TriCities Recycling Disposal Facility

BAAQMD Facility # A2246

Annual Compliance Emissions Test Report #08071
Source Test for Landfill Gas Flare- Source A-3

Located at:

7010 Auto Mall Parkway
Fremont, CA 94538

Performed and Reported by:

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

Prepared For:

Cornerstone Environmental Group, LLC
7600 Dublin Boulevard, Suite 200
Dublin, CA 94568

For Submittal To:

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Testing Performed On:
June 4th, 2008

Final Report Submitted On:
7/31/08

REVIEW AND CERTIFICATION

Team Leader:

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

If this report is submitted for Compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please contact me at (510) 525 1261.

Guy Worthington
Principal Project Manager

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SECTION 1. INTRODUCTION

1.1. Summary

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

Table 1. Source Test Information

Test Location:	7010 Auto Mall Parkway, Fremont, CA 94538
Source Contact:	Colleen Cassidy (510) 624-5928
Source Tested:	Enclosed Landfill Gas Flare (A-3)
Source Test Date:	June 4th, 2008
Test Objective:	Determine Compliance with Regulation 8, Rule 34 and Title V Permit A2246, Condition 8366
Test Performed By:	Blue Sky Environmental, LLC 624 San Gabriel Ave., Albany, CA 94706 Guy Worthington (510) 508 3469
Test Parameters:	**Landfill Gas** O_2, N_2, CO_2, BTU, THC, CH_4, NMOC, HHV, F-Factor, TRS & Sulfur Species, Volumetric Flow Rate **Flare Emissions** THC, CH_4, NMOC, NOx, CO, O_2, SO_2, Volumetric Flow Rate, Stack Exhaust Temperature.

Table 2. Compliance Summary

	Average Test Result	Permit Limit	Compliance Status
NOx, lbs/MMBTU	**0.03**	**0.06**	**In Compliance**
CO, lbs/MMBTU	**0.16**	**0.3**	**In Compliance**
NMOC, (ppmvd @ 3% O_2 as CH_4)	**9.7**	**30**	**In Compliance**
TRS in Landfill Gas, ppm	**70**	**1300**	**In Compliance**

SECTION 2. SOURCE TEST PROGRAM

2.1. Overview

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

2.2. Pollutants Tested

The following BAAQMD, EPA and ASTM sampling and analytical methods were used:

BAAQMD ST-5	CO_2
BAAQMD ST-6	CO
BAAQMD ST-7	NMOC
BAAQMD ST-13A	NOx
BAAQMD ST-14	O_2
BAAQMD ST-19A (calculated from TRS)	SO_2 calculated from TRS
EPA 19	Flow Rate Calculation, DSCFM
EPA 25C	LFG Gas analysis for NMOC by GC
ASTM 1945/3588	LFG Gas analysis for BTU and F-Factor
ASTM D-5504	Sulfur Species, H_2S and TRS

2.3. Test Date(s)

Testing was conducted on June 4th, 2008.

2.4. Sampling and Observing Personnel

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

Steve Thexton of Cornerstone Environmental Group, LLC was present to operate and oversee the Flare operation and assist in coordinating testing and the collection of process data during testing.

The BAAQMD was notified of the test in a plan submitted by Waste Management on May 7th, 2008. A Source Test Protocol acknowledgement was requested and received by Blue Sky Environmental (NST # 1409), but no agency observers were present to witness the testing. A copy of the source test protocol can be found in Appendix I.

2.5. Source/Process Description

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

2.6. Source Operating Conditions

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

The flare was operated between 1520 and 1534°F average temperature. The average landfill gas flow rate ranged between 1886 and 1914 scfm.

The landfill gas methane content ranged between 47.4% in Run#1 and 48.5% in Run #2. Run #3 Landfill Gas sample is suspected to be erroneously low (CH_4=33.7%) as indicated by the elevated oxygen and nitrogen content in the sample in the exact proportions as in ambient air (1:4). The Flare operation was stable and constant, and the low methane result is therefore likely attributed to a failure in the integrity of the Tedlar sample bag or the analysis, and not representative of the Landfill gas.

SECTION 3. SAMPLING AND ANALYSIS PROCEDURES

3.1. Port location

The A-3 Flare sampling was conducted in the 136 inch diameter ID stack, via ports approximately 35' above grade, accessed by a 40' boom-lift. Two of the four, 4-inch flange ports are available ~4 stack diameters downstream from the burners and ~1 stack diameters upstream from the exit.

3.2. Point description/Labeling – ports/stack

Blue Sky Environmental conducted two perpendicular 8 pt traverses and found O_2 stratification greater than 10%, therefore subsequent CEM sampling was conducted traversing two ports and a total of 16 points per run.

3.3. Sample train description

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

3.4. Sampling procedure description

Three, 32-minute test runs were performed, completely traversing the stack on two diameters during each run.

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

Methane in the exhaust was determined per BAAQMD Methods, using a charcoal scrubber to remove the non-methane organics, and determining the difference between the total hydrocarbon and non-methane hydrocarbon concentrations.

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

System Performance Criteria

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

Concurrent with the exhaust sampling, Blue Sky collected a total of three integrated 5-liter Tedlar Bag samples of the LFG for analysis. The samples were collected using Teflon tubing connections, and the tubing and the Tedlar bag were filled and purged prior to sampling. The gas sample was controlled with a rotameter to collect a 30-minute integrated sample. All the samples were analyzed for NMOC, HHV, F-Factor, Fixed Gases. One sample was analyzed for Sulfur Species (incl. H_2S and TRS).

The inlet volumetric flow rate was continuously measured and recorded by the facility monitors.

3.5. Instrumentation and Analytical procedures

The following continuous emissions analyzers were used:

Instrumentation	Parameter	Principle
TECO 42i	NO_x	Chemiluminescence
TECO 48C	CO	GFC/IR
Ratfisch, RS-55	THC	FID
Horiba PIR 2000	CO_2	IR
Rosemount 755R	O_2	Paramagnetic

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

The instrument response was recorded on strip charts and manually reduced. The averages were corrected for drift using BAAQMD & EPA Method 6C equations.

3.6. Comments: Limitations and Data Qualifications

Blue Sky Environmental has reviewed this report for accuracy, and concluded that the test procedures were followed and accurately described and documented. The review included the following items:

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

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

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

SECTION 4. APPENDICES

A.	Tabulated Results
B.	Calculations
C.	Laboratory Reports
D.	Field Data Sheets
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J.	BAAQMD Permit

A
Tabulated Results

TABLE #1

TriCities Recycling Disposal Facility
Flare A-3
1525°F

RUN	Run 1	Run 2	Run 3	AVERAGE	LIMITS
Test Date	6/4/08	6/4/08	6/4/08		
Test Time	0757-0833	0845-0946	1008-1047		
Standard Temp., °F	70	70	70		
Flare Temperature, °F	1520-1531	1520-1533	1520-1534		
Fuel Flow Rate, DSCFM	1,905	1,906	1,914	1,908	
Fuel Heat Input, MMBTU/Hr	53.8	55.1	38.4	49.1	
Exhaust Flow Rate, DSCFM (Method 19)	22,849	23,223	16,451*	23,036**	
Oxygen, O_2, %	13.0	12.9	13.1	13.0	
Carbon Dioxide, CO_2, %	7.2	7.0	7.1	7.1	
NOx, ppm	11.3	11.3	11.4	11.3	
NOx, ppm @ 15% O_2	8.4	8.4	8.6	8.5	
NOx, lbs/hr	1.84	1.87	1.34	1.68	
NOx, lbs/MMBTU	0.03	0.03	0.03	0.03	**0.06**
CO, ppm	94.2	84.5	85.3	88.0	
CO, ppm @ 15% O_2	70.3	62.6	64.2	65.7	
CO, lbs/hr	9.35	8.53	6.10	7.99	
CO, lbs/MMBTU	0.17	0.15	0.16	0.16	**0.3**
Total Reduced Sulfur as H_2S in fuel, ppm	70.0	70.0	70.0	70.0	**1300**
SO_2, ppm calculated emission	5.8	5.7	8.1	6.6	
THC, ppm	15.2	12.4	16.4	14.7	
THC, lbs/hr as CH_4	0.86	0.72	0.67	0.75	
CH_4, ppm	8.1	9.3	13.8	10.4	
NMHC, ppm as CH_4	7.1	3.1	2.6	4.3	
NMHC, lbs/hr as CH_4	0.4	0.2	0.1	0.2	
NMHC, ppm @ 3% O_2 as CH_4	16.0	7.0	6.0	9.7	**30**
INLET NMHC ppm as CH_4	1,762	1,955	1,467	1,728	
INLET NMHC lbs/hr as CH_4	8.3	9.3	7.0	8.2	
NMHC Removal Efficiency	>95.2%	>98.1%	>98.4%	>97.2%	**98**
INLET CH_4	474,000	485,000	337,000*	479,500**	
INLET THC (TOC) ppm as CH_4	475,762	486,955	338,467*	481,359**	
INLET THC (TOC) lbs/hr as CH_4	2,250	2,304	1,608*	2,054**	
THC (TOC) Removal Efficiency	99.96%	99.97%	99.96%	99.96%	**98**

** Fuel Input & CH4 content based on lab analysis believed to be under reported for Run #3, see section 2.3 of the report.*

*** Average Fuel Input & CH4 content based on Runs 1 & 2, since Run #3 lab analysis is believed to be under reported, see section 2.3 of the report.*

WHERE,

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

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)
PPM @ 3% O_2 = ppm * 17.9 / (20.9 - %O_2)
Lbs/hr = ppm x 8.223 E-05 x DSCFM x MW / Tstd. °R
Lbs/MMBtu = (Lbs/hr)/(MMBtu/hr)
Lbs/day = Lbs/hr * 24
THC (TOC) Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr
NMHC Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr
SO_2 emission ppm = H2S in fuel * Fuel Flow/Stack Gas Flow

B
Calculations

BLUE SKY ENVIRONMENTAL, LLC

CEM BIAS CORRECTION SUMMARY

Facility:	TriCities Recycling Disposal Facility	Barometric:	
Unit:	Flare A-3	Leak Check:	OK
Condition:	1525°F	Strat. Check:	OK
Date:	6/4/08	Personnel:	gw, jm
	Traverse 8pts x 2 ports x 2mins/pt		

	O_2	CO_2	NOx	CO	THC	CH4	SO_2		
Analyzer	755R	PIR 2000	42i	48C	RS-55	RS-55	721AT		
Range, r	25	15	50	500	50	50	100		r
Units, ppm or %	%	%	ppm	ppm	ppm	ppm	ppm		
Span Gas Value, sgv	20.57	12.64	45.8	454.0	45.0	45.0			Ccal
Run 1	0.00	0.00	0.00	0.0	0.0	0.0			zero (initial), Cib
Test Time:	20.55	12.53	45.0	447.5	45.0	45.0			cal (initial), Cib
0757-0833	13.08	7.16	11.1	92.5	15.0	8.0			TEST AVG, Cavg
	0.61	0.00	0.0	0.0	0.0	0.0			zero (final), Cfb
	20.50	12.60	45.2	444.0	44.0	44.0			cal (final), Cfb
	2%	*0%*	*0%*	*0%*	*0%*	*0%*			% zero drift
	0%	*0%*	*0%*	*-1%*	*-2%*	*-2%*			% cal drift
	13.00	**7.20**	**11.3**	**94.2**	**15.2**	**8.1**			**Cgas**
Run 2	0.61	0.00	0.0	0.0	0.0	0.0			zero (initial), Cib
Test Time:	20.50	12.60	45.2	444.0	44.0	44.0			cal (initial), Cib
0845-0946	12.94	6.98	11.1	82.5	12.0	9.0			TEST AVG, Cavg
	0.50	0.00	0.0	0.0	0.0	0.0			zero (final), Cfb
	20.00	12.68	45.0	442.0	43.0	43.0			cal (final), Cfb
	0%	*0%*	*0%*	*0%*	*0%*	*0%*			% zero drift
	-2%	*1%*	*0%*	*0%*	*-2%*	*-2%*			% cal drift
	12.94	**6.98**	**11.3**	**84.5**	**12.4**	**9.3**			**Cgas**
Run 3	0.50	0.00	0.0	0.0	0.0	0.0			zero (initial), Cib
Test Time:	20.00	12.68	45.0	442.0	43.0	43.0			cal (initial), Cib
1008-1047	12.68	7.13	11.2	82.9	15.0	12.5			TEST AVG, Cavg
	0.30	0.00	0.0	0.0	-1.0	-1.0			zero (final), Cfb
	19.50	12.68	44.8	440.0	41.0	41.0			cal (final), Cfb
	-1%	*0%*	*0%*	*0%*	*-2%*	*-2%*			% zero drift
	-2%	*0%*	*-1%*	*0%*	*-4%*	*-4%*			% cal drift
	13.05	**7.11**	**11.4**	**85.3**	**16.4**	**13.8**			**Cgas**

Pollutant Concentration (Cgas) = (Cavg - Co) x Ccal / (Cbcal - Co)
Zero and Calibration Drift = 100 x (Cfb - Cib) / r
Bias = 100 x (Cfb - Ca) / r

Co = (Cib + Cfb) / 2 for zero gas
Cbcal = (Cif + Cfb) / 2 for cal gas

STACK GAS FLOW RATE DETERMINATION -- Method 19

Facility: TriCities Recycling Disposal Facility
Unit: Flare A-3
Condition: 1525°F
Date: 6/4/08

		Time:	0757-0833	0845-0946	1008-1047	
		Run:	**1**	**2**	**3**	
# cubic feet/rev	Average Max		1,905	1,906	1,914	ft^3
# of seconds/rev			60	60	60	seconds
Gas Line Pressure (PSIG)			0.0	0.0	0.0	PSI Gauge
Gas Line Pressure (PSIA)			14.7	14.7	14.7	PSI Absolute
Gross Calorific Value @ 60°F	avg		479.9	491.1	341.2	Btu / ft^3
Stack Oxygen			13.0	12.9	13.1	%
Gas Fd-Factor @ 60°F	avg		9,451.1	9,455.2	9,456.9	DSCF/MMBtu
Gas Temperature (°F)			70	70	70	°F
Standard Temperature (°F) Tstd			70	70	70	°F
Realtime Fuel Rate (CFM)			1905.0	1906.0	1914.0	CFM
Corrected Fuel Rate (SCFM) @ Tstd			1905.0	1906.0	1914.0	SCFM
Fuel Flowrate (SCFH)			114,300	114,360	114,840	SCFH
Million Btu per minute			0.897	0.918	0.641	MMBtu/min
Heat Input (MMBtu/hour)			53.8	55.1	38.4	MMBtu/Hr
Stack Gas Flow Rate @ Tstd			**22,849**	**23,223**	**16,451**	**DSCFM**

WHERE:

Gas Fd-Factor = Fuel conversion factor (ratio of combustion gas volumes to heat inputs)
MMBtu = Million Btu

CALCULATIONS:

SCFM = CFM * (460+Tstd) * (PSIA) / 14.7 / (460+Gas°F))
SCFH = SCFM * 60
MMBtu/min = SCFM * (Btu/ft^3) * (520/(460+Tstd)) / 1,000,000
MMBtu/hr Heat Input = MMBtu/min * 60
DSCFM = Gas Fd-Factor * ((460+Tstd)/520) * MMBtu/min * 20.9/ (20.9 - O_2%)

Fd-FACTOR CALCULATION

Landfill Gas - Run 1

Sample ID: TriCities Recycling Disposal Facility
Date: 6/4/2008

	Molecular Weight	Ideal Gas Specific Gravity, G_i	Ideal Gas Term Calorific Value, H_i	Compressibility Summation Factor, $\sqrt{b_i}$	Specific Volume, ft^3/lb	Composition Mole Fraction, x_i	Specific Gravity Fraction, x_iG_i	Calorific Value Fraction, x_iH_i	Compressibility Fraction, $x_i\sqrt{b_i}$	x_iMW	Weight Fraction, $x_iMW / \sum x_iMW$	CARBON Weight Fraction	HYDROGEN Weight Fraction	OXYGEN Weight Fraction	NITROGEN Weight Fraction	SULFUR Weight Fraction	CHONS SUM	Specific Volume, ft^3/lb
Helium‡	4.00	0.1382	0.0	-0.0170		0.0000	0.0000	0.0	0.0000	0.0000	0.0000							
Hydrogen (H_2) ‡	2.02	0.0696	324.9		187.723	0.0000	0.0000	0.0	0.0000	0.0000							0.0000	
Nitrogen	28.01	0.9672	0.0	0.0164	13.443	0.1420	0.1373	0.0	0.0023	3.9774	0.1405				0.1405		0.1405	1.8885
Oxygen	32.00	1.1053	0.0		11.819	0.0140	0.0155	0.0	0.0000	0.4480	0.0158			0.0158			0.0158	0.1870
Carbon Monoxide	28.01	0.9671	321.3	0.0217	13.506	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
Carbon Dioxide‡	44.01	1.5194	0.0	0.0640	8.548	0.3780	0.5622	0.0	0.0237	16.2837	0.5752	0.1570	0.0000	0.4182			0.5752	4.9164
Methane	16.04	0.5539	1012.0	0.0436	23.565	0.4740	0.2625	479.7	0.0207	7.6030	0.2685	0.2011	0.0675				0.2686	6.3282
Ethane	30.07	1.0382	1772.9	0.0917	12.455	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Propane	44.09	1.5224	2523.0	0.1342	8.365	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isobutane	58.12	2.0067	3260.1	0.1744	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Butane	58.12	2.0067	3269.6	0.1825	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isopentane	72.14	2.4910	4009.4	0.2276	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Pentane	72.14	2.4910	4018.5	0.2377	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Hexanes	86.17	2.9753	4758.0	0.2830	4.398	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Total						1.0000	**0.978**	**479.7**	0.0230	28.3121	1.0000	0.3580	0.0675	0.4340	0.1405	0.0000	1.0000	**13.32**
							SG	**Btu/ft³**	**$\sum x_i\sqrt{b_i}$**	**$\sum xiMW$**		**35.80%**	**6.75%**	**43.40%**	**14.05%**	**0.00%**		**ft³/lb**

‡ Omitted from Compressibility Factor Calculation

Calculated Specific Gravity (SG) *(Air = 1.000 @ 760mm Hg, 60°F)*	**0.978**	
Compressibility Factor (Z)	**0.9995**	
$Z = 1 - [(\sum x_i\sqrt{b_i})^2 + (2x_H - x_H^2)(0.0005)]$		
Specific Gravity (corrected)	**0.978**	
Specific Volume, (SV) ft³/lb	**13.32**	**ft³/lb**
Gross Calorific Value (GCV) @ 60°F	**479.9**	**Btu/ft³ Gross**
Gross Calorific Value (GCV) @ 68°F	**472.7**	**Btu/ft³ Gross**
Gross Calorific Value (GCV)	**6,393**	**Btu/lb**
*Btu/lb = Btu/ft³ * ft³/lb*		
Gas Fd-Factor @ 68°F	**9,596**	**DSCF/MMBtu**
*DSCF/MMBtu = 10⁶ * ((3.64*%H₂)+(1.53*%C)+(0.57*%S)+(0.14*%N₂)-(0.46*%O₂)) / Btu/lb*		
Gas Fd-Factor @ 60°F	**9,451**	**DSCF/MMBtu**

Fd-FACTOR CALCULATION

Landfill Gas - Run 2

Sample ID: TriCities Recycling Disposal Facility
Date: 6/4/2008

	Molecular Weight	Ideal Gas Specific Gravity, G_i	Ideal Gas Heat Calorific Value, H_i	Compressibility Summation Factor, $\sqrt{b}$	Specific Volume, ft^3/lb	Component Mole Fraction, x_i	Specific Gravity Fraction, x_iG_i	Calorific Value Fraction, x_iH_i	Compressibility Fraction, $x_i\sqrt{b_i}$	x_iMW	Weight Fraction, $x_iMW / \sum x_iMW$	CARBON Weight Fraction	HYDROGEN Weight Fraction	OXYGEN Weight Fraction	NITROGEN Weight Fraction	SULFUR Weight Fraction	CHONS SUM	Specific Volume, ft^3/lb
Helium‡	4.00	0.1382	0.0	-0.0170		0.0000	0.0000	0.0	0.0000	0.0000	0.0000							
Hydrogen (H_2) ‡	2.02	0.0696	324.9		187.723	0.0000	0.0000	0.0	0.0000	0.0000							0.0000	
Nitrogen	28.01	0.9672	0.0	0.0164	13.443	0.1270	0.1228	0.0	0.0021	3.5573	0.1257				0.1257		0.1257	1.6895
Oxygen	32.00	1.1046	0.0		11.819	0.0090	0.0099	0.0	0.0000	0.2880	0.0102			0.0102			0.0102	0.1208
Carbon Monoxide	28.01	0.9671	321.3	0.0217	13.506	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
Carbon Dioxide‡	44.01	1.5194	0.0	0.0640	8.548	0.3790	0.5759	0.0	0.0243	16.6798	0.5893	0.1608	0.0000	0.4285			0.5893	5.0373
Methane	16.04	0.5539	1012.0	0.0436	23.565	0.4850	0.2686	490.8	0.0211	7.7794	0.2748	0.2058	0.0691				0.2749	6.4768
Ethane	30.01	1.0363	1772.9	0.0917	12.455	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Propane	44.09	1.5224	2523.0	0.1342	8.365	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isobutane	58.12	2.0067	3260.1	0.1744	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Butane	58.12	2.0067	3269.6	0.1825	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isopentane	72.14	2.4910	4009.4	0.2276	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Pentane	72.14	2.4910	4018.5	0.2377	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Hexanes	86.17	2.9753	4758.0	0.2830	4.398	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Total						1.0000	0.977	490.8	0.0232	28.3043	1.0000	0.3666	0.0691	0.4387	0.1257	0.0000	1.0000	13.32
							SG	Btu/ft³	$\sum x_i\sqrt{b_i}$	$\sum x_iMW$		36.66%	6.91%	43.86%	12.57%	0.00%		ft^3/lb

‡ Omitted from Compressibility Factor Calculation

Calculated Specific Gravity (SG) *(Air = 1.000 @ 760mm Hg, 60°F)* **0.977**

Compressibility Factor (Z) **0.9995**

$Z = 1 - [(\sum x_i \sqrt{b_i})^2 + (\sum x_i \sqrt{b_i}^2)/4]^2$

Specific Gravity (corrected) **0.978**

Specific Volume, (SV) ft^3/lb **13.32** ft^3/lb

Gross Calorific Value (GCV) @ 60°F **491.1** **Btu/ft³ Gross**

Gross Calorific Value (GCV) @ 68°F **483.6** **Btu/ft³ Gross**

Gross Calorific Value (GCV) **6,543** **Btu/lb**

*Btu/lb = Btu/ft³ * ft³/lb*

Gas Fd-Factor @ 68°F **9,601** **DSCF/MMBtu**

*DSCF/MMBtu = 10^6 * ((3.64 * %H2) + (1.53 * %CO) + (0.57 * %CH4) + (0.14 * %N2) + (0.16 * %O2)) / Btu/lb*

Gas Fd-Factor @ 60°F **9,455** **DSCF/MMBtu**

‡ Omitted from Compressibility Factor Calculation

Fd-FACTOR CALCULATION

Landfill Gas - Run 3

Sample ID: TriCities Recycling Disposal Facility
Date: 6/4/2008

	Molecular Weight	Ideal Gas Specific Gravity, G_i	Ideal Gas Total Calorific Value, H_i	Compressibility Summation Factor, $\sqrt{b_i}$	Specific Volume, ft³/lb	Composition Mole Fraction, x_i	Specific Gravity Fraction, x_iG_i	Calorific Value Fraction, x_iH_i	Compressibility Fraction, $x_i\sqrt{b_i}$	x_iMW	Weight Fraction, ξ_iMW / ΣxiMW	CARBON Weight Fraction	HYDROGEN Weight Fraction	OXYGEN Weight Fraction	NITROGEN Weight Fraction	SULFUR Weight Fraction	CHONS SUM	Specific Volume, ft³/lb
Helium‡	4.00	0.1383	0.0	-0.0170		0.0000	0.0000	0.0	0.0000	0.0000	0.0000							
Hydrogen (H_2) ‡	2.02	0.0696	324.9		187.723	0.0000	0.0000	0.0	0.0000	0.0000							0.0000	
Nitrogen	28.01	0.9672	0.0	0.0164	13.443	0.3280	0.3172	0.0	0.0054	9.1873	0.3230				0.3230		0.3230	4.3427
Oxygen	32.00	1.1053	0.0		11.819	0.0710	0.0785	0.0	0.0000	2.2720	0.0799			0.0799			0.0799	0.9442
Carbon Monoxide	28.01	0.9671	321.3	0.0217	13.506	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
Carbon Dioxide‡	44.01	1.5194	0.0	0.0640	8.548	0.2630	0.3996	0.0	0.0168	11.5746	0.4070	0.1111	0.0000	0.2959			0.4070	3.4790
Methane	16.04	0.5539	1012.0	0.0436	23.565	0.3370	0.1867	341.0	0.0147	5.4055	0.1901	0.1423	0.0478				0.1901	4.4790
Ethane	30.01	1.0382	1772.9	0.0917	12.455	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Propane	44.09	1.5224	2523.0	0.1342	8.365	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isobutane	58.12	2.0067	3260.1	0.1744	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Butane	58.12	2.0067	3269.6	0.1825	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isopentane	72.14	2.4910	4009.4	0.2276	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Pentane	72.14	2.4910	4018.5	0.2377	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Hexanes	86.17	2.9753	4758.0	0.2830	4.398	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Total						0.9990	0.982	341.0	0.0201	28.4394	1.0000	0.2534	0.0478	0.3758	0.3230	0.0000	1.0000	13.24
							SG	Btu/ft³	$\Sigma x_i\sqrt{b_i}$	ΣxiMW		25.34%	4.78%	37.58%	32.30%	0.00%		ft³/lb

‡ Omitted from Compressibility Factor Calculation

Calculated Specific Gravity (SG) *(Air = 1.000 @ 760mm Hg, 60°F)*	**0.982**	
Compressibility Factor (Z)	**0.9996**	
$Z = 1 - [(\Sigma x_i \sqrt{b_i})^2 + (2x_H \cdot x_H^2)(0.0005)]$		
Specific Gravity (corrected)	**0.982**	
Specific Volume, (SV) ft³/lb	**13.24**	**ft³/lb**
Gross Calorific Value (GCV) @ 60°F	**341.2**	**Btu/ft³ Gross**
Gross Calorific Value (GCV) @ 68°F	**336.0**	**Btu/ft³ Gross**
Gross Calorific Value (GCV)	**4,519**	**Btu/lb**
*Btu/lb = Btu/ft³ * ft³/lb*		
Gas Fd-Factor @ 68°F	**9,602**	**DSCF/MMBtu**
*DSCF/MMBtu = 10⁶ * ((3.64*%H₂)+(1.53*%C)+(0.57*%S)+(0.14*%N₂)-(0.46*%O₂)) / Btu/lb*		
Gas Fd-Factor @ 60°F	**9,457**	**DSCF/MMBtu**

C
Laboratory Reports

Atmospheric Analysis & Consulting, Inc.

CLIENT	: Blue Sky Environmental, LLC
PROJECT NAME	: Tri-Cities
AAC PROJECT NO.	: 080348
REPORT DATE	: 06/05/2008

On June 05, 2008, Atmospheric Analysis & Consulting, Inc. received three (3) Tedlar Bags for analysis by ASTM D-1945 which includes: Fixed Gases analysis by EPA 3C and hydrocarbon analysis by EPA 18, as well as non-methane organic compounds analysis by EPA 25C. Total Reduced Sulfur analysis by ASTM D-5504 was additionally requested on "LFG-3". Upon receipt the samples were assigned unique Laboratory ID numbers as follows:

Client ID	Lab No.
LFG-1	080348-33123
LFG-2	080348-33124
LFG-3	080348-33125

EPA 3C - An aliquot of the gaseous sample is injected into the GC/TCD for analysis following EPA 3C as specified in the SOW.

EPA 18 Analysis - Up to a 1 ml aliquot of samples is injected into the GC/FID for analysis following EPA 18 as specified in the SOW.

EPA 25C Analysis - Up to a 1 mL aliquot of samples is injected into the GC/FID/TCA for analysis following EPA 25C as specified in the SOW.

ASTM D-5504 – Up to a 1mL aliquot of sample is injected into the GC/SCD for analysis following ASTM D-5504 as specified in the SOW.

No problems were encountered during receiving, preparation, and/ or analysis of this sample. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# AACI- EPA 3C, 25C, EPA 18 and ASTM D-5504.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. Release of the data contained in this hardcopy data package and its electronic data deliverable submitted on diskette has been authorized by the Laboratory Director or his designee, as verified by the following signature.

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

Sucha S. Parmar, PhD
Technical Director

This report consists of 13 pages.

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

Client:	**Blue Sky Environmental**	**Sampling Date**	**06/04/2008**
Project No.	**080348**	**Receiving Date**	**06/05/2008**
Matrix	**Air**	**Analysis Date**	**06/05/2008**
Units	**%**	**Report Date**	**06/05/2008**

EPA Method 3C

PQL: 0.1 %			Analyte				
Client ID	**AAC ID**	**Hydrogen**	**Oxygen**	**Nitrogen**	**CO**	**Methane**	**CO2**
LFG-1	080348-33123	<PQL	1.4	14.2	<PQL	47.4	37.0
LFG-2	080348-33124	<PQL	0.9	12.7	<PQL	48.5	37.9
LFG-3	080348-33125	<PQL	7.1	32.8	<PQL	33.7	26.3

Dr. Sucha Parmar
Technical Director

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Atmospheric Analysis & Consulting, Inc.

LABORATORY ANALYSIS REPORT

CLIENT	Blue Sky Environmental	SAMPLING DATE	06/04/2008
PROJECT NO.	080348	RECEIVING DATE	06/05/2008
UNITS	PPMV	ANALYSIS DATE	06/05/2008
		REPORT DATE	06/05/2008

Total Reduced Sulfur Compounds Analysis by ASTM D-5504

Client ID	LFG-3		PQL (RLxDF's)	Reporting Limit
AAC ID	080348-33125			
Can Dilution Factor	1.0			
Analyte	Result	Dil. Fac.		
H_2S	66.93	1000	10.00	0.01
Carbonyl Sulfide	<PQL	100	1.00	0.01
SO2	<PQL	100	1.00	0.01
Methyl Mercaptan	1.74	100	1.00	0.01
Ethyl Mercaptan	<PQL	100	1.00	0.01
Dimethyl Sulfide	1.28	100	1.00	0.01
n-Butyl mercaptan	<PQL	100	1.00	0.01
Carbon Disulfide	<PQL	100	1.00	0.01
Allyl Sulfide	<PQL	100	1.00	0.01
Propyl Sulfide	<PQL	100	1.00	0.01
Allyl disulfide	<PQL	100	1.00	0.01
Isopropyl Mercaptan	<PQL	100	1.00	0.01
t-Butyl Mercaptan	<PQL	100	1.00	0.01
Propyl Mercaptan	<PQL	100	1.00	0.01
Butyl Sulfide	<PQL	100	1.00	0.01
Ethyl Methyl Sulfide	<PQL	100	1.00	0.01
Thiophene	<PQL	100	1.00	0.01
Isobutyl Mercaptan	<PQL	100	1.00	0.01
Dimethyl Disulfide	<PQL	100	1.00	0.01
Allyl Mercaptan	<PQL	100	1.00	0.01
3-Methylthiophene	<PQL	100	1.00	0.01
Tetrahydrothiophene	<PQL	100	1.00	0.01
Diethyl Sulfide	<PQL	100	1.00	0.01
2-Ethylthiophene	<PQL	100	1.00	0.01
2,5-Dimethylthiophene	<PQL	100	1.00	0.01
Diethyl disulfide	<PQL	100	1.00	0.01
Total Unidentified Sulfurs as H_2S	<PQL			
Total Reduced Sulfurs as H_2S	69.95			

All compound's concentrations expressed in terms of H_2S.

Dr. Sucha Parmar
Technical Director

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

Client	**Blue Sky Environmental**	**Sampling Date**	**06/04/2008**
Project No.	**080348**	**Receiving Date**	**06/05/2008**
Matrix	**AIR**	**Analysis Date**	**06/05/2008**
Units	**ppmV**	**Report Date**	**06/05/2008**

EPA Method 25C

PQL:		1.0 ppmv
Client Sample ID	**AAC ID**	**NMHC****
LFG-1	**080348-33123**	1762
LFG-2	**080348-33124**	1955
LFG-3	**080348-33125**	1467

****Non-Methane Hydrocarbons as Methane**

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Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT:	**Blue Sky Environmental**	**Sampling Date**	**06/04/2008**
PROJECT NO.	**080348**	**Receiving Date**	**06/05/2008**
MATRIX	**AIR**	**Analysis Date**	**06/05/2008**
UNITS	**ppmV**	**Report Date**	**06/05/2008**

C1 to C6+ Hydrocarbons by EPA Method 18

Client ID	AAC ID	*ANALYSIS METHOD*		*EPA Method 18*				
		PQL		*0.3 ppmv*				
		C1 *	C2 **	C3	C4	C5	C6	C6+
LFG-1	080348-33123	NA	<30	21.1	25.2	37.3	32.6	376.7
LFG-2	080348-33124	NA	<30	21.7	24.7	37.2	30.6	307.0
LFG-3	080348-33125	NA	<30	20.0	19.7	29.4	23.9	263.5

**** C1 reported off of the EPA 3C report***

***** Due to the extremely high C1 concentration, the C2 concentration could not be measured below this PQL due to matrix interference.***

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008
Analyst: DN

Instrument ID: TCD#1
Units: %

I - Method Blank-EPA Method 3C

AAC ID	Analyte	MB Concentration
Method Blank	Hydrogen	ND
	Oxygen	ND
	Nitrogen	ND
	CO	ND
	Methane	ND
	CO2	ND

II-Laboratory Control Spike & Duplicate - EPA Method 3C

AAC ID	Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec *	LCSD % Rec *	% RPD***
Lab Control Standards	Hydrogen	20.0	20.5	20.6	102	103	0.8
	Nitrogen	20.0	19.6	19.7	98	98	0.4
	CO	20.0	19.8	19.9	99	99	0.5
	Methane	20.0	19.8	19.9	99	99	0.6
	CO2	20.0	19.8	20.0	99	100	0.7

III - Duplicate Analysis - EPA Method 3C

AAC ID	Analyte	Sample Concentration	Duplicate Concentration	Mean	% RPD***
080344-33081	Hydrogen	0.00	0.00	0.0	0.0
	Oxygen	0.85	0.83	0.8	2.7
	Nitrogen	3.43	3.35	3.4	2.4
	CO	0.00	0.00	0.0	0.0
	Methane	26.49	26.49	26.5	0.0
	CO2	21.38	21.38	21.4	0.0

IV-Matrix Spike & Duplicate- EPA Method 3C

AAC ID	Analyte	Sample Concentration	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD***
080344-33081	Hydrogen	0.00	10.0	9.55	9.44	95	94	1.2
	Nitrogen	1.70	10.0	11.78	12.06	101	104	2.8
	CO	0.00	10.0	10.09	10.09	101	101	0.0
	Methane	13.25	10.0	22.99	22.96	97	97	0.3
	CO2	10.69	10.0	20.48	20.45	98	98	0.3

** Must be 85-115%*
*** Must be 75-125%*
**** Must be < 25%*

Sucha Parmar, Ph.D.
Technical Director

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Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008 **Instrument ID: TCD#1**
Analyst: DN **Calb Date: 04/03/08**

Opening Calibration Verification Standard

Analyte	xLR**	LR	%RPD*
Hydrogen	1869	1975	**5.5**
Oxygen* **	49346	50261	**1.8**
Nitrogen	59197	59635	**0.7**
Carbon Monoxide	57917	59391	**2.5**
Methane	48425	49740	**2.7**
Carbon Dioxide	77691	80034	**3.0**

Closing Calibration Verification Standard

Analyte	xLR**	LR	%RPD*
Hydrogen	1869	1948	**4.1**
Nitrogen	59197	57568	**2.8**
Carbon Monoxide	57917	57928	**0.0**
Methane	48425	48534	**0.2**
Carbon Dioxide	77691	78144	**0.6**

* Must be <15%
** Linear Response Factor from Initial Calibration Curve
*** Oxygen from Lab Air

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed: 06/05/2008 **Instrument ID: SCD#2**
Analyst: DN **Units: PPMV**

I - Method Blank - ASTM D-5504

AAC ID	Analyte	MB Conc.
Method Blank	H2S	ND

II-Laboratory Control Spike & Duplicate - ASTM D-5504

Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec *	LCSD % Rec *	% RPD***
H2S	0.050	0.050	0.050	100.0	100.0	0.0

III-Matrix Spike & Duplicate - ASTM D-5504 **Sample ID 080348-33215 (2000x)**

Analyte	Sample Concentration	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD***
H2S	0.033	0.025	0.055	0.057	86	94	3.6

IV - Duplicate Analysis - ASTM D-5504 **Sample ID 080348-33215**

Analyte	Sample Concentration	Duplicate Concentration	Mean	% RPD***
H2S	66.4	67.5	66.9	0.0

** Must be 90-110%*

*** Must be 85-115%*

**** Must be < 10%*

Dr. Sucha Parmar
Technical Director

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008
Analyst: DN
Calibration Date: 5/14/2008

Instrument ID: SCD#2
Units: PPMV

Opening Calibration Verification Standards

Analyte	Std. Conc.	Result	%Recovery*
H2S	0.050	0.051	**102**

Closing Calibration Verification Standard

Analyte	Std. Conc.	Result	%Recovery*
H2S	0.050	0.048	**96**

* Must be 90-110%

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Analysis Date:	**6/5/2008**	**Instrument ID:**	**FID#4**
Analyst:	**DN**	**Calibration Date:**	**8/25/2007**
Units:	**ppmv**		

I - Opening Calibration Verification Standard - Method 25C

Analyte	xCF	dCF	%RPD*
CO	3177	2983	6.3
CH4	3171	3236	2.0
CO2	3123	3125	0.1
Propane	9157	8825	3.7

II - Method Blank - Method 25C

AAC ID	Analyte	Sample Result
MB	NMEHC	ND

III - Laboratory Control Spike & Duplicate - Method 25C

AAC ID	Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec **	LCSD % Rec **	% RPD***
LCS/LCSD	NMEHC	50.0	51.0	50.9	102.0	101.9	0.1

IV - Closing Calibration Verification Standard - Method 25C

Analyte	xCF	dCF	%RPD*
CO	3177	3028	4.8
CH4	3171	3364	5.9
CO2	3123	3180	1.8
Propane	9157	9263	1.2

xCF - Average Calibration Factor from Initial Calibration Curve

dCF - Daily Calibration Factor

* Must be <15%

** Must be 90-110 %

*** Must be <20%

Sucha Parmar, Ph.D.
Technical Director

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008
Analyst: DN

Instrument ID: FID#3
Units: PPMV

I - Method Blank-EPA Method 18

AAC ID	Analyte	MB Concentration
Method Blank	Methane	ND
	Ethane	ND
	Propane	ND
	Butane	ND
	Pentane	ND
	Hexane	ND

II-Laboratory Control Spike & Duplicate - EPA Method 18

AAC ID	Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec *	LCSD % Rec *	% RPD***
Lab Control Standards	Methane	100.4	97.6	100.5	97.2	100.1	3.0
	Ethane	100.2	99.3	102.1	99.1	101.9	2.8
	Propane	100.2	98.6	100.8	98.4	100.6	2.2
	Butane	100.4	100.1	101.6	99.7	101.2	1.5
	Pentane	100.0	100.7	103.6	100.7	103.6	2.8
	Hexane	99.4	99.7	101.9	100.3	102.5	2.2

III - Duplicate Analysis - EPA Method 18

AAC ID	Analyte	Sample Concentration	Duplicate Concentration	Mean	% RPD***
080348-33123	Methane	NA	NA	NA	NA
	Ethane	NA	NA	NA	NA
	Propane	21.25	21.39	21.3	0.7
	Butane	10.36	10.34	10.4	0.2
	Pentane	5.21	5.86	5.5	11.7
	Hexane	1.84	1.78	1.8	3.2

IV-Matrix Spike & Duplicate- EPA Method 18

AAC ID	Analyte	Sample Concentration	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD***
080348-33123	Methane	NA	NA	NA	NA	NA	NA	NA
	Ethane	NA	NA	NA	NA	NA	NA	NA
	Propane	10.7	50.0	60.3	60.9	99	101	1.2
	Butane	5.2	50.0	58.6	58.5	107	107	0.0
	Pentane	2.8	50.0	58.1	57.9	111	110	0.5
	Hexane	0.9	50.0	57.6	58.0	113	114	0.7

* *Must be 85-115%*
** *Must be 75-125%*
*** *Must be < 25%*

Dr. Sucha Parmar
Technical Director

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008 **Instrument ID: FID#3**
Analyst: DN **Calibration Date: 04/18/2008**

Opening Calibration Verification Standard

Analyte	xCF**	CF	%RPD*
C1	671	683	**1.7**
C2	1308	1345	**2.9**
C3	2018	2017	**0.0**
C4	2610	2704	**3.5**
C5	3155	3336	**5.6**
C6	3632	3836	**5.5**

Closing Calibration Verification Standard

Analyte	xCF**	CF	%RPD*
C1	671	676	**0.7**
C2	1308	1333	**1.9**
C3	2018	1995	**1.1**
C4	2610	2636	**1.0**
C5	3155	3233	**2.5**
C6	3632	3788	**4.2**

* Must be <15%
** Average Calibration Factor from Initial Calibration Curve

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

BLUE SKY ENVIRONMENTAL, LLC
624 San Gabriel Avenue
Albany, CA 94706
510.525.1261 ph/fax
Contact: Guy Worthington 510 508 3469
E.Mail blueskyenvironmental@yahoo.com

LAB: AAC
ADDRESS:

ph/fax 805 650 1642
Contact:

080348

CHAIN OF CUSTODY RECORD

Project Name: TRI-CITIES

Project #:

SAMPLE Date	SAMPLE Time	Sample ID (Method-Run-Fraction)	Type/Size of container	Analysis Requested: 25C	1945	5504				
6/4/08	0800	LFG-1	Tedlar	/	/				33123	
6/4/08	0845	LFG-2	5L	/	/				33124	
6/4/08		LFG-3		/	/	/			33125	

All samples submitted to laboratories for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the sample. Samples should be held for 90+ days. The laboratory reserves the right to return unused sample portions.

COMMENTS:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Worthington	6-4-08	5:00	GSO	6-4-08	5:00
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
				6/5/08	0840
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

D
Field Data Sheets

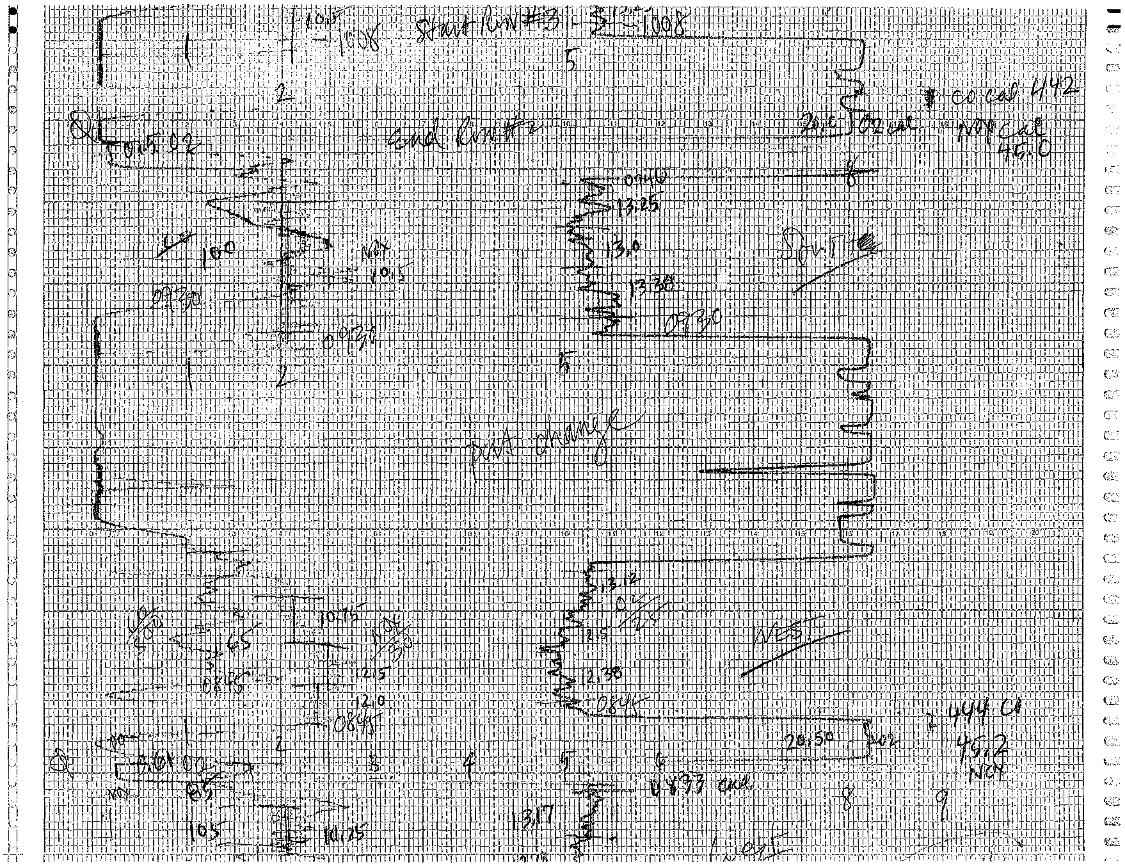
BLUE SKY ENVIRONMENTAL, LLC

CONTINUOUS EMISSION MONITORING SUMMARY DATA SHEET

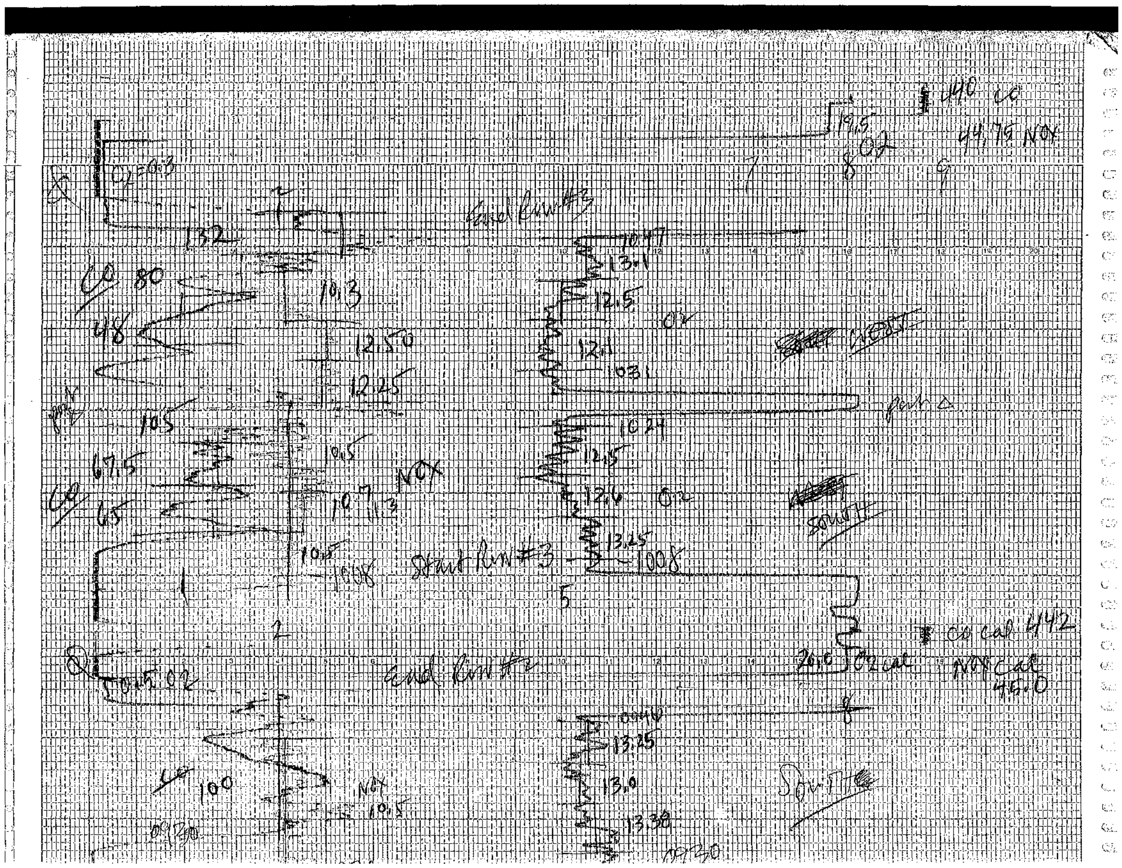
Facility: TRI-CITIES Test #: 1-2-3 Date: 6-4-08
Location: Personnel: GW, JM Leak Check: ✓
Stratification Check: ✓

Parameter		O_2	CO_2	NOx	CO	THC	CH_4	SO_2			Unit Description/Serial #:
Analyzer		755R	PIR 2000	42 L	48C	RS-55	RS-55				A-3 FLARE
Range		25	15	50	500	100					Operating Conditions:
Span Value(s)		20.57	12.04	45.8	454	45.0					1525 ±
Span Value(s)											Fuel: LFG
Span Value(s)											1900 ± SCFM
	CAL	20.55	12.53	45.0	447.5	45.0					NOTES:
	⊖	⊖	⊖	⊖	⊖	⊖					
											8'5" dia
(1)	0757	13.63	7.13	10.5	115	15	—		SOUTH		PTS
	↓	13.0	7.13	11.25	95	15	—		↓		3.3
	0813	13.0	7.13	11.00	67.5	15	—				10.7
	0817	12.88	7.20	11.80	87.5	—	8		WEST		19.8
	↓	12.78	7.20	11.75	105	—	8		↓		32.9
	0833	13.17	7.20	10.25	85	—	8				69.1
	⊖	0.61	⊖	⊖	⊖	⊖					82.2
	CAL	20.50	12.6	45.2	444	44					91.3
	AVG	13.08	7.16	11.1	92.5	15	8				98.7
											2 mins pt. x 2 pts
(2)	0845	12.38	7.35	12.0	65	12	—				32 mins
	↓	12.50	7.35	12.5	65	12	—				
	0901	13.12	7.35	10.75	65	12	—				
	0930	1338	6.6	10.5	100	—	9				
	↓	13.0	6.6	10.5	100	—	9				
	0946	13.25	6.6	10.5	100	—	9				
	⊖	0.5	⊖	⊖	⊖	⊖					
	CAL	20.5	12.68	45.0	442	43.0					
	AVG	12.94	6.98	11.1	82.5	12	9				
(3)	1008	13.25	6.98	10.5	65	15	—				
	↓	12.6	6.98	10.3	67.5	15	—				
	1024	12.5	6.98	10.5	105	15	—				
	1031	12.1	7.28	12.25	48	—	12.5				
	↓	12.5	7.28	12.50	80	—	12.5				
	1047	13.1	7.28	10.3	132	—	12.5				
	⊖	0.3	⊖	⊖	⊖	-1					
	CAL	19.5	12.68	44.25	440	41					
	AVG	12.68	7.13	11.2	82.9	15	12.5				

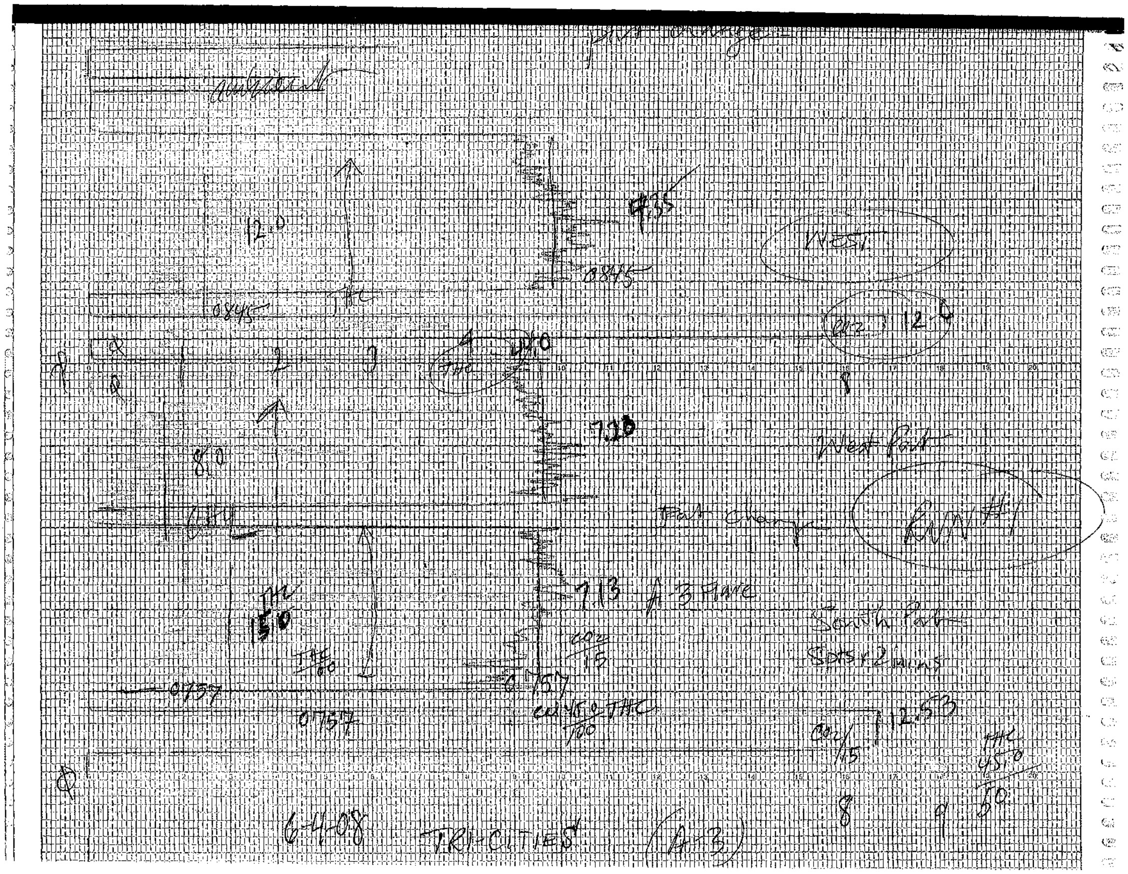
E
Strip Charts

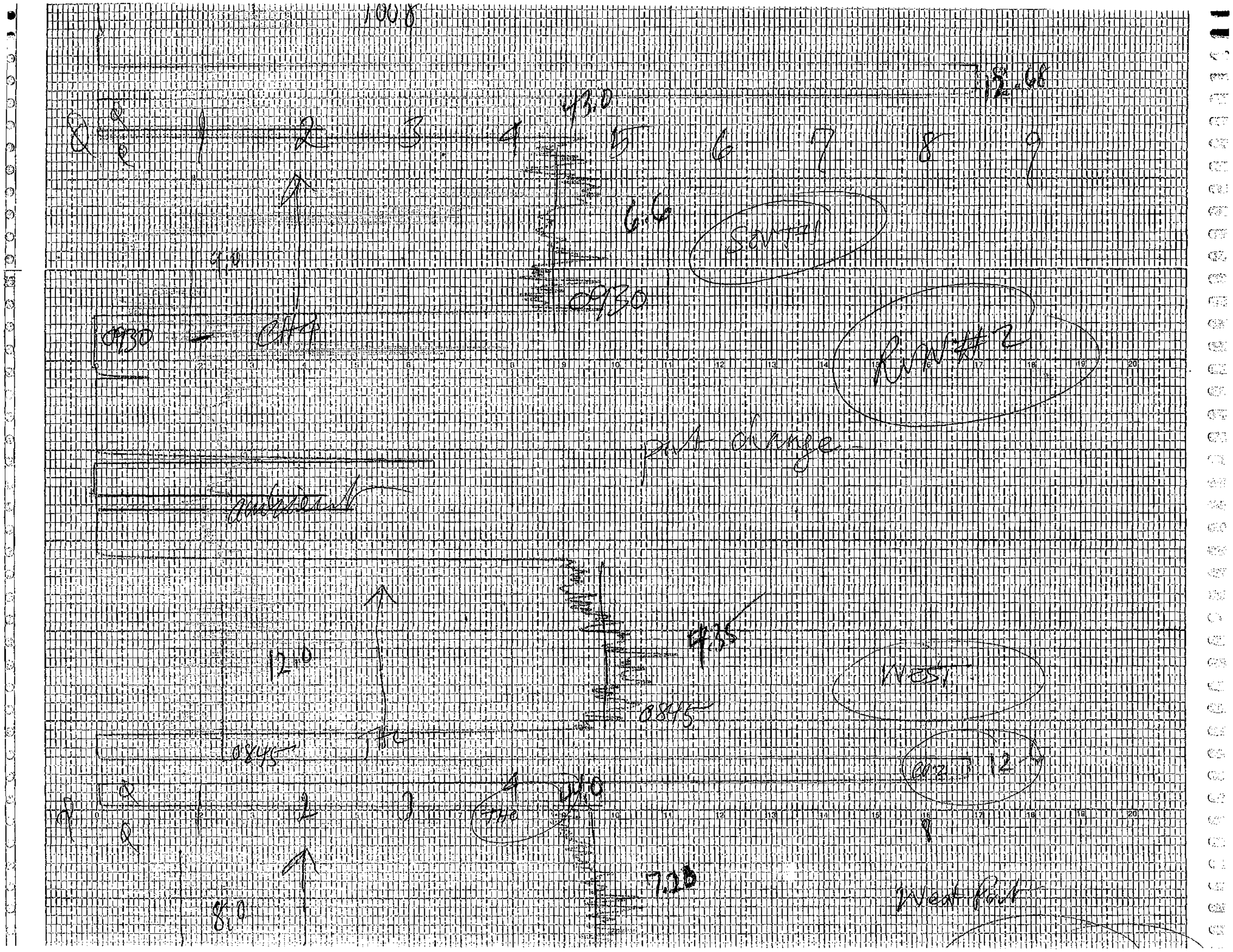


Start Run #3
1008
End Run #2
CO cal 44.2
O2 cal
NOx cal
45.0
South
port change
WEST
0930
0845
0833 cal
20.50
West

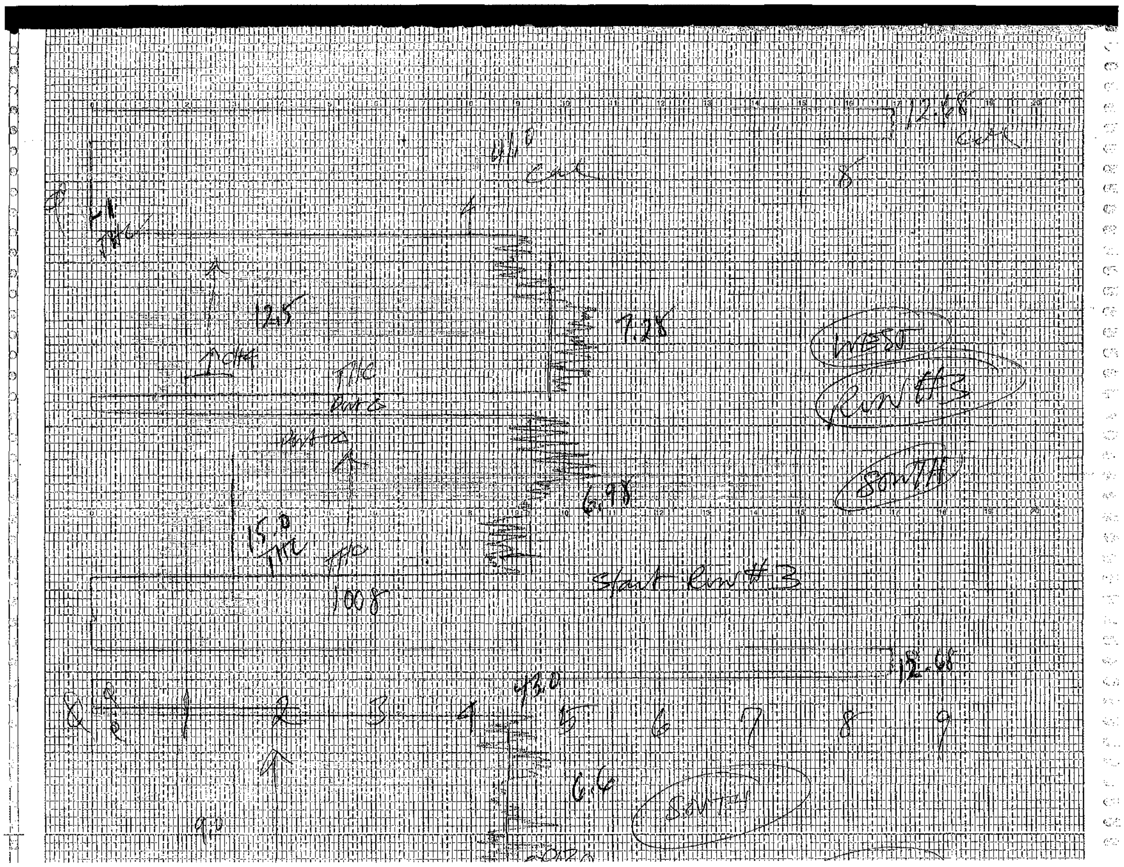


140 CO
44.75 NOx
19.5
8 O2
End Run #3
CO 80
48
10.3
12.50
12.25
12.5
12.1
1031
105
67.5
65
10.5
NOx
1024
12.5
12.6
13.25
1008
Start Run #3
CO cal 442
NOx Cal 45.0
O2 cal
20.0
End Run #2
13.25
13.0
13.30
CO 100
NOx
10.5
0930


12.0
0845
WEST
12.6
8.0
West Port
Port Change
RUN #1
A-3 Flare
15.0
South Port
0757
6-4-08
TRI-CITIES
(A-3)



6.6
SOUTH
0930
0930 — CH4
RUN #2
pH change
ambient
12.0
4.35
WEST
0845
7.2
8.0
West Point


12.68
CAL
8
4
12.5
7.28
WEST
Run #3
SOUTH
6.98
15.0
Start Run #3
12.68
0 1 2 3 4 5 6 7 8 9
6.6
SOUTH

J
Process Information

Date	Time	CH01 TEMP DEG F MIN	MAX	CH02 FLOW SCFM MIN	MAX
	55 minutes behind PST				
2008/06/04	06:52:00	1518	1531	1893	1919
2008/06/04	06:54:00	1518	1530	1898	1913
2008/06/04	06:56:00	1520	1533	1897	1913
2008/06/04	06:58:00	1516	1527	1892	1908
2008/06/04	07:00:00	1518	1532	1892	1912
2008/06/04	07:02:00	1522	1529	1895	1906
2008/06/04	07:04:00	1516	1532	1891	1906
2008/06/04	07:06:00	1523	1531	1890	1916
2008/06/04	07:08:00	1520	1526	1894	1910
2008/06/04	07:10:00	1523	1531	1884	1899
2008/06/04	07:12:00	1518	1531	1888	1898
2008/06/04	07:14:00	1521	1530	1883	1904
2008/06/04	07:16:00	1523	1530	1883	1903
2008/06/04	07:18:00	1522	1531	1887	1908
2008/06/04	07:20:00	1523	1531	1887	1908
2008/06/04	07:22:00	1521	1531	1887	1902
2008/06/04	07:24:00	1522	1535	1882	1902
2008/06/04	07:26:00	1522	1528	1881	1897
2008/06/04	07:28:00	1517	1532	1886	1902
2008/06/04	07:30:00	1517	1530	1880	1900
2008/06/04	07:32:00	1517	1535	1880	1901
2008/06/04	07:34:00	1518	1530	1885	1901
2008/06/04	07:36:00	1522	1531	1880	1899
2008/06/04	07:38:00	1520	1531	1880	1895
RUN #1		**1520**	**1531**	**1887**	**1905**

Date	Time	CH01 TEMP DEG F MIN	MAX	CH02 FLOW SCFM MIN	MAX
	55 minutes behind PST				
2008/06/04	07:50:00	1519	1533	1876	1897
2008/06/04	07:52:00	1519	1533	1871	1891
2008/06/04	07:54:00	1522	1536	1871	1890
2008/06/04	07:56:00	1521	1541	1875	1890
2008/06/04	07:58:00	1520	1532	1875	1895
2008/06/04	08:00:00	1525	1531	1880	1895
2008/06/04	08:02:00	1519	1531	1874	1895
2008/06/04	08:04:00	1521	1530	1874	1895
2008/06/04	08:06:00	1523	1532	1874	1895
2008/06/04	08:08:00	1525	1533	1875	1890
2008/06/04	08:10:00	1523	1531	1870	1886
2008/06/04	08:12:00	1524	1531	1875	1890
2008/06/04	08:14:00	1520	1530	1876	1896
2008/06/04	08:16:00	1521	1535	1876	1894
2008/06/04	08:18:00	1517	1542	1871	1895
2008/06/04	08:20:00	1522	1531	1881	1896
2008/06/04	08:22:00	1519	1533	1881	1896
2008/06/04	08:24:00	1519	1533	1875	1896
2008/06/04	08:26:00	1524	1535	1870	1885
2008/06/04	08:28:00	1517	1528	1884	1915
2008/06/04	08:30:00	1516	1535	1899	1919
2008/06/04	08:32:00	1516	1547	1883	1934
2008/06/04	08:34:00	1515	1530	1908	1934
2008/06/04	08:36:00	1522	1537	1912	1928
2008/06/04	08:38:00	1516	1531	1912	1927
2008/06/04	08:40:00	1521	1536	1911	1927
2008/06/04	08:42:00	1520	1531	1901	1931
2008/06/04	08:44:00	1519	1528	1911	1926
2008/06/04	08:46:00	1521	1536	1905	1921
2008/06/04	08:48:00	1517	1533	1905	1925
2008/06/04	08:50:00	1521	1530	1904	1919
RUN #2		**1520**	**1533**	**1886**	**1906**

Date	Time	CH01 TEMP DEG F MIN	MAX	CH02 FLOW SCFM MIN	MAX
	55 minutes behind PST				
2008/06/04	09:14:00	1519	1531	1899	1915
2008/06/04	09:16:00	1524	1529	1899	1915
2008/06/04	09:18:00	1521	1533	1904	1915
2008/06/04	09:20:00	1524	1538	1898	1922
2008/06/04	09:22:00	1518	1536	1888	1914
2008/06/04	09:24:00	1514	1531	1892	1913
2008/06/04	09:26:00	1519	1533	1892	1922
2008/06/04	09:28:00	1517	1533	1896	1912
2008/06/04	09:30:00	1523	1536	1902	1912
2008/06/04	09:32:00	1520	1531	1896	1927
2008/06/04	09:34:00	1519	1533	1895	1922
2008/06/04	09:36:00	1523	1531	1895	1912
2008/06/04	09:38:00	1523	1536	1895	1916
2008/06/04	09:40:00	1520	1536	1889	1906
2008/06/04	09:42:00	1521	1536	1894	1910
2008/06/04	09:44:00	1518	1531	1894	1909
2008/06/04	09:46:00	1521	1536	1896	1909
2008/06/04	09:48:00	1522	1528	1888	1914
2008/06/04	09:50:00	1520	1536	1890	1909
2008/06/04	09:52:00	1519	1546	1893	1911
RUN #3		**1520**	**1534**	**1895**	**1914**

G
Calibration Certifications & QC Records

PRAXAIR

In Service 3/08

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (323) 585-0582

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER MARK FOR BLUE SKY **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON DIOXIDE GMIS	vs.SRM#2745	SA 18273	15.05 %
OXYGEN GMIS	vs.SRM#2659	CC 95752	20.97 %

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** CARBON DIOXIDE GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Ultramat 5E S/N A12-730
   ANALYTICAL PRINCIPLE NDIR **LAST CALIBRATION DATE** 01/07/08
   FIRST ANALYSIS DATE 01/09/08 **SECOND ANALYSIS DATE**

Z 0.00	R 15.04	C 12.64	CONC. 12.64	Z	R	C	CONC.
R 15.04	Z 0.00	C 12.64	CONC. 12.64	R	Z	C	CONC.
Z 0.00	C 12.64	R 15.04	CONC. 12.64	Z	C	R	CONC.
U/M %		MEAN TEST ASSAY 12.64		U/M %		MEAN TEST ASSAY	

2. **COMPONENT** OXYGEN GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Oxymat 5E S/N A12-839
   ANALYTICAL PRINCIPLE Paramagnetic **LAST CALIBRATION DATE** 01/07/08
   FIRST ANALYSIS DATE 01/09/08 **SECOND ANALYSIS DATE**

Z 0.0	R 21.0	C 20.6	CONC. 20.57	Z	R	C	CONC.
R 21.0	Z 0.0	C 20.6	CONC. 20.57	R	Z	C	CONC.
Z 0.0	C 20.6	R 21.0	CONC. 20.57	Z	C	R	CONC.
U/M %		MEAN TEST ASSAY 20.57		U/M %		MEAN TEST ASSAY	

Values not valid below 150 psig
O2 concentration is corrected for CO2 interference.

THIS CYLINDER NO. CC 149153
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 01/09/08
EXPIRATION DATE 01/09/11 **TERM** 36 MONTHS

CERTIFIED CONCENTRATION

CARBON DIOXIDE	12.64 %
OXYGEN	20.57 %
NITROGEN	BALANCE

ANALYZED BY PETER SU ***CERTIFIED BY*** HELENA TRAN

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (323) 585-0582

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER BLUE SKY (MARK) **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE GMIS	vs.SRM#2635	SA 15590	24.35 ppm
NITRIC OXIDE GMIS	vs.SRM#1683	SA 11017	50.4 ppm

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** CARBON MONOXIDE GMIS **ANALYZER MAKE-MODEL-S/N** HORIBA, VIA-510, S/N 576876015
   ANALYTICAL PRINCIPLE NDIR **LAST CALIBRATION DATE** 02/04/08
   FIRST ANALYSIS DATE 02/04/08 **SECOND ANALYSIS DATE** 02/13/08

Z 0	R 24.6	C 46.2	CONC. 45.7	Z 0	R 24.6	C 46.3	CONC. 45.8
R 24.6	Z 0	C 46.1	CONC. 45.6	R 24.6	Z 0	C 46.3	CONC. 45.8
Z 0	C 46.2	R 24.6	CONC. 45.7	Z 0	C 46.3	R 24.6	CONC. 45.8
U/M ppm		MEAN TEST ASSAY	45.7	U/M ppm		MEAN TEST ASSAY	45.8

2. **COMPONENT** NITRIC OXIDE GMIS **ANALYZER MAKE-MODEL-S/N** Thermo Env. 42C S/N 0518112467
   ANALYTICAL PRINCIPLE Chemiluminescence **LAST CALIBRATION DATE** 02/04/08
   FIRST ANALYSIS DATE 02/04/08 **SECOND ANALYSIS DATE** 02/13/08

Z 0	R 50.4	C 45.5	CONC. 45.5	Z 0	R 49.4	C 44.9	CONC. 45.8
R 50.3	Z 0	C 45.5	CONC. 45.6	R 49.4	Z 0	C 44.9	CONC. 45.8
Z 0	C 45.5	R 50.4	CONC. 45.5	Z 0	C 44.9	R 49.4	CONC. 45.8
U/M ppm		MEAN TEST ASSAY	45.5	U/M ppm		MEAN TEST ASSAY	45.8

Values not valid below 150 psig.
NOx value for reference use only.

THIS CYLINDER NO. CC 267455
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 02/13/08
EXPIRATION DATE 02/13/10 **TERM** 24 MONTHS

CERTIFIED CONCENTRATION

CARBON MONOXIDE	45.8 ppm
NITRIC OXIDE	45.6 ppm
NITROGEN	BALANCE
NOx	45.8 ppm

ANALYZED BY Henry Koung ***CERTIFIED BY*** Ben McCauley

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER BLUE SKY **P.O NUMBER** 492438

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE GMIS	vs.SRM#1680	CC 95754	499 ppm
NITRIC OXIDE GMIS	vs.SRM#1686	CC 137743	491 ppm

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** CARBON MONOXIDE GMIS **ANALYZER MAKE-MODEL-S/N** HORIBA, VIA-510, S/N 576876015
   ANALYTICAL PRINCIPLE NDIR **LAST CALIBRATION DATE** 09/12/06
   FIRST ANALYSIS DATE 10/04/06 **SECOND ANALYSIS DATE** 10/11/06

Z 0	R 513	C 466	CONC. 453	Z 0	R 499	C 454	CONC. 454
R 513	Z 0	C 466	CONC. 453	R 499	Z 0	C 454	CONC. 454
Z 0	C 466	R 513	CONC. 453	Z 0	C 454	R 499	CONC. 454
U/M ppm		MEAN TEST ASSAY 453		U/M ppm		MEAN TEST ASSAY 454	

2. **COMPONENT** NITRIC OXIDE GMIS **ANALYZER MAKE-MODEL-S/N** BECKMAN 951A S/N#0101354
   ANALYTICAL PRINCIPLE CHEMILUMINESCENCE **LAST CALIBRATION DATE** 10/10/06
   FIRST ANALYSIS DATE 10/04/06 **SECOND ANALYSIS DATE** 10/11/06

Z 0	R 654	C 611	CONC. 459	Z 0	R 651	C 609	CONC. 459
R 656	Z 0	C 612	CONC. 460	R 650	Z 0	C 609	CONC. 460
Z 0	C 614	R 656	CONC. 460	Z 0	C 610	R 651	CONC. 460
U/M mV		MEAN TEST ASSAY 459		U/M mV		MEAN TEST ASSAY 460	

VALUES NOT VALID BELOW 150 PSIG
NOX VALUE FOR REFERENCE ONLY

THIS CYLINDER NO. SA 13373
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. REV 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 10/11/06
EXPIRATION DATE 10/11/08 **TERM** 24 MONTHS

CERTIFIED CONCENTRATION

CARBON MONOXIDE	454 ppm
NITRIC OXIDE	460 ppm
NITROGEN	BALANCE
NOx	465 ppm

ANALYZED BY GEORGE WAHBA ***CERTIFIED BY*** PHU TIEN NGUYEN

PRAXAIR

in service 12/1/07

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Los Angeles, CA 90058
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CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER BLUE SKY **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
PROPANE GMIS	vs.SRM#1666	SA 9503	10.1 ppm

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

COMPONENT PROPANE GMIS **ANALYZER MAKE-MODEL-S/N** HORIBA, FID-510, 851135122

ANALYTICAL PRINCIPLE Flame Ionization Detector **LAST CALIBRATION DATE** 09/04/07

FIRST ANALYSIS DATE 09/25/07 **SECOND ANALYSIS DATE**

Z	0.00	R	27.56	C	40.83	CONC.	15.0	Z	R	C	CONC.
R	27.59	Z	0.00	C	40.98	CONC.	15.0	R	Z	C	CONC.
Z	0.00	C	41.02	R	27.53	CONC.	15.0	Z	C	R	CONC.
U/M	ppm				MEAN TEST ASSAY		15.0	U/M	ppm		MEAN TEST ASSAY

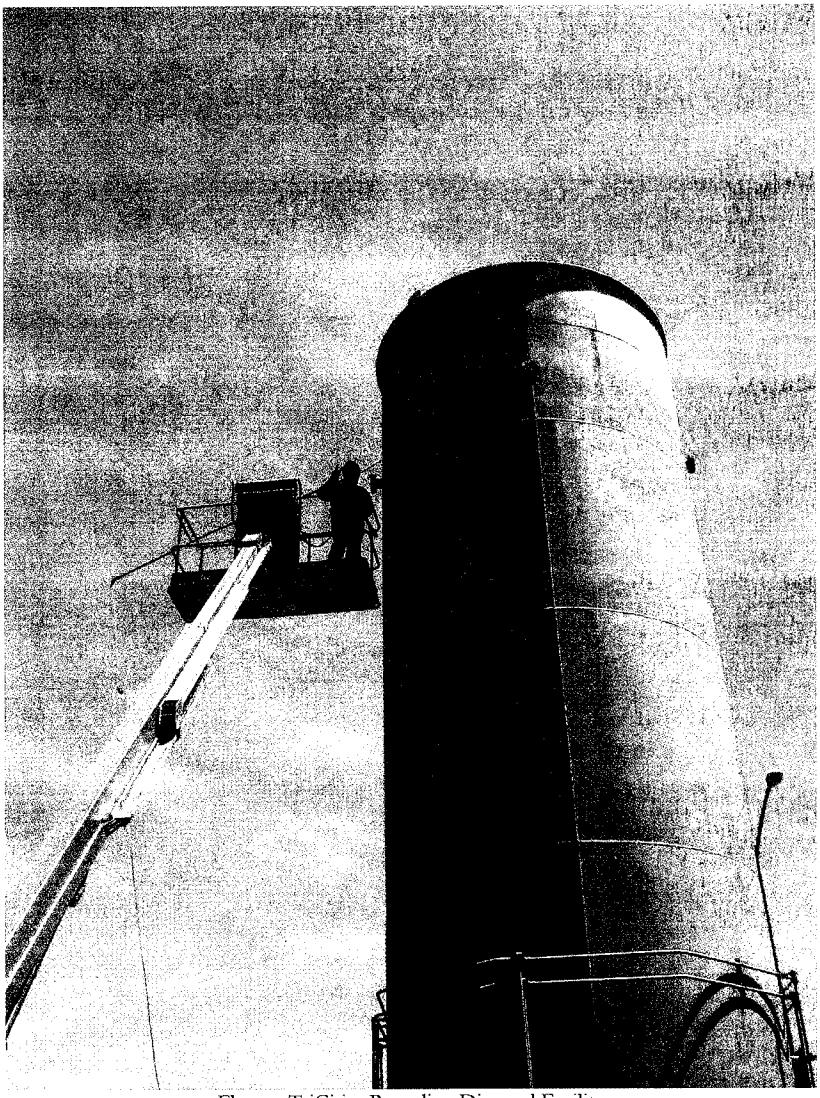
Values not valid below 150 psig

THIS CYLINDER NO.	CC 76661	**CERTIFIED CONCENTRATION**	
HAS BEEN CERTIFIED ACCORDING TO SECTION	EPA-600/R97/121	PROPANE	15.0 ppm
OF TRACEABILITY PROTOCOL NO.	Rev. 9/97	AIR	BALANCE
PROCEDURE	G1		
CERTIFIED ACCURACY	± 1 **% NIST TRACEABLE**		
CYLINDER PRESSURE	2000 **PSIG**		
CERTIFICATION DATE	09/25/07		
EXPIRATION DATE	09/25/10 **TERM** 36 MONTHS		

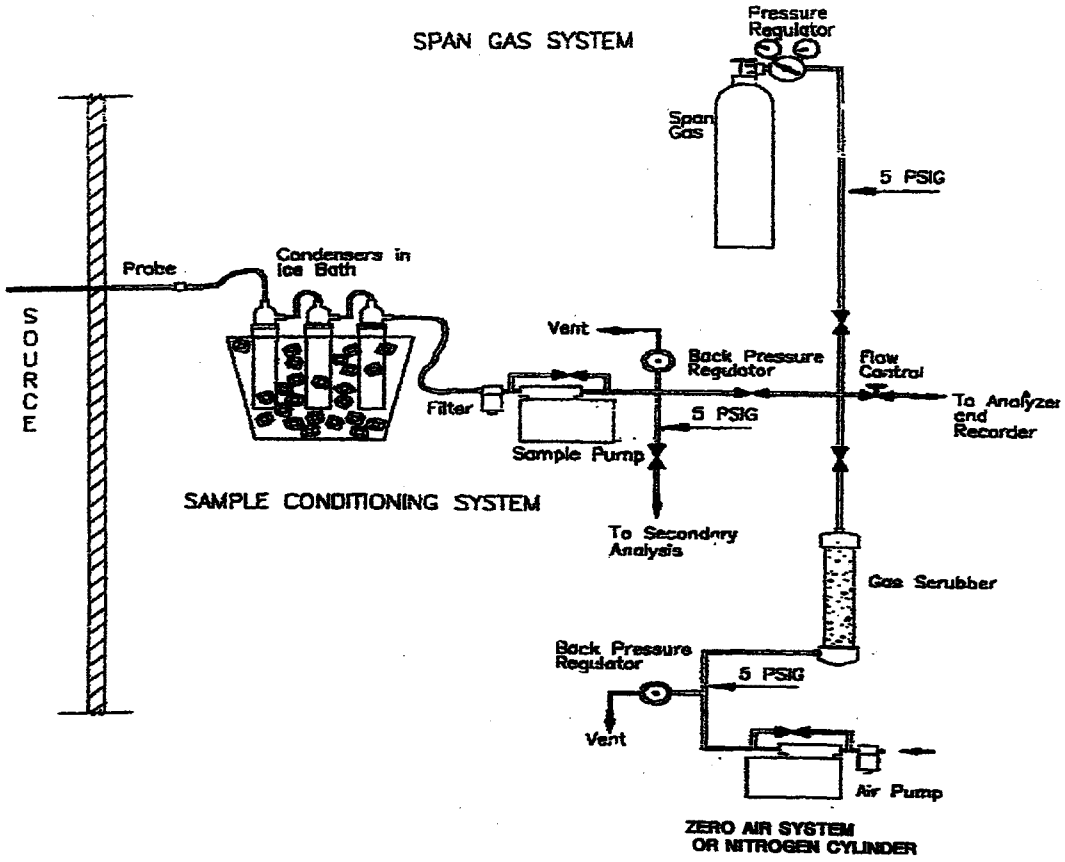
45.0

ANALYZED BY PABLO REYES ***CERTIFIED BY*** EUGENE CHO

H
Sample Train Configuration and Stack Diagrams



Flare at TriCities Recycling Disposal Facility



BAAQMD ST-5 (CO2)
BAAQMD ST-6 (CO)
BAAQMD ST-7 (THC by FID)
BAAQMD ST-13A (NOx)
BAAQMD ST-14 (O2)
BAAQMD ST-19A (SO2)

Related Correspondence (Source Test Plan)

Blue Sky Environmental, LLC
624 San Gabriel Avenue
Albany, California 94706
Ph/Fax (510) 525 1261
Cell (510) 508 3469
blueskyenvironmental@yahoo.com

May 7, 2008

Source Test Plan

Attn.: Ken Kunaniec
Bay Area Air Quality Management District
Compliance and Enforcement Division
939 Ellis Street
San Francisco, CA 94109

Re: Source Test Protocol for compliance emissions testing of the Enclosed Landfill Gas Flare (A-3) at TriCities Waste Management, located at 7010 Auto Mall Parkway, Fremont, California, 94538. BAAQMD Facility #A2246.

Dear Mr. Underwood,

Blue Sky Environmental, LLC is pleased to present this Source Test Plan for the Enclosed Landfill Gas Flare (A-3). Blue Sky Environmental, LLC is approved by the California Air Resources Board as an independent contractor to conduct compliance emission testing. This Source Test will include the following:

BAAQMD Source # A-3 Flare Condition 8366	**Test Parameters/Limits**
Compliance Test	THC, CH_4, NMOC , NOx, CO, O_2 in the flare stack gas (Part 10d) NOx 0.06 lbs/MMBtu (Part 8) CO 0.30 lbs/MMBtu) (Part 9) The NMOC destruction efficiency achieved by the flare (part 10 e) NMOC 98% DE or < 30 ppm as CH_4 @3% O_2 (BAAQMD 8-34-301.3) 3 LFG samples for CO_2, N_2, O_2, THC, NMOC & CH_4 (Part 10b) One LFG sample for TRS[KG1] (Part 12) LFG Flow rate to the flare (dry basis) (Part 10a) Stack gas flow rate from the flare (dry basis) (Part 10c) The average combustion temperature in the flare during the test period (Part 10f)

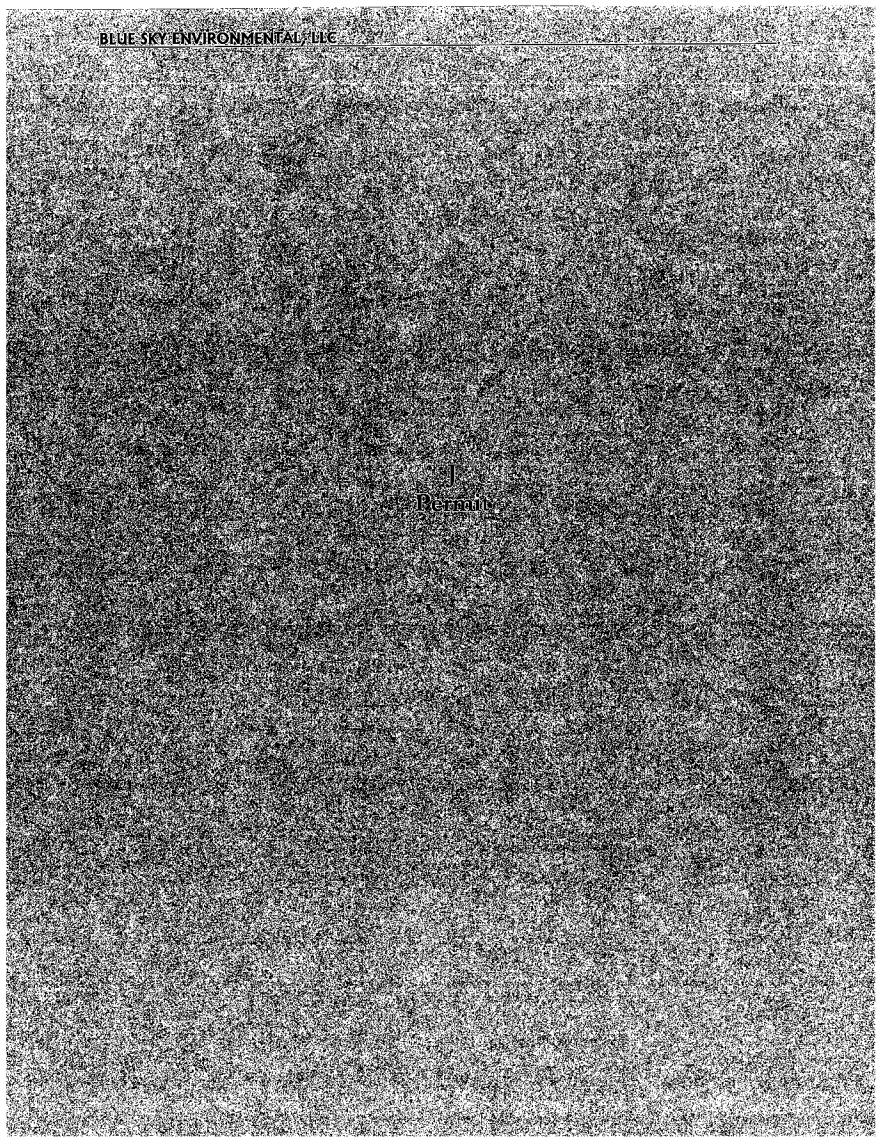
Testing is currently scheduled for June 4th, 2008, with a 7:00 am arrival time. If you have any questions, please contact Guy Worthington at 510 525 1261, or 510 508 3469.

- At the flare exhaust, triplicate thirty-minute tests will be performed. Testing will use BAAQMD methods for NO_x (ST-13A), CO (ST-6), TNMHC's (ST-7-FID), CO_2 (ST-5) and O_2 (ST-14). Testing is designed to determine compliance with the following BAAQMD Permit and Reg 8 Rule 34 conditions listed in the Table above. EPA Method 19 will be used to calculate the Stack Gas Flowrate.

- Integrated Tedlar bag samples of the Landfill Gas (LFG) will be collected during each test run, and will be analyzed for HHV, CO_2, N_2, O_2, NMOC and CH_4, using ASTM 1945 (EPA 18 & 3C) & EPA 25C. A single sample of LFG will be analyzed for TRS by ASTM 5504. The samples will be analyzed within 72 hours.[KG2]

- The facility fuel flow meter will be recorded and a fuel analysis will be performed to calculate outlet volumetric flow rate using EPA Method 19. The facility is required to have accurate, operating Flare temperature recording and LFG gas flow monitors. If necessary, the fuel flow may be measured by BAAQMD Methods 17 & 18. The fuel moisture content will be determined by wet-bulb/dry-bulb measurement.

- Three hard copies of the compliance test report and one electronic copy will be submitted to the client upon completion of the test program and will include analytical test results. The report will include a test description and tables presenting concentrations (ppm), emission rates (lbs/hr) for all sampling parameters. All supporting documents (strip charts, field data sheets, calibrations, calculations, etc.) will also be included. The final report is due to the BAAQMD 60 days after testing has been completed



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

Final

MAJOR FACILITY REVIEW PERMIT

Issued To:
TriCities Waste Management
Facility #A2246

Facility Address:
7010 Auto Mall Parkway
Fremont, CA 94538

Mailing Address:
7010 Auto Mall Parkway
Fremont, CA 94538

Responsible Official	**Facility Contact**
James Devlin	Colleen Cassidy
North Bay Market Area Manager	Environmental Protection Specialist
(510) 430-8509	(510) 624-5928

Type of Facility:	Municipal Solid Waste Landfill	BAAQMD Permit Division Contact:
Primary SIC:	4953	Ted Hull, Senior Air Quality Engineer
Product:	Landfill Operations	

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Signed by Jack P. Broadbent — November 2, 2007
Jack P. Broadbent, Executive Officer/Air Pollution Control Officer — Date

II. EQUIPMENT

Table II A - Permitted Sources

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

S-#	Description	Make or Type	Model	Capacity
S-1	TriCities Landfill: (Active Solid Waste Disposal Site with Active Gas Collection System, Up to 38 Vertical Gas Collection Wells)	Municipal Solid Waste	N/A	Max. Design Capacity = 19.271 million cubic yards (14.735 million cubic meters) Max. Waste In Place = 13.5 million tons Max. Waste Acceptance Rate = 2,628 tons/day
S-5	Wood Waste Stockpiles	N/A	N/A	200 tons/day
S-9	Portable Diesel Engine	John Deere		70 hp
S-10	Parts Cleaner	Safety-Kleen		20 gallon capacity
S-14	Diesel IC Engine – Air Compressor (GE-1)	John Deere	4239D	80 BHP
S-15	Diesel IC Engine – Air Compressor (GE-2)	John Deere	4239D	80 BHP
S-16	Diesel IC Engine – Vacuum Truck	Cummins	6BTA5.9	177 BHP
S-17	Diesel IC Engine – Street Sweeper	John Deere	4239D	80 BHP

II. Equipment

Table II B – Abatement Devices

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
A-3	Landfill Gas Flare, burning propane (during start-up only) and landfill gas, 75 MM BTU/hour	S-1	BAAQMD Regulation 8-34-301.3 and BAAQMD Condition #8366, Part 6, see also Table IV-A	Minimum Flue Gas Temperature: 1450 degrees F (3-hour average), see also Table VII-A	Either NMOC destruction efficiency ≥98% (wt), or <30 ppm NMOC @ 3% O_2 at flare outlet, see also Table VII-A
A-5	Water Truck	S-1	BAAQMD Regulation 6-301	None	Ringelmann No. 1

VI. PERMIT CONDITIONS

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

Condition # 8366
FOR S-1: LANDFILL WITH GAS COLLECTION SYSTEM AND A-3: LANDFILL GAS FLARE

1. The TriCities Landfill S-1 is permitted for a total refuse capacity of 19,271,000 cubic yards (approximately 13,489,700 tons), with a maximum refuse acceptance rate of 2,628 tons/day. Prior to increasing the design capacity of the landfill, the owner/operator of this site shall first apply for and receive from the District a modified permit to operate. (Basis: Cumulative Increase, Offsets, and Toxic Risk Management Policy)

2. The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described. Increasing or decreasing the number of wells or collectors, or significantly changing the length of collectors or the locations of wells or collectors are modifications that are subject to the Authority to Construct requirement.

   The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Applications # 3515 and 10998.

	Required Components
Total Number of Vertical Wells:	28

   In addition, the Permit Holder has been issued an Authority to Construct for modifications to the gas collection system, the details of which are included in Permit Application #15345. The landfill is now authorized for up to a total of 38 vertical gas extraction wells. (Basis: Regulations 2-1-301, 8-34-301.1, and 8-34-305)

3. In order to demonstrate compliance with the above requirements, the S-1 Permit Holder shall maintain the following records:
   a. Monthly records of the quantity of refuse accepted and placed in the landfill.
   b. For areas of the landfill not controlled by a landfill gas collection system, the Permit Holder shall maintain a record of the date that waste was initially placed in the area or cell.
   c. The cumulative amount of waste placed in each uncontrolled area or cell on a monthly basis.

VI. Permit Conditions

Condition # 8366
FOR S-1: LANDFILL WITH GAS COLLECTION SYSTEM AND A-3: LANDFILL GAS FLARE

d. If the Permit Holder plans to exclude an uncontrolled area or cell from the collection system requirement, the types and amounts of all non-decomposable waste placed in the area or cell shall be recorded. If non-decomposable waste makes up less than 100% of the contents of a given cell, that percentage shall be noted.
e. The initial operation date for each new landfill gas well and collector.
f. An accurate map of the landfill that indicates the locations of all refuse boundaries and the locations of all wells and collectors as identified in the Collection and Control System Design Plan. Any areas containing only non-decomposable waste shall be clearly identified. This map shall be updated at least every six months to indicate changes in refuse boundaries and to include any newly installed wells and collectors.

These records shall be kept on-site and be made available for inspection to District personnel upon request for a period of five years from the date on which a record was made. (Basis: Cumulative Increase and Regulations 2-6-501 and8-34-304)

4. The landfill gas collection system described in Part 2 above shall be operated continuously. Wells shall not be disconnected or removed from operation nor shall isolation or adjustment valves be closed without written authorization from the District, unless the Permit Holder complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. (Basis: Regulations 8-34-301 and 8-34-305)

5. All landfill gas collected by the gas collection system for S-1 shall be abated at all times by the Landfill Gas Flare A-3. Under no circumstances shall raw landfill gas be vented to the atmosphere. This limitation does not apply to unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118 or to inadvertent component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (Basis: Regulation 8-34-301)

VI. Permit Conditions

Condition # 8366
FOR S-1: LANDFILL WITH GAS COLLECTION SYSTEM AND A-3: LANDFILL GAS FLARE

6. The combustion zone temperature of the flare shall be maintained at a minimum temperature of 1450 degrees F, averaged over any 3-hour period. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise this minimum temperature limit in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature is not less than 1400 degrees F. (Basis: Regulation 8-34-301, Toxic Risk Management Policy, RACT, and 40 CFR 60.758(c)(1)(i))

7. The Landfill Gas Flare A-3 shall be equipped with a combustion temperature readout monitor and continuous recorder to measure and record the temperature in the combustion zone. (Basis: Regulation 8-34-507)

8. Emissions of Nitrogen Oxides (NOx) from the Flare A-3 shall not exceed 0.06 pounds per million BTU (calculated as NO_2). (basis: RACT and Offsets)

9. Emissions of Carbon Monoxide (CO) from the Flare A-3 shall not exceed 0.3 pounds per million BTU. (basis: RACT and Offsets).

10. In order to demonstrate compliance with Regulation 8, Rule 34, Section 301.3, Regulation 9, Rule 1, Section 302, 40 CFR 60 .752(b)(2)(iii)(B), and the above requirements, the Permit Holder shall ensure that a District approved source test is conducted annually on the Landfill Gas Flare (A-3). The annual source test shall determine the following:
    a. Landfill gas flow rate to the flare (dry basis)
    b. Concentrations (dry basis) of methane (CH_4) and total non-methane organic compounds (NMOC) in the landfill gas;
    c. Stack gas flow rate from the flare (dry basis)
    d. Concentrations (dry basis) of nitrogen oxides (NOx), carbon monoxide (CO), CH_4, NMOC, and O_2 in the flare stack gas
    e. The NMOC destruction efficiency achieved by the flare
    f. The average combustion temperature in the flare during the test period.

VI. Permit Conditions

Condition # 8366
FOR S-1: LANDFILL WITH GAS COLLECTION SYSTEM AND A-3: LANDFILL GAS FLARE

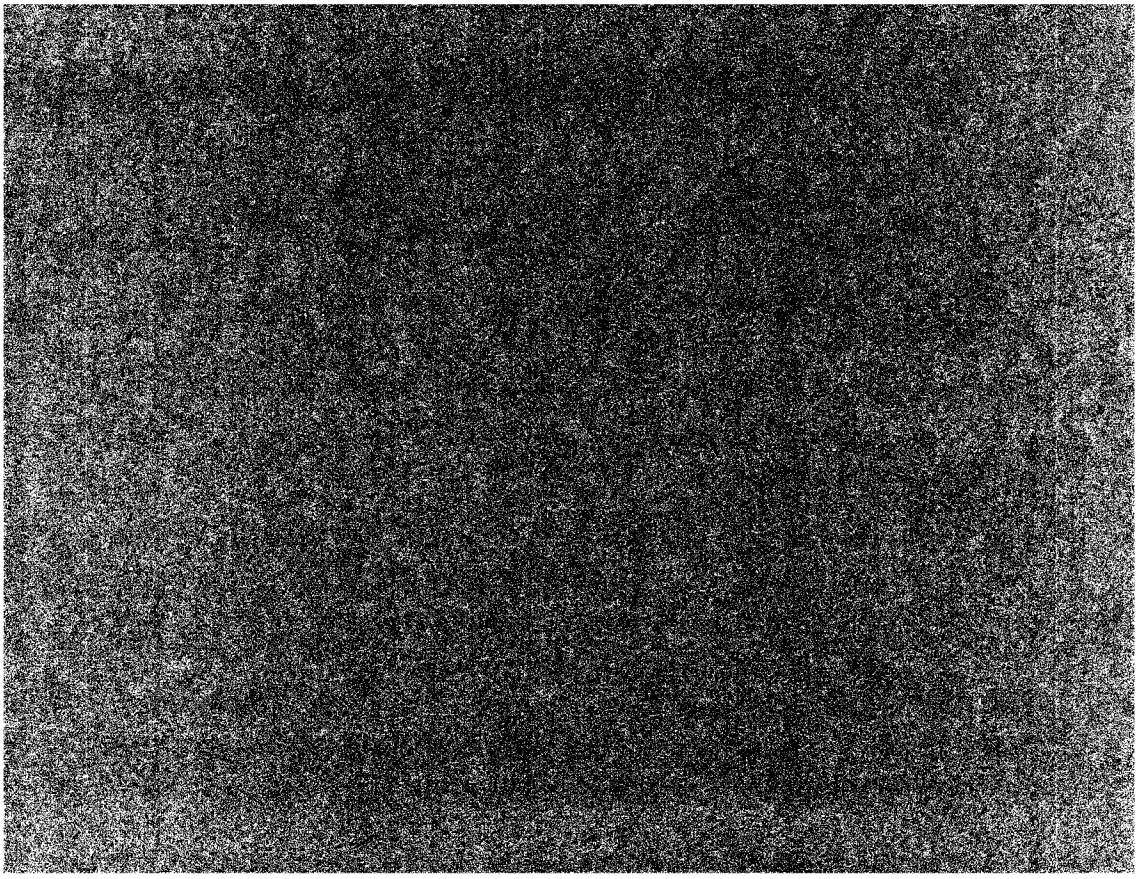
Annual source tests shall be conducted no sooner than 9 months and no later than 12 months after the previous source test. The Source Test Section of the District shall be contacted to obtain its approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days after the test date. (Basis: Regulations 8-34-301.3 and 8-34-412 and 40 CFR 60.752(b)(2)(iii)(B))

11. The heat input to the A-3 Flare shall not exceed 1,800 million BTU per day or 657,000 million BTU per year. In order to demonstrate compliance with this part, the Permit Holder shall calculate and record on a monthly basis the maximum daily and total monthly heat input to the flare based on the landfill gas flow rate recorded pursuant to Part10, the average methane concentration in the landfill gas based on the most recent source test, and a high heating value for methane of 1013 BTU/scf. The records shall be retained for five years and shall be made available to the District staff upon request. (Basis: Regulation 2-1-301)

12. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in control systems exhaust. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 1300 ppmv (dry). In order to demonstrate compliance with this part, the Permit Holder shall measure the total sulfur content in collected landfill gas on a quarterly basis using a draeger tube. The landfill gas sample shall be taken from the main landfill gas header. The Permit Holder shall follow the manufacturer's recommended procedures for using the draeger tube and interpreting the results. The Permit Holder shall conduct the first draeger tube test no later than 3 months after the issue date of the MFR Permit and quarterly thereafter.
(Basis: Regulations 9-1-302 and 2-6-503)

13. On rainless operating days, water shall be applied as necessary and at least 2 times per full operational day to all unpaved roadways and active soil removal and fill areas associated with this facility to suppress dust emissions. On operating days when rain has fallen in the last 24 hours, water shall be applied as necessary to prevent visible dust emissions. (Basis: Regulations 6-301 and 1-301)

14. Paved roadways at the facility shall be kept sufficiently clear of dirt and debris as to prevent visible particulate emissions from vehicle traffic or wind. (Basis: Regulations 6-301 and 1-301)



Thompson, Jimmy

From: Teixeira, Sarah
Sent: Friday, August 01, 2008 9:02 AM
To: Thompson, Jimmy
Subject: FW: FedEx Shipment 796041645968 Delivered

From: TrackingUpdates@fedex.com [mailto:TrackingUpdates@fedex.com]
Sent: Friday, August 01, 2008 8:58 AM
To: Teixeira, Sarah
Subject: FedEx Shipment 796041645968 Delivered

This tracking update has been requested by:

Company Name: Cornerstone Environmental Grou
Name: Sarah Teixeira
E-mail: sarah.teixeira@cornerstoneeg.com

Our records indicate that the following shipment has been delivered:

Ship (P/U) date:	Jul 31, 2008
Delivery date:	Aug 1, 2008 8:55 AM
Sign for by:	V.COOPER
Delivered to:	Shipping/Receiving
Service type:	FedEx Priority Overnight
Packaging type:	Your Packaging
Number of pieces:	1
Weight:	1.00 lb.
Special handling/Services:	Deliver Weekday

Tracking number: 796041645968

Shipper Information	Recipient Information
Sarah Teixeira	Tim Underwood
Cornerstone Environmental Grou	BAAQMD Source Test Division
7600 Dublin Blvd Suite 200	939 ELLIS ST
Dublin	SAN FRANCISCO
CA	CA
US	US
94568	94109

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Customer Support Trace
3875 Airways Boulevard
Module H, 4th Floor
Memphis, TN 38116

U.S. Mail: PO Box 727
Memphis, TN 38194-4643

Telephone: 901-369-3600

August 1,2008

Dear Customer:

The following is the proof-of-delivery for tracking number **796041645968**.

Delivery Information:

Status:	Delivered	**Delivery location:**	SAN FRANCISCO, CA
Signed for by:	V.COOPER	**Delivery date:**	Aug 1, 2008 08:55
Service type:	Priority Overnight		

NO SIGNATURE IS AVAILABLE
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Shipping Information:

Tracking number:	796041645968	**Ship date:**	Jul 31, 2008
		Weight:	1.0 lbs.

Recipient:
SAN FRANCISCO, CA US

Shipper:
Dublin, CA US

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1.800.GoFedEx 1.800.463.3339

Thompson, Jimmy

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Sent: Friday, August 01, 2008 9:02 AM
To: Thompson, Jimmy
Subject: FW: FedEx Shipment 796041657858 Delivered

From: TrackingUpdates@fedex.com [mailto:TrackingUpdates@fedex.com]
Sent: Friday, August 01, 2008 8:58 AM
To: Teixeira, Sarah
Subject: FedEx Shipment 796041657858 Delivered

This tracking update has been requested by:

Company Name: Cornerstone Environmental Grou
Name: Sarah Teixeira
E-mail: sarah.teixeira@cornerstoneeg.com

Our records indicate that the following shipment has been delivered:

Ship (P/U) date:	Jul 31, 2008
Delivery date:	Aug 1, 2008 8:55 AM
Sign for by:	V.COOPER
Delivered to:	Shipping/Receiving
Service type:	FedEx Priority Overnight
Packaging type:	Your Packaging
Number of pieces:	1
Weight:	1.00 lb.
Special handling/Services:	Deliver Weekday

Tracking number: 796041657858

Shipper Information	Recipient Information
Sarah Teixeira	Compliance and Enforcement Division
Cornerstone Environmental Grou	Bay Area Air Quality Management Dis
7600 Dublin Blvd Suite 200	939 ELLIS ST
Dublin	SAN FRANCISCO
CA	CA
US	US
94568	94109

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Telephone: 901-369-3600

August 1,2008

Dear Customer:

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Delivery Information:

Status:	Delivered	**Delivery location:**	SAN FRANCISCO, CA
Signed for by:	V.COOPER	**Delivery date:**	Aug 1, 2008 08:55
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Shipping Information:

Tracking number:	796041657858	**Ship date:**	Jul 31, 2008
		Weight:	1.0 lbs.

Recipient:
SAN FRANCISCO, CA US

Shipper:
Dublin, CA US

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