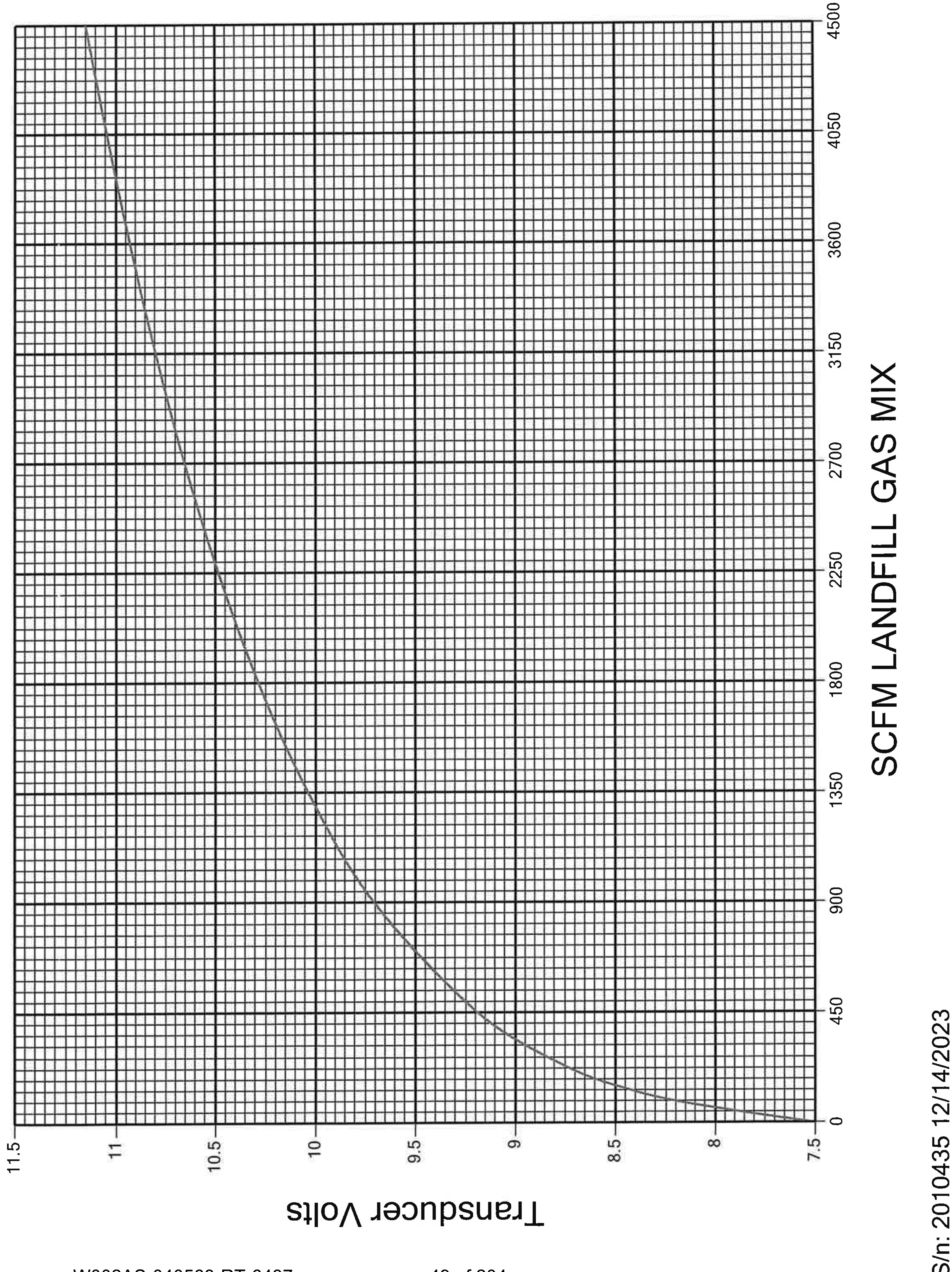
mA	SCFM LANDFILL GAS MIX	Volts
4.00	0.000	7.5150
4.16	45.000	7.8830
4.32	90.000	8.1790
4.80	225.000	8.7470
5.60	450.000	9.1940
7.20	900.000	9.7060
8.80	1350.000	10.0370
10.40	1800.000	10.2840
12.00	2250.000	10.4830
13.60	2700.000	10.6520
15.20	3150.000	10.7980
16.80	3600.000	10.9280
18.40	4050.000	11.0450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

9500 EEPROM SETUP DATA

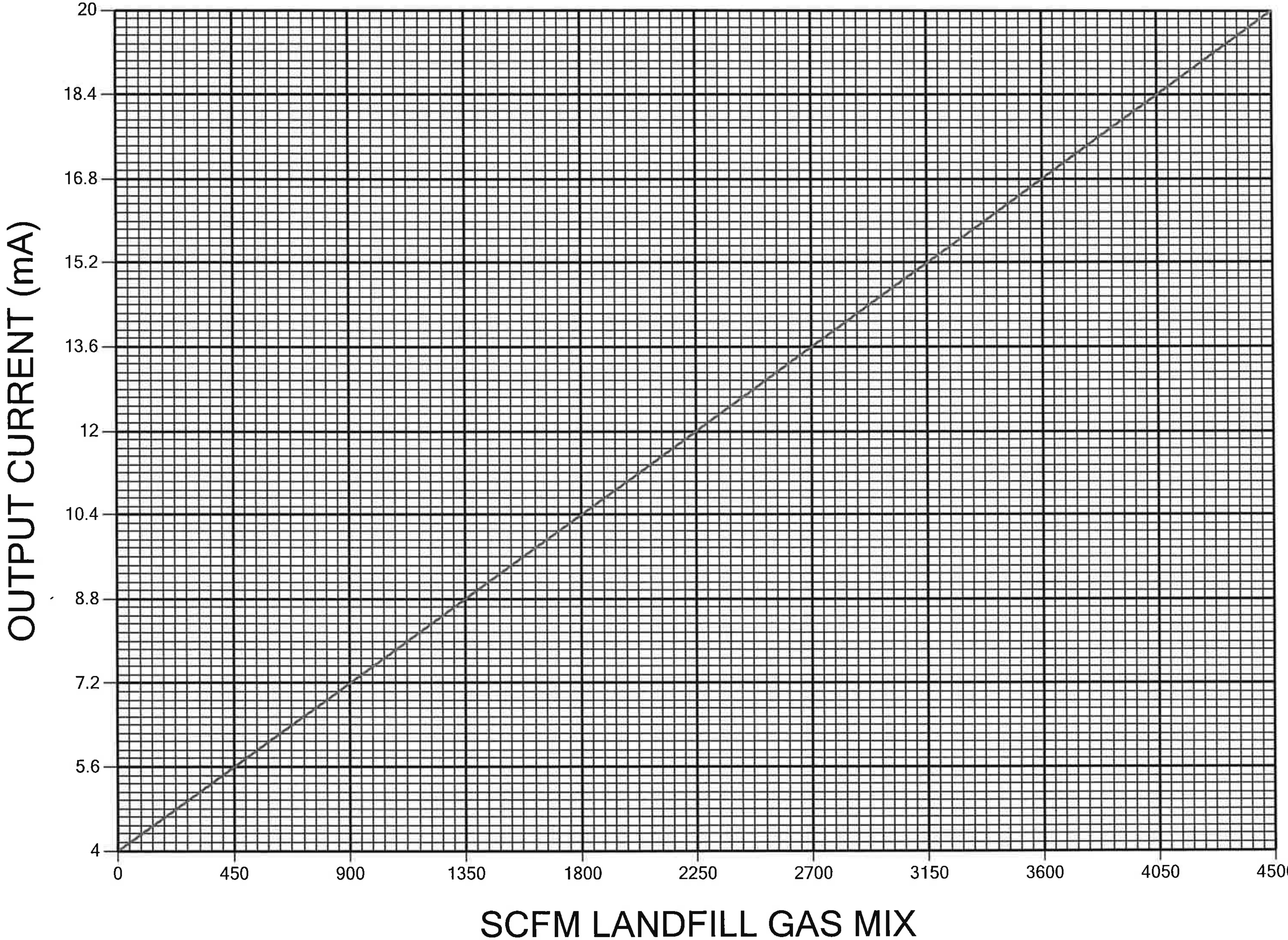
Maximum Flow Range	4500	SCFM LANDFILL GAS MIX
Flow FS at 20 mA	4500	SCFM LANDFILL GAS MIX
Flow Full Scale Displayed	4500	SCFM LANDFILL GAS MIX
Totalizer Counts	450	per/Min
Totalizer Decimal Point	0	
Display Cutoff	3	% FS
Filter Time Constant	2 SEC	

THERMAL INSTRUMENT COMPANY, INC.

217 Sterner Mill Road Phone: 215-355-8400 Fax: 215-355-1789 Web: www.thermalinstrument.com



Transducer Volts
11.5
11
10.5
10
9.5
9
8.5
8
7.5
0
450
900
1350
1800
2250
2700
3150
3600
4050
4500
SCFM LANDFILL GAS MIX
S/n: 2010435 12/14/2023



2010435 12/14/2023

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: ± 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% CH_4, 50% CO_2, 1.5% O_2

Standard Conditions: 60Deg. F @ 1 ATM

Signature ____________ Date **December 14, 2023**

THERMAL INSTRUMENT COMPANY, INC.

217 Sterner Mill Road, Trevose, 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 (ft^2)................................	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% O2)….	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% O2)……	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
O2 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% O2	40,680.45
lb/hr	288.99

TGNMOC, ppm as Hexane	**Avg Results**
ppm	6977.0
ppm @3% O2	6780.08
lb/hr	258.89

Methane	**Avg Results**
ppm	350,595.00
ppm @3% O2	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

Analyte	Inlet Run 2 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

Analyte	Inlet Run 3 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

Analyte	Outlet Run 1 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: JX

Probe Material SS Probe Length 3ft

Connecting Tubing Material N/A Connecting Tubing Length N/A

Barometric Pressure 29.81 Ambient Temperature 87.5°

Test No.		~~17 A~~		~~B~~			
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: 3'

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: flare 1 - outlet Performed By: JI

Probe Material SS Probe Length 3ft

Connecting Tubing Material ~~Tef~~ N/A Connecting Tubing Length

Barometric Pressure 28.81 Ambient Temperature ~~8~~ 75°

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	22	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:

MONTROSE
AIR QUALITY SERVICES

TEDLAR BAG SAMPLING DATA SHEET

CLIENT: WASTE CONNECTIONS PERFORMED BY: SJ

LOCATION: FLARE 1 CHIQUITA UNIT: FLARE 1 INLET

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

Comments:

Quantum Analytical Services Inc.
www.quantumairlab.com
1210 E. 223rd Street, Suite #314 • Carson, California 90745 • 310/830-2226 • Fax 310/830-2227

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

Analyte, Units		Chiquita Flare 1 Inlet 1A	Chiquita Flare 1 Inlet 1B
	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	**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
CO2, %		45.62	45.64
CO, %		<0.01	<0.01
O2, %		2.48	2.48
N2, %		16.47	16.57
H2, %		<0.01	<0.01
H2S, %		<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); SDCF/MMBTU, ASTM 3588		**9965**	**9977**

Dr. Andrew Kitto
President

Quantum Analytical Services Inc.
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1210 E. 223rd Street, Suite #314 • Carson, California 90745 • 310/830-2226 • Fax 310/830-2227

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**	
		Chiquita Flare 1 Inlet
	Sample ID	**1A**
	Sample Date	**06/27/24**
	Sample Time	-
	Lab ID	**18024-9**
Analyte	**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 H_2S		**778.3**

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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_2S	**761.9**	**20**	**745.5**	**98**

N/A: Not Applicable *Must be ±10%

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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

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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 ±10%

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President

Quantum Analytical Services Inc.

24-703

№ 6428

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CHAIN OF CUSTODY

Page: 1 of: 1

Client: MONTROSE AQS

Contact Person: P. Sandoval
tel: 626 617 6313
fax:

Project No.: PROJ - 040468
Project Name: CHIQUITA FLARE 1
Project Manager: P. Sandoval
P.O. Number:

Analysis: CH4

Turnaround Time:
- [ ] Same Day
- [ ] 24 Hours
- [ ] 48 Hours
- [x] Normal

Client Sample ID	Tag #	Date	Time	Lab ID Number	ASTM D1945/3588	HHV, BTU, F-Factor	EPA 18	SCAQMD 307-91			Remarks
CHIQUITA FLARE 1 N/RT 1A		6/27/24		18024-9	X	X	X				
" 1B		"		-10	X	X					

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
[signature]	6/27/24	[signature]	6/28/24 11:00
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

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

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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

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Sample Summary

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

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

ENTHALPY ANALYTICAL

Case Narrative

Montrose Air Quality Services 1631 E. St Andrew Pl Santa Ana, CA 92705 Pete San Juan	Lab Job Number:	511226
	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.

Air Chain of Custody Record

Request for Analysis

ENTHALPY ANALYTICAL

instructions to assist filling out the COC are on the next tab

Lab Use Only

work order # 51774

lab name Enthalpy - Orange address 931 W. Barkley Ave., Orange, CA 92868 phone Orange 714-771-6900 special instructions:	**CUSTOMER INFORMATION** company: Montrose AQS contact/ report to: Pete San Juan email: psanjuan@montrose-env.com cc emails: address: 1631 E St Andrew Pl phone: 626-617-6313	**PROJECT INFORMATION** project name: Chiquita Flare 1 submit invoice to project #: PROJ-040458 P.O. #: PO-066298 site name: Chiquita Landfill site state: CA

custody seal intact? ☐ yes ☐ no ☐ none | PO #

on ice? ☐ yes ☐ no | Add. Notes

temperature °C ______

meets req.? ☐ yes ☐ no

preservation notes

turnaround time request (pre-approval required for TAT less than standard. surcharges will apply) ☑ STANDARD ☐ 5 day ☐ 2 day ☐ 1 day ☐ other______

data deliverable type: ☑ STANDARD ☐ other______

EDD required (Y/N)? | **EDD Format**______

units for reporting: | **retention requirements:**

regulatory program, as applicable (i.e., CAA, CARB, etc.): ☑ compliance ☐ engineering

***matrix code:** (A) ambient, (O) other, (H) headspace, (PM) particulate matter, (S) stationary, (V) vapor, (W) worker

****container or media type:** (B) bag (tedlar), (Bd) badge, (Bt) bottle, (C) canister, (F) filter, (O) other, (T) tube, (TD) thermal desorption tube

	Sampling Information			Equipment Information				Start Sampling Information			Stop Sampling Information					Analysis Requested		Comments
	Sample ID	Matrix Code*	Sample Type	Container Type** (media type)	Container ID# (Media ID)	Flow Cont. #	Container Size	Date	Time	Initial Pressure ("Hg)	Date	Time	Final Pressure ("Hg)	Sampler Name	Final Volume	SCAQMD 25.3	EPA TO 15 Rule 1150.1	
1	Chiquita Flare 1 Exh	S	INTE(	Canist	C80242	Vial 17A	6L	6/27/24	09:20	30	6/27/24	10:20	10	JI/AD		✔		
2	Chiquita Flare 1 Exh	S	INTE(	Canist	C80224	Vial 17B	6L	6/27/24	09:20	30	6/27/24	10:20	10	JI/AD		✔		
3	Chiquita Flare 1 In -1	S	INTE(	Canist	C80027		6L	6/27/24	09:20	30	6/27/24	09:50	5	SJ			✔	
4	Chiquita Flare 1 In -2	S	INTE(	Canist	C80044		6L	6/27/24	09:55	30	6/27/24	10:25	5	SJ			✔	
5	Chiquita Flare 1 In -3	S	INTE(	Canist	C80156		6L	6/27/24	10:30	30	6/27/24	11:00	5	SJ			✔	
6	Chiquita Flare 1 Exh-1	S	INTE(	Canist	C80182		6L	6/27/24	09:20	30	6/27/24	09:50	5	JI/AD			✔	
7	Chiquita Flare 1 Exh-2	S	INTE(	Canist	C80194		6L	6/27/24	09:55	30	6/27/24	10:25	5	JI/AD			✔	
8	Chiquita Flare 1 Exh-3	S	INTE(	Canist	C80263		6L	6/27/24	10:30	29	6/27/24	11:00	5	JI/AD			✔	
9																		
10																		
11																		
12																		
13																		
14							6L											
15																		

note shipper, courier, and tracking # below		Signature	Print Name	Company / Title	Date (MM/DD/YY)	Time (24:00)
1	Relinquished By:	[signature]	Alex Vitex	MAQS	06/22/24	C27
	Received By:	[signature]	Geena Sylvester	E.A.	6/28/24	10:27
2	Relinquished By:					
	Received By:					
3	Relinquished By:					
	Received By:					
4	Relinquished By:					
	Received By:					

Notes (include special conditions, possible hazards, etc.):

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

ENTHALPY ANALYTICAL

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) (No Cooler): Amb.

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: JUN 28 2024

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931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal
Sample Acceptance Checklist – Rev 4, 8/8/2017

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

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

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 IN-1	Lab ID: 511226-003 Matrix: Air	Collected: 06/27/24 09:50

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

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 IN-2	Lab ID: 511226-004 Matrix: Air	Collected: 06/27/24 10:25

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:	Lab ID: 511226-005	Collected: 06/27/24 11:00
CHIQUITA FLARE 1 IN-3	Matrix: Air	

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

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 EXH-1	Lab ID: 511226-006 Matrix: Air	Collected: 06/27/24 09:50

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

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 EXH-2	Lab ID: 511226-007 Matrix: Air	Collected: 06/27/24 10:25

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

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Analysis Results for 511226

Sample ID: CHIQUITA FLARE 1 EXH-3	Lab ID: 511226-008 Matrix: Air	Collected: 06/27/24 11:00

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

Results for any subcontracted analyses are not included in this section.

ENTHALPY
ANALYTICAL

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

ENTHALPY ANALYTICAL

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		

ENTHALPY ANALYTICAL

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

ENTHALPY ANALYTICAL

Batch QC

ND Not Detected

ENTHALPY
ANALYTICAL

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 Reciept 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

ENTHALPY
ANALYTICAL

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 Reciept 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

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Title :
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 12:37

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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					M
2	Carbon Monox	15.2	8.285	-0.056	93853	BB	19.2	
3	NMNEOC	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 :
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 15:15

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	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	
2	Ethane		9.239					M
	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

****

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Title :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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

****

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Title :
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 12:37

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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					M
2	Carbon Monox	15.2	8.288	-0.053	94117	BB	19.2	
3	NMNEOC	0.3	15.062	0.511	9004	BB	18.5	
	Totals:	15.5		0.458	103121			

Status Codes:
M - 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

****

Title :
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/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 Dioxi	46589.3	4.609	-0.391	489667040	BB	16.8	
2	Ethane		9.239					M
	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   LSB: 1 microVolts

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

Manual injection

****

Title :
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 14:59

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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	1732761	BV	4.0	
3	Nitrogen	37.4	4.098	-0.302	9590930	VB	9.6	
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 :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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					M
2	Carbon Monox	3.2	8.300	-0.041	19493	BB	19.4	
3	NMNEOC	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

****

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

```
Title       :
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 15:16

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 Dioxi	45098.1	4.614	-0.386	476108160	BB	16.6	
2	Ethane		9.239					M
	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

****

Print Date: Tue Jul 02 15:00:34 2024 Page 1 of 1

Title :
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 15:00

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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	
4	Methane		5.848					M
5	Carbon Monox		7.979					M
	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 :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 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 : 511226-002

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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					M
2	Carbon Monox	3.3	8.303	-0.038	20153	BB	19.5	
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 :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 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 : 511226-002

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	45126.4	4.613	-0.387	476367424	BB	16.6	
2	Ethane		9.239					M
	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

****

Print Date: Tue Jul 02 15:00:48 2024 Page 1 of 1

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 16-11-26 511226-002 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 : 511226-002

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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	1691701	BV	4.1	
3	Nitrogen	36.1	4.100	-0.300	9264330	VB	9.8	
4	Methane		5.848					M
5	Carbon Monox		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

Template Settings

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

Calibration Info

CurveNo	Type	FileName:	Volume	Correlation	R-squared	A0:	A1:	A2:
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

Sample Info

Identification	Inj. Type	Conc.	Area	CV	Inj. Volume
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	86667	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	4691317	1.5	200
	IC	-0.2162	156068	3.1	200
H20 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	456529	3.3	200
	IC	0.2159	365120	2.5	200
H20 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

ENTHALPY
ANALYTICAL

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

Print Date: Tue Jul 02 12:25:33 2024 Page 1 of 1

Title :
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 12:25

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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					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 :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi		5.000					M
2	Ethane		9.239					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 31685 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 :
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 14:55

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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

****

Title :
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 DUP

Injection Date: 2024-07-01 09:22 Calculation Date: 2024-07-02 12:26

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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					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 : 69111 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

****

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

Title :
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 DUP

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi		5.000					M
2	Ethane		9.239					M
	Totals:	0.0		0.000	0			

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

****

Print Date: Tue Jul 02 14:55:40 2024 Page 1 of 1

Title :
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 DUP

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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		4.400					M
4	Methane		5.848					M
5	Carbon Monox	0.0	7.445	-0.534	2748	BB	2.2	
	Totals:	0.0		-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 :
Run File : 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
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	0.9	5.778	-0.118	5327	BB	11.2	
2	Carbon Monox	0.9	8.309	0.371	5365	BB	19.0	
3	NMNEOC	0.9	15.052	0.501	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 :
Run File : 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
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 15:06

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	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:	2.1		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 :
Run File : 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
Method File : c:\brukerws\methods\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
Workstation: Windows
Instrument : Bruker GC/TCA#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	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 :
Run File : 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
Method File : c:\brukerws\methods\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 15:06

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	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		0.081	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 :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	9.3	5.780	-0.116	56407	BB	11.4	
2	Carbon Monox	8.4	8.288	0.350	52026	BB	19.1	
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 :
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 15:07

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	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

****

Print Date: Tue Jul 02 12:30:28 2024 Page 1 of 1

Title :
Run File : c:\brukerws\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:\brukerws\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 12:30

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	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 :
Run File : c:\brukerws\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:\brukerws\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
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	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

****

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

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 11-29-59 fgs ccv s18115 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 : FGs CCV S18115

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	45439.0	4.608	-0.392	479220128	BB	17.0	
2	Ethane		9.239					M
	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

****

Print Date: Tue Jul 02 12:44:55 2024 Page 1 of 1

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 11-29-59 fgs ccv s18115 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 : FGs CCV S18115

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	3.3	3.440	-0.008	1094738	BB	4.5	
3	Nitrogen	4.9	4.213	-0.187	1249354	BB	7.0	
4	Methane	5.0	5.656	-0.192	3966670	BB	11.6	
5	Carbon Monox	5.1	8.043	0.064	1341117	BB	19.8	
	Totals:	18.3		-0.323	7651879			

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

****

Print Date: Tue Jul 02 15:09:40 2024 Page 1 of 1

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 11-55-30 fgs ccv s18115 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 : FGs CCV S18115 Dup

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	45419.1	4.607	-0.393	479038752	BB	17.1	
2	Ethane		9.239					M
	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

****

Print Date: Tue Jul 02 12:45:56 2024 Page 1 of 1

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 11-55-30 fgs ccv s18115 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 : FGs CCV S18115 Dup

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

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	3.3	3.441	-0.007	1095328	BB	4.5	
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

****

Print Date: Tue Jul 02 12:32:17 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 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
Workstation: Windows
Instrument : Bruker GC/TCA#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	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

****

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 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 15:13

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	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	
2	Ethane		9.239					M
	Totals:	478.8		-0.229	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

****

Print Date: Tue Jul 02 14:56:50 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 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 : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	20.7	3.447	-0.001	6791188	BV	3.7	
3	Nitrogen	78.6	4.007	-0.393	20158832	VB	12.7	
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   :
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 DUP

Injection Date: 2024-07-01 12:46   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 No.	Peak Name	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Methane	1.9	5.782	-0.114	11682	BB	11.2	
2	Carbon Monox	0.6	8.351	0.413	3628	BB	20.7	
3	NMNEOC	0.2	15.076	0.525	6129	BB	19.4	
	Totals:	2.7		0.824	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   LSB: 1 microVolts

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

Manual injection

****

Title :
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 Dup

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 ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	478.0	4.770	-0.230	5717040	BB	15.3	
2	Ethane		9.239					M
	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

****

Print Date: Tue Jul 02 14:57:04 2024 Page 1 of 1

Title :
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 DUP

Injection Date: 2024-07-01 12:46 Calculation Date: 2024-07-02 14:56

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	20.7	3.446	-0.002	6792109	BV	3.7	
3	Nitrogen	78.7	4.006	-0.394	20164840	VB	12.7	
4	Methane	0.0	5.500	-0.348	253	TS	0.0	
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

****

Title :
Run File : 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 12:27

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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					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 : 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

****

Print Date: Tue Jul 02 15:13:31 2024 Page 1 of 1

Title :
Run File : 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 15:13

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi		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

****

Title :
Run File : 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
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	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		4.400					M
4	Methane		5.848					M
5	Carbon Monox		7.979					M
	Totals:	0.0		0.000	0			

Status Codes:
M - Missing peak

Total Unidentified Counts : 0 counts

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

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

****

Title :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	0.9	5.783	-0.113	5551	BB	11.4	
2	Carbon Monox	0.8	8.323	0.385	4662	BB	19.4	
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

****

Print Date: Tue Jul 02 15:08:13 2024 Page 1 of 1

Title :
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 15:08

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	1.1	4.795	-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 :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	9.4	5.782	-0.114	57163	BB	11.4	
2	Carbon Monox	8.5	8.295	0.357	52840	PB	19.2	
3	NMNEOC	9.6	15.035	0.484	261626	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

****

Title :
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 15:08

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	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	124686	BB	15.3	
2	Ethane	10.4	9.568	0.329	125686	BB	27.9	
	Totals:	20.8		0.097	250372			

Total Unidentified Counts : 28420 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): 28 microVolts - monitored before this run

Manual injection

****

Print Date: Tue Jul 02 15:09:57 2024 Page 1 of 1

Title :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 23-01-06 fgs ccv s18115 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 : FGs CCV S18115

Injection Date: 2024-07-01 23:01 Calculation Date: 2024-07-02 09:37

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	45488.1	4.613	-0.387	479667584	BB	17.0	
2	Ethane		9.239					M
	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 :
Run File : c:\brukerws\data\2024\070124 25.3\2024-07-01 23-01-06 fgs ccv s18115 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 : FGs CCV S18115

Injection Date: 2024-07-01 23:01 Calculation Date: 2024-07-02 12:46

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	3.3	3.445	-0.003	1099838	BB	4.4	
3	Nitrogen	4.9	4.219	-0.181	1261898	BP	7.0	
4	Methane	5.1	5.663	-0.185	4020150	PB	11.6	
5	Carbon Monox	5.0	8.053	0.074	1329530	BB	19.8	
	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

****

Title :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	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

****

Title :
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
Workstation: Windows
Instrument : Bruker GC/TCA#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	Result ppmCarbon	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Carbon Dioxi	425.9	4.769	-0.231	5094946	BB	15.2	
2	Ethane		9.239					M
	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

****

Print Date: Tue Jul 02 14:57:26 2024 Page 1 of 1

Title :
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 14:57

Operator : MPD
Workstation: Windows
Instrument : Bruker GC/TCA#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 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 (%V)	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	Hydrogen		2.884					M
2	Oxygen	20.7	3.447	-0.001	6795170	BV	3.7	
3	Nitrogen	78.2	4.009	-0.391	20037468	VB	12.9	
4	Methane		5.848					M
5	Carbon Monox	-	7.979					M
	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

****

ENTHALPY
ANALYTICAL

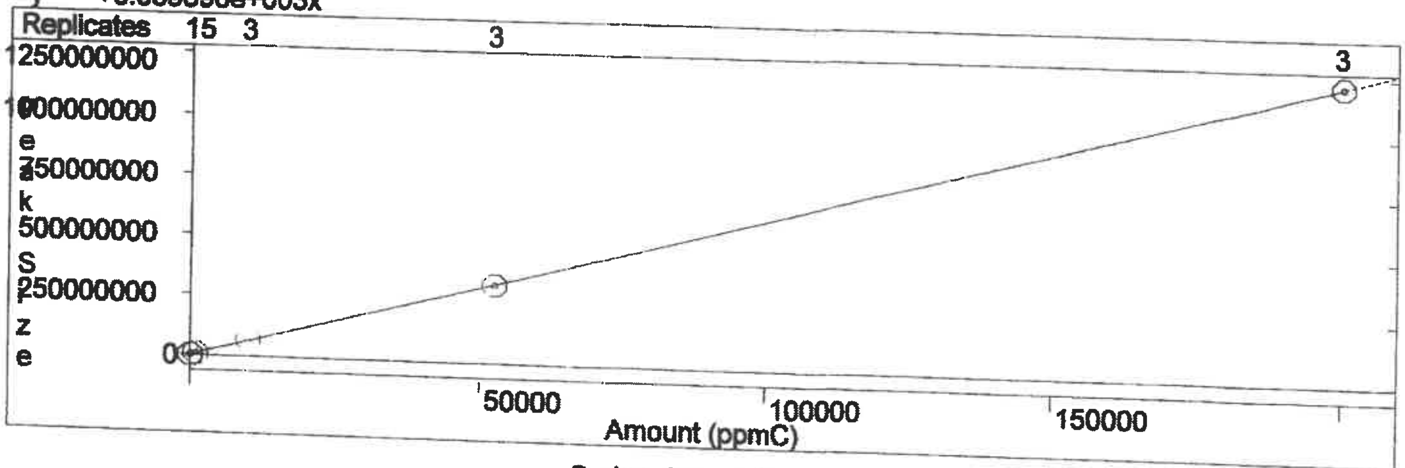
ICAL Data

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

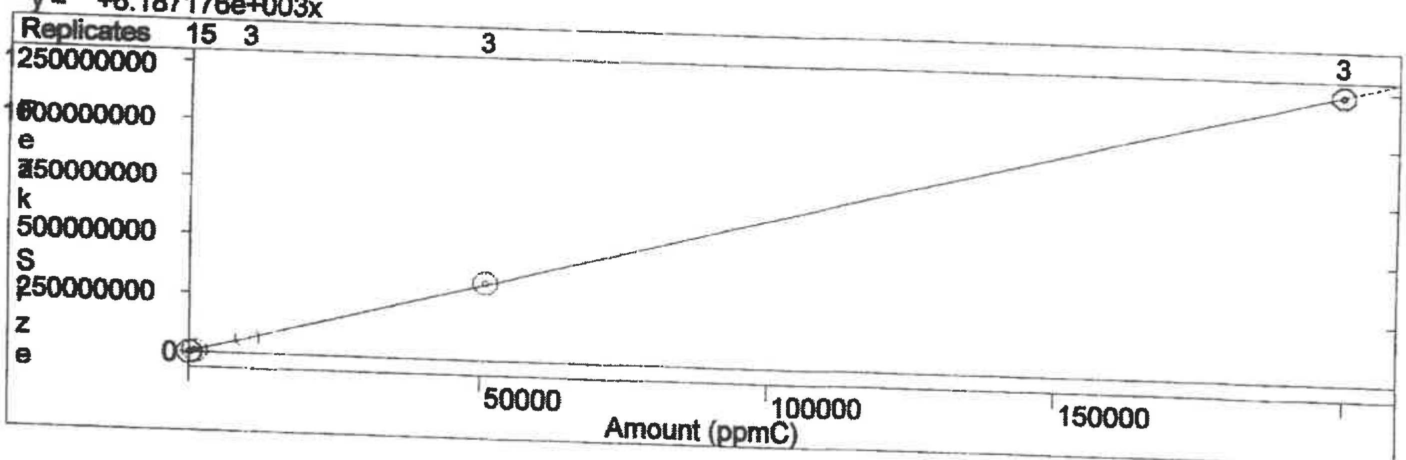
Resp. Fact. RSD: 4.643%
Coeff. Det.(r^2): 0.999987



Carbon Monoxide

External Standard Analysis - Locked
Curve Type: Linear
Origin: Force (Edited)
y = +6.187176e+003x

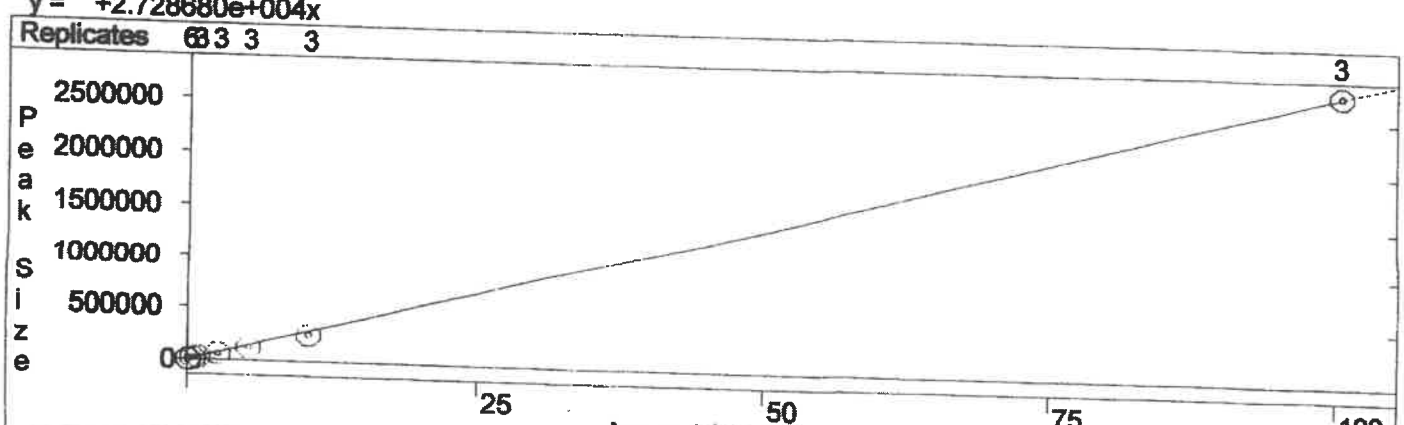
Resp. Fact. RSD: 10.13%
Coeff. Det.(r^2): 0.999941



NMNEOC

External Standard Analysis - Locked
Curve Type: Linear
Origin: Force (Edited)
y = +2.728680e+004x

Resp. Fact. RSD: 6.437%
Coeff. Det.(r^2): 0.999789

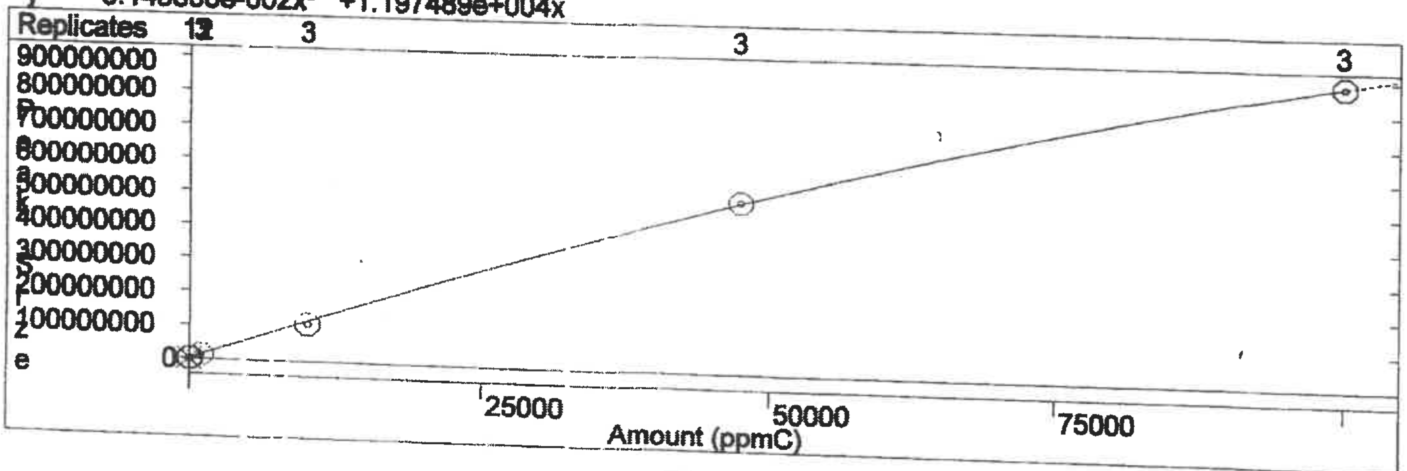


Print Date: 12 Oct 2023 08:14:26
Calibration Curves Report
File: c:\... \active gc methods 2023\master scaqmd 253 quant 100923.mth
Detector: 45X-GC, Address: 44, Channel ID: Front

Carbon Dioxide

External Standard Analysis - Locked
Curve Type: Quadratic (Edited)
Origin: Force (Edited)
$y = -3.143638e-002x^2 +1.197489e+004x$

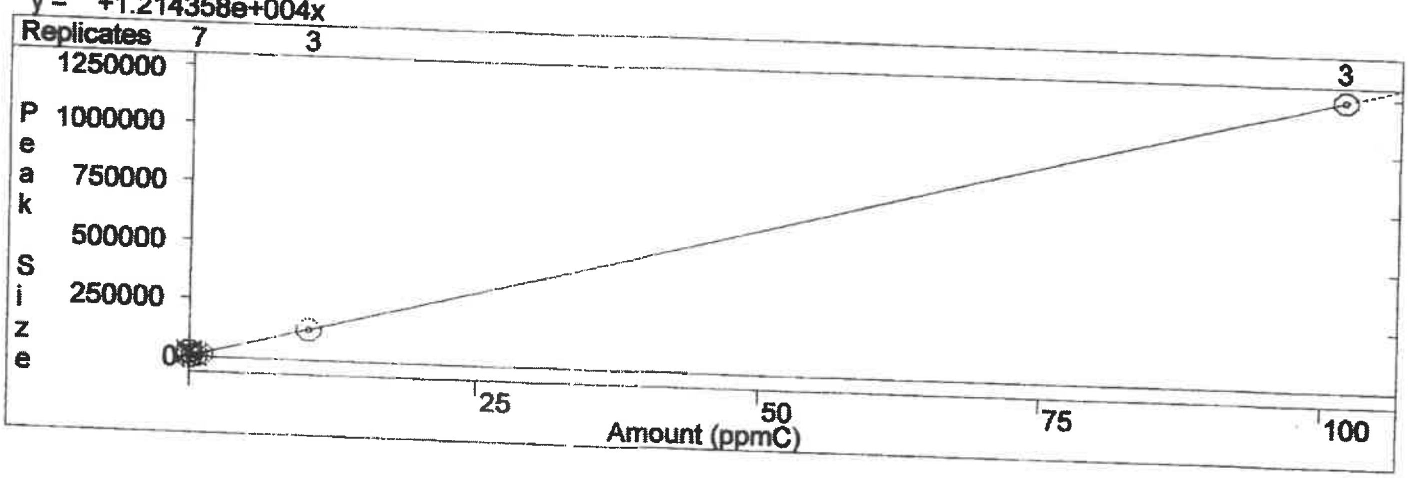
Resp. Fact. RSD: 10.28%
Coeff. Det.(r^2): 0.999882



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

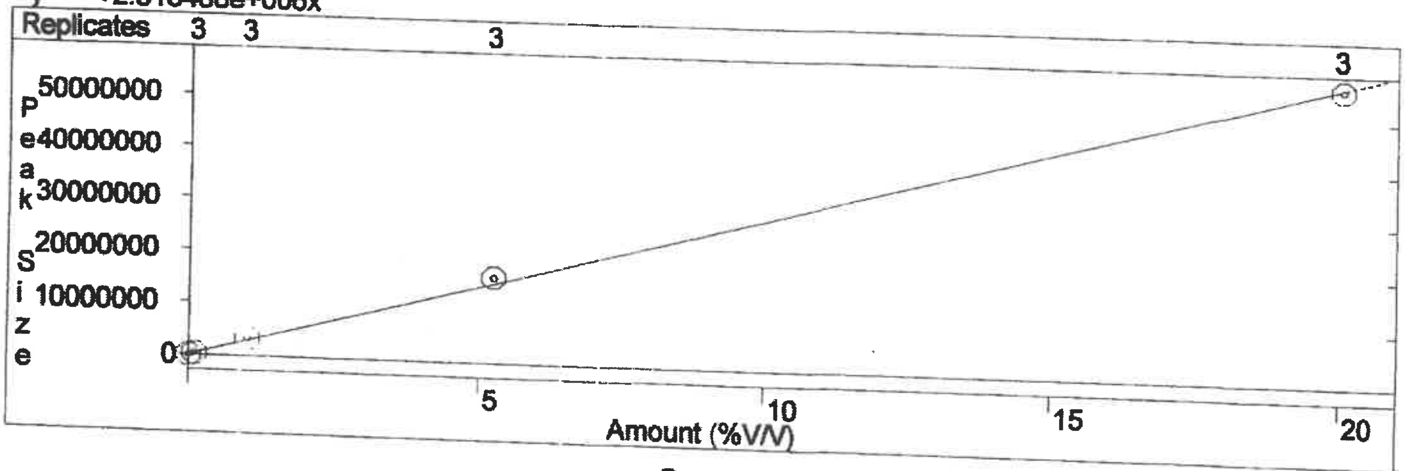


Print Date: 12 Oct 2023 08:18:17
Calibration Curves Report - Page 1
File: c:\.. \active gc methods 2023\master scaqmd 253 quant 100923.mth
Detector: 45X-GC, Address: 44, Channel ID: Rear

Hydrogen

External Standard Analysis - Locked
Curve Type: Linear
Origin: Force (Edited)
y = +2.818488e+006x

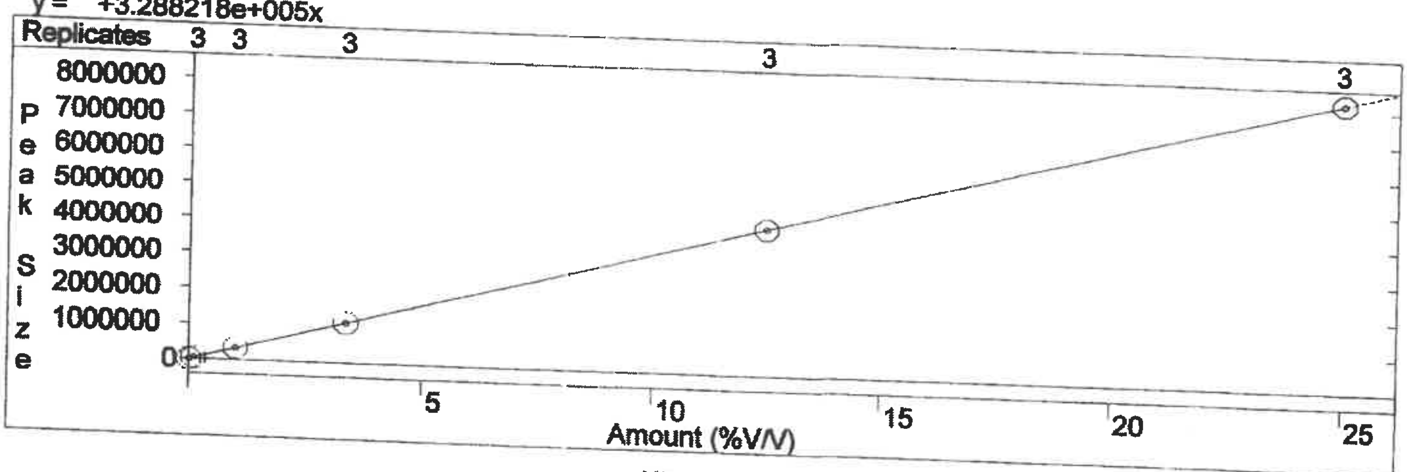
Resp. Fact. RSD: 5.254%
Coeff. Det.(r^2): 0.999456



Oxygen

External Standard Analysis - Locked
Curve Type: Linear
Origin: Force (Edited)
y = +3.288218e+005x

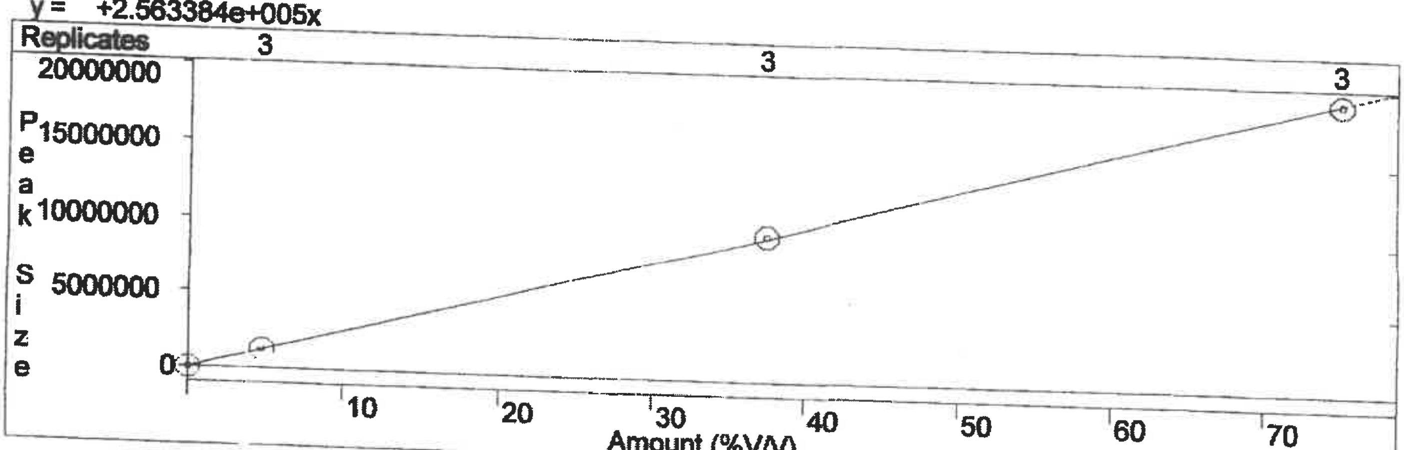
Resp. Fact. RSD: 1.293%
Coeff. Det.(r^2): 0.999994



Nitrogen

External Standard Analysis - Locked
Curve Type: Linear
Origin: Force (Edited)
y = +2.563384e+005x

Resp. Fact. RSD: 1.779%
Coeff. Det.(r^2): 0.999898

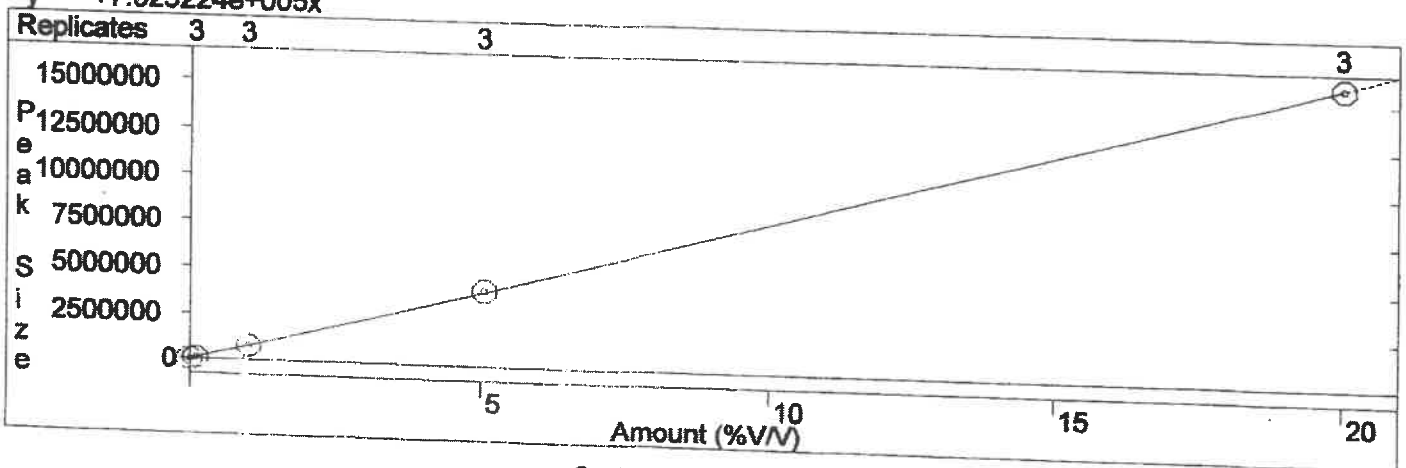


Print Date: 12 Oct 2023 08:18:17
Calibration Curves Report - Page 2
File: c:\... \active gc methods 2023\master scaqmd 253 quant 100923.mth
Detector: 45X-GC, Address: 44, Channel ID: Rear

Methane

External Standard Analysis - Locked
Curve Type: Linear
Origin: Force (Edited)
y = +7.925224e+005x

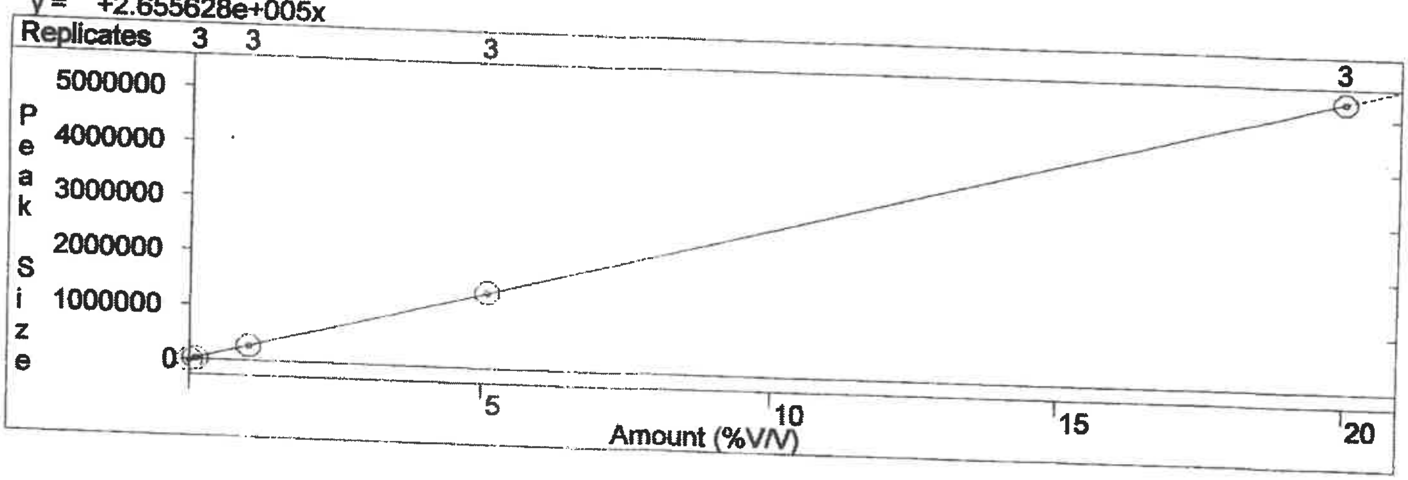
Resp. Fact. RSD: 0.9599%
Coeff. Det.(r^2): 0.999973



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

R²:	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	**Correlation**	0.99934
A2:	0	**Volume**	200
A1:	483,869	**Curve Order**	1st Order
A0:	260,676		

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

MONTROSE

CEMS PERFORMANCE DATA SHEET

Client: Waste Connections
Location: Flare 1
CEMS ID#: T4

Date: 6/27/2024
Performed By: SJ, AD, JI

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

MONTROSE

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	
O_2	Mid	CC203715	9.09	11/20/31	B32023	45.5%
O_2	High	CC505326	18.05	11/15/31	B32023	90.3%
CO_2	Mid	CC203715	8.97	11/20/31	B32023	44.9%
CO_2	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%
NO_2	NO_2	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

NO_2 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_o-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

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an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
11711 S. Alameda Street
Los Angeles, CA 90059
Airgas.com

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

Approved for Release

LO 2/22/24

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Airgas Specialty Gases
Airgas USA LLC
11711 S. Alameda Street
Los Angeles, CA 90059
Airgas.com

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

O_2 18.05%
CO_2 18.28%
CC505326
EXP. NOV 15, 2031
B32023

Approved for Release

LO 12/5/2023

Page 1 of 1

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an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
11711 S. Alameda Street
Los Angeles, CA 90059
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI82E15A0220	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	7.489 % 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

O_2 9.090%

CO_2 8.970%

CC203715

EXP. NOV 20, 2031

B32023

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LO 12/5/2023

Page 1 of 1

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

MONTROSE AIR QUALITY SERVICES
1631 E ST ANDREWS PLACE
SANTA ANA CA92705

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: 70086223602
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft3

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-12/531, 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
Last Multipoint Calibration: 08/11/2022

Reference Standard: Type / Cylinder #: GMIS / ND8750
Concentration / Uncertainty: 47.5 ppm ±0.2 ppm
Expiration Date: 06/02/2025
Traceable to: SRM # / Sample # / Cylinder #: PRM / C1765710.01 / APEX1324323
SRM Concentration / Uncertainty: 50.04 ppm / ±0.20 ppm
SRM Expiration Date: 12/09/2022

First Analysis Data: Date 08/31/2022

Z:	0	R: 47.5		C: 22.5		Conc:	22.5
R:	47.5	Z: 0		C: 22.6		Conc:	22.6
Z:	0	C: 22.6		R: 47.4		Conc:	22.6
UOM:	ppm			Mean Test Assay:		22.6	ppm

Second Analysis Data: Date 09/07/2022

Z:	0	R: 47.5		C: 22.6		Conc:	22.6
R:	47.5	Z: 0		C: 22.6		Conc:	22.6
Z:	0	C: 22.7		R: 47.5		Conc:	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

AS 2-9-23

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.

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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:	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

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JS 9/1/23

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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	17.00 PPM	17.04 PPM	G1	+/- 1.7% NIST Traceable	08/10/2023, 08/17/2023
AIR	Balance				

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

NO_2 17.04 ppm
CC504061
Exp. 08/17/26
B32023

Approved for Release

JS 9/20/23

Page 1 of 1

Airgas.
an Air Liquide company

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	Reference Number:	48-402541563-1
Cylinder Number:	CC1442	Cylinder Volume:	144.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32022	Valve Outlet:	350
Gas Code:	CO,BALN	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	09010246	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

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
11711 S. Alameda Street
Los Angeles, CA 90059
Airgas.com

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

Page 1 of 1

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&l

Lat: 34.42972°NLon: 118.66712°WElev: 1278.0ft.

Reference Barometer ID	DEL VALLE (DLVC1)
Reference Barometer Location	
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	29.85
Reference Barometer Reference Elevation	1278
Reference Barometer Actual Pressure	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

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS			Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.15	26.00	879.700	885.240	5.540		75.0		75.0	14742-33	0.1618	18.0	68.0	68.0	68.0
0.15	26.00	885.240	890.780	5.540		75.0		75.0	14742-33	0.1618	18.0	68.0	68.0	68.0
0.15	26.00	890.780	896.320	5.540		75.0		75.0	14742-33	0.1618	18.0	68.0	68.0	68.0
0.66	12.00	862.600	868.060	5.460		72.0		73.0	PK-48	0.3452	17.0	68.0	68.0	68.0
0.66	12.00	868.060	873.520	5.460		73.0		74.0	PK-48	0.3452	17.0	68.0	68.0	68.0
0.66	12.00	873.520	878.995	5.475		74.0		75.0	PK-48	0.3452	17.0	68.0	68.0	68.0
1.80	7.00	846.700	851.905	5.205		70.0		70.0	PK-63	0.5666	16.0	67.0	67.0	67.0
1.80	7.00	851.905	857.120	5.215		70.0		71.0	PK-63	0.5666	16.0	67.0	68.0	67.5
1.80	7.00	857.120	862.335	5.215		71.0		72.0	PK-63	0.5666	16.0	68.0	68.0	68.0
3.50	5.00	830.800	835.975	5.175		68.0		68.0	PK-732	0.7871	15.0	66.0	67.0	66.5
3.50	5.00	835.975	841.145	5.170		68.0		69.0	PK-732	0.7871	15.0	67.0	67.0	67.0
3.50	5.00	841.145	846.285	5.140		69.0		70.0	PK-732	0.7871	15.0	67.0	67.0	67.0

DRY GAS METER		ORIFICE				DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR				
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)		Y Value (number)	dH@ Value (in H2O)	Individual Run 0.95 < Y < 1.05?	Individual Orifice Ymax - Ymin < 0.010?	Orifice Average 0.98 < Y/Yd < 1.02?	Orifice Average dH@ - dH@ av < 0.155?
5.475	155.0	5.485	155.3	5.480		1.002	1.874	Pass			
5.475	155.0	5.485	155.3	5.480		1.002	1.874	Pass			
5.475	155.0	5.485	155.3	5.480		1.002	1.874	Pass			
					Average	1.002	1.874		Pass	Pass	Pass
5.426	153.7	5.401	153.0	5.396		0.995	1.820	Pass			
5.418	153.4	5.401	153.0	5.396		0.997	1.816	Pass			
5.422	153.6	5.401	153.0	5.396		0.996	1.813	Pass			
					Average	0.996	1.816		Pass	Pass	Pass
5.213	147.6	5.176	146.6	5.162		0.993	1.847	Pass			
5.218	147.8	5.174	146.5	5.164		0.991	1.847	Pass			
5.208	147.5	5.171	146.5	5.166		0.993	1.845	Pass			
					Average	0.992	1.847		Pass	Pass	Pass
5.224	148.0	5.139	145.5	5.119		0.984	1.866	Pass			
5.214	147.7	5.136	145.5	5.122		0.985	1.866	Pass			
5.174	146.5	5.136	145.5	5.122		0.993	1.863	Pass			
					Average	0.987	1.865		Pass	Pass	Pass

Average Yd: 0.994 dH@: 1.850

Q @ dH = 1: 0.551

Performed by signature: Date: 04/24/2024

Reviewed by signature: Date: 04/24/2024

Note: Control box not equipped with meter inlet temperature reading.

48WCS Semi Annual Cal 04-24-2024 WCS
4/24/2024
4:00 PM

MONTROSE
AIR QUALITY SERVICES

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)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 85
Date: 1/4/2024
Performed By: JS

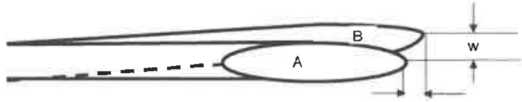
Calibrated Digital Temperature Readout ID: PTC-83
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 805002770

T/C I.D. 85	Readout I.D.	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °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

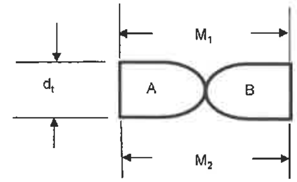
1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

MONTROSE

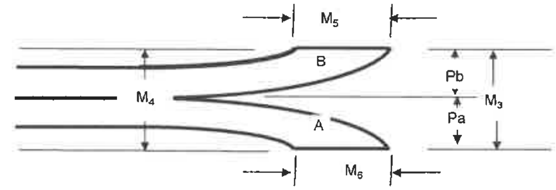
S Type Pitot Tube Dimensional Calibration Record



Side View



End View



Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	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	
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	Status
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

Jan 2024 Calibrations SNA
12:08 PM
8/20/2024

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 - 0.050 inches H_2O		Run 1 Measured Value (inches W.C.)	Run 1 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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	0.031	0.030	0.0010	3.33%	Pass
Target 80%	0.040	0.039	0.040	0.0010	2.50%	Pass
Target 100%	0.050	0.048	0.050	0.0020	4.00%	Pass

Calibration Range Scale: 0 - 0.050 inches H_2O		Run 2 Measured Value (inches W.C.)	Run 2 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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	0.029	0.030	0.0010	3.33%	Pass
Target 80%	0.040	0.041	0.040	0.0010	2.50%	Pass
Target 100%	0.050	0.051	0.050	0.0010	2.00%	Pass

Calibration Range Scale: 0 - 0.050 inches H_2O		Run 3 Measured Value (inches W.C.)	Run 3 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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	0.031	0.030	0.0010	3.33%	Pass
Target 80%	0.040	0.041	0.040	0.0010	2.50%	Pass
Target 100%	0.050	0.052	0.050	0.0020	4.00%	Pass

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 %.

MONTROSE AIR QUALITY SERVICES

Jan 2024 Calibrations SNA
12:08 PM
8/20/2024

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 - 0.100 inches H_2O		Run 1 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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 Scale: 0 - 0.100 inches H_2O		Run 2 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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 Scale: 0 - 0.100 inches H_2O		Run 3 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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

% 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 %.

MONTROSE AIR QUALITY SERVICES

Jan 2024 Calibrations SNA
12:08 PM
8/20/2024

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_2O		Run 1 Measured Value (inches W.C.)	Run 1 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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_2O		Run 2 Measured Value (inches W.C.)	Run 2 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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_2O		Run 3 Measured Value (inches W.C.)	Run 3 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% 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 %.

MONTROSE AIR QUALITY SERVICES

Jan 2024 Calibrations SNA
12:08 PM
8/20/2024

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: 0 - 10.000 inches H_2O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	2.020	2.000	0.0200	1.00%	Pass
Target 40%	4.000	4.040	4.000	0.0400	1.00%	Pass
Target 60%	6.000	6.020	6.000	0.0200	0.33%	Pass
Target 80%	8.000	8.090	8.000	0.0900	1.13%	Pass
Target 100%	10.000	10.250	10.000	0.2500	2.50%	Pass

Calibration Range		Run 2		Individual Run Results		
Scale: 0 - 10.000 inches H_2O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	2.050	2.000	0.0500	2.50%	Pass
Target 40%	4.000	4.120	4.000	0.1200	3.00%	Pass
Target 60%	6.000	6.110	6.000	0.1100	1.83%	Pass
Target 80%	8.000	8.100	8.000	0.1000	1.25%	Pass
Target 100%	10.000	10.110	10.000	0.1100	1.10%	Pass

Calibration Range		Run 3		Individual Run Results		
Scale: 0 - 10.000 inches H_2O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	2.010	2.000	0.0100	0.50%	Pass
Target 40%	4.000	4.160	4.000	0.1600	4.00%	Pass
Target 60%	6.000	6.150	6.000	0.1500	2.50%	Pass
Target 80%	8.000	8.120	8.000	0.1200	1.50%	Pass
Target 100%	10.000	10.090	10.000	0.0900	0.90%	Pass

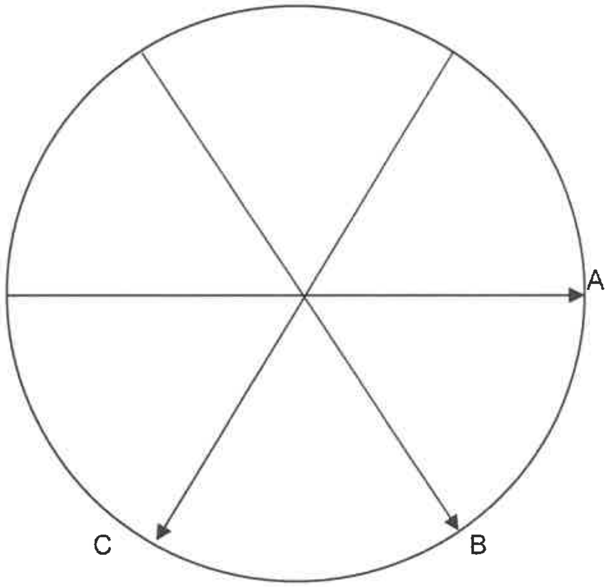
Average results for three runs

% Difference	Pass/Fail
1.67%	Pass

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

MONTROSE AIR QUALITY SERVICES

FACILITY: CHIQUITA
SOURCE TESTED: FLARE 1
CALIBRATED BY: [illegible]
DATE: 6/27/24



NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
260T	0.648	0.648	0.648	0.648

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 : ±0.02mm or ± 0.001"/±0.02mm

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

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

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

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Gaseous Concentrations, corrected (Ccorr @ 3%O_2.)

$$Ccorr\ @3\%O_2 = \frac{ppm * (20.9-3.0)}{(20.9-\%O2)}$$

VI. Destruction Efficiency (DE), %)

$$DE,\% = \left(\frac{M_{in}-M_{out}}{M_{in}}\right)(100\%)$$ based on mass emission rates

VII. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%\ O_2}$$

VIII. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{lb/hr}{MMBtu/hr}$$

IX Percent Isokinetic

$$I = \frac{17.32 * T_s\ (V_{mstd})}{(1 - B_{wo})\ 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

X. Particulate Emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	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
0	=	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, iwb
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

$$\text{Moisture } (B_{ws}) \; \frac{\text{Vwstd}}{\text{Vmstd + Vwstd}} \text{ X } 100$$

$$\text{Where: Vwstd} = \frac{0.0464\text{ft}^3}{\text{ml}} \text{ X Vol } H_2O \text{ Collected (ml)}$$

$$\text{Vmstd = Y Meter x } \frac{520°\text{R}}{29.92 \text{ in. Hg}} \text{ x } \frac{\text{Vol Metered}}{\text{Meter Temp}} \text{ X Pres Meter}$$

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 midget 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 CH_4, CO_2 and total gaseous non-methane organics (TGNMO) as CH_4. All non-methane organics are oxidized to CO_2 then reduced back to CH_4 and then measured by flame ionization. All carbon contained in the original non-methane portion is therefore converted to CH_4 and the results are reported as TGNMO as CH_4.

CALCULATIONS

TGNMO lb/hr = TGNMO PPmv x DSCFM x M.W. x 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, O_2, CO_2, 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:

$$\text{CO ppm} = (\text{CO \% FS} - \text{Average CO Zero}) \quad \times \quad \frac{\text{CO Cal Gas Value}}{\text{Average CO Span} - \text{Average CO Zero}}$$

ppm @ 3% O_2 = ppm obsv. x 17.9/(20.9-%O_2 obsv.)
ppm @ 15% O_2 = ppm obsv. x 5.9/(20.9-%O_2 obsv.)

lb/hr (NO_x/CO/NMHC) = ppm obsv. x 1.581×10^{-7} x DSCFM calc. x MW (@ 60°F)

lb/MMbtu = (ppm x MW x Fd Factor/SV x10^6 x 20.9/(20.9-%O_2) Or, = lb/hr/MMBtu/hr

Molecular Weight (MW)
NO_x = 46
CO = 28
NMHC as CH_4 = 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 $\Delta H@$	--
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

South Coast
Air Quality Management District
South Coast AQMD
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

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA 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.

American Association for Laboratory Accreditation CORPORATE SEAL 1978 DISTRICT OF COLUMBIA A2LA

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.

MONTROSE AIR QUALITY SERVICES

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: 002-2022-50

Tate Strickler, VP – Quality Systems

Date of Issue: 02/28/2022

Date of Expiration: 02/27/2027

MONTROSE ENVIRONMENTAL

MONTROSE AIR QUALITY SERVICES

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: 002-2022-51

DATE OF ISSUE: 02/28/2022

DATE OF EXPIRATION: 02/27/2027

Tate Strickler, VP – Quality Systems

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: 002-2022-52

Tate Strickler, VP – Quality Systems

Date of issue: 02/28/2022

Date of expiration: 02/27/2027

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 Method 100.1

Certificate Number: 002-2022-55

Tate Strickler, VP – Quality Systems

Date of Issue: 03/07/2022

Date of Expiration: 03/06/2027

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)

FORM ST-110 :stevforl.doc (Revised 11/18/98

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. 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)]

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

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, NOx, TNMOCs, PM10 (total PM) and SOx, 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
NOx as NO2	3.9
PM10	1.4
ROG	0.92
SOx as SO2	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
NOx as NO2	2.4
PM10	1.4
ROG	1.33
SOx as SO2	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 ± 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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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 R TO DECLARATION OF PATRICK SULLIVAN, BCES, CPP, REPA

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

Hearing Date:	June 4 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 TEST REPORT FOR 2025 1ST QUARTER 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:	**March 20, 2025**
Production Date:	**April 18 2025**
Document Number:	**W002AS-053154-RT-7193**

MONTROSE AIR QUALITY SERVICES

STAC STACK TESTING ACCREDITATION COUNCIL

ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

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: 4/18/2025

Name: Pete SanJuan 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: 4/18/2025

Name: Surya Adhikari Title: Senior Reporting QC Specialist

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1.0 INTRODUCTION

Montrose Air Quality Services, LLC (MAQS) was contacted by SCS Engineers (SCS) to conduct quarterly sampling at various locations on the vapor ventilation system located at the Chiquita Canyon Landfill (Chiquita), 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). The Montrose test team consisted of Pete San Juan and Kyle Thomas. Pete San Juan was the on-site qualified individual for MAQS. 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, inlet to Zeeco Flare, Flare Station Pre-H2S treatment, and Flare Station Post-H2S treatment. 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	SCAQMD 2.1	1 for each location
Moisture	Wet Bulb/Dry Bulb	Psychrometric Chart	SCAQMD 4.1	1 for each location
H_2S and TRS	Summa Can	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 O_2 and CO_2.

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 Summa canisters. The samples were analyzed by GC/SCD by AtmAA, Inc., in Calabasas, California, following SCAQMD Method 307-91 protocol. The 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 was 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 are presented in Appendix A.1.

TABLE 4-1
H_2S AND TOTAL REDUCED SULFUR RESULTS
CHIQUITA CANYON LANDFILL
LEACHATE AND CONDENSATE VAPOR SAMPLING
MARCH 20, 2025

Parameter/Units	Tank Farm 6	Tank Farm 9A	Tank Farm 9B	Tank Farm 2	Tank Farm 7A	Tank Farm 7B	ZEECO	Flare Station Pre-H_2S	Flare Station Post-H_2S
N_2, %	77.59	74.80	77.27	74.00	76.26	75.93	29.74	17.50	18.76
H_2O, %	1.24	0.68	0.76	0.61	0.86	0.86	4.36	2.68	2.64
Flow Rate, scfm	230	190	281	58	214	224	1,164	1,761	1,731
Temperature, °F	81	78	76	77	79	79	165	90	90
O_2, %	21.82	21.17	21.88	20.66	21.52	21.29	6.75	4.04	3.64
CO_2, %	0.14	2.64	0.14	2.30	0.14	1.92	36.30	42.98	43.53
Sulfur Compounds									
H_2S, ppm	<0.10	10.5	<0.10	<.10	<0.10	0.69	209	301	<0.40
Carbonyl Sulfide, ppm	<0.10	<0.10	<0.10	0.12	<0.10	<.10	0.71	1.07	0.98
Methyl Mercaptan, ppm	0.12	14.60	<0.10	1.46	<0.10	4.45	104	170	<0.40
Ethyl Mercaptan, ppm	<0.10	0.22	<0.10	<.10	<0.10	<.10	1.64	2.43	<0.40
Dimethyl Sulfide, ppm	3.54	49.90	1.76	62.30	1.60	28.90	284	502	495
Carbon Disulfide, ppm	<0.10	<0.10	<0.10	<.10	<0.10	<.10	<0.40	<0.40	0.45
i-Propyl Mercaptan, ppm	<0.10	0.17	<0.10	<.10	<0.10	<.10	1.72	3.28	<0.40
t-Butyl Mercaptan, ppm	<0.10	<0.10	<0.10	<.10	<0.10	<.10	<0.40	<0.40	<0.40
n-Propyl Mercaptan, ppm	<0.10	<0.10	<0.10	0.85	<0.10	0.34	4.31	7.01	7.57
s-Butyl Mercaptan, ppm	<0.10	0.76	<0.10	0.94	<0.10	0.29	4.98	9.24	9.27
i-Butyl Mercaptan, ppm	<0.10	<0.10	<0.10	<.10	<0.10	<.10	<0.40	<0.40	<0.40
Dimethyl Disulfide, ppm	<0.10	0.30	<0.10	1.33	<0.10	0.34	0.99	2.22	57.0
Tetrahydrothiophene, ppm	<0.10	0.38	<0.10	0.93	<0.10	0.16	2.07	3.87	4.51
Unidentified S Compounds, ppm	<0.10	2.18	<0.10	5.14	0.14	1.16	10.3	16.4	87.3
Total Sulfur Compounds									
Total Sulfur, ppm	3.66	79.24	1.76	74.38	1.73	36.64	624.2	1019.7	719.4

TABLE 4-2
TRACE ORGANICS SPECIES RESULTS
CHIQUITA CANYON LANDFILL
LEACHATE AND CONDENSATE VAPOR SAMPLING
MARCH 20, 2025

Sample Location:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B	Tank Farm 2	Tank Farm 7A	Tank Farm 7B	Zeeco	Flare Station Pre-H_2S	Flare Station Post-H_2S
Test No.:	1	1	1	1	1	1	1	1	1
Start Time:	815	855	855	900	935	935	935	1010	1010
Flow Rate, scfm:	230	190	281	58	214	224	1,164	1,761	1,731
Species	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
Hydrogen sulfide:	< 100	10,500	< 100	< 100	< 100	685	209,000	300,500	< 400
Benzene:	765	15,400	358	23,650	421	6,500	81,900	127,000	116,000
Benzyl Chloride:	< 30	< 30	< 30	< 45	< 45	< 45	< 5,000	< 5,000	< 5,000
Chlorobenzene:	< 25	< 25	< 25	53.3	< 40	< 40	< 4,500	< 4,500	< 4,500
Dichlorobenzenes*:	< 40	< 40	< 40	214	< 60	< 60	< 6,500	< 6,500	< 6,500
1,1-dichloroethane:	< 30	< 30	< 30	< 45	< 45	< 45	< 5,000	< 5,000	< 5,000
1,2-dichloroethane:	< 30	< 30	< 30	51.6	< 45	< 45	< 5,000	< 5,000	< 5,000
1,1-dichloroethylene:	< 30	< 30	< 30	< 45	< 45	< 45	< 5,000	< 5,000	< 5,000
Dichloromethane:	< 60	< 60	< 60	< 100	< 100	< 100	< 11,000	< 11,000	< 11,000
1,2-dibromoethane:	< 15	< 15	< 15	< 25	< 25	< 25	< 3,000	< 3,000	< 3,000
Perchloroethylene:	< 15	< 15	< 15	< 25	< 25	< 25	< 3,000	< 3,000	< 3,000
Carbon Tetrachloride:	< 35	< 35	< 35	< 60	< 60	< 60	< 6,000	< 6,000	< 6,000
Toluene:	58.3	905	59.0	3,190	96.0	409	8,910	12,400	11,800
1,1,1-trichloroethane:	< 20	< 20	< 20	< 35	< 35	< 35	< 4,000	< 4,000	< 4,000
Trichloroethene:	< 20	< 20	< 20	< 35	< 35	< 35	< 4,000	< 4,000	< 4,000
Chloroform:	< 20	< 20	< 20	< 35	< 35	< 35	< 4,000	< 4,000	< 4,000
Vinyl Chloride:	< 20	< 20	< 20	< 35	< 35	< 35	< 4,000	< 4,000	< 4,000
M+P-xylenes:	36.1	309	49.5	1,535	71.6	156	4,580	5,360	5,440
O-xylene:	< 25	105	< 25	569	< 40	65.4	< 4,500	< 4,500	< 4,500

< - 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.
*Total amount containing meta, para, and ortho isomers.
Due to high concentration of certain chemicals present in the sample (such as benzene etc.), affected samples were diluted for the analysis which resulted the elevated detection limits.

APPENDIX A
TEST DATA

Appendix A.1
Sample Location Data

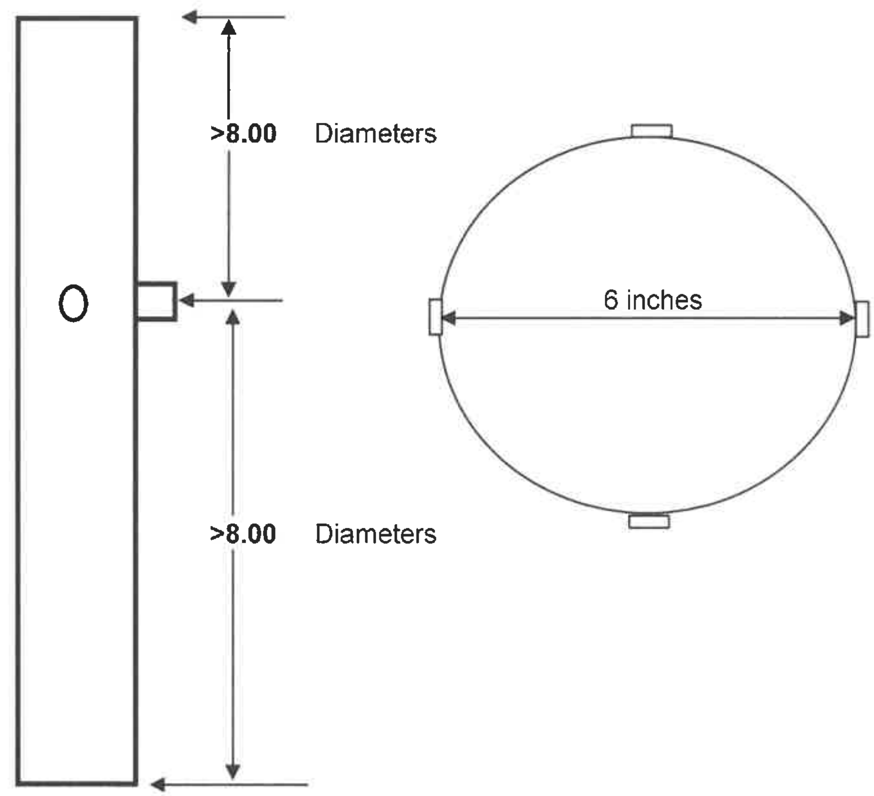
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Chiquita TF 6

Performed By: SJ, KT



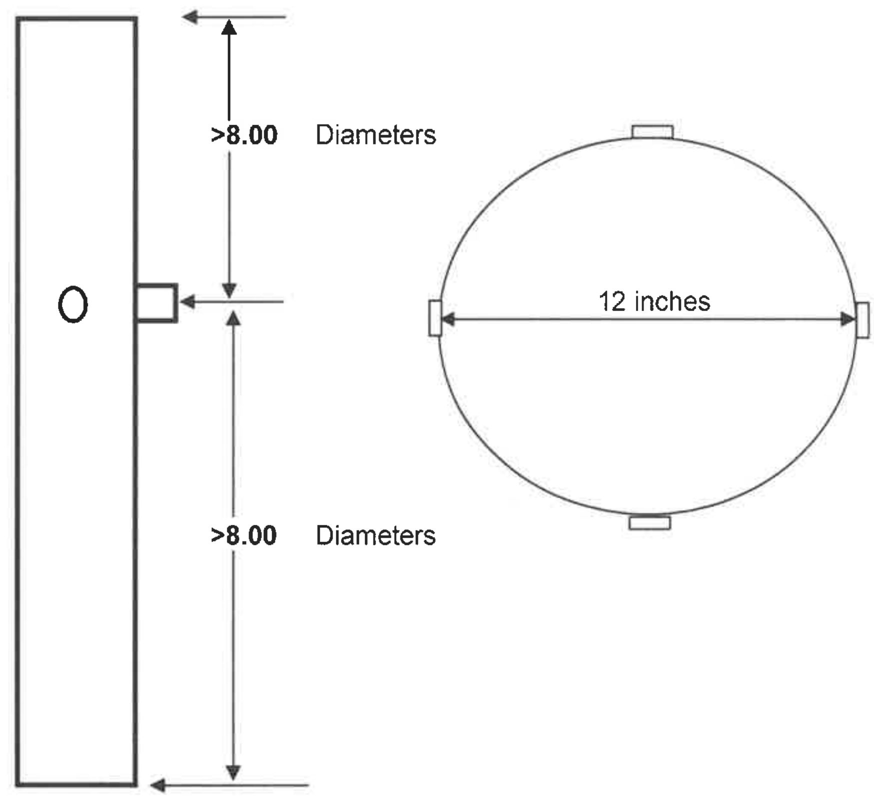
Diameter (inches)	**6.00**
Upstream (inches)	**48.00**
Downstream (inches)	**48.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.196**

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	5.5	5.5

METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services | Date: 3/20/25

Location: Chiquita TF 9A | Performed By: SJ, KT



Diameter (inches) **12.00**

Upstream (inches) **96.00**

Downstream (inches) **96.00**

Coupling (in.) **0.00**

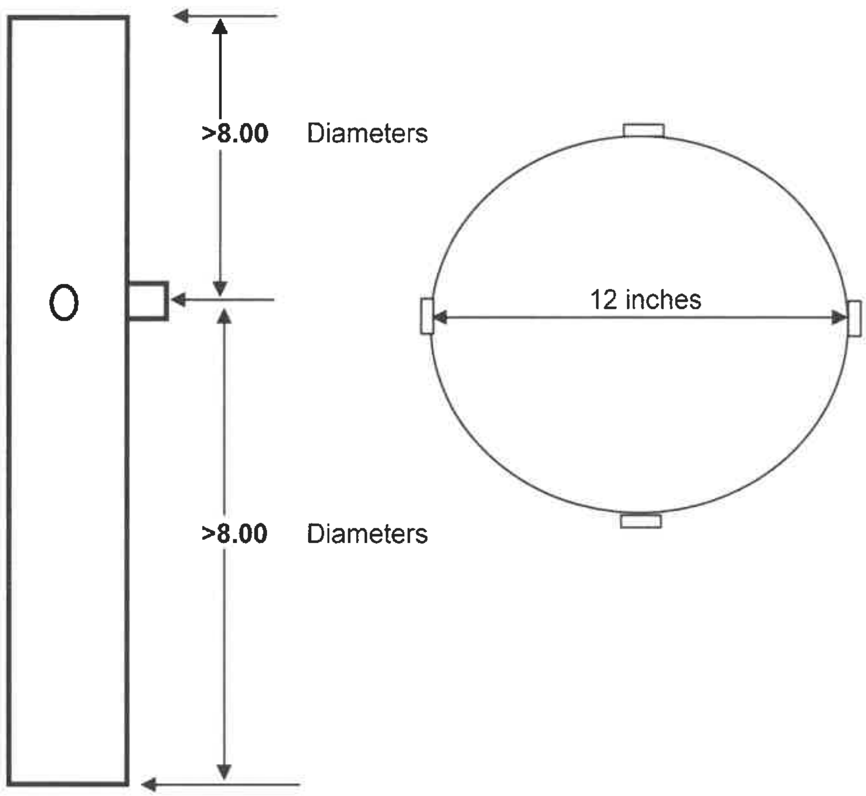
Stack Area (ft^2) **0.785**

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: 3/20/25

Location: Chiquita TF 9B | Performed By: SJ, KT



Diameter (inches)	**12.00**
Upstream (inches)	**96.00**
Downstream (inches)	**96.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.785**

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

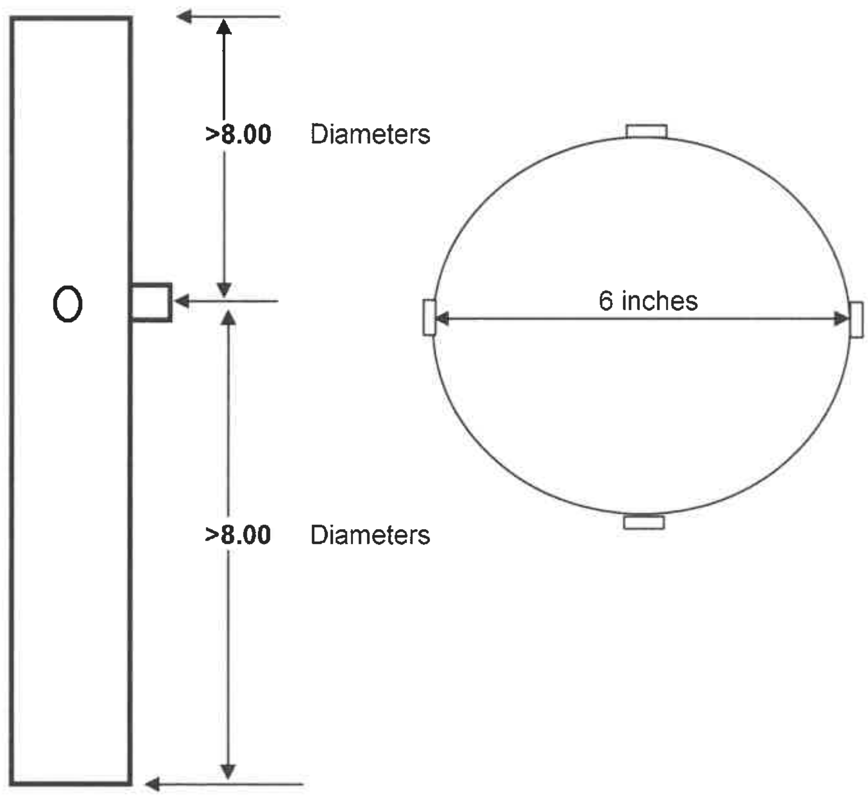
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Chiquita TF 2

Performed By: SJ, KT



Diameter (inches)	**6.00**
Upstream (inches)	**48.00**
Downstream (inches)	**48.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.196**

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	5.5	5.5

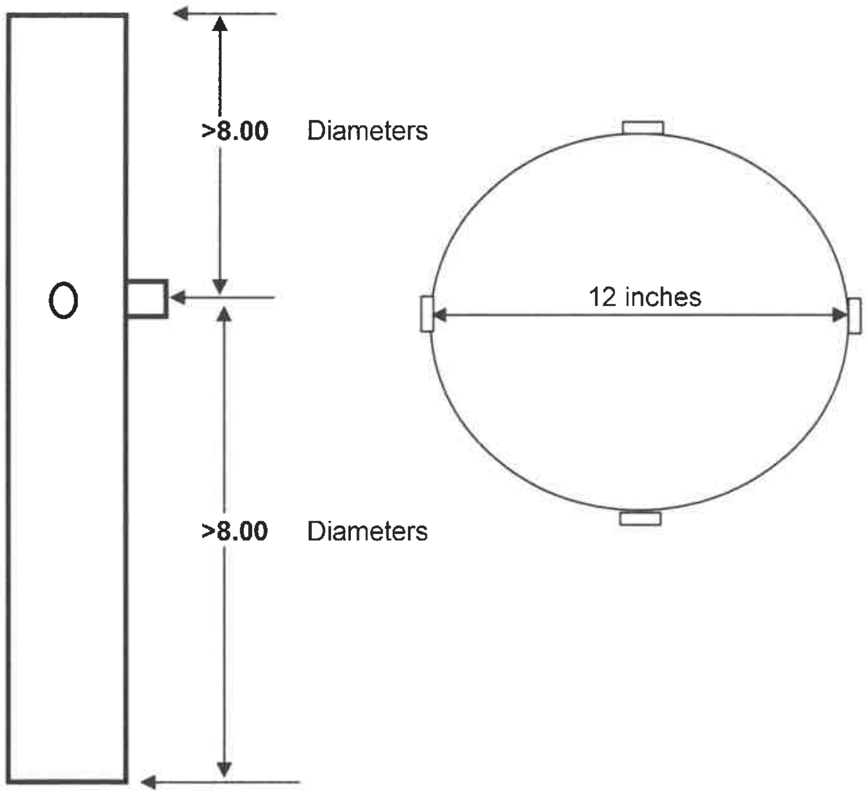
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Chiquita TF 7A

Performed By: SJ, KT



Diameter (inches) **12.00**

Upstream (inches) **96.00**

Downstream (inches) **96.00**

Coupling (in.) **0.00**

Stack Area (ft^2) **0.785**

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

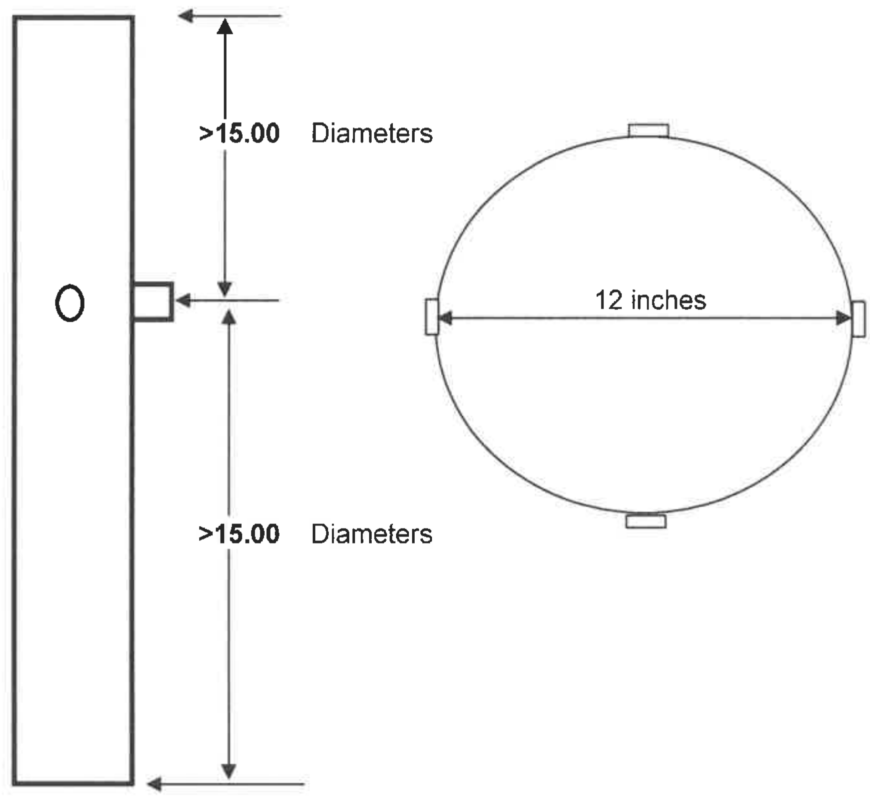
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Chiquita TF 7B

Performed By: SJ, KT



Diameter (inches)	**12.00**
Upstream (inches)	**180.00**
Downstream (inches)	**180.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.785**

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

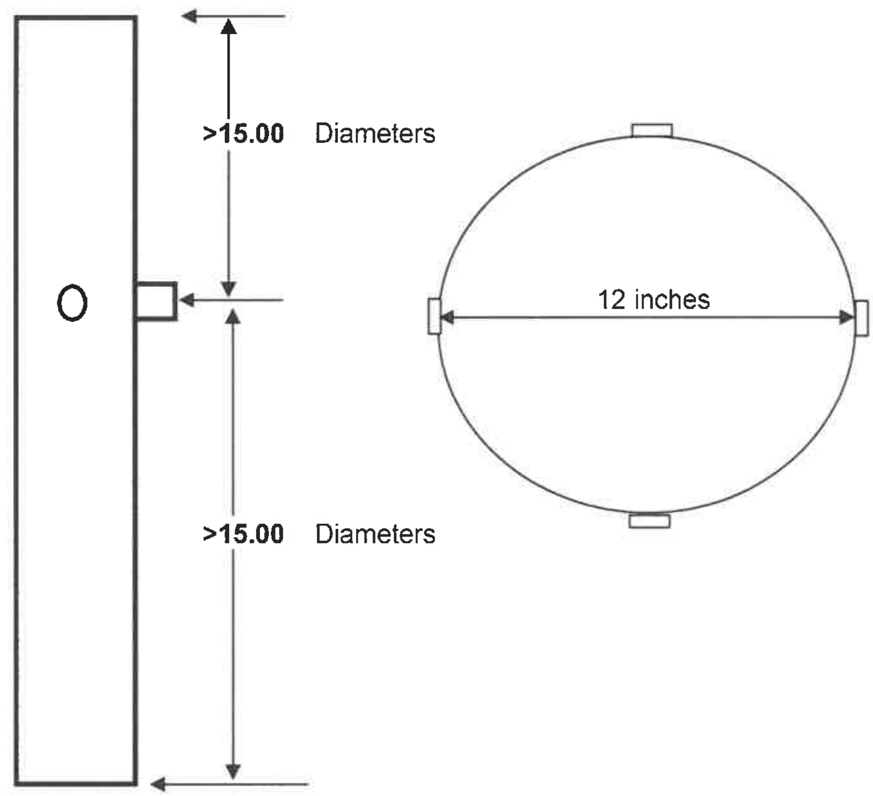
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Chiquita Zeeco Flare Inlet

Performed By: SJ, KT



Diameter (inches)	**12.00**
Upstream (inches)	**180.00**
Downstream (inches)	**180.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**0.785**

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

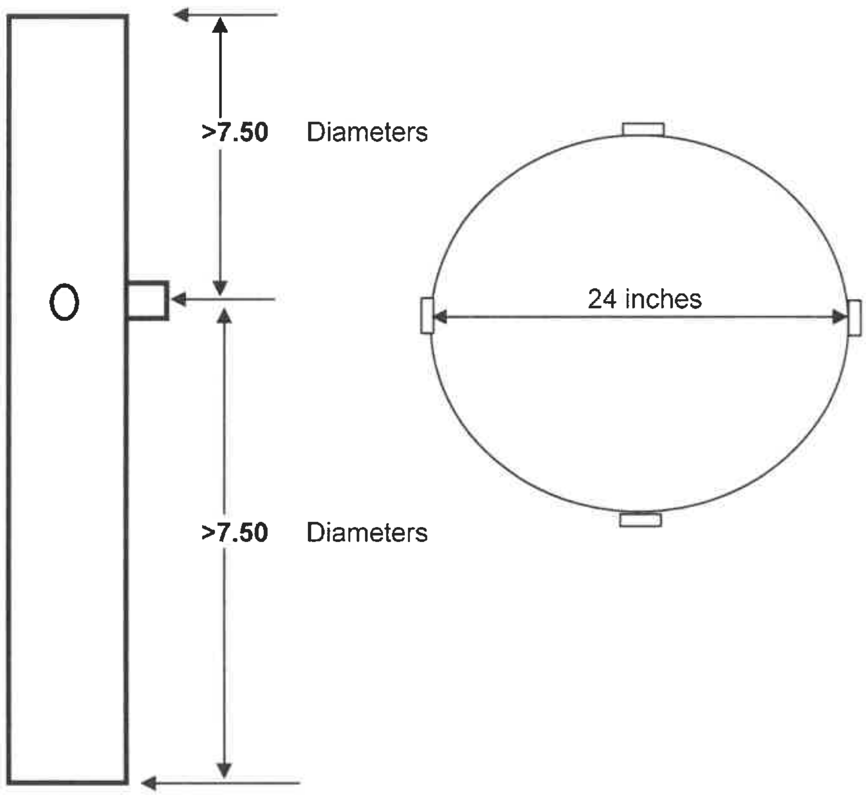
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Flare Station Pre-H2S

Performed By: SJ, KT



Diameter (inches)	**24.00**
Upstream (inches)	**180.00**
Downstream (inches)	**180.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**3.142**

Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
1	3.2	0.8	0.8
2	10.5	2.5	2.5
3	19.4	4.7	4.7
4	32.3	7.8	7.8
5	67.7	16.2	16.2
6	80.6	19.3	19.3
7	89.5	21.5	21.5
8	96.8	23.2	23.2

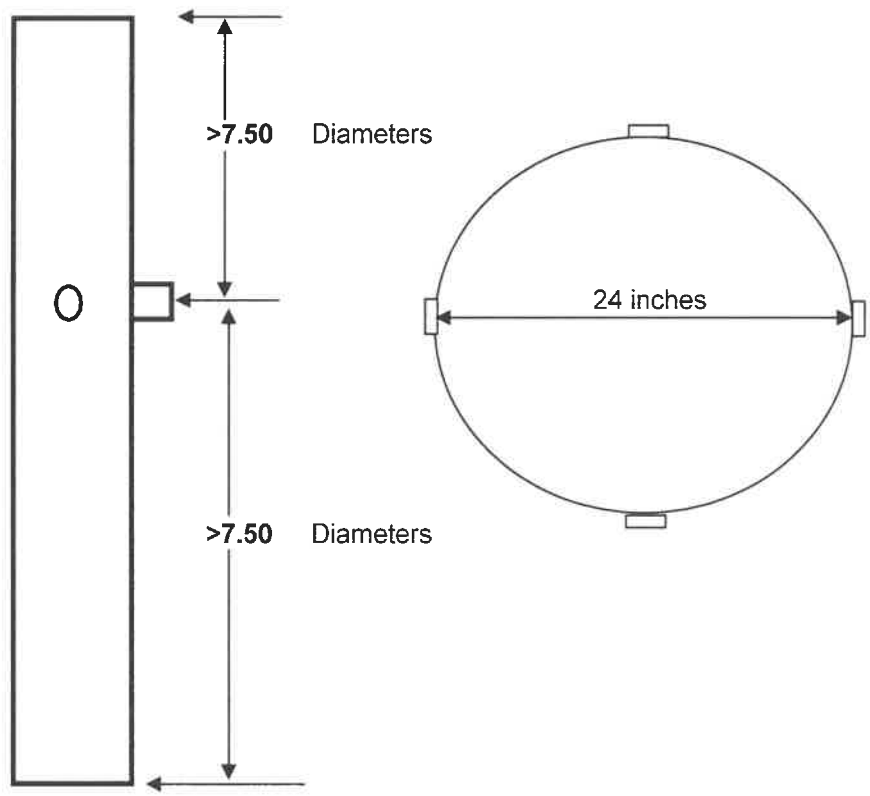
METHOD 1 DATA SHEET
INLET SAMPLE LOCATION

Client: SCS Field Services

Date: 3/20/25

Location: Flare Station Post-H2S

Performed By: SJ, KT



Diameter (inches)	**24.00**
Upstream (inches)	**180.00**
Downstream (inches)	**180.00**
Coupling (in.)	**0.00**
Stack Area (ft^2)	**3.142**

Sample Point	% of Diameter	Dist from Wall (inches)	Dist from Port (inches)
1	3.2	0.8	0.8
2	10.5	2.5	2.5
3	19.4	4.7	4.7
4	32.3	7.8	7.8
5	67.7	16.2	16.2
6	80.6	19.3	19.3
7	89.5	21.5	21.5
8	96.8	23.2	23.2

Appendix A.2
Velocity, Moisture and Flow Rate Data

MONTROSE AQS

Duct Moisture by Wet bulb/Dry bulb Measurements

Facility: Chiquita Canyon Landfill

CEM I.D. : T-4

TEST DATE: March 20, 2025

BY: PSJ

$$B_{ws} = \frac{e_a^{"}}{P_a}$$

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

	P_{bar}	Static Pressure (in. of H_2O)	P_a	T_{dry}	T_{wet}	e_a	B_{ws}	e"
Tank Farm 6	29.03	-4.50	28.7011	81	61	0.3562	1.24	0.56307
Tank Farm 9A	29.03	-0.007	29.0315	78	55	0.198489	0.68	0.439506
Tank Farm 9B	29.03	-0.009	29.0313	76	55	0.219448	0.76	0.439506
Tank Farm 2	29.03	-0.006	29.0316	77	54	0.178052	0.61	0.419127
Tank Farm 7A	29.03	-0.005	29.0316	79	57	0.249873	0.86	0.480303
Tank Farm 7B	29.03	-0.005	29.0316	79	57	0.249873	0.86	0.480303
Zeeco	29.03	-2.800	28.8261	165	100	1.256142	4.36	1.91137
Flare Station Pre	29.03	-0.020	29.0305	90	76	0.778127	2.68	0.923801
Flare Station Post	29.03	5.200	29.4144	90	76	0.776138	2.64	0.923801

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Tank Farm 6	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.196	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	8:15	8:45
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-4.50	iwg
Pstack:	28.70	"Hg
MW Wet:	28.66	lb/lb-mole
MW Dry:	28.79	lb/lb-mole
Moisture		
Moisture Content:	1.24 %	From WbDb
Fuel Gas Composistion Data		
O_2:	21.82 %	From canister analysis
CO_2:	0.14 %	From canister analysis
N_2:	77.59 %	From canister analysis
CH_4:	0.14 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.130	0.3606	81	20.96
2	0.150	0.3873	81	22.52
3	0.100	0.3162	81	18.39
4	0.090	0.3000	81	17.44
5	0.120	0.3464	81	20.14
6	0.110	0.3317	81	19.28
1	0.120	0.3464	81	20.14
2	0.160	0.4000	81	23.26
3	0.150	0.3873	81	22.52
4	0.170	0.4123	81	23.97
5	0.150	0.3873	81	22.52
6	0.160	0.4000	81	23.26
Average	0.1329	0.3646	81	21.20

Flow Rate:	250	wacfm
Flow Rate:	230	scfm
Flow Rate:	227	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Tank Farm 9A	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.785	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	8:55	9:25
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-0.007	iwg
Pstack:	29.03	"Hg
MW Wet:	28.92	lb/lb-mole
MW Dry:	29.00	lb/lb-mole

Moisture		
Moisture Content:	0.68 %	From WbDb

Fuel Gas Composistion Data		
O_2:	21.17 %	From canister analysis
CO_2:	2.64 %	From canister analysis
N_2:	74.80 %	From canister analysis
CH_4:	0.75 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.005	0.0707	78	4.06
2	0.007	0.0837	78	4.80
3	0.006	0.0775	78	4.45
4	0.006	0.0775	78	4.45
5	0.008	0.0894	78	5.13
6	0.005	0.0707	78	4.06
1	0.005	0.0707	78	4.06
2	0.006	0.0775	78	4.45
3	0.005	0.0707	78	4.06
4	0.007	0.0837	78	4.80
5	0.003	0.0548	78	3.14
6	0.005	0.0707	78	4.06
Average	0.0056	0.0748	78	4.29

Flow Rate:	202	wacfm
Flow Rate:	190	scfm
Flow Rate:	188	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Tank Farm 9B	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.785	ft^2

TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	8:55	9:25
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-0.009	iwg
Pstack:	29.03	"Hg
MW Wet:	28.64	lb/lb-mole
MW Dry:	28.72	lb/lb-mole

Moisture			
Moisture Content:	0.76	%	From WbDb

Fuel Gas Composistion Data			
O_2:	21.88	%	From canister analysis
CO_2:	0.14	%	From canister analysis
N_2:	77.27	%	From canister analysis
CH_4:	0.14	%	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.013	0.1140	76	6.56
2	0.013	0.1140	76	6.56
3	0.013	0.1140	76	6.56
4	0.010	0.1000	76	5.76
5	0.013	0.1140	76	6.56
6	0.012	0.1095	76	6.31
1	0.012	0.1095	76	6.31
2	0.012	0.1095	76	6.31
3	0.013	0.1140	76	6.56
4	0.012	0.1095	76	6.31
5	0.011	0.1049	76	6.04
6	0.012	0.1095	76	6.31
Average	0.0121	0.1102	76	6.34

Flow Rate:	299	wacfm
Flow Rate:	281	scfm
Flow Rate:	279	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Tank Farm 2	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.196	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	9:00	9:30
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-0.006	iwg
Pstack:	29.03	"Hg
MW Wet:	28.30	lb/lb-mole
MW Dry:	28.37	lb/lb-mole

Moisture		
Moisture Content:	0.61 %	From WbDb

Fuel Gas Composistion Data		
O_2:	20.66 %	From canister analysis
CO_2:	2.30 %	From canister analysis
N_2:	74.00 %	From canister analysis
CH_4:	0.14 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.006	0.0775	77	4.49
2	0.007	0.0837	77	4.85
3	0.007	0.0837	77	4.85
4	0.009	0.0949	77	5.50
5	0.010	0.1000	77	5.80
6	0.013	0.1140	77	6.61
1	0.008	0.0894	77	5.18
2	0.009	0.0949	77	5.50
3	0.007	0.0837	77	4.85
4	0.005	0.0707	77	4.10
5	0.009	0.0949	77	5.50
6	0.010	0.1000	77	5.80
Average	0.0082	0.0906	77	5.25

Flow Rate:	62	wacfm
Flow Rate:	58	scfm
Flow Rate:	58	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Tank Farm 7A	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.785	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	9:35	10:05
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-0.005	iwg
Pstack:	29.03	"Hg
MW Wet:	28.23	lb/lb-mole
MW Dry:	28.32	lb/lb-mole

Moisture		
Moisture Content:	0.86 %	From WbDb

Fuel Gas Composistion Data		
O_2:	21.52 %	From canister analysis
CO_2:	0.14 %	From canister analysis
N_2:	76.26 %	From canister analysis
CH_4:	0.14 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.005	0.0707	79	4.11
2	0.007	0.0837	79	4.86
3	0.006	0.0775	79	4.50
4	0.009	0.0949	79	5.52
5	0.008	0.0894	79	5.20
6	0.007	0.0837	79	4.86
1	0.006	0.0775	79	4.50
2	0.008	0.0894	79	5.20
3	0.006	0.0775	79	4.50
4	0.005	0.0707	79	4.11
5	0.009	0.0949	79	5.52
6	0.008	0.0894	79	5.20
Average	0.0069	0.0833	79	4.84

Flow Rate:	228	wacfm
Flow Rate:	214	scfm
Flow Rate:	212	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Tank Farm 7B	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.785	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	9:35	10:05
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-0.005	iwg
Pstack:	29.03	"Hg
MW Wet:	28.85	lb/lb-mole
MW Dry:	28.94	lb/lb-mole
Moisture		
Moisture Content:	0.86 %	From WbDb
Fuel Gas Composistion Data		
O_2:	21.29 %	From canister analysis
CO_2:	1.92 %	From canister analysis
N_2:	75.93 %	From canister analysis
CH_4:	0.14 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.007	0.0837	79	4.81
2	0.009	0.0949	79	5.46
3	0.008	0.0894	79	5.14
4	0.009	0.0949	79	5.46
5	0.008	0.0894	79	5.14
6	0.007	0.0837	79	4.81
1	0.006	0.0775	79	4.46
2	0.009	0.0949	79	5.46
3	0.010	0.1000	79	5.75
4	0.011	0.1049	79	6.03
5	0.006	0.0775	79	4.46
6	0.005	0.0707	79	4.07
Average	0.0078	0.0884	79	5.09

Flow Rate:	240	wacfm
Flow Rate:	224	scfm
Flow Rate:	222	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Zeeco	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	0.785	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	9:35	10:05
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-2.80	iwg
Pstack:	28.83	"Hg
MW Wet:	31.65	lb/lb-mole
MW Dry:	32.27	lb/lb-mole

Moisture			
Moisture Content:	4.36	%	From WbDb
Fuel Gas Composistion Data			
O_2:	6.75	%	From canister analysis
CO_2:	36.30	%	From canister analysis
N_2:	29.74	%	From canister analysis
CH_4:	36.3	%	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.270	0.5196	165	30.84
2	0.280	0.5292	165	31.40
3	0.300	0.5477	165	32.50
4	0.300	0.5477	165	32.50
5	0.280	0.5292	165	31.40
6	0.260	0.5099	165	30.26
1	0.280	0.5292	165	31.40
2	0.270	0.5196	165	30.84
3	0.280	0.5292	165	31.40
4	0.240	0.4899	165	29.07
5	0.250	0.5000	165	29.67
6	0.230	0.4796	165	28.46
Average	0.2696	0.5192	165	30.81

Flow Rate:	1,452	wacfm
Flow Rate:	1,164	scfm
Flow Rate:	1,113	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Flare Station Pre-H2S	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	3.142	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	10:10	10:40
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	-0.02	iwg
Pstack:	29.03	"Hg
MW Wet:	29.39	lb/lb-mole
MW Dry:	29.71	lb/lb-mole

Moisture		
Moisture Content:	2.68 %	From WbDb

Fuel Gas Composistion Data		
O_2:	4.04 %	From canister analysis
CO_2:	42.98 %	From canister analysis
N_2:	17.50 %	From canister analysis
CH_4:	28.78 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.026	0.1612	90	9.28
2	0.025	0.1581	90	9.10
3	0.028	0.1673	90	9.63
4	0.027	0.1643	90	9.46
5	0.029	0.1703	90	9.80
6	0.028	0.1673	90	9.63
7	0.031	0.1761	90	10.13
8	0.030	0.1732	90	9.97
1	0.033	0.1817	90	10.46
2	0.032	0.1789	90	10.30
3	0.033	0.1817	90	10.46
4	0.032	0.1789	90	10.30
5	0.037	0.1924	90	11.07
6	0.035	0.1871	90	10.77
7	0.038	0.1949	90	11.22
8	0.039	0.1975	90	11.37
Average	0.0313	0.1769	90	10.18

Flow Rate:	1,920	wacfm
Flow Rate:	1,761	scfm
Flow Rate:	1,714	dscfm

DATA AND WORKSHEET
RUN NUMBER 1

TEST CONSTANTS		
Station:	Chiquita Canyon Landfill	
Unit:	Flare Station Post-H2S	
Performed By:	3/20/2025	
Cp:	0.84	
T_{ref}:	60	°F
Stack Area:	3.142	ft^2
TEST VARIABLES		
Start Date:	3/20/25	
Start/End Time:	10:10	10:40
Test Condition:	Normal	
Barom. Pressure:	29.03	
Pstack:	5.20	iwg
Pstack:	29.41	"Hg
MW Wet:	29.41	lb/lb-mole
MW Dry:	29.72	lb/lb-mole
Moisture		
Moisture Content:	2.64 %	From WbDb
Fuel Gas Composistion Data		
O_2:	3.64 %	From canister analysis
CO_2:	43.53 %	From canister analysis
N_2:	18.76 %	From canister analysis
CH_4:	25.95 %	From canister analysis

METHOD 2.1 DATA

Point	dP (in. H_2O)	sqrt(dP)	Temp °F	Vel. (fps)
1	0.031	0.1761	90	10.06
2	0.027	0.1643	90	9.39
3	0.025	0.1581	90	9.04
4	0.029	0.1703	90	9.73
5	0.028	0.1673	90	9.57
6	0.027	0.1643	90	9.39
7	0.029	0.1703	90	9.73
8	0.030	0.1732	90	9.90
1	0.025	0.1581	90	9.04
2	0.029	0.1703	90	9.73
3	0.031	0.1761	90	10.06
4	0.034	0.1844	90	10.54
5	0.033	0.1817	90	10.38
6	0.036	0.1897	90	10.85
7	0.034	0.1844	90	10.54
8	0.031	0.1761	90	10.06
Average	0.0299	0.1728	90	9.88

Flow Rate:	1,862	wacfm
Flow Rate:	1,731	scfm
Flow Rate:	1,685	dscfm

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA TANK FARM 6
PERFORMED BY: SS, KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC 43
DP INDICATOR ID: ADM 880 #9
TC ID: 4/B (SX) DB
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 145
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —/—

Run #: 1	Ps: -4.50		Run #:	Ps:		Run #:	Ps:	
Start: 0815	Stop: 0845		Start:	Stop:		Start:	Stop:	
Sample Point	Vel. Head inches H_2O	Temp, °F	~~Sample Point~~ CYCL.	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
T 1	0.130	81	2°					
2	0.150	81	1					
3	0.160	81	0					
4	0.09	81	1					
5	0.12	81	3					
6	0.11	81	4					
1	0.12	81	2					
2	0.16	81	1					
3	0.15	81	0					
4	0.17	81	3					
5	0.15	81	1					
6	0.16	81	3					
Heated Line Temp. °F	N/A		Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C	N/A		Chiller Temp. °C			Chiller Temp. °C		

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA TANK Farm 9A
PERFORMED BY: SJ / KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC43
DP INDICATOR ID: ADM 850 #7
TC ID: PB
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 145
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -0.007	Run #:	Ps:	Run #:	Ps:
Start: 0855	Stop: 0925	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	CYCL. ~~Sample~~ Point	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.005	78	6					
2	0.007	78	4					
3	0.006	78	2					
4	0.006	78	1					
5	0.008	78	4					
6	0.005	78	1					
1	0.005	78	3					
2	0.006	78	6					
3	0.005	78	2					
4	0.007	78	2					
5	0.003	78	8					
6	0.005	78	2					

Heated Line Temp. °F	N/A	Heated Line Temp. °F		Heated Line Temp. °F.	
Chiller Temp. °C	N/A	Chiller Temp. °C		Chiller Temp. °C	

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SSS
LOCATION/UNIT: CHIQUITA TANK FARM 9B
PERFORMED BY: SS / KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC43
DP INDICATOR ID: ADM850 #9
TC ID: DB
DP INDICATOR TYPE: Electronic
PITOT TUBE ID: 145
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -0.009	Run #:	Ps:	Run #:	Ps:
Start: 855	Stop: 925	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	CYCL. ~~Sample Point~~	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.013	76	10					
2	0.013	76	0					
3	0.013	76	1					
4	0.010	76	3					
5	0.013	76	1					
6	0.012	76	2					
1	0.012	76	7					
2	0.012	76	1					
3	0.013	76	3					
4	0.012	76	1					
5	0.011	76	0					
6	0.012	76	6					

Heated Line Temp. °F	N/A	Heated Line Temp. °F		Heated Line Temp. °F.	
Chiller Temp. °C	N/A	Chiller Temp. °C		Chiller Temp. °C	

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA TANK FARM 2
PERFORMED BY: SS / KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC 43
DP INDICATOR ID: ADM 850 #2
TC ID: DB
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 145
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -0.006	Run #:	Ps:	Run #:	Ps:
Start: 900	Stop: 930	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	CYCL. ~~Sample Point~~	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.006	77	4°					
2	0.007	77	4					
3	0.007	77	8					
4	0.009	77	4					
(8) 5	0.010	77	2					
6	0.013	77	1					
1	0.008	77	0					
2	0.009	77	3					
3	0.007	77	1					
4	0.005	77	5					
5	0.009	77	1					
6	0.010	77	2					

Heated Line Temp. °F		Heated Line Temp. °F		Heated Line Temp. °F	
Chiller Temp. °C		Chiller Temp. °C		Chiller Temp. °C	

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA TANKFARM 7A
PERFORMED BY: SS | KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC 43
DP INDICATOR ID: ADM 850 #9
TC ID: OB
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 145
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -0.005	Run #:	Ps:	Run #:	Ps:
Start: 935	Stop: 1005	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	CYCL. ~~Sample Point~~	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.005	79	30					
2	0.007	79	1					
3	0.006	79	2					
4	0.009	79	2					
5	0.008	79	1					
6	0.007	79	0					
1	0.006	79	2					
2	0.008	79	1					
3	0.006	79	4					
4	0.005	79	3					
5	0.009	79	1					
6	0.008	79	3					

Heated Line Temp. °F	N/A	Heated Line Temp. °F		Heated Line Temp. °F.	
Chiller Temp. °C		Chiller Temp. °C		Chiller Temp. °C	

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA TANK FARM 7B
PERFORMED BY: SS / KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC 43
DP INDICATOR ID: ADM 850 #9
TC ID: DB
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 146
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -0.005	Run #:	Ps:	Run #:	Ps:
Start: 935	Stop: 1005	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	CYCL. ~~Sample Point~~	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.007	79	10°					
2	0.009	79	6					
3	0.008	79	5					
4	0.009	79	1					
5	0.008	79	0					
6	0.007	79	1					
1	0.006	79	4					
2	0.009	79	2					
3	0.010	79	1					
4	0.011	79	3					
5	0.006	79	5					
6	0.005	79	1					
Heated Line Temp. °F	N/A		Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C			Chiller Temp. °C			Chiller Temp. °C		

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA REECO
PERFORMED BY: SJ/KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC 43
DP INDICATOR ID: ELECTRONIC ADM850?
TC ID: DB
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 145
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -2.80	Run #:	Ps:	Run #:	Ps:
Start: 935	Stop: 1005	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	CYCL. ~~Sample Point~~	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.27	165	0°					
2	0.28	165	1					
3	0.30	165	2					
4	0.30	165	1					
5	0.28	165	0					
6	0.26	165	0					
1	0.28	165	3					
2	0.27	165	1					
3	0.28	165	0					
4	0.24	165	2					
5	0.25	165	1					
6	0.23	165	4					
Heated Line Temp. °F	N/A		Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C	N/A		Chiller Temp. °C			Chiller Temp. °C		

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA FLARE STATION PRE H2S
PERFORMED BY: SS/KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: PTC43
DP INDICATOR ID: ADM 850 #9
TC ID: B46
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 1TL
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1	Ps: -2.020	Run #:	Ps:	Run #:	Ps:
Start: 1010	Stop: 1040	Start:	Stop:	Start:	Stop:

Sample Point	Vel. Head inches H_2O	Temp, °F	~~Sample~~ CYCL. Point	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.026	90	2°					
2	0.025	90	0					
3	0.028	90	1					
4	0.027	90	3					
5	0.029	90	6					
6	0.028	90	2					
7	0.031	90	4					
8	0.030	90	7					
1	0.033	90	2					
2	0.032	90	1					
3	0.033	90	3					
4	0.032	90	1					
5	0.037	90	2					
6	0.035	90	1					
7	0.038	90	5					
8	0.039	90	4					

Heated Line Temp. °F	N/A	Heated Line Temp. °F		Heated Line Temp. °F.	
Chiller Temp. °C	N/A	Chiller Temp. °C		Chiller Temp. °C	

FLUE GAS VELOCITY DATA AND WORKSHEET

CLIENT: W/C SCS
LOCATION/UNIT: CHIQUITA FLARE STATION POST H2S
PERFORMED BY: ST/KT
TEST DATE: 3/20/25
BAR. PRESSURE: 29.03
TC READOUT ID: 146
DP INDICATOR ID: ADM 850 #9
TC ID: 146
DP INDICATOR TYPE: ELECTRONIC
PITOT TUBE ID: 146
Cp: 0.84
ZERO: ✓ LEVEL: ✓ LEAK CHECK PRE- ✓ POST- ✓ BALANCE CHECK WEIGHT —

Run #: 1		Ps: 5.20	Run #:		Ps:	Run #:		Ps:
Start: 1010		Stop: 1040	Start:		Stop:	Start:		Stop:
Sample Point	Vel. Head inches H_2O	Temp, °F	~~Sample Point~~ cycl.	Vel. Head inches H_2O	Temp, °F	Sample Point	Vel. Head inches H_2O	Temp, °F
1	0.031	90	2°					
2	0.027	90	6°					
3	0.025	90	9°					
4	0.029	90	4°					
5	0.028	90	3					
6	0.027	90	1					
7	0.029	90	7					
8	0.030	90	1					
1	0.025	90	0					
2	0.029	90	4					
3	0.031	90	8					
4	0.034	90	2					
5	0.033	90	4					
6	0.036	90	1					
7	0.034	90	6					
8	0.031	90	3					
Heated Line Temp. °F	N/A		Heated Line Temp. °F			Heated Line Temp. °F.		
Chiller Temp. °C			Chiller Temp. °C			Chiller Temp. °C		

Appendix A.3
Organics and Sulfur Field and Laboratory Data

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: TANK FARM 6 Performed By: ST/KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		51383	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0815	30
	10	0825	21
	20	0835	12
end →	30	0845	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 6.0"

Upstream: 48"

Downstream: 48"

Flow Rate: —

Wet bulb: 61

Dry bulb: 81

TEDLAR BAG DATA

Start: N/A

Stop:

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: TANK FARM 9A Performed By: SJ/KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		49442	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0855	30
	10	0905	22
	20	0915	13
→END	30	0925	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 12"

Upstream: 96"

Downstream: 96"

Flow Rate: —

Wet bulb: SJ ~~78~~ 55

Dry bulb: 78

TEDLAR BAG DATA

Start:

Stop: N/A

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: TANK FARM 9B Performed By: ST/KG

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		48469	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0855	30
	10	0905	21
	20	0915	13
end →	30	0925	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 12"

Upstream: 96"

Downstream: 96"

Flow Rate: —

Wet bulb: 55

Dry bulb: 76

TEDLAR BAG DATA

Start:

Stop: N/A

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: TANK FARM 2 Performed By: ST | KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		46911	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0900	30
	10	0910	23
	20	0920	14
End →	30	0930	5
Sample Collection	Stop		
Post -Test Leak Check	Start	~~1040~~ 1050	5
Post-Test Leak Check	Stop	~~1030~~ 1100	5

CGO 3/20/25

FLOWRATE DATA

Diameter: 6"

Upstream: 48"

Downstream: 48"

Flow Rate: —

Wet bulb: 54

Dry bulb: 77

TEDLAR BAG DATA

Start: N/A

Stop:

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: TANK FARM 7A Performed By: ST / KT

Barometric Pressure 29.07 Ambient Temperature 28°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		47728	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0935	30
	10	0945	22
	20	0955	14
END→	30	1005	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 12"

Upstream: 96"

Downstream: 96"

Flow Rate: —

Wet bulb: 57

Dry bulb: 79

TEDLAR BAG DATA

Start: N/A

Stop:

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: TANK FARM 1B Performed By: SS / KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		48864	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0935	30
	10	0945	21
	20	0955	13
end →	30	1005	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 12"

Upstream: 180"

Downstream: 180"

Flow Rate: —

Wet bulb: 57

Dry bulb: 79

TEDLAR BAG DATA

Start:

Stop: N/A

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: ZEECO Performed By: ST/KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		5125	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	0935	30
	10	0945	22
	20	0955	14
end →	30	1005	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 12"

Upstream: 180"

Downstream: 180"

Flow Rate: —

Wet bulb: 100

Dry bulb: 165

TEDLAR BAG DATA

Start: N/A

Stop:

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: FLARE STATION PRE H2O Performed By: ST/KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		49439	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	1010	30
	10	1020	23
	20	1030	13
end→	30	1040	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 24"

Upstream: 180"

Downstream: 180"

Flow Rate: —

Wet bulb: 76

Dry bulb: 90

TEDLAR BAG DATA

Start: N/A

Stop:

Bag ID:

LEACHATE TANK HEADSPACE SAMPLING DATA

Client/Facility: CHIQUITA Date: 3/20/25

Unit/Location: FLARE STATION POST H2S Performed By: SJ / KT

Barometric Pressure 29.03 Ambient Temperature 78°

SUMMA CANISTER DATA

Test No.		1	
Canister ID		46611	
		Time	Vacuum
Pre-Test Leak Check	Start	0740	30
Pre-Test Leak Check	Stop	0750	30
Sample Collection	Start	1010	30
	10	1020	23
	20	1030	13
end	30	1040	5
Sample Collection	Stop		
Post -Test Leak Check	Start	1050	5
Post-Test Leak Check	Stop	1100	5

FLOWRATE DATA

Diameter: 24"

Upstream: 180"

Downstream: 180"

Flow Rate: —

Wet bulb: 76

Dry bulb: 90

TEDLAR BAG DATA

Start: N/A

Stop:

Bag ID:

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LABORATORY ANALYSIS REPORT

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

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 21, 2025

ANALYSIS DESCRIPTION

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

AtmAA Lab No.:	20795-31	20795-32	20795-33
Sample I.D.:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B
Components	*(Concentration in %,v)*		
Nitrogen	77.59	74.80	77.27
Oxygen	21.82	21.17	21.88
Methane	<0.14	0.75	<0.14
Carbon dioxide	<0.14	2.64	<0.14

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: March 20, 2025
Date Analyzed: March 21, 2025

Components	Sample ID	Repeat Analysis (Concentration in %,v)		Mean Conc.	% RPD
		Run #1	Run #2		
Nitrogen	Tank Farm 6	77.98	77.19	77.59	1.0
Oxygen	Tank Farm 6	21.86	21.77	21.82	0.41
Methane	Tank Farm 6	<0.14	<0.14	---	---
Carbon dioxide	Tank Farm 6	<0.14	<0.14	---	---

Three Silco canister samples, laboratory numbers 20795-(31-33), 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 2 repeat measurements from three Silco canister samples is 0.72%.

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LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in Silco Canister Samples

Report Date:	April 14, 2025
Client:	Montrose AQS
Project Location:	Chiquita Landfill
Project No.:	PROJ-053154
Date Received:	March 20, 2025
Date Analyzed:	March 21, 2025
Laboratory Temp:	73.5 °F
Barometric Pressure:	29.95 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.:	20795-31	20795-32	20795-33
Sample ID:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B
Component	*(Concentration in ppmv, component)*		
Methane	300	7500	26.4
Ethene	<0.30	6.48	<0.20
Acetylene	<0.30	<0.30	<0.20
Ethane	<0.30	7.12	<0.20
Non-methane hydrocarbons analysis by carbon number grouping			
C3	<0.10	22.3	<0.10
C4	70.0	75.5	31.9
C5	60.0	71.3	29.5
C6	42.0	96.3	21.7
C7	7.57	36.0	5.18
C8	7.29	29.4	4.69
C9	4.90	29.0	8.17
C10	9.27	26.5	23.1
C11	1.28	5.35	7.17
C12	0.65	3.12	6.87
C13	0.24	2.03	9.36
C14	<0.06	0.51	2.16
	(Concentration in ppmvC)		
TNMHC	1105	2473	1096

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: March 20, 2025
Date Analyzed: March 21, 2025

Component	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Conc. in ppmv, component)			
Methane	Tank Farm 6	254	254	254	0.08
Ethene	Tank Farm 6	<0.30	<0.30	<0.30	---
Acetylene	Tank Farm 6	<0.30	<0.30	<0.30	---
Ethane	Tank Farm 6	<0.30	<0.30	<0.30	---
non-methane hydrocarbons analysis by carbon number grouping					
C3	Tank Farm 6	<0.10	<0.10	<0.10	---
C4	Tank Farm 6	70.0	69.9	70.0	0.09
C5	Tank Farm 6	60.0	60.1	60.0	0.17
C6	Tank Farm 6	42.0	41.9	42.0	0.26
C7	Tank Farm 6	7.70	7.45	7.57	3.3
C8	Tank Farm 6	7.44	7.13	7.29	4.2
C9	Tank Farm 6	4.86	4.95	4.90	1.7
C10	Tank Farm 6	9.17	9.37	9.27	2.1
C11	Tank Farm 6	1.08	1.48	1.28	31
C12	Tank Farm 6	0.61	0.69	0.65	12
C13	Tank Farm 6	0.24	0.25	0.24	4.5
C14	Tank Farm 6	<0.06	<0.06	<0.06	---
		(Concentration in ppmvC)			
TNMHC	Tank Farm 6	1103	1107	1105	0.32

Three Silco canister samples, laboratory numbers 20795-(31-33), 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 12 repeat measurements from three Silco canister samples is 5.0%.

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LABORATORY ANALYSIS REPORT

Hydrogen Sulfide and Reduced Sulfur Compounds
Analysis in Silco Canister Sample by SCAQMD Method 307.91

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 20, 2025

ANALYSIS DESCRIPTION

Total sulfur analysis measured by gas chromatography with sulfur chemiluminescence detector (SCD), SCAQMD 307.91.

AtmAA Lab No.:	20795-31	20795-32	20795-33
Sample I.D.:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B
Components		*(Concentration in ppmv)*	
Hydrogen sulfide	<0.10	10.5	<0.10
Carbonyl sulfide	<0.10	<0.10	<0.10
Methyl mercaptan	0.12	14.6	<0.10
Ethyl mercaptan	<0.10	0.22	<0.10
Dimethyl sulfide	3.54	49.9	1.76
Carbon disulfide	<0.10	<0.10	<0.10
i-Propyl mercaptan	<0.10	0.17	<0.10
t-Butyl mercaptan	<0.10	<0.10	<0.10
n-Propyl mercaptan	<0.10	<0.10	<0.10
s-Butyl mercaptan	<0.10	0.76	<0.10
i-Butyl mercaptan	<0.10	<0.10	<0.10
Dimethyl disulfide	<0.10	0.30	<0.10
Tetrahydrothiophene	<0.10	0.38	<0.10
Unidentified sulfurs	<0.10	2.18	<0.10
		(Concentration in ppmv, as H_2S)	
Total Sulfur	3.66	79.24	1.76

Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 20, 2025

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in ppmv)			
Hydrogen sulfide	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	10.6	10.4	10.5	1.9
	Tank Farm 9B	<0.10	<0.10	---	---
Carbonyl sulfide	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	<0.10	<0.10	---	---
	Tank Farm 9B	<0.10	<0.10	---	---
Methyl mercaptan	Tank Farm 6	0.12	0.12	0.12	0.00
	Tank Farm 9A	14.6	14.5	14.6	0.69
	Tank Farm 9B	<0.10	<0.10	---	---
Ethyl mercaptan	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	0.22	0.22	0.22	0.00
	Tank Farm 9B	<0.10	<0.10	---	---
Dimethyl sulfide	Tank Farm 6	3.55	3.52	3.54	0.85
	Tank Farm 9A	50.3	49.5	49.9	1.6
	Tank Farm 9B	1.77	1.74	1.76	1.7
Carbon disulfide	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	<0.10	<0.10	---	---
	Tank Farm 9B	<0.10	<0.10	---	---
i-Propyl mercaptan	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	0.17	0.16	0.17	6.1
	Tank Farm 9B	<0.10	<0.10	---	---
t-Butyl mercaptan	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	<0.10	<0.10	---	---
	Tank Farm 9B	<0.10	<0.10	---	---
n-Propyl mercaptan	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	<0.10	<0.10	---	---
	Tank Farm 9B	<0.10	<0.10	---	---
s-Butyl mercaptan	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	0.76	0.75	0.76	1.3
	Tank Farm 9B	<0.10	<0.10	---	---

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)
(continued)

Components	Sample ID	Repeat Analysis		Mean	%
		Run #1	Run #2	Conc.	RPD
		(Concentration in ppmv)			
i-Butyl mercaptan	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	<0.10	<0.10	---	---
	Tank Farm 9B	<0.10	<0.10	---	---
Dimethyl disulfide	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	0.31	0.29	0.30	6.7
	Tank Farm 9B	<0.10	<0.10	---	---
Tetrahydrothiophene	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	0.38	0.37	0.38	2.7
	Tank Farm 9B	<0.10	<0.10	---	---
Unidentified sulfurs	Tank Farm 6	<0.10	<0.10	---	---
	Tank Farm 9A	2.19	2.16	2.18	1.4
	Tank Farm 9B	<0.10	<0.10	---	---

Three Silco canister samples, laboratory numbers 20795-(31-33), were analyzed for total sulfur compounds. Agreement between repeat analyses is a measure of precision and is shown above in the column "% RPD". The average % RPD for 12 repeat measurements from three Silco canister samples is 2.1%.

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

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-31
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).

Component	Mole %	Wt %	C,H,O,N,S, Wt.%	
Methane	0.00	0.00	Carbon	0.05
Carbon dioxide	0.00	0.00	Hydrogen	0.01
Nitrogen	78.04	75.45	Oxygen	23.21
Oxygen	21.01	23.21	Nitrogen	75.46
Argon	0.93	1.28	Argon	1.28
Hydrogen	0.00	0.00	Sulfur	0.00
$(CH_2)_n$	0.020	0.06		

Specific Volume	13.091			
BTU/ft3 (Dry @60F, 14.696 psia)	0.8850	(HHV)	0.8189	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	0.8695	(HHV)	0.8046	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	11.59	(HHV)	10.72	(LHV)
Compressibility Factor (@60F, 14.696 psia)	0.9996			
Wobbe Index	0.8907			
Specific Gravity	0.9871			

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:	April 14, 2025
Client:	Montrose AQS
Project Location:	Chiquita Landfill
Date Received:	March 20, 2025
Date Analyzed:	March 21, 2025
AtmAA Lab #:	20795-32
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 a calculated according to ASTM 3588-98 (14.696 psia and 60°F).

Component	Mole %	Wt %	C,H,O,N,S,	Wt.%
Methane	0.75	0.41	Carbon	1.50
Carbon dioxide	2.66	3.99	Hydrogen	0.12
Nitrogen	75.25	71.95	Oxygen	25.19
Oxygen	20.39	22.29	Nitrogen	71.95
Argon	0.90	1.24	Argon	1.24
Hydrogen	0.00	0.00	Sulfur	0.00
$(CH_2)_n$	0.041	0.12		

Specific Volume	12.948			
BTU/ft3 (Dry @60F, 14.696 psia)	9.596	(HHV)	8.691	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	9.429	(HHV)	8.540	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	124.25	(HHV)	112.53	(LHV)
F_d (factor)	9895			
F_w (factor)	11805			
F_c (factor)	3874			
Compressibility Factor (@60F, 14.696 psia)	0.9996			
Wobbe Index	9.6014			
Specific Gravity	0.9989			

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: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-33
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 a calculated according to ASTM 3588-98 (14.696 psia and 60°F).

Component	Mole %	Wt %	C,H,O,N,S,	Wt.%
Methane	0.00	0.00	Carbon	0.05
Carbon dioxide	0.00	0.00	Hydrogen	0.01
Nitrogen	77.92	75.31	Oxygen	23.34
Oxygen	21.13	23.34	Nitrogen	75.31
Argon	0.94	1.29	Argon	1.29
Hydrogen	0.00	0.00	Sulfur	0.00
$(CH_2)_n$	0.015	0.05		

Specific Volume	13.088			
BTU/ft3 (Dry @60F, 14.696 psia)	0.8666	(HHV)	0.8034	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	0.8515	(HHV)	0.7894	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	11.34	(HHV)	10.52	(LHV)
Compressibility Factor (@60F, 14.696 psia)	0.9996			
Wobbe Index	0.8715			
Specific Gravity	0.9888			

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

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LABORATORY ANALYSIS REPORT

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

Report Date:	April 14, 2025
Client:	Montrose AQS
Project Location:	Chiquita Landfill
Project No.:	PROJ-053154
Date Received:	March 20, 2025
Date Analyzed:	March 21, 2025

ANALYSIS DESCRIPTION

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

AtmAA Lab No.:	20795-34	20795-35	20795-36
Sample I.D.:	Tank Farm 2	Tank Farm 7A	Tank Farm 7B
Components	*(Concentration in %,v)*		
Nitrogen	74.00	76.26	75.93
Oxygen	20.66	21.52	21.29
Methane	<0.14	<0.14	<0.14
Carbon dioxide	2.30	<0.14	1.92

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:	April 14, 2025
Client:	Montrose AQS
Project Location:	Chiquita Landfill
Project No.:	PROJ-053154
Date Received:	March 20, 2025
Date Analyzed:	March 21, 2025
Laboratory Temp:	73.5 °F
Barometric Pressure:	29.95 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.:	20795-34	20795-35	20795-36
Sample ID:	Tank Farm 2	Tank Farm 7A	Tank Farm 7B
Component	*(Concentration in ppmv, component)*		
Methane	1015	77.7	695
Ethene	<0.30	<0.30	2.90
Acetylene	<0.30	<0.30	<0.20
Ethane	<0.30	<0.30	2.18
Non-methane hydrocarbons analysis by carbon number grouping			
C3	17.1	<0.10	6.16
C4	167	66.2	91.7
C5	277	99.3	203
C6	301	60.9	132
C7	129	9.66	242
C8	89.1	6.49	18.8
C9	116	8.12	15.0
C10	149	34.4	38.7
C11	24.1	9.50	15.5
C12	14.3	8.33	5.88
C13	5.38	5.18	9.01
C14	<0.06	1.29	0.87
	(Concentration in ppmvC)		
TNMHC	8567	1953	4934

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

BFung

Brian W. Fung
Laboratory Director

AtmAA Inc.

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LABORATORY ANALYSIS REPORT

Hydrogen Sulfide and Reduced Sulfur Compounds
Analysis in Silco Canister Sample by SCAQMD Method 307.91

Report Date:	April 14, 2025
Client:	Montrose AQS
Project Location:	Chiquita Landfill
Project No.:	PROJ-053154
Date Received:	March 20, 2025
Date Analyzed:	March 20, 2025

ANALYSIS DESCRIPTION

Total sulfur analysis measured by gas chromatography with sulfur chemiluminescence detector (SCD), SCAQMD 307.91.

AtmAA Lab No.:	20795-34	20795-35	20795-36
Sample I.D.:	Tank Farm 2	Tank Farm 7A	Tank Farm 7B
Components	*(Concentration in ppmv)*		
Hydrogen sulfide	<0.10	<0.10	0.69
Carbonyl sulfide	0.12	<0.10	<0.10
Methyl mercaptan	1.46	<0.10	4.45
Ethyl mercaptan	<0.10	<0.10	<0.10
Dimethyl sulfide	62.3	1.60	28.9
Carbon disulfide	<0.10	<0.10	<0.10
i-Propyl mercaptan	<0.10	<0.10	<0.10
t-Butyl mercaptan	<0.10	<0.10	<0.10
n-Propyl mercaptan	0.85	<0.10	0.34
s-Butyl mercaptan	0.94	<0.10	0.29
i-Butyl mercaptan	<0.10	<0.10	<0.10
Dimethyl disulfide	1.33	<0.10	0.34
Tetrahydrothiophene	0.93	<0.10	0.16
Unidentified sulfurs	5.14	0.14	1.16
	(Concentration in ppmv, as H_2S)		
Total Sulfur	74.38	1.73	36.64

Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 20, 2025

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in ppmv)			
Hydrogen sulfide	Tank Farm 2	<0.10	<0.10	---	---
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	0.69	0.68	0.69	1.5
Carbonyl sulfide	Tank Farm 2	0.11	0.12	0.12	8.7
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	<0.10	<0.10	---	---
Methyl mercaptan	Tank Farm 2	1.43	1.49	1.46	4.1
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	4.49	4.41	4.45	1.8
Ethyl mercaptan	Tank Farm 2	<0.10	<0.10	---	---
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	<0.10	<0.10	---	---
Dimethyl sulfide	Tank Farm 2	61.8	62.8	62.3	1.61
	Tank Farm 7A	1.60	1.59	1.60	0.63
	Tank Farm 7B	28.9	28.9	28.9	0.17
Carbon disulfide	Tank Farm 2	<0.10	<0.10	---	---
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	<0.10	<0.10	---	---
i-Propyl mercaptan	Tank Farm 2	<0.10	<0.10	---	---
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	<0.10	<0.10	---	---
t-Butyl mercaptan	Tank Farm 2	<0.10	<0.10	---	---
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	<0.10	<0.10	---	---
n-Propyl mercaptan	Tank Farm 2	0.85	0.85	0.85	0.00
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	0.34	0.34	0.34	0.00
s-Butyl mercaptan	Tank Farm 2	0.94	0.94	0.94	0.00
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	0.29	0.29	0.29	0.00

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)
(continued)

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in ppmv)			
i-Butyl mercaptan	Tank Farm 2	<0.10	<0.10	---	---
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	<0.10	<0.10	---	---
Dimethyl disulfide	Tank Farm 2	1.32	1.33	1.33	0.75
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	0.34	0.34	0.34	0.00
Tetrahydrothiophene	Tank Farm 2	0.92	0.94	0.93	2.2
	Tank Farm 7A	<0.10	<0.10	---	---
	Tank Farm 7B	0.17	0.15	0.16	13
Unidentified sulfurs	Tank Farm 2	5.10	5.17	5.14	1.4
	Tank Farm 7A	0.14	0.13	0.14	7.4
	Tank Farm 7B	1.16	1.16	1.16	0.00

Three Silco canister samples, laboratory numbers 20795-(34-36), were analyzed for total sulfur compounds. Agreement between repeat analyses is a measure of precision and is shown above in the column "% RPD". The average % RPD for 18 repeat measurements from three Silco canister samples is 2.4%.

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

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-34
Sample ID: Tank Farm 2

Specific volume, BTU, and F-factor are calculated using normalized labortatory 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).

Component	Mole %	Wt %	C,H,O,N,S, Wt.%		
Methane	0.00	0.00	Carbon	1.33	
Carbon dioxide	2.37	3.55	Hydrogen	0.07	
Nitrogen	76.22	72.62	Oxygen	24.75	
Oxygen	20.38	22.18	Nitrogen	72.62	
Argon	0.90	1.23	Argon	1.23	
Hydrogen	0.00	0.00	Sulfur	0.00	
$(CH_2)_n$	0.133	0.43			
Specific Volume		12.900			
BTU/ft3 (Dry @60F, 14.696 psia)		6.949	(HHV)	6.439	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)		6.828	(HHV)	6.326	(LHV)
BTU/lb (Dry @60F, 14.696 psia)		89.64	(HHV)	83.06	(LHV)
Compressibility Factor (@60F, 14.696 psia)		0.9996			
Wobbe Index		6.941			
Specific Gravity		1.0023			

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: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-35
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).

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	77.97	75.34	Oxygen	23.27
Oxygen	21.07	23.27	Nitrogen	75.34
Argon	0.93	1.29	Argon	1.29
Hydrogen	0.00	0.00	Sulfur	0.00
$(CH_2)_n$	0.032	0.10		

Specific Volume	13.086			
BTU/ft3 (Dry @60F, 14.696 psia)	1.576	(HHV)	1.460	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	1.549	(HHV)	1.435	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	20.63	(HHV)	19.11	(LHV)
Compressibility Factor (@60F, 14.696 psia)	0.9996			
Wobbe Index	1.586			
Specific Gravity	0.9884			

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: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-36
Sample ID: Tank Farm 7B

Specific volume, BTU, and F-factor are calculated using normalized labtoratory 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).

Component	Mole %	Wt %	C,H,O,N,S,	Wt.%
Methane	0.00	0.00	Carbon	1.00
Carbon dioxide	1.94	2.91	Hydrogen	0.04
Nitrogen	76.53	73.16	Oxygen	24.56
Oxygen	20.55	22.45	Nitrogen	73.16
Argon	0.91	1.24	Argon	1.24
Hydrogen	0.00	0.00	Sulfur	0.00
$(CH_2)_n$	0.079	0.24		

Specific Volume	12.945			
BTU/ft3 (Dry @60F, 14.696 psia)	3.928	(HHV)	3.638	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	3.859	(HHV)	3.575	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	50.84	(HHV)	47.10	(LHV)
Compressibility Factor (@60F, 14.696 psia)	0.9996			
Wobbe Index	3.929			
Specific Gravity	0.9993			

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

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LABORATORY ANALYSIS REPORT

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

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 21, 2025

ANALYSIS DESCRIPTION

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

AtmAA Lab No.:	20795-37	20795-38	20795-39
Sample I.D.:	Zeeco Inlet	Flare Station Pre H2S	Flare Station Post H2S
Components		*(Concentration in %,v)*	
Nitrogen	29.74	17.50	18.76
Oxygen	6.75	4.04	3.64
Methane	22.39	28.78	25.95
Carbon dioxide	36.30	42.98	43.53
Hydrogen	1.82	2.84	3.38

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: March 20, 2025
Date Analyzed: March 21, 2025

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in %,v)			
Nitrogen	Zeeco Inlet	29.78	29.69	29.74	0.30
Oxygen	Zeeco Inlet	6.75	6.74	6.75	0.15
Methane	Zeeco Inlet	22.47	22.30	22.39	0.76
Carbon dioxide	Zeeco Inlet	36.30	36.30	36.30	0.00
Hydrogen	Zeeco Inlet	1.78	1.85	1.82	3.9

Three Silco canister samples, laboratory numbers 20795-(37-39), 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 1.0%.

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LABORATORY ANALYSIS REPORT

Speciated Hydrocarbons Analysis in Silco Canister Samples

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
Laboratory Temp: 73.5 °F
Barometric Pressure: 29.95 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.:	20795-37	20795-38	20795-39
Sample ID:	Zeeco Inlet	Flare Station Pre H2S	Flare Station Post H2S
Component	*(Concentration in ppmv, component)*		
Methane	223900	287800	259500
Ethene	<0.30	<0.30	<0.20
Acetylene	<0.30	<0.30	<0.20
Ethane	48.4	55.9	59.9
Non-methane hydrocarbons analysis by carbon number grouping			
C3	211	223	221
C4	1040	1422	1872
C5	1240	1324	1703
C6	939	952	2251
C7	294	1110	708
C8	211	341	510
C9	221	321	464
C10	227	311	168
C11	47.5	49.1	18.6
C12	17.0	28.9	12.6
C13	10.4	11.2	5.94
C14	1.98	0.68	2.02
	(Concentration in ppmvC)		
TNMHC	25622	36332	45638

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: March 20, 2025
Date Analyzed: March 21, 2025

Component	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Conc. in ppmv, component)			
Methane	Zeeco Inlet	224700	223000	223850	0.76
Ethene	Zeeco Inlet	<0.30	<0.30	<0.30	---
Acetylene	Zeeco Inlet	<0.30	<0.30	<0.30	---
Ethane	Zeeco Inlet	48.2	48.7	48.4	1.0
non-methane hydrocarbons analysis by carbon number grouping					
C3	Zeeco Inlet	215	207	211	3.5
C4	Zeeco Inlet	1106	974	1040	13
C5	Zeeco Inlet	1312	1168	1240	12
C6	Zeeco Inlet	977	901	939	8.2
C7	Zeeco Inlet	295	293	294	0.85
C8	Zeeco Inlet	213	210	211	1.1
C9	Zeeco Inlet	223	220	221	1.2
C10	Zeeco Inlet	233	221	227	5.5
C11	Zeeco Inlet	48.1	47.0	47.5	2.3
C12	Zeeco Inlet	16.6	17.3	17.0	4.3
C13	Zeeco Inlet	10.4	10.3	10.4	0.77
C14	Zeeco Inlet	1.96	2.00	1.98	2.1
		(Concentration in ppmvC)			
TNMHC	Zeeco Inlet	26582	24663	25622	7.5

Three Silco canister samples, laboratory numbers 20795-(37-39), 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 15 repeat measurements from three Silco canister samples is 4.2%.

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LABORATORY ANALYSIS REPORT

Hydrogen Sulfide and Reduced Sulfur Compounds
Analysis in Silco Canister Sample by SCAQMD Method 307.91

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 20, 2025

ANALYSIS DESCRIPTION

Total sulfur analysis measured by gas chromatography with sulfur chemiluminescence detector (SCD), SCAQMD 307.91.

AtmAA Lab No.:	20795-37	20795-38	20795-39
Sample I.D.:	Zeeco Inlet	Flare Station Pre H2S	Flare Station Post H2S
Components	*(Concentration in ppmv)*		
Hydrogen sulfide	209	301	<0.40
Carbonyl sulfide	0.71	1.07	0.98
Methyl mercaptan	104	170	<0.40
Ethyl mercaptan	1.64	2.43	<0.40
Dimethyl sulfide	284	502	495
Carbon disulfide	<0.40	<0.40	0.45
i-Propyl mercaptan	1.72	3.28	<0.40
t-Butyl mercaptan	<0.40	<0.40	<0.40
n-Propyl mercaptan	4.31	7.01	7.57
s-Butyl mercaptan	4.98	9.24	9.27
i-Butyl mercaptan	<0.40	<0.40	<0.40
Dimethyl disulfide	0.99	2.22	57.0
Tetrahydrothiophene	2.07	3.87	4.51
Unidentified sulfurs	10.3	16.4	87.3
	(Concentration in ppmv, as H_2S)		
Total Sulfur	624.2	1019.7	719.4

Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 20, 2025

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in ppmv)			
Hydrogen sulfide	Zeeco Inlet	213	205	209	3.8
	Flare Station Pre H2S	299	302	301	1.0
	Flare Station Post H2S	<0.40	<0.40	---	---
Carbonyl sulfide	Zeeco Inlet	0.70	0.71	0.71	1.4
	Flare Station Pre H2S	1.07	1.07	1.07	0.00
	Flare Station Post H2S	1.00	0.95	0.98	5.1
Methyl mercaptan	Zeeco Inlet	106	102	104	3.8
	Flare Station Pre H2S	169	171	170	1.2
	Flare Station Post H2S	<0.40	<0.40	---	---
Ethyl mercaptan	Zeeco Inlet	1.67	1.61	1.64	3.7
	Flare Station Pre H2S	2.39	2.47	2.43	3.29
	Flare Station Post H2S	<0.40	<0.40	---	---
Dimethyl sulfide	Zeeco Inlet	289	278	284	3.9
	Flare Station Pre H2S	500	503	502	0.60
	Flare Station Post H2S	511	479	495	6.5
Carbon disulfide	Zeeco Inlet	<0.40	<0.40	---	---
	Flare Station Pre H2S	<0.40	<0.40	---	---
	Flare Station Post H2S	0.45	0.44	0.45	2.2
i-Propyl mercaptan	Zeeco Inlet	1.73	1.70	1.72	1.7
	Flare Station Pre H2S	3.28	3.27	3.28	0.31
	Flare Station Post H2S	<0.40	<0.40	---	---
t-Butyl mercaptan	Zeeco Inlet	<0.40	<0.40	---	---
	Flare Station Pre H2S	<0.40	<0.40	---	---
	Flare Station Post H2S	<0.40	<0.40	---	---
n-Propyl mercaptan	Zeeco Inlet	4.40	4.21	4.31	4.4
	Flare Station Pre H2S	6.96	7.06	7.01	1.4
	Flare Station Post H2S	7.80	7.34	7.57	6.1
s-Butyl mercaptan	Zeeco Inlet	5.04	4.92	4.98	2.4
	Flare Station Pre H2S	9.23	9.25	9.24	0.22
	Flare Station Post H2S	9.54	8.99	9.27	5.9

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)
(continued)

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in ppmv)			
i-Butyl mercaptan	Zeeco Inlet	<0.40	<0.40	---	---
	Flare Station Pre H2S	<0.40	<0.40	---	---
	Flare Station Post H2S	<0.40	<0.40	---	---
Dimethyl disulfide	Zeeco Inlet	1.02	0.96	0.99	6.1
	Flare Station Pre H2S	2.20	2.24	2.22	1.8
	Flare Station Post H2S	58.7	55.2	57.0	6.1
Tetrahydrothiophene	Zeeco Inlet	2.07	2.06	2.07	0.48
	Flare Station Pre H2S	3.86	3.88	3.87	0.52
	Flare Station Post H2S	4.56	4.46	4.51	2.2
Unidentified sulfurs	Zeeco Inlet	10.1	10.5	10.3	3.8
	Flare Station Pre H2S	15.9	16.9	16.4	6.4
	Flare Station Post H2S	89.9	84.7	87.3	6.0

Three Silco canister samples, laboratory numbers 20795-(37-39), were analyzed for total sulfur compounds. Agreement between repeat analyses is a measure of precision and is shown above in the column "% RPD". The average % RPD for 30 repeat measurements from three Silco canister samples is 3.1%.

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

Report Date: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-37
Sample ID: Zeeco Inlet

Specific volume, BTU, and F-factor are calculated using normalized labortatory 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	22.97	11.78	Carbon	24.11
Carbon dioxide	37.25	52.40	Hydrogen	3.28
Nitrogen	30.51	27.32	Oxygen	44.88
Oxygen	6.63	6.78	Nitrogen	27.32
Argon	0.29	0.38	Argon	0.38
Hydrogen	1.86	0.12	Sulfur	0.02
$(CH_2)_n$	0.463	1.21		

Specific Volume	12.126			
BTU/ft3 (Dry @60F, 14.696 psia)	259.1	(HHV)	233.5	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	254.5	(HHV)	229.4	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	3141	(HHV)	2831	(LHV)
F_d (factor)	10194			
F_w (factor)	12210			
F_c (factor)	2464			
Compressibility Factor (@60F, 14.696 psia)	0.9978			
Wobbe Index	249.60			
Specific Gravity	1.0772			

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: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-38
Sample ID: Flare Station Pre H2S

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	29.74	15.19	Carbon	29.85
Carbon dioxide	44.41	62.39	Hydrogen	4.27
Nitrogen	18.08	16.17	Oxygen	49.46
Oxygen	4.00	4.08	Nitrogen	16.17
Argon	0.18	0.23	Argon	0.23
Hydrogen	2.93	0.19	Sulfur	0.03
$(CH_2)_n$	0.635	1.72		

Specific Volume	12.100			
BTU/ft3 (Dry @60F, 14.696 psia)	339.8	(HHV)	306.2	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	333.9	(HHV)	300.8	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	4112	(HHV)	3705	(LHV)
F_d (factor)	9907			
F_w (factor)	11910			
F_c (factor)	2330			
Compressibility Factor (@60F, 14.696 psia)	0.9972			
Wobbe Index	327.0			
Specific Gravity	1.0797			

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: April 14, 2025
Client: Montrose AQS
Project Location: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 21, 2025
AtmAA Lab #: 20795-39
Sample ID: Flare Station Post H2S

Specific volume, BTU, and F-factor are calculated using normalized labortatory 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	27.01	13.63	Carbon	29.17
Carbon dioxide	45.32	62.88	Hydrogen	3.98
Nitrogen	19.53	17.25	Oxygen	49.40
Oxygen	3.63	3.66	Nitrogen	17.25
Argon	0.16	0.20	Argon	0.20
Hydrogen	3.52	0.22	Sulfur	0.00
$(CH_2)_n$	0.832	2.15		

Specific Volume	11.95			
BTU/ft3 (Dry @60F, 14.696 psia)	322.0	(HHV)	290.2	(LHV)
BTU/ft3 (Water Saturated @ 0.25636 psia)	316.4	(HHV)	285.2	(LHV)
BTU/lb (Dry @60F, 14.696 psia)	3848	(HHV)	3469	(LHV)
F_d (factor)	10088			
F_w (factor)	12086			
F_c (factor)	2433			
Compressibility Factor (@60F, 14.696 psia)	0.9972			
Wobbe Index	307.8			
Specific Gravity	1.0943			

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

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LABORATORY ANALYSIS REPORT

SCAQMD Rule 1150.1 Components Analysis in Silco Canister Samples

Report Date: April 14, 2025
Client: Montrose AQS
Project Name: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 20-21, 2025

AtmAA Lab No.:	20795-31	20795-32	20795-33
Sample I.D.:	Tank Farm 6	Tank Farm 9A	Tank Farm 9B
	(Concentration in ppbv)		
Components			
Hydrogen sulfide	<100	10500	<100
Benzene	765	15400	358
Benzyl chloride	<30	<30	<30
Chlorobenzene	<25	<25	<25
Dichlorobenzenes*	<40	<40	<40
1,1-dichloroethane	<30	<30	<30
1,2-dichloroethane	<30	<30	<30
1,1-dichloroethylene	<30	<30	<30
Dichloromethane	<60	<60	<60
1,2-dibromoethane	<15	<15	<15
Perchloroethylene	<15	<15	<15
Carbon tetrachloride	<35	<35	<35
Toluene	58.3	905	59.0
1,1,1-trichloroethane	<20	<20	<20
Trichloroethene	<20	<20	<20
Chloroform	<20	<20	<20
Vinyl chloride	<20	<20	<20
m+p-xylenes	36.1	309	49.5
o-xylene	<25	105	<25

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*

BFung

Brian W. Fung
Laboratory Director

AtmAA Inc.

5107 Douglas Fir Rd., Calabasas, CA 91302 • (818) 223-3277

specialized air assessment laboratory
atmaa.com

LABORATORY ANALYSIS REPORT

SCAQMD Rule 1150.1 Components Analysis in Silco Canister Samples

Report Date: April 14, 2025
Client: Montrose AQS
Project Name: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 20-21, 2025

AtmAA Lab No.:	20795-34	20795-35	20795-36
Sample I.D.:	Tank Farm 2	Tank Farm 7A	Tank Farm 7B
	(Concentration in ppbv)		
Components			
Hydrogen sulfide	<100	<100	685
Benzene	23650	421	6500
Benzyl chloride	<45	<45	<45
Chlorobenzene	53.3	<40	<40
Dichlorobenzenes*	214	<60	<60
1,1-dichloroethane	<45	<45	<45
1,2-dichloroethane	51.6	<45	<45
1,1-dichloroethylene	<45	<45	<45
Dichloromethane	<100	<100	<100
1,2-dibromoethane	<25	<25	<25
Perchloroethylene	<25	<25	<25
Carbon tetrachloride	<60	<60	<60
Toluene	3190	96.0	409
1,1,1-trichloroethane	<35	<35	<35
Trichloroethene	<35	<35	<35
Chloroform	<35	<35	<35
Vinyl chloride	<35	<35	<35
m+p-xylenes	1535	71.6	156
o-xylene	569	<40	65.4

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*

BFung

Brian W. Fung
Laboratory Director

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atmaa.com

LABORATORY ANALYSIS REPORT

SCAQMD Rule 1150.1 Components Analysis in Silco Canister Samples

Report Date: April 18, 2025
Client: Montrose AQS
Project Name: Chiquita Landfill
Project No.: PROJ-053154
Date Received: March 20, 2025
Date Analyzed: March 20-21, 2025

AtmAA Lab No.:	20795-37	20795-38	20795-39
Sample I.D.:	Zeeco Inlet	Flare Station Pre H2S	Flare Station Post H2S
	(Concentration in ppbv)		
Components			
Hydrogen sulfide	209000	300500	<400
Benzene	81900	127000	116000
Benzyl chloride	<5000	<5000	<5000
Chlorobenzene	<4500	<4500	<4500
Dichlorobenzenes*	<6500	<6500	<6500
1,1-dichloroethane	<5000	<5000	<5000
1,2-dichloroethane	<5000	<5000	<5000
1,1-dichloroethylene	<5000	<5000	<5000
Dichloromethane	<11000	<11000	<11000
1,2-dibromoethane	<3000	<3000	<3000
Perchloroethylene	<3000	<3000	<3000
Carbon tetrachloride	<6000	<6000	<6000
Toluene	8910	12400	11800
1,1,1-trichloroethane	<4000	<4000	<4000
Trichloroethene	<4000	<4000	<4000
Chloroform	<4000	<4000	<4000
Vinyl chloride	<4000	<4000	<4000
m+p-xylenes	4580	5360	5440
o-xylene	<4500	<4500	<4500

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*

B Fung

Brian W. Fung
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Project Name: Chiquita Landfill
Date Received: March 20, 2025
Date Analyzed: March 20-21, 2025

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% RPD
		(Concentration in ppbv)			
Hydrogen sulfide	Tank Farm 2	<100	<100	---	---
Benzene	Tank Farm 2	24500	22800	23650	7.2
Benzyl chloride	Tank Farm 2	<45	<45	---	---
Chlorobenzene	Tank Farm 2	53.4	53.2	53.3	0.38
Dichlorobenzenes	Tank Farm 2	207	221	214	6.5
1,1-dichloroethane	Tank Farm 2	<45	<45	---	---
1,2-dichloroethane	Tank Farm 2	52.0	51.2	51.6	1.6
1,1-dichloroethylene	Tank Farm 2	<45	<45	---	---
Dichloromethane	Tank Farm 2	<100	<100	---	---
1,2-dibromoethane	Tank Farm 2	<25	<25	---	---
Perchloroethylene	Tank Farm 2	<25	<25	---	---
Carbon tetrachloride	Tank Farm 2	<60	<60	---	---
Toluene	Tank Farm 2	3280	3100	3190	5.6
1,1,1-trichloroethane	Tank Farm 2	<35	<35	---	---
Trichloroethene	Tank Farm 2	<35	<35	---	---
Chloroform	Tank Farm 2	<35	<35	---	---
Vinyl chloride	Tank Farm 2	<35	<35	---	---
m+p-xylenes	Tank Farm 2	1540	1530	1535	0.65
o-xylene	Tank Farm 2	576	562	569	2.5

Nine Silco canister samples, laboratory numbers 20795-(31-39), 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 7 repeat measurements from nine Silco canister samples is 3.5%.

DS 1 OF 2

CHAIN OF CUSTODY RECORD

Client/Project Name: MONTROSE AQS	Project Location: CHIQUITA LANDFILL
Project Number: PROJ -	Purchase Order Number:
Sampler: (Signature)	Turnaround Times: ~~Standard 10 day~~ Expedited: 24hr / 48hr / 72hr / 5 day

ANALYSES REQUESTED

Client Sample Identification	Type of Sample Canister ID	AtmAA Lab Number	Sampling Date	Sampling Time	ASTM 1945/3588	FIXED GASES TO-15	RULE 1150.1 SCAQMD 307-91				Special Remarks
TANK FARM 6	51383	20795-31	3/20/25	0815	X	X	X				#628
TANK FARM 9A	49442	-32		0855	X	X	X				# 584
TANK FARM 9B	48469	-33		0865	X	X	X				# 548
TANK FARM 2	46911	-34		0900	X	X	X				# 527
TANK FARM 7A	47728	-35		0935	X	X	X				# 566
TANK FARM 7B	48864	-36		0935	X	X	X				# 562
ZEECO INLET	51125	-37		0935	X	X	X				#601

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	3/20/25				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time
				3/20/25	11:55

Company Info:	Send Report to:	Analytical Laboratory
Company: MONTROSE	Company: MONTROSE	AtmAA Inc.
Street Address: 1631 E. ST. ANDREW	Street Address:	23917 Craftsman Rd.
City/State/Zip: SANTA ANA	City/State/Zip:	Calabasas, CA 91302
Telephone No.: 626 617 6313	Project Manager: PETE SANJUAN	TEL: (818) 223-3277
Email Address: psanjuan@montrose-env.com	Email Address:	Email Address: info@atmaa.com

PG 2 OF 2

CHAIN OF CUSTODY RECORD

Client/Project Name: MONTROSE AQS	Project Location: CHIQUITA LANDFILL
Project Number: PROJ -	Purchase Order Number:
Sampler: (Signature)	Turnaround Times: ~~Standard 10 day~~ Expedited: 24hr / 48hr / 72hr / 5 day

ANALYSES REQUESTED: ASTM 1945/3588; FIXED GASES TO 15; RULE 1150.1; SCAQMD 307-91

Client Sample Identification	Type of Sample Canister ID	AtmAA Lab Number	Sampling Date	Sampling Time	ASTM 1945/3588	FIXED GASES TO 15	RULE 1150.1	SCAQMD 307-91			Special Remarks
FLARE STATION PRE	H2S 49439	20795-38	3/20/25	1010							#581
FLARESTATION POST	H2S 46611	-39	↓	1010							#516

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	3/20/25				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time
				3/21/25	11:25

Company Info:

Company:
Street Address
City/State/Zip:
Telephone No.:
Email Address:

Send Report to:

Company:
Street Address
City/State/Zip:
Project Manager:
Email Address:

Analytical Laboratory

AtmAA Inc.
23917 Craftsman Rd.
Calabasas, CA 91302
TEL: (818) 223-3277
Email Address: info@atmaa.com

Appendix A.4
Quality Assurance Data

Barometric Pressure Determination

Date: 03/20/25

Time: 7:30

Data By: SJ, KT

Reference: https://forecast.weather.gov/MapClick.php?lat=33.6873&l

Lat: 34.42972°NLon: 118.66712°WElev: 1278.0ft.

Reference Barometer ID	DEL VALLE (DLVC1)
Reference Barometer Location	
Reference Barometer Other Info.	
Reference Barometer Indication, corrected to sea level	30.03
Reference Barometer Reference Elevation	**1278**
Reference Barometer Actual Pressure	28.75
Test Barometer Location/Site	Chiquita Canyon
Location/Site Elevation	**997**
Location/Site Barometric Pressure	29.03
Sampling Location Height (above/below site elevation)	**1**
Sampling Location Barometric Pressure	**29.03**

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: TC-WB
Date: 1/3/2025
Performed By: JS/JS/JL

Calibrated Digital Temperature Readout ID: PTC-69
T1 Reference Thermometer ID: 2788
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 0514-1120

T/C I.D. TC-WB	Readout I.D.	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °F	%, (°R)	
T3 (~ 370 F)	PTC-69	367	367	367	367	370	370	370	370	3.0	0.4%	Pass
T2 (~ 212 F)	PTC-69	215	215	215	215	212	212	212	212	3.0	0.4%	Pass
T1 (~ 32 F)	PTC-69	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)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: TC-DB
Date: 1/3/2025
Performed By: JS/JS/JL

Calibrated Digital Temperature Readout ID: PTC-69
T1 Reference Thermometer ID: 2788
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 0514-1120

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-DB	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-69	371	371	371	371	370	370	370	370	1.0	0.1%	Pass
T2 (~ 212 F)	PTC-69	215	215	215	215	212	212	212	212	3.0	0.4%	Pass
T1 (~ 32 F)	PTC-69	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)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 145
Date: 1/3/2025
Performed By: JS/JS/JL

Calibrated Digital Temperature Readout ID: PTC-69
T1 Reference Thermometer ID: 2788
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 0514-1120

T/C I.D. 145	Readout I.D.	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °F	%, (°R)	
T3 (~ 370 F)	PTC-69	368	368	368	368	370	370	370	370	2.0	0.2%	Pass
T2 (~ 212 F)	PTC-69	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~ 32 F)	PTC-69	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)

MONTROSE AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 146
Date: 1/3/2025
Performed By: JS/JS/JL

Calibrated Digital Temperature Readout ID: PTC-69
T1 Reference Thermometer ID: 2788
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 0514-1120

T/C I.D. 146	Readout I.D.	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °F	%, (°R)	
T3 (~ 370 F)	PTC-69	366	366	366	366	370	370	370	370	4.0	0.5%	Pass
T2 (~ 212 F)	PTC-69	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~ 32 F)	PTC-69	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)

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: PTC-43
Readout Description: Handheld
Date: 1/3/2025
Performed By: JS, JS, JI

Calibrated Thermocouple ID: TC-Cal
T1 Reference Thermometer ID: 2788
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 0514-1120

T/C I.D. TC-Cal	Readout I.D.	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °F	%, (°R)	
T3 (~ 370 F)	PTC-43	370	370	370	370	370	370	370	370	0.0	0.0%	Pass
T2 (~212 F)	PTC-43	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-43	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)

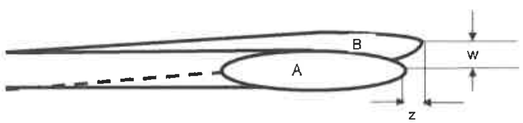
Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	T/C Source °F Reading 1	Reading 2	Reading 3	Average	Difference °F	%, (°R)	
T4 (~650 F)	129462	648	648	648	648	650	650	650	650	2.0	0.2%	Pass
T3 (~370 F)	129462	370	370	370	370	370	370	370	370	0.0	0.0%	Pass
T2 (~212 F)	129462	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~32 F)	129462	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

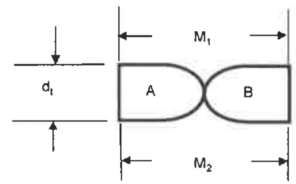
1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

MONTROSE

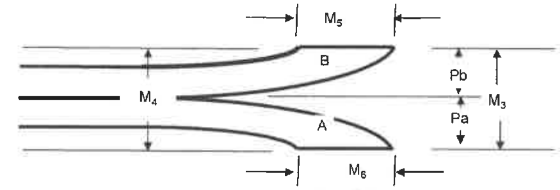
S Type Pitot Tube Dimensional Calibration Record



Side View



End View



Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	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	
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	Status
145	**1/3/25**	**JAC**	Y	Y	Y	0.268	0.653	0.650	0.638	0.655	0.349	0.365	0.3	-1.4	1.2	**Pass**
146	**1/3/25**	**JAC**	Y	Y	Y	0.375	1.100	1.100	1.100	1.100	0.290	0.290	0.0	0.0	1.5	**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

Jan. 2025 Calibrations SNA
9:18 AM
4/17/2025

DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 1/3/2025

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

Calibration Range Scale: 0 - 0.050 inches H_2O		Run 1 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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 Scale: 0 - 0.050 inches H_2O		Run 2 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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 Scale: 0 - 0.050 inches H_2O		Run 3 Measured Value (inches W.C.)	Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
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

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
0.00%	Pass

MONTROSE

Jan. 2025 Calibrations SNA
9:19 AM
4/17/2025

DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 1/3/2025

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

Calibration Range		Run 1		Individual Run Results		
Scale: inches H_2O	0 - 0.100	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 60%	0.060	0.059	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.079	0.080	0.0010	1.25%	Pass
Target 100%	0.100	0.100	0.100	0.0000	0.00%	Pass

Calibration Range		Run 2		Individual Run Results		
Scale: inches H_2O	0 - 0.100	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 60%	0.060	0.059	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.079	0.080	0.0010	1.25%	Pass
Target 100%	0.100	0.100	0.100	0.0000	0.00%	Pass

Calibration Range		Run 3		Individual Run Results		
Scale: inches H_2O	0 - 0.100	Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.020	0.020	0.020	0.0000	0.00%	Pass
Target 40%	0.040	0.040	0.040	0.0000	0.00%	Pass
Target 60%	0.060	0.059	0.060	0.0010	1.67%	Pass
Target 80%	0.080	0.079	0.080	0.0010	1.25%	Pass
Target 100%	0.100	0.100	0.100	0.0000	0.00%	Pass

Average results for three runs

% Difference	Pass/Fail
0.58%	Pass

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

MONTROSE
AIR QUALITY SERVICES

Jan. 2025 Calibrations SNA
9:19 AM
4/17/2025

DIFFERENTIAL PRESSURE CALIBRATION
Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 1/3/2025

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

Calibration Range		Run 1		Individual Run Results		
Scale: 0 - 1.000 inches H_2O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.200	0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400	0.401	0.400	0.0010	0.25%	Pass
Target 60%	0.600	0.602	0.600	0.0020	0.33%	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		Individual Run Results		
Scale: 0 - 1.000 inches H_2O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.200	0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400	0.401	0.400	0.0010	0.25%	Pass
Target 60%	0.600	0.602	0.600	0.0020	0.33%	Pass
Target 80%	0.800	0.801	0.800	0.0010	0.13%	Pass
Target 100%	1.000	1.000	1.000	0.0000	0.00%	Pass

Calibration Range		Run 3		Individual Run Results		
Scale: 0 - 1.000 inches H_2O		Measured Value (inches W.C.)	Reference Value (inches W.C.)	Absolute Value	% Difference	Pass/ Fail
Target 20%	0.200	0.200	0.200	0.0000	0.00%	Pass
Target 40%	0.400	0.401	0.400	0.0010	0.25%	Pass
Target 60%	0.600	0.602	0.600	0.0020	0.33%	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

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
0.13%	Pass

MONTROSE AIR QUALITY SERVICES

DIFFERENTIAL PRESSURE CALIBRATION

Semi-annual

Display ID: ADM 9
Description: Air Data Multimeter (ADM 850)
Serial Number: M14140
Calibration Date: 1/3/2025

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

Calibration Range	Scale: 0 - 10.000 inches H_2O	Run 1 Measured Value (inches W.C.)	Run 1 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	1.955	2.000	0.0450	2.25%	Pass
Target 40%	4.000	4.015	4.000	0.0150	0.37%	Pass
Target 60%	6.000	6.010	6.000	0.0100	0.17%	Pass
Target 80%	8.000	8.045	8.000	0.0450	0.56%	Pass
Target 100%	10.000	10.100	10.000	0.1000	1.00%	Pass

Calibration Range	Scale: 0 - 10.000 inches H_2O	Run 2 Measured Value (inches W.C.)	Run 2 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	1.995	2.000	0.0050	0.25%	Pass
Target 40%	4.000	4.035	4.000	0.0350	0.88%	Pass
Target 60%	6.000	6.095	6.000	0.0950	1.58%	Pass
Target 80%	8.000	8.055	8.000	0.0550	0.69%	Pass
Target 100%	10.000	10.100	10.000	0.1000	1.00%	Pass

Calibration Range	Scale: 0 - 10.000 inches H_2O	Run 3 Measured Value (inches W.C.)	Run 3 Reference Value (inches W.C.)	Individual Run Results Absolute Value	% Difference	Pass/ Fail
Target 20%	2.000	1.990	2.000	0.0100	0.50%	Pass
Target 40%	4.000	4.090	4.000	0.0900	2.25%	Pass
Target 60%	6.000	6.095	6.000	0.0950	1.58%	Pass
Target 80%	8.000	8.040	8.000	0.0400	0.50%	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
0.94%	Pass

MONTROSE

Jan. 2025 Calibrations SNA
9:19 AM
4/17/2025

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

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

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

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

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	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
0	=	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, iwb
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

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

<u>Internal Quality Assurance Manual</u>: 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.

<u>Personnel Testing and Training</u>: 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.

<u>Equipment Maintenance and Calibration</u>: 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.

<u>Knowledge of Current Test Methods</u>: 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

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

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

STAC
STACK TESTING ACCREDITATION COUNCIL

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.

MONTROSE
AIR QUALITY SERVICES

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: 002-2022-50

Date of Issue: 02/28/2022

Date of Expiration: 02/27/2027

Tate Strickler, VP – Quality Systems

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: 002-2022-52

Tate Strickler, VP – Quality Systems

Date of Issue: 02/28/2022

Date of Expiration: 02/27/2027

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):

EPA Methods 3C, TO-8, TO-12 and TO-15

Certificate Number: 002-2023-48

Tate Strickler, VP – Quality Systems

Date of Issue: 11/01/2023

Date of Expiration: 10/31/2028

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:	**March 20, 2025**
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:** **4/18/2025**

Pete SanJuan	**Client Project Manager**	**(714) 279-6777**	**4/18/2025**
(Name)	(Title)	(Phone)	(Date)

FORM ST-110 :stevforl.doc (Revised 11/18/98

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]

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]

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. Pete SanJuan
Title: Client Project Manager
Region: West
Email: PSanjuan@montrose-env.com
Phone: (714) 279-6777

Name: Mr. Matt McCune
Title: Regional Vice President
Region: West
Email: MMccune@montrose-env.com
Phone: (714) 279-6777

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 S TO DECLARATION OF PATRICK SULLIVAN, BCES, CPP, REPA

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

Hearing Date:	June 4 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

Archived: Friday, December 20, 2024 9:24:22 AM
From: Viswanathan, Srividhya
Mail received time: Sat, 14 Dec 2024 03:33:27
Sent: Friday, December 13, 2024 7:33:34 PM
To: bchen@aqmd.gov ndickel@aqmd.gov Christina Ojeda
Cc: Jones, Art Sullivan, Pat rrauls@montrose-env.com
Subject: CCL: Condition 72 Recommendation
Importance: Normal
Sensitivity: None

[EXTERNAL SENDER: Use caution with links/attachments]

All,

Below please find the Reaction Committee's recommendation on additional vapor flow testing pursuant to Condition 72(c) of the Stipulated Order for Abatement with South Coast AQMD in Case No. 6177-4.

Per Condition 72(c) of the SOFA, CCL is required to respond to the AQMD by December 13, 2024, with a recommendation on testing for concentrations of chemical constituents that may be present in the gaseous-phase emissions being recovered from the leachate storage tanks. This is referred to as "vapor flow testing" in the language under Condition 72(c) of the modified SOFA. As a reminder, the head space in these leachate storage tanks is under vacuum and the vapor are being recovered and introduced into the landfill gas (LFG) collection system for combustion at the existing control devices.

The Reaction Committee is proposing to conduct monthly field testing to collect methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), and balance gas concentrations of the gaseous-phase emissions that may be present in the head space of the leachate storage tanks, also known as "leachate vapor flow from the leachate tanks". Based on the testing conducted in October 2024, the concentrations of constituents of interest in the leachate vapors are much lower than constituent concentrations present in the raw LFG. Additionally, the flow (quantities) of these leachate vapors is being measured and recorded with dedicated flow meters for the leachate tanks, after which the collected leachate vapors are comingled with the LFG before being combusted in the flares. Sampling and analysis of LFG at the flare station is conducted after the leachate vapors are co-mingled into the gas stream, thus these data also reflect the contribution of leachate vapors to these contaminant concentrations.

Due to the low concentrations and relatively low flow quantities of leachate vapors compared to the concentrations and quantities of the LFG being collected and controlled at the facility, the Reaction Committee recommends that measurement of constituent concentrations within the leachate vapor flow on a monthly frequency is adequate to properly monitor and characterize leachate vapor concentrations.

Thank you!

Thanks,
Vidhya

Srividhya Viswanathan, P.E.*
*Licensed in CA, NV, AZ and OK

Direct: (858)-583-7757
Cell: (858) 524-9525
Email: sviswanathan@scsengineers.com

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 T TO DECLARATION OF PATRICK SULLIVAN, BCES, CPP, REPA** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: June 4 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

Archived: Friday, May 23, 2025 9:06:14 AM
From: Viswanathan, Srividhya
Sent: Friday, May 16, 2025 7:43:40 PM
To: Baitong Chen Nathaniel Dickel Christina Ojeda
Cc: Jones, Art Sullivan, Pat rrauls@montrose-env.com
Subject: Case No. 6177-4: Condition 72(c) Leachate and Condensate Vapor Sampling
Importance: Normal
Sensitivity: None

[EXTERNAL SENDER: Use caution with links/attachments]

All,

Below please find the Reaction Committee's further recommendations on additional vapor flow testing pursuant to Condition 72(c) of the Stipulated Order for Abatement with South Coast AQMD in Case No. 6177-4.

Per Condition 72(c) of the modified SOFA, the Reaction Committee may submit further recommendations regarding additional vapor flow testing within 30 days of the additional source test report. The most recent source test was submitted on April 18, 2025. As such, below are the recommendations of the Reaction Committee regarding the additional vapor flow testing based on a review of the April 2025 and prior reports.

The Reaction Committee is proposing to conduct monthly field testing to collect methane (CH4), carbon dioxide (CO2), oxygen (O2), and balance gas concentrations of the gaseous-phase emissions that may be present in the head space of the leachate storage tanks, also known as "leachate vapor flow from the leachate tanks". In addition, the Reaction Committee recommends adding monitoring for volatile organic compounds (VOCs) using a photoionization detector (PID), and hydrogen sulfide (H2S) using Draeger tubes to the monthly field monitoring program.

Based on the testing conducted in October 2024, and subsequently in March 2025, the concentrations of constituents of interest in the leachate vapors continue to remain much lower than constituent concentrations present in the raw landfill gas (LFG). The March 2025 testing results indicate that the composition of the vapors in the headers/manifolds across Tank Farms 6, 9A, 9B, 2 and 7 range between approximately 74 – 78 percent (%) nitrogen, and 20.66 – 21.88% oxygen, which is similar to the composition of air.

Additionally, the flow (quantities) of these leachate vapors is being measured and recorded with dedicated flow meters for the leachate tanks, after which the collected leachate vapors are comingled with the LFG before being combusted in the thermal oxidizers (TOX) and flares. Sampling and analysis of LFG at the flare station is conducted after the leachate vapors are co-mingled into the gas stream, thus these data also reflect the contribution of leachate vapors to these contaminant concentrations.

Due to the low concentrations and relatively low flow quantities of leachate vapors compared to the concentrations and quantities of the LFG being collected and controlled at the facility, the Reaction Committee maintains the recommendation to measure constituent concentrations within the leachate vapor flow on a monthly frequency with a modification to the monitoring procedures as described above. We also recommend moving to an annual schedule for the formal source testing.

Thanks,
Vidhya

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