

AP-42 Test Data - Submission Checklist		
FACILITY INFORMATION		
Landfill Name: City of Palo Alto Landfill		
Location: 3201 East Bayshore Rd., East Palo Alto, CA 94303		
Owner: City of Palo Alto	LFG Operator: City of Palo Alto	
Contact Person:	Address:	
Email:	Phone:	Fax:
Year Opened:	Year Gas Collection Started:	
Gas Collection Control Device Description: LFG flare		
Co disposal: ☐ Yes ☐ No ☒ Unknown		
ADMINISTRATIVE INFORMATION		
Complete test reports must be submitted (see footnote ¹)		
Sampling Date: 9/28/07	Analysis Date: 10/1/07	
Description of sampling site: Enclosed LFG Flare		
Description of sampling method: Continuous emissions monitoring		
QA/QC data included: ☒ Yes ☐ No		
Chain of Custody included: ☒ Yes ☐ No		
DATA SUMMARY		
Type of Data: ☐ Header Draw ☐ Punch Probe (this data does not presently meet EPA requirements) ☒ Stack Test ☐ Other:		
Header Draw data:	Raw LFG Constituent data:	
NMOC data:	☐ Yes ☐ No	
NMOC (ppm as hexane):	Sulfur Compound data: ☐ Yes ☐ No	
NMOC Test Method:	LFG Test Methods:	
Stack Testing data:		
Device Tested (Flare , IC Engine, Turbine, Boiler):		
Concentration (ppm)		
NOx: 2.75 @ 15% O2	SOx: 3.05	
CO: 0.35 @ 15% O2	Dioxin/furans: NS	
PM: NS	Aldehydes/metals: NS	
Was sampling conducted after the control device? (Y/N): Y		
Test Methods: BAAQMD ST-6, 7, 13A, 14, EPA Method 6, Modified EPA Method TO-15 and D-5504		

¹ According to USEPA, complete test reports should contain, at a minimum: Landfill name; physical description of the landfill, gas collection system and control device; description of sampling site and methods used to take samples; a sample matrix showing date of test and methods used for analysis; data results tables and discussion of results, identifying any data qualifiers or unusual circumstances affecting results; and QA/QC items such as field notes, laboratory notes, and a test QAPP or documentation of field and laboratory QA/QC procedures, including equipment calibrations and blank or spiked sample results.

**CITY OF PALO ALTO LANDFILL
PALO ALTO, CA**

Compliance Emissions Test Report

One Landfill Gas Fired Flare (A-3)
NO_x, CO, SO₂ & NMOC Emission Results &
Complete Landfill Gas Characterization
[Facility # A2721, Condition # 1028]

Test Date(s): September 28, 2007

Report Date: October 30, 2007

Performed and Reported by:

BEST ENVIRONMENTAL (BE)

6261 Southfront Road

Livermore, CA 94551

Phone: (925) 455-9474

Fax: (925) 455-9479

Prepared For:

SCS Field Services

4707 Greenleaf Circle, Suite F

Modesto, CA 95956

Attn: James Moore

For Submittal To:

Bay Area Air Quality Management District

939 Ellis Street

San Francisco, CA 94109

Attn: Tim Underwood

REVIEW AND CERTIFICATIONTeam Leader:

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



Bobby Asfour
Project Manager

Reviewer:

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



Regan Best
Source Test Manager

TABLE of CONTENTS

SECTION 1. INTRODUCTION.....	1
1.1. TEST PURPOSE.....	1
1.2. TEST LOCATION.....	1
1.3. TEST DATE(S).....	1
1.4. POLLUTANTS TESTED.....	1
1.5. SAMPLING AND OBSERVING PERSONNEL.....	1
1.6. OTHER IMPORTANT BACKGROUND INFORMATION.....	1
SECTION 2. SUMMARY OF RESULTS.....	2
2.1. EMISSION RESULTS.....	2
2.2. PROCESS DATA.....	3
2.3. ALLOWABLE EMISSIONS.....	3
2.4. COMMENTS: DISCUSSION OF QUALITY ASSURANCE AND ERRORS.....	4
SECTION 3. SOURCE OPERATION.....	4
3.1. PROCESS DESCRIPTION.....	4
3.2. FLOW DIAGRAM.....	4
3.3. PROCESS AND CONTROL OPERATING PARAMETERS DURING TESTING.....	4
3.4. NORMAL OPERATING PARAMETERS.....	4
3.5. TESTING OR PROCESS INTERRUPTIONS AND CHANGES.....	4
SECTION 4. SAMPLING AND ANALYSIS PROCEDURES.....	5
4.1. PORT LOCATION.....	5
4.2. POINT DESCRIPTION/LABELING – PORTS/STACK.....	5
4.3. METHOD DESCRIPTION, EQUIPMENT, SAMPLING, ANALYSIS AND QA/QC.....	5
4.4. ANALYTICAL LABORATORIES.....	6
TABLE 1.....	7
APPENDICES.....	A
A. Calculations & Nomenclature.....	A-1
B. Laboratory Reports.....	B-1
C. Field Data Sheets.....	C-1
D. Strip Charts Records.....	D-1
E. Calibration Gas Certificates.....	E-1
F. Equipment Calibration Records.....	F-1
G. Stack Diagrams.....	G-1
H. Sampling System Diagrams.....	H-1
I. Source Test Plan.....	I-1
J. Permit to Operate.....	J-1

SECTION 1. INTRODUCTION

1.1. Test Purpose

Best Environmental was contracted by SCS Field Services to perform emissions testing on one landfill gas flare (A-3) to comply with Bay Area Air Quality Management District (BAAQMD) Regulation 8 Rule 34 Sections 301.3 & 412 as well as condition # 1028 of the permit. A copy of the Permit is included in the appendices.

1.2. Test Location

The testing was conducted on the flare located at the City of Palo Alto, Bynbee Park, 3201 East Bayshore Road, Palo Alto, CA 94303. (Facility #A2721)

The flare is used to incinerate landfill gas that is created from the decomposition of waste.

1.3. Test Date(s)

Testing was conducted on September 28, 2007.

1.4. Pollutants Tested

The following emission parameters were measured:

Parameter	Monitoring & Analytical Protocols
TNMHC, CH ₄ , THC, NO _x , CO & O ₂	BAAQMD Methods ST-7, 13A, 14 & 6
SO ₂	BAAQMD Method 19B
DSCFM	EPA Method 19 (exhaust)
Inlet TNMHC	EPA Method 25C
Fixed Gases, Btu/CF & F Factor	ASTM D-1945 & 3588
LFG organics & TRS compounds	Modified EPA TO-15 & D-5504

1.5. Sampling and Observing Personnel

Sampling was performed by Bobby Asfour and Eddy Asfour of BEST ENVIRONMENTAL (BE).

The BAAQMD was notified of the test date, however, there was no representative present to witness the test program.

1.6. Other Important Background Information

Testing was last performed at the flare on October 4, 2006.

SECTION 2. SUMMARY OF RESULTS

2.1. Emission Results

Table 2.1:

Parameter	Average Results	Limits
NOx, ppm @ 15% O ₂	2.75	32
CO, ppm @ 15% O ₂	0.35	208
SO ₂ , lbs/hr	0.080	N/A
*TNMHC, ppm @ 3% O ₂ as Methane	<1.81	30
*TNMHC Destruction Efficiency	>70.908%	98%
THC Destruction Efficiency	99.9975	N/A
CH ₄ Destruction Efficiency	99.9963	N/A

*The PTO cites compliance to be determined by either of these two standards.

A more extensive summary of the emissions is presented in Table 1 on page 6. The Landfill Gas Characterization lab results can be found below and in Appendix B of the report.

Parameter	Results
AP-42 List of Compounds (inlet)	
Hydrogen Sulfide, ppb	34000
Carbonyl Sulfide, ppb	<300
Methyl Mercaptan, ppb	<300
Ethyl Mercaptan, ppb	<300
Dimethyl Sulfide, ppb	<300
Total Reduced Sulfur as H ₂ S, ppm	36
Freon 12 (Flourotrichloromethane), ppb	230
Vinyl Chloride, ppb	210
Chloroethane, ppb	50
Freon 11 (Dichlorodiflouromethane), ppb	50
1,1-Dichloroethene, ppb	<5
Methylene Chloride, ppb	31
1,1-Dichloroethane, ppb	14
Chloroform, ppb	<5
1,1,1-Trichloroethane, ppb	<5
Carbon Tetrachloride, ppb	<5
Benzene, ppb	170
1,2-Dichloroethane, ppb	7
Trichloroethene, ppb	52
1,2-Dichloropropane	<5
1,1,2-Trichloroethane	<5
Tetrachloroethene, ppb	65
1,2-Dibromoethane(ethylene dibromide), ppb (EDB)	<5
Chlorobenzene, ppb	92
Toluene, ppb	1400
Ethyl Benzene, ppb	1200
m, p-Xylene, ppb	1400

o-xylene, ppb	480
1,1,2,2-Tetrachloroethane, ppb	<5
1,3-Dichlorobenzene, ppb	<5
1, 4-Dichlorobenzene, ppb	110
1, 2 Dichlorobenzene, ppb	15
Hexane, ppb	350
Bromodichloromethane, ppb	<5
Chloromethane, ppb	<20
Acetone, ppb	1000
Carbon Disulfide, ppb	<20
2-Propanol, ppb	66060
Trans-1,2-Dichloroethene, ppb	<20
2-Butanone (Methyl Ethyl Ketone), ppb	900
4-Methyl-2-pentanone(Methyl isobutyl ketone), ppb	90
Ethanol, ppb	1900
Chlorodifluoromethane, ppb	300
Acrylonitrile, ppb	<20
Dichlorofluoromethane, ppb	67
Methyl tert-butyl ether, ppb	<20
Oxygen, %	4.38
Nitrogen, %	38.02
Carbon Dioxide, %	19.64
Carbon Monoxide, %	<10
NMOC, ppm	27
Methane, %	37.93
Butane, ppm	<100
Ethane, ppm	<100
Propane, ppm	<100
Pentane, ppm	<100
Hexanes +, ppm	300

2.2. Process Data

The flare temperature and fuel flow rate on the flare control panel was recorded during every run.

Table 2.2:

Parameter	Fuel Flow Meter, SCFM	Flare Temp., °F
Run # 1	343	1534
Run # 2	345	1556
Run # 3	344	1551

2.3. Allowable Emissions

See Table 2.1 above. The VOC Removal efficiency standard could not be demonstrated, as the inlet VOC concentrations were very low. However, the test results show that the flare is operating within the PTO VOC gaseous emission limit and is therefore in compliance.

2.4. Comments: Discussion of Quality Assurance and Errors

Quality assurance procedures listed in the above referenced test methods and referenced in the Source Test Plan were performed and documented. The QA/QC procedures are described in Section 4.3 of the report. Documentation of the QA/QC is provided in Appendix A, B, E & F.

SECTION 3. SOURCE OPERATION

3.1. Process Description

The landfill gas fired flare is a control device for the treatment of landfill gas (mainly methane, carbon dioxide and nitrogen) that is generated from the decomposition of waste. The gas is collected in a network of interconnected pipes from several landfill gas extraction wells that draw a vacuum on the vapors in the landfill. The vapors are treated to remove condensate and particulate material, and then they are incinerated in the flare.

3.2. Flow Diagram

A digital image of the flare stack is contained in Appendix G.

3.3. Process and control operating parameters during testing

The flare was operated at ~1550 °F at a fuel rate of ~345 SCFM according to the flare's monitoring devices,

3.4. Normal Operating Parameters

The flare was operating normally during the test periods.

3.5. Testing or Process interruptions and changes

There were no process interruptions during the test series.

SECTION 4. SAMPLING AND ANALYSIS PROCEDURES

4.1. Port location

Emissions from the flare were sampled via a square stack with four ports located approximately 5 stack diameters downstream of the burners and 1 stack diameter upstream from the exit. Access to the sampling ports was provided by a 40-foot boom-lift.

The dimensional cross-sections of the square stack is 78 X 78 inches (Area SQFT = 42.25)

The fuel line to the flare is a 10-inch stainless steel pipe. A single port/tap was located approximately 2-feet downstream from the flame arrestor and 2-feet upstream from the flare wall.

4.2. Point description/Labeling – ports/stack

The stack ports were not labeled, but were designated as facing East. 16-traverse points were selected by CARB Method 1 and were used to determine the stack gas profile during the first run. The remaining test runs consisted of traversing port #2 and port #4 to represent the stack emissions.

4.3. Method description, equipment, sampling, analysis and QA/QC

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

The following is an overview of the Testing Performed

Parameter	Location	Method(s)	Duration	# of Runs
THC, CH ₄ , NMOC, NO _x , CO & O ₂	Exhaust	BAAQMD ST-7, 13A, 14, 6	30 mins	3
SO ₂	Exhaust	BAAQMD Method 19B	30 mins	3
Flow Rate	Exhaust	EPA 19	~10 mins	3
LFG organics & TRS compounds	Inlet	Modified EPA TO-15 & D-5504	30 mins	1
C1-C6, O ₂ , N ₂ , BTU-Fixed Gasses	Inlet	ASTM D-1945/3588	~15 mins	3
Flow Rate & Flare Temp.	Inlet	Flare Gas Metering System	~10 mins	3
NMOC	Inlet	EPA Method 25C	~15 mins	3

CARB Method 1. This method is used to determine the duct of stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements. The point selection is made based on the type of test (particulate, velocity or CEM), the stack diameter and port location distance from flow disturbance.

O₂, NO_x, CO & THC by BAAQMD ST-13A, 14, 6 & 7. These methods are all continuous emissions monitoring (CEM) techniques using instrumental analyzers to determine stack emissions. A leak check of the CEM system was performed prior to the start of testing. A linearity check was performed by first calibrating all analyzers with a zero gas and a high level gas. All calibrations were performed internally (direct calibration mode). NMHC testing was performed using a heated FID THC analyzer with methane cutter calibrated with propane in air EPA Protocol 1 calibration gases. Sample gas is pulled through a methane cutter, during each run, and tested for CIL. NMHC is assumed equal to THC minus CH₄. In this case, NMHC is less than 1 as the methane concentrations were within 1ppm of the THC concentrations throughout the test program.

The following continuous monitoring analyzers were used:

<u>Parameter</u>	<u>Make</u>	<u>Model</u>	<u>Principle</u>
NO _x	TECO	42C	Chemiluminescence
CO	TECO	48i	GFC IR analyzer
O ₂	Horiba	PMA200	Paramagnetic
THC	CAI	300M	FID/Methane Cutter

BAAQMD Method 19B is used to determine the moisture and SO₂ content in the gas stream by extracting a sample and condensing the stack gas in the impingers and the silica gel trap of the Method 19B sample trains. The first two impingers are filled with 100mL of H₂O₂ the third is left empty and the fourth is filled with 200mg of silica gel. The moisture gained is determined volumetrically and gravimetrically. The SO₂ is determined using the Barium-thorin Titration method. Results are recorded on the field data sheet. A sample is pulled using a leak tight pump. Volume is measured with a calibrated dry gas meter. Pre-and post-test leak checks are performed for each run.

EPA Method 25C, TO-15 & D-5504 analysis is used to determine emissions of NMOC (equivalent to TNMHC) referenced to methane. Organic and inorganic compounds including sulfurs are determined from one of the runs. Inlet gases are filled into tedlar bags in triplicate corresponding to the test program. The bags are labeled respectively then sent to a laboratory and analyzed for NMOC and speciated compounds using GC/FID (gas chromatography/flame ionization detector) within 72 hours (48 hours for sulfur). For more information on the lab analysis, refer to Appendix C for method description and QA/QC.

EPA Method 19 is used to determine stack gas volumetric flow rates using oxygen based F-factors. F-factors are ratios of combustion gas volumes generated from heat input. The heating value of the fuel in Btu per cubic foot is determined from the analysis of fuel gas samples using gas chromatography (GC). Dedicated fuel meters monitor total fuel consumption for the source. The total cubic feet per hour of fuel multiplied times the Btu/CF provides million Btu per hour (MMBTU) heat input. The heat input in MMBTU/hr is multiplied by the F-factor (DSCF/MMBTU) and adjusted for the measured oxygen content of the source to determine volumetric flow rate. This procedure is proposed for pollutants whose compliance standards are based on emission rates (lb/day) or emission factors (lb/MMBtu).

EPA Method ASTM D-1945 & D-3588 analysis is used to determine the contents of fuel gas (e.g. Methane, fixed gases & BTU Content). Inlet gases are filled into a tedlar bag, the bag is labeled respectively then sent to a Laboratory and analyzed for fixed gases, methane and C₁-C₆ using GC/FID (gas chromatography/flame ionization detector). Each compound has calorific values that are used to calculate the combustion factors.

4.4. Analytical Laboratories

3 Inlet bag samples were sent to Columbia Analytical Services, Inc. for VOC analysis. 1 Inlet bag samples was sent to Zalco Laboratories for heat input analysis. 1 inlet bag sample was sent to Air Toxics Laboratories Ltd. for organic and inorganic compound analyses.

Three wet test samples were brought back to the BE laboratory and analyzed for SO₂.

For more information on the analysis procedure and QA/QC refer to Appendix B.

TABLE 1
City of Palo Alto Landfill
NO_x, CO, THC & SO₂ Emissions
Flare Outlet (A-3)

RUN #	1		2		3		AVG	
TEST LOCATION	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
TEST DATE	09/28/2007		09/28/2007		09/28/2007			
TEST TIME	1014-1046		1101-1143		1152-1223			
STANDARD TEMP., °F	70		70		70			
FLARE TEMP., °F	1534		1556		1551		1547	
FLOW RATE, DSCFM	343.0	2,694	345.0	2,753	344.0	2,541	344.0	2,663
O ₂ , %	4.38	11.16	N.M.	11.31	N.M.	10.53	4.4	11.00
CO ₂ , (%)	19.640	N.M.	N.M.	N.M.	N.M.	N.M.	19.640	N.M.
N ₂ , %	38.020	N.M.	N.M.	N.M.	N.M.	N.M.	38.020	N.M.
CO, ppm	N.A.	0.83	N.A.	0.58	N.A.	0.33	N.A.	0.58
CO, ppm @ 15% O ₂	N.A.	0.50	N.A.	0.36	N.A.	0.19	N.A.	0.35
CO, lbs/hr	N.A.	0.010	N.A.	0.007	N.A.	0.004	N.A.	0.007
NO _x , ppm	N.M.	4.55	N.M.	4.61	N.M.	4.65	N.M.	4.60
NO _x , ppm @ 15% O ₂	N.A.	2.76	N.A.	2.83	N.A.	2.65	N.A.	2.75
NO _x , lbs/hr as NO ₂	N.M.	0.088	N.M.	0.091	N.M.	0.084	N.M.	0.087
CH ₄ , ppm	379300.0	1.98	379300.0	1.82	379300.0	1.66	379300.0	1.82
CH ₄ , lbs/hr	322.962	0.013	324.845	0.012	323.904	0.010	323.904	0.012
THC, ppm	379326.0	1.01	379326.0	1.29	379328.0	1.39	379326.7	1.23
THC, lbs/hr	322.984	0.007	324.867	0.009	323.927	0.009	323.926	0.008
TNMHC, ppm	26	<1.00	26	<1.00	28	<1.00	27	<1.00
TNMHC, ppm @ 3% O ₂ as Methane	N.A.	<1.84	N.A.	<1.87	N.A.	<1.73	N.A.	<1.81
TNMHC, lbs/hr as CH ₄	0.022	<0.007	0.022	<0.007	0.024	<0.006	0.023	<0.007
SO ₂ , ppm	N.M.	3.14	N.M.	2.73	N.M.	3.27	N.M.	3.05
SO ₂ , lbs/hr	N.M.	0.084	N.M.	0.075	N.M.	0.083	N.M.	0.080
H ₂ S, ppm	N.M.	N.M.	N.M.	N.M.	34.00	N.M.	34.00	N.M.
H ₂ S, lbs/hr	N.M.	N.M.	N.M.	N.M.	0.062	N.M.	0.062	N.M.
INMHC D.E., %	>69.788		>69.311		>73.624		>70.908	
THC D.E., %	99.998		99.9973		99.9973		99.9975	
CH ₄ D.E., %	99.996		99.9962		99.9968		99.9963	
CO, lbs/MMBtu (O ₂ based)	0.0013		0.0009		0.0005		0.0009	
NO _x , lbs/MMBtu (O ₂ based)	0.0113		0.0116		0.0109		0.0113	
SO ₂ , lbs/MMBtu (O ₂ based)	0.0109		0.0096		0.0107		0.0104	

WHERE:

CO - Carbon Monoxide (M.W. = 28)
 NO_x - Nitrogen Dioxide (M.W. = 46)
 CO₂ - Carbon Dioxide
 O₂ - Oxygen
 CH₄ - Methane (M.W. = 16)
 TOC - Total Oxidizable Carbon as CH₄
 THC - Total Hydrocarbon as CH₄
 TNMHC - Total Non-Methane Hydrocarbon as CH₄
 TNMHC = THC - CH₄
 SO₂ - Sulfur Dioxide (M.W. = 64.1)
 H₂S - Hydrogen Sulfide (M.W. = 34)
 lbs/hr - Pounds Per Hour Emission Rate

lbs/MMBtu - Pounds per Million Btu
 DSCFM - Dry Standard Cubic Feet Per Minute
 D.E. - Destruction Efficiency
 N.M. - Not Measured
 N.A. - Not Applicable
 ppm - Parts per Million

CALCULATIONS:

D.E. = $100 * (\text{Inlet TNMHC lbs/hr} - \text{Outlet TNMHC lbs/hr}) / \text{Inlet TNMHC lbs/hr}$
 lbs/hr = ppm * DSCFM * M.W. * 8.223E-5 / (Tad + 460)
 lbs/MMBtu (O₂ based) = ppm * M.W. * Fd * 2.60E-9 * 20.9 / (20.9 - %O₂)
 ppm @ 3% O₂ = ppm * (17.9 / (20.9 - O₂))
 ppm @ 15% O₂ = ppm * (5.9 / (20.9 - O₂))

APPENDICES

APPENDIX A – CALCULATIONS & NOMENCLATURE

APPENDIX B - LABORATORY REPORTS

APPENDIX C - FIELD DATA SHEETS

APPENDIX D - STRIP CHART RECORDS

APPENDIX E – CALIBRATION GAS CERTIFICATES

APPENDIX F – EQUIPMENT CALIBRATION RECORDS

APPENDIX G – STACK DIAGRAMS

APPENDIX H – SAMPLING SYSTEM DIAGRAMS

APPENDIX I – SOURCE TEST PLAN

APPENDIX J – PERMIT TO OPERATE

APPENDIX A
CALCULATIONS & NOMENCLATURE

Standard Abbreviations for Reports

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

Common Conversions / Calculations / Constants

1 gram = 15.432 grains

1 pound = 7000 grains

grains per pound = 453.6

bhp = 1.344 * Engine kW, (where Engine kW = Generator kW output / 0.95) @ 95% efficiency

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

2.59E-9 = Conversion factor for ppm to lbs/scf, EPA 40CFR60.45

dscf / MMBTU = 8710 for Natural gas, EPA Method 19

Btu/ft³ = 1040 for Natural Gas, EPA Method 19

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

lbs/hr = ppm / SV x dscfm x M * 60; CARB Method 100; where SV = 385E⁶ @ 68°F or ≈ 379E⁶ @ 60°F.

Correction to 12% CO₂ = gr/dscf * 12% / stack CO₂%; EPA Method 5

Correction to 3% O₂ = ppm * 17.9 / (20.9 - stack O₂ %); CARB Method 100

Correction to 15% O₂ = ppm * 5.9 / (20.9 - stack O₂ %); CARB Method 100

dscfm = Gas Fd * MMBtu/min * 20.9 / (20.9 - stack O₂ %); EPA Method 19

lb/MMBtu = Fd * M * ppm * 2.59E-9 * 20.9 / (20.9 - stack O₂ %); EPA Method 19

Standard Temperatures by District

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

CEM CORRECTION SUMMARY

Facility: City of Palo Alto Landfill
 Unit: Flare Outlet (A-3)
 Condition: 1550 F
 Date: 09/28/2007

Barometric: 29.90
 Leak Check: OK
 Strat. Check: OK
 Personnel: BA/EA

	Inlet						Outlet					Comments
	TOC	CO ₂	O ₂	CO	CH ₄	O ₂	CO ₂	NOx	CO	THC	CH ₄	
Analyzer						100P		600CL	48i	300M	300M	
Range						25		25	20	100	100	
Units, ppm or %						%		ppm	ppm	ppm	ppm	
Span Gas Value						21.66		22.3	17.8	90.3	90.3	
Run 1 1014-1046						-0.01		0.1	0.0	-0.1	-0.1	zero (initial), Z _i
						21.68		22.8	18.1	90.0	90.0	upscale cal (initial), S _i
						11.1		4.7	0.8	-1.4	-0.4	TEST AVG
						-0.21		0.1	-0.1	-4.6	-4.6	zero (final), Z _f
						21.51		22.7	17.9	83.7	83.7	upscale cal (final), S _f
						-0.8%		-0.1%	-0.6%	-4.5%	-4.5%	zero drift
						-0.7%		-0.3%	-0.8%	-6.3%	-6.3%	cal drift
						11.2		4.6	0.8	1.0	2.0	CORRECTED AVG
Run 2 1101-1143						-0.21		0.1	-0.1	0.3		zero (initial), Z _i
						21.51		22.7	17.9	90.3		upscale cal (initial), S _i
						11.1		4.8	0.4	0.5		TEST AVG
						-0.21		0.1	-0.2	-1.9		zero (final), Z _f
						21.47		22.8	17.8	87.6		upscale cal (final), S _f
						0.0%		0.2%	-0.2%	-2.2%		zero drift
						-0.2%		0.6%	-0.5%	-2.7%		cal drift
						11.3		4.6	0.6	1.3		CORRECTED AVG
Run 3 1152-1223						-0.21		0.1	-0.2	-1.9	-1.9	zero (initial), Z _i
						21.47		22.8	17.8	87.6	87.6	upscale cal (initial), S _i
						10.3		4.9	0.2	-1.1	-0.8	TEST AVG
						-0.21		0.1	-0.2	-3.0	-3.0	zero (final), Z _f
						21.48		22.9	17.8	86.4	86.4	upscale cal (final), S _f
						0.0%		-0.1%	-0.1%	-1.0%	-1.0%	zero drift
						0.0%		0.3%	-0.1%	-1.3%	-1.3%	cal drift
						10.5		4.6	0.3	1.4	1.7	CORRECTED AVG
AVERAGES						11.0		4.6	0.6	1.2	1.8	TEST AVG

CORRECTED VALUE = [Test Avg. - ((Z_f+Z_i) / 2)] * Span Gas Value / [(S_f+S_i) / 2 - ((Z_f+Z_i) / 2)]

ZERO DRIFT % = 100 * (Z_f-Z_i) / Instrument Range

SPAN DRIFT % = 100 * (S_f-S_i) / Instrument Range

STACK GAS FLOW RATE DETERMINATION -- FUEL USAGE **EPA Method 19**

Facility: City of Palo Alto Landfill
 Unit: Flare Outlet (A-3)
 Condition: 1550F
 Date: 09/28/2007

Time:

Gross Calorific Value @ 68°F

Stack Oxygen

Gas Fd-Factor @ 68°F

Standard Temperature (°F)

Run 1 1014-1046	Run 2 1101-1143	Run 3 1152-1223	
377.3	377.3	377.3	Btu / ft ³
11.16	11.31	10.53	%
9695.3	9695.3	9695.3	DSCF/MMBtu
70	70	70	°F

Corrected Fuel Rate (SCFM) @ 68°F

Fuel Flow Rate (SCFH) @68°F

Fuel Flow Rate (SCFH) @60°F

Million Btu per minute

Heat Input (MMBtu/hour)

343.0	345.0	344.0	SCFM
20,580	20,700	20,640	SCFH
20,268	20,286	20,337	SCFH
0.129	0.130	0.130	MMBtu/min
7.8	7.8	7.8	MMBtu/Hr

Stack Gas Flow Rate

2,694	2,753	2,541	DSCFM
-------	-------	-------	-------

WHERE:

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

MMBtu - Million Btu

CALCULATIONS:

SCFM = CFM * 528 * (gas line PSIA) / 14.7 / (gas °F - 460)

MMBtu/min = (SCFM * Btu/ft³) / 1,000,000

DSCFM = Gas Fd-Factor * MMBtu/min * 20.95 / (20.95 - stack oxygen%)

SCFH = SCFM * 60

Heat Input = MMBtu/min * 60

City of Palo Alto Landfill
BAAQMD ST-19B - SO₂ Determination

Location:	Flare Outlet (A-3)			
Test:	1	2	3	
Date:	09/28/2007	09/28/2007	09/28/2007	
Time:	1015-1045	1104-1134	1155-1225	
1. Uncorrected Meter Volume (1021-1048	22.136	22.233	20.883	
2. Meter Factor (Yd)	1.0185	1.0185	1.0185	
3. Barometric Pressure (Pb)	29.80	29.80	29.80	" Hg
4. Meter Pressure (ΔH)	0.0	0.0	0.0	" H ₂ O
5. Meter Temperature (Tm)	80.7	85.9	92.3	°F
6. Std. Temperature (Tstd)	70.0	70.0	70.0	°F
7. Impinger H ₂ O Gain (Vw imp)	22.0	26.0	32.0	ml
8. Silica Gel Wt. Gain (Vw sg)	3.0	3.0	3.0	g
9. Total H ₂ O Gain (Vw)	25.0	29.0	35.0	g
10. Moisture Vapor (Vw std)	1.182	1.372	1.655	ft ³
11. SO ₂ (mg)	5.2	4.5	5.0	mg
Std. Meter Volume (Vm std)	22.012	21.897	20.329	ft ³
Percent of H ₂ O in Stack (% H ₂ O)	5.10	5.89	7.53	%
SO ₂ (ppm)	3.14	2.73	3.27	

WHEREft³ - Cubic Feet

Hg = Mercury

°F = Fahrenheit

ml = milliliters

mg = milligrams

g = grams

% = Percent

CALCULATIONS

$$\text{SO}_2 \text{ ppm} = 1.6085 * \text{mg SO}_2 * T_{\text{std}} / (\text{Vm std} * 64.1)$$

$$\text{SO}_3 \text{ \& SO}_4 \text{ ppm} = 1.6085 * \text{mg H}_2\text{SO}_4 * T_{\text{std}} / (\text{Vm std} * 98.1)$$

$$\text{Vw std} = 0.00267 * \text{Vw} * (T_{\text{std}} + 460) / 29.92$$

$$\text{Vm std} = \text{Vm} * \text{Yd} * (T_{\text{std}} + 460) * (\text{Pb} + (\Delta\text{H}/13.6)) / (\text{Tm} + 460) / 29.92$$

$$\text{Stack Moisture H}_2\text{O \%} = 100 * \text{Vw std} / (\text{Vw std} + \text{Vm std})$$

APPENDIX B
LAB REPORTS

LAB METHOD 6 SO₂ DETERMINATION

Job Name: City of Palo Alto
 Sample date: 9/28/07
 Request By: B. Asfour
 Date of Analysis: 10/2/07
 Source: Stack outlet

Analysts: R. Mariano

Signature: *R. Mariano*

Barium Perchlorate Standardization:

H₂SO₄ Normality = 0.00983 eq./liter

RUN#	H ₂ SO ₄ , ml	Ba(ClO ₄) ₂ , ml
1	20.00	21.40
2	20.00	21.35
3	20.00	21.35
Avg.	20.00	21.37

Ba (ClO₄)₂ Normality = 0.00920 eq./liter

Sample Analysis:

Sample ID.	Tot. Vol. (ml)	Aliq. (ml)	Titrant #1(ml)	Titrant #2(ml)	Avg.	Dilution	SO ₂ Con. (mg)
R1	222	20.0	1.65	1.60	1.63	1.0	5.2
R2	226	20.0	1.40	1.40	1.40	1.0	4.5
R3	232	20.0	1.50	1.50	1.50	1.0	5.0
Blank	100	20.0	0.05	0.05	0.05		

CALCULATION:

$$\text{SO}_2 \text{ mg} = 32.03 * \text{Ba(ClO}_4)_2 \text{ Normality} * (\text{Titrant Avg.} - \text{Blank Avg.}) * (\text{Tot Vol.} / \text{Aliquot}) * \text{Dilution}$$

SAMPLE CHAIN OF CUSTODY

#	DATE	TIME	SAMPLE ID Run/Method/Fraction/Success	CONTAINER size / type	Volume	Average Temp °F	SAMPLE DESCRIPTION	ANALYSIS	TAT
1	9-29-01	1030	R1 inlet outlet	50 mL / HSE 222	667	3% H ₂ O ₂ + catch	SO ₂	Norm	
2		1130	R2 inlet outlet	↓	226	↓	↓	↓	
3		1200	R3 inlet outlet	↓	233	↓	↓	↓	
4									
5			Blank		7200	↓	↓	↓	
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

SPECIAL INSTRUCTIONS:

Submit Results to: Attn: Ruby Adams

Best Environmental, 6261 Southfront Rd., Livermore, CA 94551

Relinquished by: DC 9/28/07 Received by: Adams Date: 10-2-07 Time: 10 AM

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

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

④ SAMPLE CONDITION AS RECEIVED: OK or not OK

SHIP DATE.

CARRIER

October 15, 2007

Mr. Bobby Asfour
Best Environmental
6261 Southfront Road
Livermore, CA 94551

RE: P2703023
City of Palo Alto

Dear Mr. Asfour:

Enclosed are the results of the sample(s) submitted to our laboratory on October 1, 2007. For your reference, these analyses have been assigned our service request number P2703023.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 5 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Michael Tuday
Director of Research & Development

LABORATORY REPORT

Client:	BEST ENVIRONMENTAL	Date of Report:	10/15/07
Address:	6261 Southfront Road	Date Received:	10/01/07
	Livermore, CA 94551	CAS Project No:	P2703023
Contact:	Mr. Bobby Asfour	Purchase Order:	Verbal
Client Project ID: City of Palo Alto			

Three (3) Tedlar Bag Samples labeled:	"R1/Inlet"	"R2/Inlet"	"R3/Inlet"
---------------------------------------	------------	------------	------------

The samples were received at the laboratory under chain of custody on October 01, 2007. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

Total Gaseous Non-Methane Organics as Methane Analysis

The samples were analyzed for total gaseous non-methane organics as methane according to modified EPA Method 25C. The analyses included a single sample injection (method modification) analyzed by gas chromatography using flame ionization detection/total combustion analysis.

The results of analyses are given on the attached data sheet. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Reviewed and Approved:



Wade Henton
GC-VOA Team Leader
Air Quality Laboratory

Reviewed and Approved:



John Yokoyama
Operations Manager
Air Quality Laboratory

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Best Environmental**
 Client Project ID: **City of Palo Alto**

CAS Project ID: P2703023

Total Gaseous Nonmethane Organics (TGNMO) as Methane

Test Code: EPA Method 25C Modified
 Instrument ID: HP5890II/GC1/FID/TCA
 Analyst: Wade Henton
 Sampling Media: Tedlar Bag(s)
 Test Notes:

Date(s) Collected: 9/28/07
 Date Received: 10/1/07
 Date Analyzed: 10/1/07
 Volume(s) Analyzed: 0.50 ml

Client Sample ID	CAS Sample ID	D.F.	Total Gaseous Nonmethane Organics (TGNMO) as Methane Concentration in ppmV		Data Qualifier
			Result	MRL	
R1/Inlet	P2703023-001	1.00	26	1.0	
R2/Inlet	P2703023-002	1.00	26	1.0	
R3/Inlet	P2703023-003	1.00	28	1.0	
Method Blank	P071001-MB	1.00	ND	1.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: 24 Date: 10/15/07

Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: Best Environmental Work order: P2703023
 Project: City of Palo Alto
 Sample(s) received on: 10/1/07 Date opened: 10/1/07 by: LK

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

		Yes	No	N/A
1	Were sample containers properly marked with client sample ID?	☒	☐	☐
2	Did sample containers arrive in good condition?	☒	☐	☐
3	Were chain-of-custody papers used and filled out?	☒	☐	☐
4	Did sample container labels and/or tags agree with custody papers?	☒	☐	☐
5	Was sample volume received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper temperature (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
	Cooler Temperature <u>NA</u> °C			
	Blank Temperature <u>NA</u> °C			
8	Were custody seals on outside of cooler/Box?	☐	☐	☒
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☐	☒
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Is pH (acid) preservation necessary, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are pH (acid) preserved?	☐	☐	☒
	Were VOA vials checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?	☐	☐	☒
10	Tubes: Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
11	Badges: Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☐

Lab Sample ID	Required pH (as received, if required)	pH (as received, if required)	VOA Headspace Trace/Absent	Receipt/Preservation Comments
P2703023-001			NA	
P2703023-002			NA	
P2703023-003			NA	

Explain any discrepancies: (include lab sample ID numbers): _____

Project ID: City of Palo Alto
 Analyzed Lab: *CD* *Celvarbia*

SAMPLE CHAIN OF CUSTODY

P2703023

#	DATE	TIME	SAMPLE ID Room, Room, Production, Source	CONTAINER size / type	Volume	Storage Temp °F	SUBSTRATE DESCRIPTION	ANALYST	TEST
1	<i>9/18/07</i>	<i>1030</i>	<i>R1 / Inlet</i>	<i>100 / Tedlee</i>	<i>~6L</i>	<i>Amb</i>	<i>Landfill Gas</i>	<i>Nmoc</i>	<i>Norm</i>
2	<i>↓</i>	<i>1130</i>	<i>R2 / Inlet</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>	<i>↓</i>
3	<i>↓</i>	<i>1200</i>	<i>R3 / Inlet</i>						
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

SPECIAL INSTRUCTIONS:

Submit Results to: *Alth*; *Bobby Asfaw*

Best Environmental, 6261 Southfront Rd., Livermore, CA 94551

Relinquished by: *P. Asfaw*Received by: *CALIF. OVERNIGHT*

Date:

Time:

Relinquished by: *CALIF. OVERNIGHT*Received by: *Shirley Roberts*

Date:

Date: *10/1/07*Time: *0735*

Relinquished by:

Received by:

Date:

Time:

SAMPLE CONDITION AS RECEIVED: *OK* *error* *OK*

SLEEP DATE:

CARRIER



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0709631B

Work Order Summary

CLIENT:	Mr. Bobby Asfour Best Environmental 6261 Southfront Road Livermore, CA 94551	BILL TO:	Mr. Bobby Asfour Best Environmental 6261 Southfront Road Livermore, CA 94551
PHONE:	925-455-9474 x104	P.O. #	
FAX:	925-455-9479	PROJECT #	City of Palo Alto
DATE RECEIVED:	09/29/2007	CONTACT:	Sarah Nguyen
DATE COMPLETED:	10/04/2007		

FRACTION #	NAME	TEST	RECEIPT VAC/PRES
01A	R1/Inlet	ASTM D-5504	Tedlar Bag
02A	Lab Blank	ASTM D-5504	NA
03A	LCS	ASTM D-5504	NA

CERTIFIED BY:

Laboratory Director

DATE: 10/04/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP - AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAP standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000, (800) 985-5955, FAX (916) 985-1020

Page 1 of 6



AN ENVIRONMENTAL ANALYTICAL LABORATORY

LABORATORY NARRATIVE
ASTM D-5504
Best Environmental
Workorder# 0709631B

One 10 Liter Tedlar Bag sample was received on September 29, 2007. The laboratory performed the analysis of sulfur compounds via ASTM D-5504 using GC/SCD. The method involves direct injection of the air sample into the GC via a fixed 1.0 mL sampling loop. See the data sheets for the reporting limits for each compound.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Ethyl Methyl Sulfide and n-Butyl Mercaptan coelute with 3-Methyl Thiophene.

The Total Reduced Sulfur (TRS) concentration is calculated by summing all peaks and quantitating the area based on the response of Hydrogen Sulfide.

Sample R1/Inlet was analyzed past the method specified 24 hour hold time.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Summary of Detected Compounds
SULFUR GASES BY ASTM D-5504 GC/SCD

Client Sample ID: R1/Inlet

Lab ID#: 0709431B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)
Hydrogen Sulfide	300	34000
Total Reduced Sulfur ref. to H ₂ S (MW=34)	300	36000



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: R1/Inlet

Lab ID#: 07096318-01A

SULFUR GASES BY ASTM D-5504 GC/SCD

Compound	Rpt. Limit (ppbv)	Amount (ppbv)
Hydrogen Sulfide	300	34000
Carbonyl Sulfide	300	Not Detected
Methyl Mercaptan	300	Not Detected
Ethyl Mercaptan	300	Not Detected
Dimethyl Sulfide	300	Not Detected
Carbon Disulfide	300	Not Detected
Isopropyl Mercaptan	300	Not Detected
tert-Butyl Mercaptan	300	Not Detected
n-Propyl Mercaptan	300	Not Detected
Thiophene	300	Not Detected
isobutyl Mercaptan	300	Not Detected
3-Methyl Thiophene/n-Butyl Mercaptan/Ethyl Methyl Sulfide	300	Not Detected
Diethyl Sulfide	300	Not Detected
Dimethyl Disulfide	300	Not Detected
Tetrahydrothiophene	300	Not Detected
2-Ethylthiophene	300	Not Detected
2,5-Dimethylthiophene	300	Not Detected
Diethyl Disulfide	300	Not Detected
Total Reduced Sulfur ref. to H ₂ S (MW=34)	300	35000

The result for Total Reduced Sulfur is reported from file L092904a.d.

Container Type: 10 Liter Tedlar Bag



AIR ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0709631B-02A

SULFUR GASES BY ASTM D-5584 GC/SCD

Client Name	002903	Date of Collection	9/28/04
Project Name	002903	Date of Analysis	9/28/04 3:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)
Hydrogen Sulfide	4.0	Not Detected
Carbonyl Sulfide	4.0	Not Detected
Methyl Mercaptan	4.0	Not Detected
Ethyl Mercaptan	4.0	Not Detected
Dimethyl Sulfide	4.0	Not Detected
Carbon Disulfide	4.0	Not Detected
Isopropyl Mercaptan	4.0	Not Detected
tert-Butyl Mercaptan	4.0	Not Detected
n-Propyl Mercaptan	4.0	Not Detected
Thiophene	4.0	Not Detected
Isobutyl Mercaptan	4.0	Not Detected
3-Methyl Thiophene/n-Butyl Mercaptan/Ethyl Methyl Sulfide	4.0	Not Detected
Diethyl Sulfide	4.0	Not Detected
Dimethyl Disulfide	4.0	Not Detected
Tetrahydrothiophene	4.0	Not Detected
2-Ethylthiophene	4.0	Not Detected
2,5-Dimethylthiophene	4.0	Not Detected
Diethyl Disulfide	4.0	Not Detected
Total Reduced Sulfur ref. to H ₂ S (MW=34)	4.0	Not Detected

The result for Total Reduced Sulfur is reported from file L092903a.d.

Container Type: NA - Not Applicable



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0709631B-03A

SULFUR GASES BY ASTM D-5504 GC/SCD

DATE: 18/04/2007	TIME: 14:54	LAB: 0709631B-03A	CLIENT: LCS
------------------	-------------	-------------------	-------------

Compound	%Recovery
Hydrogen Sulfide	81
Carbonyl Sulfide	91
Methyl Mercaptan	97
Ethyl Mercaptan	102
Dimethyl Sulfide	100
Carbon Disulfide	109
Isopropyl Mercaptan	101
tert-Butyl Mercaptan	102
n-Propyl Mercaptan	100
Thiophene	92
Isobutyl Mercaptan	103
3-Methyl Thiophene/n-Butyl Mercaptan/Ethyl Methyl Sulfide	102
Diethyl Sulfide	104
Dimethyl Disulfide	101
Tetrahydrothiophene	112
2-Ethylthiophene	94
2,5-Dimethylthiophene	96
Diethyl Disulfide	105

Container Type: NA - Not Applicable

Air Toxics Ltd. Introduces the Electronic Report

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

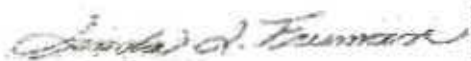
(916) 985-1000 .FAX (916) 985-1020
Hours 8:00 A.M to 6:00 P.M. Pacific

WORK ORDER #: 0709631A**Work Order Summary**

CLIENT:	Mr. Bobby Asfour Best Environmental 6261 Southfront Road Livermore, CA 94551	BILL TO:	Mr. Bobby Asfour Best Environmental 6261 Southfront Road Livermore, CA 94551
PHONE:	925-455-9474 x104	P.O. #	
FAX:	925-455-9479	PROJECT #	City of Palo Alto
DATE RECEIVED:	09/29/2007	CONTACT:	Sarah Nguyen
DATE COMPLETED:	10/11/2007		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECIPIENT</u> <u>VAC./PRES.</u>
01A	R1/Inlet	Modified TO-15	Tedlar Bag
02A	Lab Blank	Modified TO-15	NA
03A	CCV	Modified TO-15	NA
04A	LCS	Modified TO-15	NA

CERTIFIED BY:



Laboratory Director

DATE: 10/11/07

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP - A130763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: 1187680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
Modified TO-15
Best Environmental
Workorder# 0709631A**

One 10 Liter Tedlar Bag sample was received on September 29, 2007. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Daily CCV	± 30% Difference	<± 30% Difference with two allowed out up to <± 40%; flag and narrate outliers
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

F - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ - Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

rI-File was requantified for the purpose of reissue

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: R1/Inlet

Lab ID#: 0709631A-01A

Compound	Ret. Limit (ppbv)	Amount (ppbv)	Ret. Limit (uG/m3)	Amount (uG/m3)
Freon 12	5.0	230	25	1200
Vinyl Chloride	5.0	210	13	540
Chloroethane	5.0	50	13	130
Freon 11	5.0	50	28	280
Methylone Chloride	5.0	31	17	110
1,1-Dichloroethane	5.0	14	20	55
Benzene	5.0	170	16	550
1,2-Dichloroethane	5.0	7.0	20	28
Trichloroethene	5.0	52	27	280
Tetrachloroethene	5.0	65	34	440
Chlorobenzene	5.0	92	23	420
Toluene	5.0	1400	19	5100
Ethyl Benzene	5.0	1200	22	5100
m,p-Xylene	5.0	1400	22	6200
o-Xylene	5.0	480	22	2100
1,4-Dichlorobenzene	5.0	110	30	680
1,2-Dichlorobenzene	5.0	15	30	91
Hexane	5.0	350	18	1200
Acetone	20	1000	48	2400
2-Propanol	20	660	49	1600
2-Butanone (Methyl Ethyl Ketone)	20	900	59	2600
4-Methyl-2-pentanone	20	90	82	370
Ethanol	20	1900	38	3600
Chlorodifluoromethane	20	300	71	1000
Dichlorofluoromethane	20	67	84	280

Client Sample ID: R1/Inlet

Lab ID#: 0709631A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	7092916	Date of Collection:	9/28/07
Dil. Factor:	10.0	Date of Analysis:	9/29/07 07:55 PM

Compound	Ret. Limit (ppbv)	Amount (ppbv)	Ret. Limit (uG/m3)	Amount (uG/m3)
Freon 12	5.0	230	25	1200
Vinyl Chloride	5.0	210	13	540
Chloroethane	5.0	50	13	130
Freon 11	5.0	50	28	280
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
Methylene Chloride	5.0	31	17	110
1,1-Dichloroethane	5.0	14	20	55
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
Benzene	5.0	170	16	550
1,2-Dichloroethane	5.0	7.0	20	28
Trichloroethene	5.0	52	27	280
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	65	34	440
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	92	23	420
Toluene	5.0	1400	19	5100
Ethyl Benzene	5.0	1200	22	5100
m,p-Xylene	5.0	1400	22	6200
o-Xylene	5.0	480	22	2100
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	110	30	680
1,2-Dichlorobenzene	5.0	15	30	91
Hexane	5.0	350	18	1200
Bromodichloromethane	5.0	Not Detected	34	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Acetone	20	1000	48	2400
Carbon Disulfide	20	Not Detected	62	Not Detected
2-Propanol	20	660	49	1600
trans-1,2-Dichloroethane	20	Not Detected	79	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	900	59	2600
4-Methyl-2-pentanone	20	90	82	370
Ethanol	20	1900	38	3600
Chlorodifluoromethane	20	300	71	1000
Acrylonitrile	20	Not Detected	43	Not Detected
Dichlorodifluoromethane	20	67	84	280



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: R1/Inlet

Lab ID#: 0709631A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	708291E	Date of Collection:	9/23/07
Dir. Factor:	10.0	Date of Analysis:	9/29/07 07:55 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Methyl tert-butyl ether	20	Not Detected	72	Not Detected

Container Type: 10 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 0709631A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	7092907	Date of Collection:	NA	
Det. Factor:	1.03	Date of Analysis:	9/29/07 12:21 PM	
Compound	Rot. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected	7.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected	8.2	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Chlorodifluoromethane	2.0	Not Detected	7.1	Not Detected
Acrylonitrile	2.0	Not Detected	4.3	Not Detected
Dichlorofluoromethane	2.0	Not Detected	8.4	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 0709631A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2092907	Date of Collection:	NA
DR Factor:	1.00	Date of Analysis:	9/20/97 12:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected

Container Type: NA - Not Applicable

Surrogates	% Recovery	Method Limits
Toluene-d8	88	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: CCV

Lab ID#: 0709631A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	2002904	Date of Collection:	NA
DR Factor:	1.00	Date of Analysis:	5/29/07 10:00 AM

Compound	%Recovery
Freon 12	83
Vinyl Chloride	81
Chloroethane	84
Freon 11	83
1,1-Dichloroethene	85
Methylene Chloride	80
1,1-Dichloroethane	85
Chloroform	80
1,1,1-Trichloroethane	89
Carbon Tetrachloride	88
Benzene	88
1,2-Dichloroethane	98
Trichloroethane	99
1,2-Dichloropropane	95
1,1,2-Trichloroethane	111
Tetrachloroethene	109
1,2-Dibromoothane (EDB)	114
Chlorobenzene	106
Toluene	96
Ethyl Benzene	107
m,p-Xylene	110
o-Xylene	105
1,1,2,2-Tetrachloroethane	104
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	103
1,2-Dichlorobenzene	96
Hexane	85
Bromodichloromethane	100
Chloromethane	80
Acetone	80
Carbon Disulfide	83
2-Propanol	84
trans-1,2-Dichloroethane	87
2-Butanone (Methyl Ethyl Ketone)	91
4-Methyl-2-pentanone	100
Ethanol	83
Chlorodifluoromethane	62
Acrylonitrile	95
Dichlorodifluoromethane	76

Client Sample ID: CCV

Lab ID#: 0709631A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	T082804	Date of Collection:	NA
Dil Factor:	1.00	Date of Analysis:	8/29/07 10:00 AM

Compound	%Recovery
Methyl tert-butyl ether	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: LCS

Lab ID#: 0709631A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	7092965	Date of Collection:	NA
DR. Factor:	1.96	Date of Analysis:	8/25/07 10:45 AM

Compound	%Recovery
Freon 12	85
Vinyl Chloride	84
Chloroethane	87
Freon 11	85
1,1-Dichloroethene	98
Methylene Chloride	91
1,1-Dichloroethane	93
Chloroform	84
1,1,1-Trichloroethane	92
Carbon Tetrachloride	91
Benzene	90
1,2-Dichloroethane	100
Trichloroethene	102
1,2-Dichloropropane	97
1,1,2-Trichloroethane	111
Tetrachloroethene	110
1,2-Dibromoethane (EDB)	111
Chlorobenzene	106
Toluene	102
Ethyl Benzene	107
m,p-Xylene	108
o-Xylene	105
1,1,2,2-Tetrachloroethane	103
1,3-Dichlorobenzene	98
1,4-Dichlorobenzene	100
1,2-Dichlorobenzene	93
Hexane	91
Bromodichloromethane	103
Chloromethane	84
Acetone	85
Carbon Disulfide	86
2-Propanol	92
trans-1,2-Dichloroethane	92
2-Butanone (Methyl Ethyl Ketone)	97
4-Methyl-2-pentanone	107
Ethanol	100
Chlorodifluoromethane	Not Spiked
Acrylonitrile	Not Spiked
Dichlorodifluoromethane	Not Spiked

Client Sample ID: LCS

Lab ID#: 0709631A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	7092905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9-29-07 10:45 AM

Compound	%Recovery
----------	-----------

Methyl tert-butyl ether	107
-------------------------	-----

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	105	70-130

0709631

ESCHERICHIA COLI

Project ID: City of Palo Alto

Analytical Lab: Air Toxics

SAMPLE CHAIN OF CUSTODY

#	DATE	TIME	SAMPLE ID	CONTAINER	VOLUME	STATUS	ANALYSIS	TIME
1	9-28-07	12:00	R11111111	101/Tedlar	60	Anal	Landfill Gas	10-15-07 DSS/Nonna
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								

Cal ID: R1020471506
CUSTODY SEAL INTACT
Y/N ROOMS TEMP N/A

SPECIAL INSTRUCTIONS:

Please use alternate L138

Best Environmental, 6261 Spadifront Rd., Livermore, CA 94551

Relinquished by: Bob Oly Date: 9/28/07 Time: 8:20
Received by: Nonna Date: 9/29/07 Time: 8:20
Relinquished by: Bob Oly Date: 9/28/07 Time: 8:20
Received by: Nonna Date: 9/29/07 Time: 8:20

SAMPLE CONDITION AS RECEIVED: OK 9/29/07

SHIP DATE

CARRIER

B-28



ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Friday, October 05, 2007

Bobby Asfour
Best Environmental Services
6261 Southfront Rd.
Livermore, CA 94551

TEL: (925) 455-9474
FAX: (925) 455-9479

RE: City of Palo Alto

Order No.: 0710001

Dear Bobby Asfour:

Zalco Laboratories, Inc. received 1 sample(s) on 10/1/2007 for the analyses presented in the following report.

We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,


Authorized Signature

Zalco Laboratories, Inc.
(661) 395-0539



ZALCO LABORATORIES, INC.

Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(861) 395-0539
FAX (861) 395-3069

Best Environmental Services
6261 Southfront Road
Livermore CA 94551

Attention: Bobby Asfour

Sample Description: **RI/Inlet**

Sampled: 09/28/2007 @ 10:30 AM by Client

Laboratory No: 0710001-001
Date Received: 10/01/07
Date Analyzed: 10/01/07
Purchase Order:

Test Code: 1635

Chromatographic Analysis, ASTM D-1945-81, ASTM D-3588-89, GPA 2145-94

Constituent:	Mole %	Weight %	Gas Liquids, Gallons per 1000 cubic feet	CHONS%
Oxygen	4.38	5.23		Carbon, C 25.87
Nitrogen	38.02	39.73		Hydrogen, H 5.72
Carbon Dioxide	19.64	32.25		Oxygen, O 28.68
Carbon Monoxide	0.00	0.00		Nitrogen, N 39.73
Hydrogen Sulfide	0.00	0.00		Sulfur, S 0.00
Methane	37.93	22.70		
Ethane	0.00	0.00		
Propane	0.00	0.00	0.00	
IsoButane	0.00	0.00	0.00	
n-Butane	0.00	0.00	0.00	
IsoPentane	0.00	0.00	0.00	
n-Pentane	0.00	0.00	0.00	
Hexanes+	0.03	0.08	0.01	

Totals:	100.00	100.00	0.01	100.00
---------	--------	--------	------	--------

Gas Properties calculated at STP: degrees F.	60.00	H/C Ratio:
Measurement Base Pressure at STP: psia	14.696	0.22

Gross Btu/Cu.Ft.,	Dry Gas HHV	385.0	Relative Gas Density, Ideal gas:	0.9255
Ideal Gross Btu/Lb.	Dry Gas HHV	5442.5	Specific Gravity, (Air = 1) Real gas:	0.9264
Net Btu/Cu.Ft.	Dry Gas LHV	346.7	Real Gas Density, Lb/Cu.Ft.	0.07075
Ideal Net Btu/Lb	Dry Gas LHV	4900.8	Specific Volume, Cu.Ft./Lb	14.1345
Gross Btu/Cu.Ft., water saturated		384.4	Compressibility, 'Z'	0.9984

		Gross or HHV:	Net or LHV:
"F" Factor,	DSCF/MMBtu at 60F.	9549.9	10605.5
"F" Factor,	DSCF/MMBtu at 68F.	<u>9695.3</u>	10767.0
"F" Factor,	DSCF/MMBtu at 70F.	9732.2	10807.9
"FC" Factor,	DSCF CO2/MMBtu60F	1502.8	1668.9
"FC" Factor,	DSCF CO2/MMBtu68F.	1525.7	1694.3

*Note: Total Sulfur is below the detection limit of 0.01 Mole %

07010001

BEST ENVIRONMENTAL

Livermore, CA 925-455-9474

Project ID: City of Palo Alto

SAMPLE CHAIN OF CUSTODY

Analysis Lab: ZALCO

#	DATE	TIME	SAMPLE ID Box # Method Fraction Source	CONTAINER Vol / Type	Volume	Storage Temp °F	SAMPLE DESCRIPTION	ANALYSIS	FAF
1	9/18/07	1030	R1 inlet	104 tedlar 6L	Amb.		Landfill Gas	Comp. Fuel	Norm
2	↓			↓	↓	↓	↓	↓	↓
3		1100	R1 Backup						
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

SPECIAL INSTRUCTIONS:

analyze one sample only

Submit Results to: Attn: Bobby Astor

Best Environmental, 6261 Southfront Rd., Livermore, CA 94551

Relinquished by: Adrian 9/18/07Received by: Cherrie FergusonDate: 10/01/07Time: 8:55

Relinquished by: _____

Received by: _____

Date: _____

Time: _____

Relinquished by: _____

Received by: _____

Date: _____

Time: _____

B-31

SAMPLE CONDITION AS RECEIVED: OK gy not OK

SHIP DATE

CARRIER

APPENDIX C
FIELD DATA SHEETS

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility: City of Palo Alto Landfill
 Location: Flare Outlet (A-3)
 Observers: _____
 Expected Run Time = 30 min
 Cylinder #s: _____

Run #: 1
 Barometric: 29.90
 Personnel: BA/FA
 Std. Temp: 70

Date: 09/28/07
 Leak ✓: OK
 Strat. ✓: OK

Analyte	O2	CO2	NOx	CO	THC	CH4	timer		
Analyzer	100L		600CLD	48L	300M	300M			
Range	25		25	20	100	100			
Span Value	21.66		22.3	17.8	90.3	90.3			
Time	Comments:								
10:14	9.79		5.9	0.7	0.7				
10:15	10.03		5.7	0.7	0.3				
10:16	9.54		5.8	0.8	0.0				
10:17	9.75		5.9	0.8	-0.4				
10:18	9.43		5.9	0.8	-0.5				
10:19	10.23		5.6	0.7	-0.6				
10:20	10.44		4.9	0.6	-0.8				
10:21	10.50		4.6	0.7	-0.8				
10:22	11.81		4.5	1.7	0.9				
10:23	14.03		3.5	3.9	-0.1				
10:24	10.55		3.8	1.3	-1.2				
10:25	10.11		4.3	1.1	-1.2				
10:26	9.50		4.7	0.8	-1.6				
10:27	9.50		4.9	0.7	-1.8				
10:28	9.66		4.8	0.7	-2.0				
10:29	10.25		4.7	0.6	-2.1				
10:30	9.88		4.4	0.6	-2.3				
10:31	11.83		4.2	0.8	-1.2				
10:32	11.89		3.8	1.2	-2.2				
10:33	11.55		4.3	0.6	-2.2				
10:34	11.61		4.5	0.5	-1.8				
10:35	11.60		4.4	0.4	-2.0				
10:36	11.63		4.5	0.4	-2.1				
10:37	11.36		4.4	0.3	-2.2				
10:38	11.64		4.4	0.4	-1.9				
10:39	14.94		3.8	0.6	-1.5				
10:40	11.71		3.9	0.6	-2.4				
10:41	11.82		4.9	0.5	-2.5				
10:42	11.70		4.9	0.5	-2.1				
10:43	11.60		4.9	0.4	-1.9				
10:44	12.00		5.0	0.4	-2.0				
10:45	12.35		4.7	0.3	-2.2	-0.4			
ZERO f	10:03	-0.01	0.1	0.0	-0.1	-0.1			
SPAN f	10:08	21.68	22.8	18.1	90.9	90.0			
Average		11.07	4.7	0.8	-1.4	-0.4			
ZERO f	10:50	-0.21	0.1	-0.1	-4.6	-4.6			
SPAN f	10:55	21.51	22.7	17.9	83.7	83.7			
Zero Drift %		-0.8%	-0.1%	-0.6%	-4.5%	-4.5%			
Span Drift %		-0.7%	-0.3%	-0.8%	-6.3%	-6.3%			
Corr. Avg.		11.16	4.6	0.8	1.8	2.0			

Corrected Average = $[(Z_1 + Z_2) / 2] * \text{Span Gas Value} / [(S_1 - S_0) / 2 + (Z_1 + Z_2) / 2]$

Zero Drift % = $100 * (Z_2 - Z_0) / \text{Instrument Range}$

Span Drift % = $100 * (S_1 - S_0) / \text{Instrument Range}$

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility: City of Palo Alto Landfill
 Location: Flare Outlet (A-3)
 Observer: _____
 Expected Run Time = 30 min
 Cylinder %:

Run #: 2
 Barometric: 29.90
 Personnel: BA/EA
 Std. Temp: 70

Date: 09/28/07
 Leak ✓: OK
 Strat. ✓: OK

Analyte	O2	CO2	NOx	CO	THC	CH4	timer		
Analyzer	100P		600C1.13	48i	300M				
Range	25		25	20	100				
Span Value	21.66		22.3	17.8	90.3				
Time									Comments:
11:01	12.60		4.3	0.1	1.8				
11:02	12.51		4.4	0.1	1.6				
11:03	12.30		4.3	0.1	1.4				
11:04	11.73		5.2	0.1	1.3				
11:05	11.58		4.9	0.2	1.1				Operating conditions
11:06	11.56		5.1	0.3	1.1				
11:07	11.95		4.8	0.2	1.1				
11:08	11.24		4.9	0.2	0.9				Fail
11:09	11.63		5.2	0.2	1.0				
11:10	11.76		5.0	0.2	0.9				
11:11	11.74		5.1	0.2	0.8				
11:12	11.56		5.1	0.2	0.7				
11:13	11.25		5.2	0.1	0.6				
11:14	11.50		5.3	0.1	0.6				
11:15	11.01		5.2	0.1	0.4				
11:16	10.36		5.6	0.2	0.3				
11:17	10.51		5.8	0.3	0.3				
11:18	10.48		5.0	0.4	0.2				
11:19	11.48		4.7	0.3	0.3				
11:20	12.14		4.2	0.4	0.3				
11:21	11.19		4.2	0.3	0.2				
11:33	10.50		3.9	3.0	0.0				
11:34	9.93		3.7	2.8	-0.2				
11:35	10.42		3.7	1.6	-0.1				
11:36	10.76		3.9	0.8	-0.2				
11:37	10.50		4.5	0.5	-0.2				
11:38	9.79		4.8	0.3	-0.3				
11:39	10.35		4.9	0.2	-0.3				
11:40	10.25		4.9	0.1	-0.3				
11:41	9.97		5.1	0.1	-0.3				
11:42	10.07		5.2	0.1	-0.4				
ZERO 1	10:57	-0.21	0.1	-0.2	0.3				
SPAN 1	10:58	21.51	22.7	17.9	90.3				
Average	11:12		4.8	0.4	0.5				
ZERO 1	11:45	-0.21	0.1	-0.2	-1.9				
SPAN 1	11:49	21.47	22.8	17.8	87.6				
Zero Drift %	0.0%		0.2%	-0.2%	-2.2%				
Span Drift %	-0.2%		0.6%	-0.5%	-2.7%				
Corr. Avg.	11:31		4.6	0.6	1.3				

Corrected Average = (Test Avg. - ((Z1-Z0) / 2)) * Span Gas Value / ((S1-S0) / 2) ((Z1-Z0) / 2)

Zero Drift % = 100 * (Z1 - Z0) / Span Gas Value

Span Drift % = 100 * (S1 - S0) / Span Gas Value

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility: City of Palo Alto Landfill
 Location: Flare Outlet (A-3)
 Observer:
 Expected Run Time = 30 min
 Cylinder #s:

Run #: 3
 Barometric: 29.90
 Personnel: BA/EA
 Std. Temp: 70

Date: 09/28/07
 Leaks ✓: OK
 Strat ✓: OK

Analyte	O2	CO2	NOx	CO	THC	CH4	timer		
Analyzer	100P		600CLD	48i	300M	300M			
Range	25		25	20	100	100			
Span Value	21.66		22.3	17.8	90.3	90.3			
Time	Comments:								
11:52	10.75		4.6	0.1	-0.6				
11:53	10.84		4.5	0.0	-0.6				Good
11:54	10.76		4.3	0.2	-0.7				
11:55	10.67		4.4	0.3	-0.7				
11:56	10.46		4.7	0.1	-0.7				Operating Conditions
11:57	10.96		4.5	0.0	-0.7				
11:58	9.92		4.5	0.0	-0.8				
11:59	10.71		4.7	0.2	-0.8				Flare
12:00	9.63		4.8	0.1	-1.0				
12:01	9.66		4.9	0.2	-1.0				
12:02	10.03		4.9	0.3	-1.0				
12:03	9.74		4.7	0.2	-1.0				
12:04	9.22		5.1	0.3	-1.1				
12:05	9.62		5.1	0.4	-1.1				
12:06	9.88		4.8	0.4	-1.1				
12:07	9.66		4.7	0.4	-1.1				
12:08	9.49		4.7	0.3	-1.2				
12:09	9.71		5.0	0.3	-1.0				
12:11	10.03		4.3	0.5	-1.2				
12:12	9.72		4.8	0.4	-1.3				
12:13	10.87		5.1	0.2	-1.2				
12:14	11.15		5.2	0.1	-1.2				
12:15	10.92		5.3	0.0	-1.3				
12:16	11.04		5.5	0.0	-1.3				
12:17	11.34		5.1	0.0	-1.3				
12:18	10.37		5.1	0.0	-1.5				
12:19	10.62		5.2	0.0	-1.4				
12:20	11.08		4.9	0.1	-1.4				
12:21	10.67		4.9	0.0	-1.4				
12:22	10.51		5.3	0.0	-1.5	-0.8			
ZERO 1	11:45	-0.21	0.1	-0.2	-1.9	-1.9			
SPAN 1	11:49	21.47	22.8	17.8	87.6	87.6			
Average	10.33		4.9	0.2	-1.1	-0.8			
ZERO 1	12:26	-0.21	0.1	-0.2	-3.0	-3.0			
SPAN 1	12:31	21.48	22.9	17.8	86.4	86.4			
Zero Drift %	0.0%		-0.1%	-0.1%	-1.0%	-1.0%			
Span Drift %	0.0%		0.3%	-0.1%	-1.3%	-1.3%			
Corr. Avg.	10.33		4.6	0.3	1.4	1.7			

Corrected Average = [Test Avg. - ((Z1-Z0) / 2)] * Span Gas Value / [(S1+S0) / 2] + ((Z1+Z0) / 2)

Zero Drift % = 100 * (ZF - Z0) / Instrument Range

Span Drift % = 100 * (SF - S0) / Instrument Range

(CARB/EPA Method 4) Moisture Sampling Data Sheet

Facility: City of Alameda Meter #: _____ Pbar: _____
 Location: Out lot Yd: _____ % O₂: _____
 Date: 9.28.07 Pyrometer #: _____ % CO₂: _____
 Personnel: BA BA % H₂O: _____

R1 M/L

Point	Time	Meter Vol. F ³	Temperature, °F			Vacuum, "Hg
			Meter In	Meter Out	Imp.	
1	10:15	166.239	68	68	40	4
2	20	169.4	78	86		4
3	25	173.1	80	87		5
4	30	176.4	78	86	✓	5
5	35	182.7	80	87		6
6	40	184.3	81	89		6
Stop	10:45	188.375				
TOTAL/AVG		22.136	80.67			

R2

1	11:04	188.582	82	85	40	5
2	5	190.9	82	90	✓	5
3	10	195.4	82	92	✓	6
4	15	198.6	82	90	✓	5
5	20	202.1	84	90		5
6	25	203.7				
Stop	11:34	206.85				
TOTAL/AVG		22.253	85.9			

1	11:55	206.982	88	95	40	5
2	12:00		86	98	✓	
3	05	213.9	86	98	✓	5
4	10	217.4	88	98	✓	5
5	15	220.9	89	98		5
6	20	224.2	86	98		5
Stop	12:25	227.865				
TOTAL/AVG		20.885	92.3			

Comments: _____

Initial Leak Check ☒ CFM 20 "HgFinal Leak Check ☒ CFM 22 "Hg

	Initial	Final	Net
H ₂ O ₂			
Impinger #1:	100	148	48
Impinger #2:	100	74	26
Impinger #3:			
Silica Gel:	200	203	3
Total Net:			25
% Moisture			

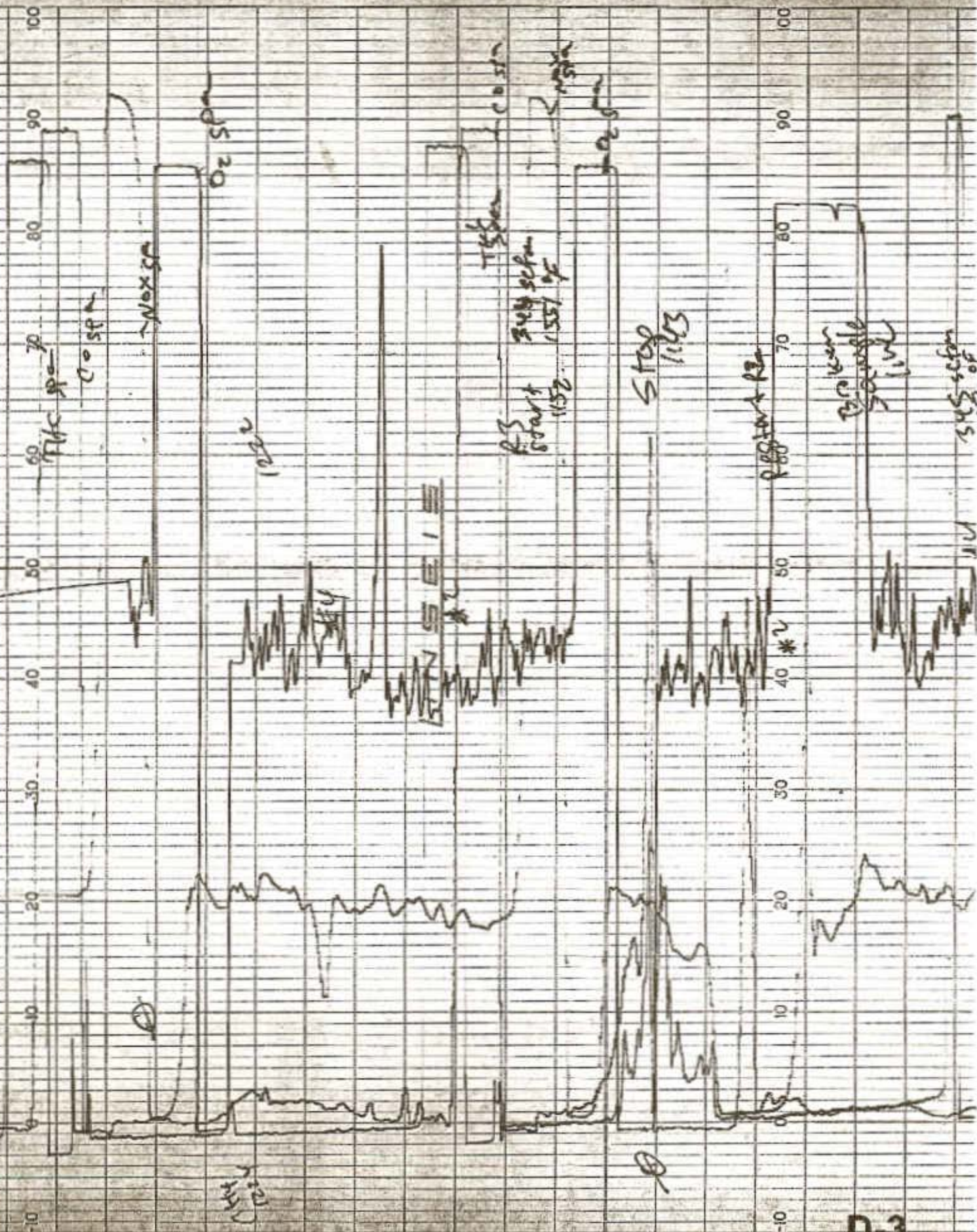
Initial Leak Check ☒ CFM 22 "HgFinal Leak Check ☒ CFM 16 "Hg

	Initial	Final	Net
H ₂ O ₂			
Impinger #1:	100	126	26
Impinger #2:	100	100	0
Impinger #3:			
Silica Gel:	203	206	3
Total Net:			29
% Moisture			

Initial Leak Check ☒ CFM 16 "HgFinal Leak Check ☒ CFM 16 "Hg

	Initial	Final	Net
H ₂ O ₂			
Impinger #1:	100	132	32
Impinger #2:	100	100	0
Impinger #3:			
Silica Gel:	200	209	9
Total Net:			35
% Moisture			

APPENDIX D
STRIP CHART RECORDS



APPENDIX E
CALIBRATION GAS CERTIFICATES



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

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER BEST CORP.

P.O. NUMBER

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE (DIR)	VS-58MR2611	CC 160.26	24.4 ppm
CARBON DIOXIDE (DIR)	VS-SRMR2620	SA 14765	2.571 %
OXYGEN (DIR)	VS-SRMR2620	CC 95-713	21.66 %

ANALYZER READINGS

R=REFERENCE STANDARD

Z=ZERO GAS

C=GAS CANDIDATE

1. COMPONENT	CARBON MONOXIDE (DIR)	ANALYZER MAKE-MODEL-S/N	Siemens Ultramat 5M S/N A12-725
ANALYTICAL PRINCIPLE	NDIR	LAST CALIBRATION DATE	09/01/05
FIRST ANALYSIS DATE	09/01/05	SECOND ANALYSIS DATE	09/09/05
Z 0.00 R 24.45 C 17.85	CONC. 17.84	Z 0.00 R 24.45 C 17.90	CONC. 17.85
R 24.45 Z 0.00 C 17.90	CONC. 17.80	Z 0.00 C 17.90	CONC. 17.81
Z 0.00 C 17.85 R 24.45	CONC. 17.84	Z 0.00 C 17.90 R 24.45	CONC. 17.87
U/M ppm	MEAN TEST ASSAY 17.85	U/M ppm	MEAN TEST ASSAY 17.85
2. COMPONENT	CARBON DIOXIDE (DIR)	ANALYZER MAKE-MODEL-S/N	Siemens Ultramat 5M S/N A12-730
ANALYTICAL PRINCIPLE	NDIR	LAST CALIBRATION DATE	09/01/05
FIRST ANALYSIS DATE	09/01/05	SECOND ANALYSIS DATE	
Z 0.00 R 2.575 C 1.760	CONC. 1.759	Z R C	CONC.
R 2.575 Z 0.00 C 1.760	CONC. 1.759	R Z C	CONC.
Z 0.00 C 1.760 R 2.575	CONC. 1.759	Z C R	CONC.
U/M %	MEAN TEST ASSAY 1.759	U/M %	MEAN TEST ASSAY
3. COMPONENT	OXYGEN (DIR)	ANALYZER MAKE-MODEL-S/N	Siemens Oxyset 5M S/N A12-913
ANALYTICAL PRINCIPLE	Paramagnetic	LAST CALIBRATION DATE	09/01/05
FIRST ANALYSIS DATE	09/01/05	SECOND ANALYSIS DATE	
Z 0.00 R 21.66 C 21.66	CONC. 21.66	Z R C	CONC.
R 21.66 Z 0.00 C 21.66	CONC. 21.66	R Z C	CONC.
Z 0.00 C 21.66 R 21.66	CONC. 21.66	Z C R	CONC.
U/M %	MEAN TEST ASSAY 21.66	U/M %	MEAN TEST ASSAY

THIS CYLINDER NO. CC 05540
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA 400/5-97-121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE 011
CERTIFIED ACCURACY ± 1 % NIST TRACEABLE
CYLINDER PRESSURE 2025 PSIG
CERTIFICATION DATE 09/09/05
EXPIRATION DATE 09/09/06 TERM 36 MONTHS

CERTIFIED CONCENTRATION

CARBON MONOXIDE 17.8 ppm
CARBON DIOXIDE 1.76 %
OXYGEN 21.66 %
NITROGEN BALANCE

VALUES NOT VALID BELOW 150 PSIG.

ANALYZED BY

HELENA TRAN

CERTIFIED BY

THOMAS RASMUSSEN

IMPORTANT
Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, 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 analysis performed, we make no warranty or representation as to the reliability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.



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

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER 217288RG

P.O NUMBER

REFERENCE STANDARD

COMPONENT

NIST SRM NO.

CYLINDER NO.

CONCENTRATION

NITRIC OXIDE 5010

SRM 8839A

CC 117448

24.70 ppm

ANALYZER READINGS

R=REFERENCE STANDARD

Z=ZERO GAS

C=GAS CANDIDATE

1. COMPONENT	NITRIC OXIDE	CONC.	ANALYZER MAKE-MODEL-S/N	THEMO ENV. 47C D/M 05/01/2007
ANALYTICAL PRINCIPLE	CHECKED/REFERENCE			LAST CALIBRATION DATE 02/03/06
FIRST ANALYSIS DATE 02/20/06				SECOND ANALYSIS DATE 02/27/06
Z 0.0 R 24.6 C 22.2 CONC. 22.3			Z 0.0 R 25.0 C 22.6 CONC. 22.3	
R 24.4 Z 0.0 C 22.2 CONC. 22.3			R 25.0 Z 0.0 C 22.6 CONC. 22.3	
Z 0.0 C 22.2 R 24.6 CONC. 22.3			Z 0.0 C 22.6 R 25.0 CONC. 22.3	
U/M ppm	MEAN TEST ASSAY 22.3		U/M ppm	MEAN TEST ASSAY 22.3

VALUES NOT VALID BELOW 150 PPM.
USE VALUES FOR REFERENCE GAS ONLY.

THIS CYLINDER NO. CC 21973H

HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/101
OF TRACEABILITY PROTOCOL NO. REV. 9/97

PROCEDURE 01

CERTIFIED ACCURACY ± 1 % NIST TRACEABLE

CYLINDER PRESSURE 7600 PSIG

CERTIFICATION DATE 02/27/06

EXPIRATION DATE 02/27/08 TERM 24 MONTHS

CERTIFIED CONCENTRATION

NITRIC OXIDE 22.3 ppm
NITROGEN BALANCE
NOX 22.3 ppm

ANALYZED BY

Betty Kwing

CERTIFIED BY

IMPORTANT

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, 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 particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

E-3



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

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER NIST INV.

P.O. NUMBER DET4419553

REFERENCE STANDARD

COMPONENT

NIST SRM NO.

CYLINDER NO.

CONCENTRATION

PROPANE 1310

SRM 1557

CA 5103

45.6 ppm

ANALYZER READINGS

R=REFERENCE STANDARD

Z=ZERO GAS

C=GAS CANDIDATE

1. COMPONENT	PROPANE	ORIG	ANALYZER MAKE-MODEL-S/N	HERISA, PID 510, 851325122
ANALYTICAL PRINCIPLE		Flame Ionization Detector		LAST CALIBRATION DATE 09/15/06
FIRST ANALYSIS DATE		09/25/06		SECOND ANALYSIS DATE
Z 0.0	R 134.6	C 81.4	CONC. 30.1	Z R C CONC.
R 134.5	Z 0.0	C 81.4	CONC. 30.1	R Z C CONC.
Z 0.0	C 81.5	R 134.4	CONC. 30.2	Z C R CONC.
U/M ppm		MEAN TEST ASSAY	30.1	U/M ppm MEAN TEST ASSAY

Value not valid below 100 psig.

THIS CYLINDER NO. ALM 067134

CERTIFIED CONCENTRATION

HAS BEEN CERTIFIED ACCORDING TO SECTION

EPA-600/8-97/121

PROPANE

30.1 ppm X 3

OF TRACEABILITY PROTOCOL NO.

Rev. 9/97

AIR

90.3 ppm

PROCEDURE G1

CERTIFIED ACCURACY ± 1 % NIST TRACEABLE

THC

CYLINDER PRESSURE 2000 PSIG

CERTIFICATION DATE 09/25/06

EXPIRATION DATE 09/25/09 TERM 36 MONTHS

ANALYZED BY

KING CHEUNG

CERTIFIED BY

PED TING NGUYEN

IMPORTANT

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, 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 particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall Praxair Distribution, Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.

E-4

APPENDIX F
EQUIPMENT CALIBRATION RECORDS

Spring Type Thermometer Calibration

Calibrated By:

B. B. Baker

Date Calibrated:

5-2-07

Calibration Due:

11-2-07

Thermometer ID	Test Thermometer Temp (°F)	Reference Thermocouple (°F)	Temp Difference	% Difference	Notes
Meter in					
36A	35	35.9	-.9		PASS ↓
	68	70.1	-2.1		
	123	124.4	-1.4		
Meter out					
8A					
	36	36.6	-.6		↓ ✓
	68	69.8	-1.8		
	121	120.3	+ .7		

NIST Pyrometer:

T223406

T/Couple:

970306

ASTM Thermometer:

Rm 3310

Comments:

Reference Thermometer: ASTM mercury in glass.

Method Reference: EPA QA Handbook Vol. III: Stationary Source Specific Methods, sect. 3.5.2.2

Tolerance Limits: ± 5.4 °F at ambient temperature and in hot water bath.

Calibration Frequency - 6 months

METER BOX FULL TEST CALIBRATION

Meter #: 8559

Meter Orifice ID: 11.64

Standard Meter: Wet Gas Meter

Test Vacuum "Hg: 3.0

Bar. Pressure (Pb): 29.65

Leak Checked: 17,000

Date: 11/7/07

Operator: BOB GALLAGHER

Signature

QA/QC Officer: *Bob Gallagher*

	Yd	ΔH@
Current	0.9896	1.963
Previous	0.9918	1.978

ΔH	ΔP	Yds	Standard Meter Gas Volume (ft³)			Meter Box Gas Volume (ft³)			Std. Meter Temp.	Meter Box Temperature					Time (Min.)	Q	Yd	Alt@
			Initial	Final	(Vds) Net	Initial	Final	(Vd) Net		(T _{in}) Avg.	(T _i) Inlet		(T _o) Outlet					
										Inlet	Read	Inlet	Read					
0.50	-0.055	1.000	0.000	5.000	5.000	947.000	952.082	5.082	47.0	50	50	50	50	50.0	13.57	0.380	0.9883	1.985
0.50	-0.055	1.000	5.000	13.165	8.165	952.082	960.367	8.285	47.0	50	50	50	50	50.0	22.22	0.379	0.9900	1.995
0.50	-0.060	1.000	13.165	19.545	6.380	960.367	966.833	6.466	47.0	50	51	50	50	50.3	17.35	0.379	0.9916	1.992
1.50	-0.085	1.000	0.000	13.615	13.615	968.480	982.218	13.738	48.0	50	51	50	50	50.3	20.33	0.690	0.9915	1.808
1.50	-0.085	1.000	13.615	24.800	11.185	982.218	993.527	11.309	49.0	51	51	50	51	50.8	16.70	0.688	0.9885	1.813
1.50	-0.090	1.000	24.800	35.430	10.630	993.527	1004.282	10.755	50.0	51	53	51	51	51.5	15.90	0.686	0.9874	1.825
3.00	-0.110	1.000	0.000	10.640	10.640	5.078	15.810	10.732	50.0	52	56	51	53	53.0	12.04	0.907	0.9896	2.079
3.00	-0.105	1.000	10.640	26.925	16.285	15.810	32.303	16.493	50.0	56	58	53	55	55.5	18.50	0.903	0.9904	2.089
3.00	-0.110	1.000	26.925	37.120	10.195	32.303	42.650	10.347	51.0	58	60	54	55	56.8	11.56	0.903	0.9888	2.084

Comments: this is the calib. Cert.

Variables:

- Q = Flow rate (cfm)
 ΔH = Orifice pressure differential (in. H₂O)
 AP = Inlet pressure differential standard meter (in. H₂O)
 Yds = Standard meter correction factor (Unitless)
 Yd = Meter box correction factor (Unitless)
 ΔH@ = Orifice pressure differential that gives 0.75 DSCFM of air at 68°F and 29.92 in. Hg (in. H₂O)

$$Yd = (Yds) \left(\frac{Vds}{Vd} \right) \left(\frac{Td + 460}{Ts + 460} \right) \left(\frac{Pb + AP/13.6}{Pb + ΔH/13.6} \right)$$

$$\Delta H@ = \frac{0.0317 \times \Delta H \left[(Ts + 460) \theta \right]}{Pb (Ts + 460) \left[\frac{Vds \times Yds}{Vd} \right]}$$

$$Q = \frac{17.64 \times Vds \times Pb}{(Yds + 460) \theta}$$

1. Yd Tolerance: (Yd_{test} - Yd) / Yd ≤ 0.02 ref. Fig 3.6 in EPA method 52. ΔH@ Tolerance: (ΔH@_{test} - ΔH@) / ΔH@ ≤ 0.20 ref. Fig 3.6 in EPA method 5

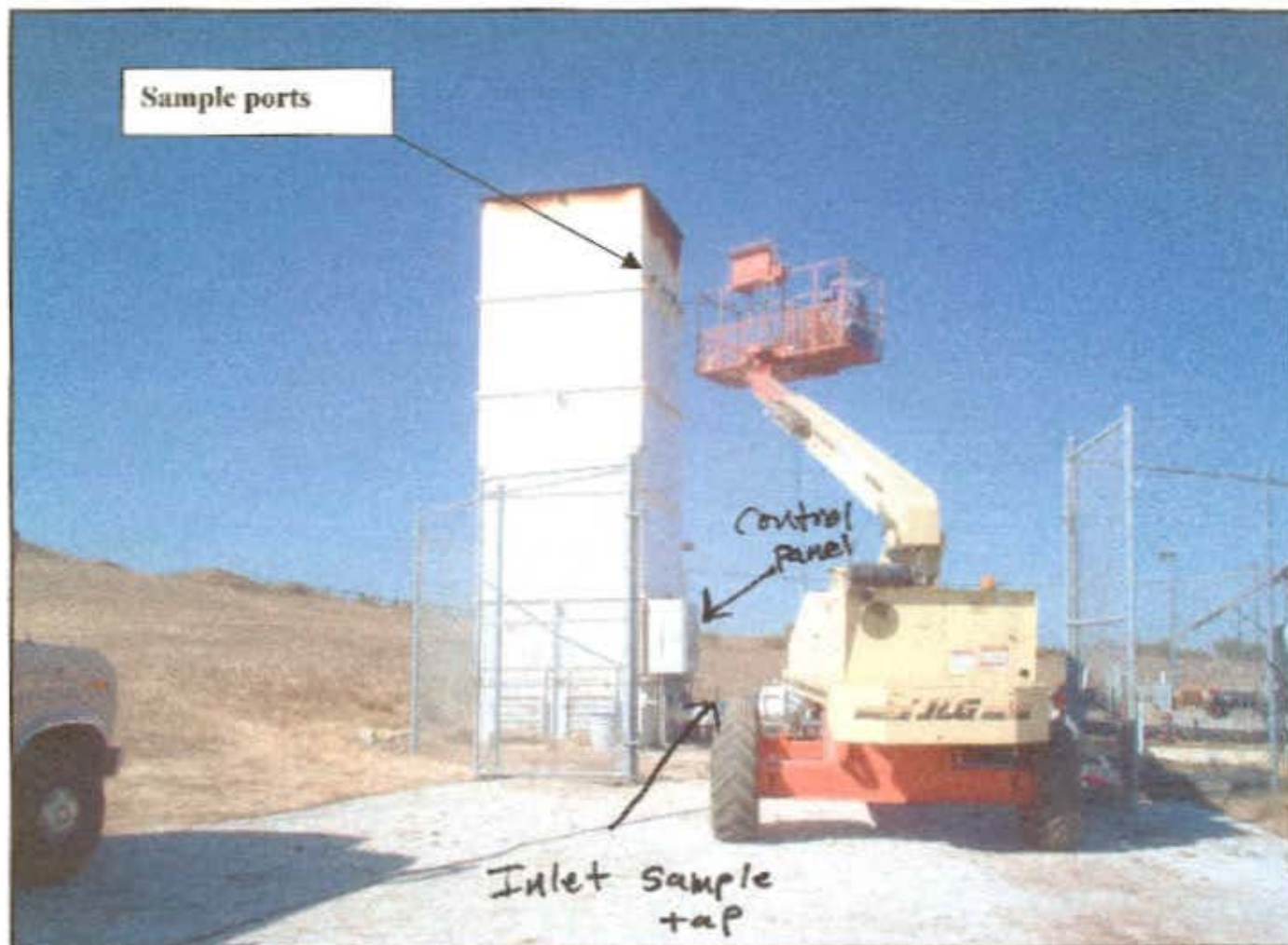
g/cals/metercal/meter1

APPENDIX G STACK DIAGRAMS

City of Palo Alto Landfill

Landfill Gas Flare (A-3)

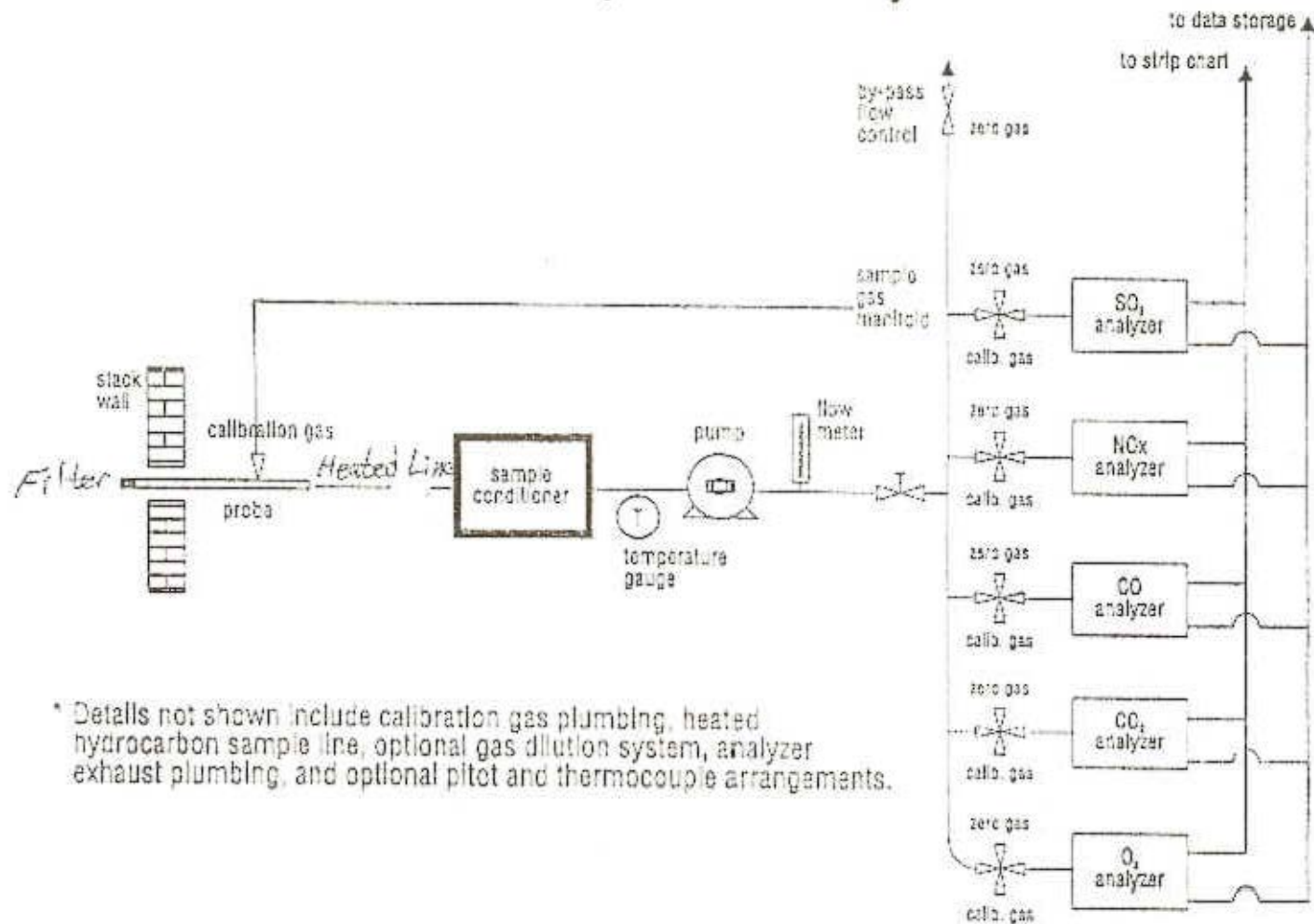
[Facility # A2721, Condition # 1028]



APPENDIX H

SAMPLING SYSTEM DIAGRAMS

Method 100 Sample Train Assembly



* Details not shown include calibration gas plumbing, heated hydrocarbon sample line, optional gas dilution system, analyzer exhaust plumbing, and optional pitot and thermocouple arrangements.

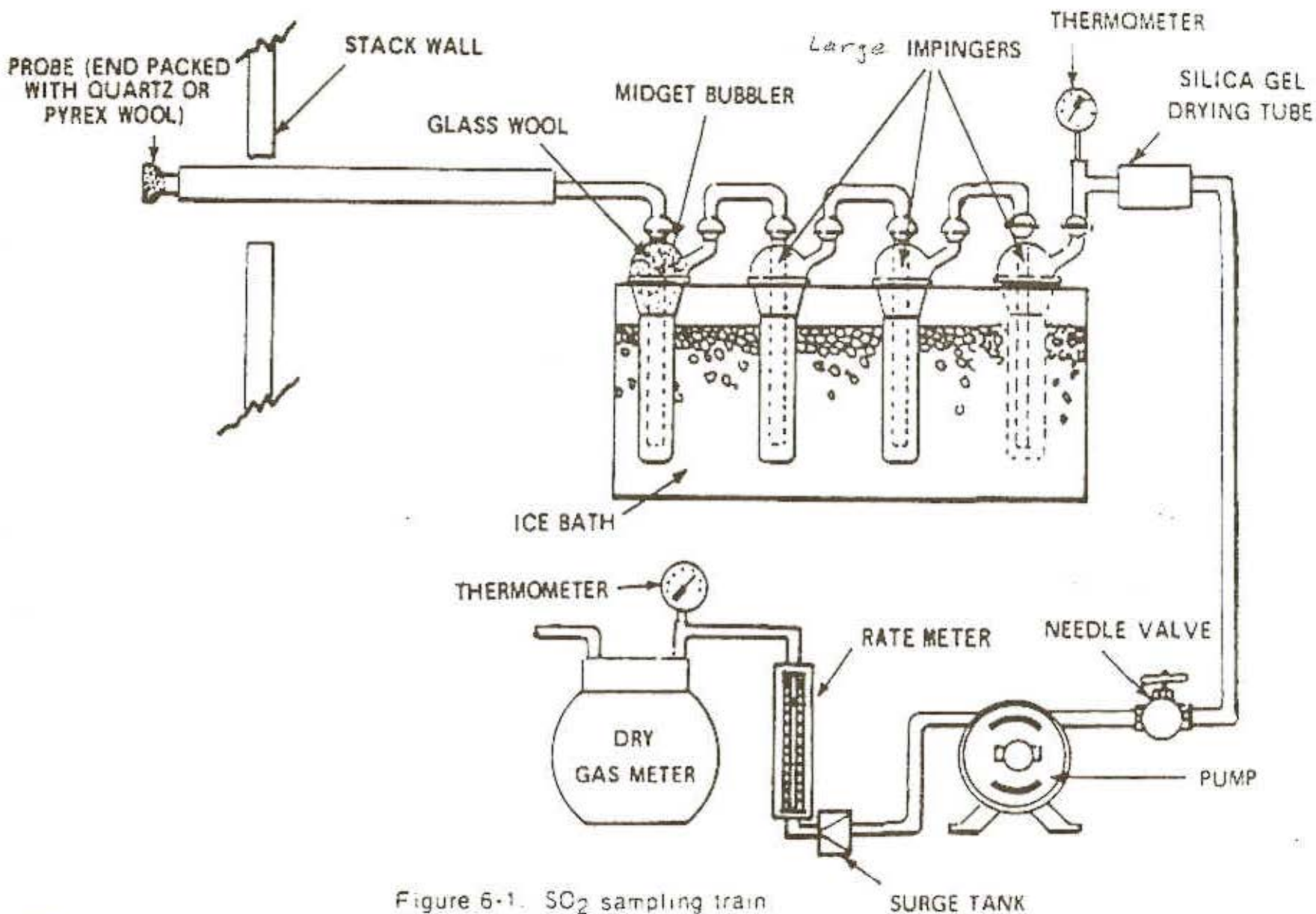


Figure 6-1. SO_2 sampling train

EPA Method 6

BEST ENVIRONMENTAL

6261 SOUTHFRONT ROAD

LIVERMORE, CALIFORNIA 94551

(925) 455-9474 FAX (925) 455-9479

E-Mail bestair@sbcglobal.net

September 14, 2007

Attn: Ken Kunaniec

BAAQMD

939 Ellis Street

San Francisco, CA 94019

RE: Compliance emissions Monitoring of one flare located at the City of Palo Alto Landfill, Byxbee Park, Palo Alto, California. (Regulation #8-34-301.3 & 412 Plant A2721, Cond.#1028).

Dear Ken:

Best Environmental (BE) proposes the following methodology for compliance testing the above referenced source.

- Triplicate thirty-minute test runs will be performed at the flare exhaust using BAAQMD Methods ST-13A (NO_x), ST-6 (CO), ST-7 (THC's = CH₄ & NMOC), and ST-14 (O₂).
- A single integrated fuel sample will be collected at the inlet for the landfill gas organic and sulfur compounds (analyzed using a modified EPA Method TO-14 & D-5504), plus compliance fuel gas analysis (BTU/CF, hydrocarbons C1-C6, O₂, CO₂, N₂ etc.) analyzed using ASTM Method D-1945 and D-3588
- Triplicate integrated bag samples will be collected at the flare inlet for TNMHC (NMOC) and analyzed using EPA Method 25C.
- Fuel flow rate will be recorded and the fuel analysis data will be used to calculate outlet volumetric flow rate using EPA Method 19. Flare temperature will also be recorded and included in the final report.

An overview of the sampling program is summarized in the table below

Parameter	Location	Method(s)	Duration	# of Runs
THC, CH ₄ , NMOC, NO _x , CO & O ₂	Exhaust	BAAQMD ST-7, 13A, 14, 6	30 mins	3
SO ₂	Exhaust	BAAQMD ST-19A	30 mins	3
Flow Rate & Fuel	Exhaust	EPA 19	30 mins	3
LFG organics	Inlet	EPA TO14/TO15 & D-5504	30 mins	1
C1-C6, O ₂ , N ₂ & BTU	Inlet	ASTM D-1945/3588	30 mins	1
Flow Rate	Inlet	Flare Gas Metering System	30 mins	3
NMOC	Inlet	EPA 25C	30 mins	3

- Three copies of the technical compliance report will be submitted to SCS Field Services within approximately four weeks of testing. The report will present a test narrative; emission concentrations, emission rates, NMOC, CH₄ & THC destruction

efficiency and landfill gas organic & sulfur compound characterization. Analysis will be performed by Columbia Analytical and/or Air Toxics Ltd.. for Method 25C. All supporting documents (strip charts, field data sheets, laboratory reports, calibrations, calculations, process information, etc) will also be included.

The test program is scheduled for September 28, 2007 with BE's tentative site arrival time set for 8:00am. Mr. James Moore from SCS Field Services is coordinating the test program and he can be reached at (209) 545-8490.

If there are any questions, please contact me at (925) 455-9474 X 104.

Sincerely,



Bobby Asfour
Project Manager

cc: James Moore, SCS Field Services



APPENDIX J
PERMIT TO OPERATE

Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Proposed**MAJOR FACILITY REVIEW PERMIT**

Issued To:
City of Palo Alto Landfill
Facility #A2721

Facility Address:
Byxbee Park
Palo Alto, CA 94301

Mailing Address:
P. O. Box 10250
Palo Alto, CA 94303

Responsible Official
Frank Benest, City Manager
(650)-496-5937

Facility Contact
Sean Kennedy, Manager, Environmental Programs
(650)-496-5937

Type of Facility: Landfill
Primary SIC: 4953
Product: Landfill Gas

BAAQMD Permit Division Contact:
Hari S. Doss

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

William C. Norton, Executive Officer/Air Pollution Control Officer

Date

Draft

k:\tech_data\title\permit\draft\A2721.doc
Application # 3047
3/29/2003 12:19 PM

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

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 IJ and Regulation 2-1-301.

S-#	Description	Make or Type	Model	Capacity
S-1	Palo Alto Landfill with Gas Collection System	Active solid waste disposal site that accepts municipal, commercial, industrial, and construction wastes. active		Max. Waste Acceptance Rate = 200 tons per day Max. Design Capacity = 7,759,000 yd ³ (5,937,000 m ³) Max. Cumulative Waste in Place = 5,830,000 tons (5,289,000 Mg) 92 vertical wells
S-5	Wood Grinder	Morbark	Model 5600 CPA #4304	50 tons per hour
S-6	Diesel Engine, Driver for S-5 Wood Grinder	Caterpillar, Model Year 2000	3412EC	860 bhp, 2100 rpm, 1649 in ³ , 44.4 gallons/hour of diesel oil, 6.172 MM BTU/hour
S-7	Trommel Screen	Powerscreen	Model 620 CPA #4307	50 tons per hour
S-8	Diesel Engine, Driver for S-7 Trommel Screen	Deutz Model Year 2000	BF4M-1012C	96 bhp, 2200 rpm, 195 in ³ , 4.7 gallons/hour of diesel oil, 0.653 MM BTU/hour

Table II B - Abatement Devices

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
A-3	Landfill Gas Flare, Sur Line, 30 MM BTU/hour, 1000 cfm of landfill gas	S-1	BAAQMD 6-34-301.3, see also Table IV-A	Minimum combustion zone temperature of 1470 °F, see also Table VII-A	98% by weight destruction of NMOC or < 30 ppmv of NMOC, as CH ₄ , at 3% O ₂ , dry
A-5	Water Sprays	S-5 and S-7	BAAQMD 6-301	Visible emission	Ringelmann 1

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. PERMIT CONDITIONS

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

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL
GAS FLARE

1. The Permit Holder shall comply with the following waste acceptance and disposal limits and shall obtain the appropriate New Source Review permit, if one of the following limits is exceeded:
 - a. Total waste accepted and placed at the landfill shall not exceed 200 tons in any day (basis: Regulation 2-1-301)
 - b. The total cumulative amount of all waste placed in the landfill shall not exceed 5,830,000 tons. Exceedance of the cumulative tonnage limit is not a violation of the permit and does not trigger the requirement to obtain a New Source review permit, if the operator can, within 30 days of the date of discovery of the exceedance, provide documentation to the District demonstrating, in accordance with BAAQMD Regulation 2-1-234.3, that the limit should be higher. (basis: Regulation 2-1-234.3)
 - c. The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill, excluding final cover) shall not exceed 7,759,000 cubic yards. (basis: Regulation 2-1-301)
2. This facility is not subject to Regulation 8, Rule 40 because the landfill does not accept contaminated soil (soil containing more than 50 ppmw of volatile organic compounds, VOCs). The following types of materials may be accepted:
 - a. Materials for which the Permit Holder has appropriate documentation demonstrating that either the organic content of the soil or the organic concentration above the soil is below the "contaminated" level (as defined in Regulation 8, Rule 40, Sections 205, 207, and 211).
 - b. Materials for which the Permit Holder lacks documentation to prove that soil is not contaminated, but source of the soil is known and there is no reason to suspect that the soil might contain organic compounds.
 - c. Materials which the Permit Holder plans to test in order to determine the VOC contamination level in the soil, provided that the material is sampled within 24 hours of receipt by this site and is handled as if the soil were contaminated until the Permit Holder receives the test results. The Permit Holder shall collect soil samples in accordance with Regulation 8-40-601. The organic content of the collected soil samples shall be determined in accordance with Regulation 8-40-602.

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL
GAS FLARE

- i. If the test results indicate that the soil is contaminated or if the soil was not sampled within 24 hours of receipt by the facility, the Permit Holder must continue to handle the soil in accordance with Regulation 8, Rule 40, until the soil has been removed from this site or has completed treatment. Storing soil in a temporary stockpile or pit is not considered treatment. Co-mingling, blending, or mixing of soil lots is not considered treatment.
- ii. If the test results indicate that the soil, as received at this site, has an organic content of 50 ppmw or less, then the soil need not be handled in accordance with Regulation 8, Rule 40 any longer.

(basis: Regulation 8-40-301)

3. The Permit Holder shall limit the quantity of low VOC soil (soil that contains 50 ppmw or less of VOCs) disposed of per day so that no more than 15 pounds of total carbon could be emitted to the atmosphere per day. In order to demonstrate compliance with this condition, the Permit Holder shall maintain the following records in a District approved log.
 - a. Record on a daily basis the amount of low VOC soil disposed of in the landfill or used as cover material in the landfill. This total amount (in pounds per day) is Q in the equation in subpart c. below.
 - b. Record on a daily basis the VOC content of all low VOC soils disposed of or used as cover material. This VOC Content (C in the equation below) should be expressed as parts per million by weight as total carbon.
 - c. Calculate and record on a daily basis the VOC Emission Rate (E) using the following equation:

$$E = Q * C / 10^6$$

(basis: Regulation 8-2-301)

4. Water and/or dust suppressants shall be applied to all unpaved roadways and active soil removal and fill areas associated with this landfill as necessary to prevent visible particulate emissions. Paved roadways at the facility shall be kept sufficiently clear of dirt and debris as necessary to prevent visible particulate emissions from vehicle traffic or wind. (basis: Regulations 2-1-403, 6-301, and 6-305)

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

- ~~1. Under no circumstances shall raw landfill gas be vented to the atmosphere in excess of 1000 ppmv measured as methane, per Regulation 8-34-301.1 and 8-34-303.~~
5. All collected landfill gas shall be vented to the properly operating Landfill Gas Flare (A-3) or to the IC Engines (S-1 and S-2 at Site # A9794). If the IC engines at Site # A9794 are not operating, all collected landfill gas shall be vented to the A-3 Landfill Gas Flare. If one or both of the IC engines at Site #9794 are operating, any amount of collected landfill gas that exceeds the capacity of the operating engines shall be vented to the flare. Raw landfill shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair (which is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118) and for 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)
- ~~2. Wells shall not be disconnected or removed at any time except for repair or maintenance of brief duration, without written authorization from the District.~~
6. The landfill gas collection system described in Part 7a shall be operated continuously, as defined in Regulation 8-34-219. Wells and adjustment valves shall not be shut off, disconnected, or removed from operation 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: Regulation 8-34-301.1)
- ~~3. The District shall be notified in writing of a change in permit conditions in the event of increasing the number of wells from 92.~~

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

7. The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described in Parts 7a below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing locations of wells or collectors are all considered to be modifications that are subject to the Authority to Construct requirement.

a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Application # 2230.

Required Components

Total Number of Vertical Wells: 92

(basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305)

4. ~~A flow meter to measure gas flow into the flare shall be installed and maintained.~~
5. ~~Written annual reports shall be submitted to the District within 30 days after the permit anniversary date of the amount (in tons) of garbage placed on the uncontrolled portion of the landfill during the 12 months prior to the anniversary date. The report shall be submitted to the Permit Services Division, referenced to the above permit number, and shall include the increase (in feed) in refuse depth, area (in yd² and acreage) filled, and compacted in place density (lb/yd³) of the garbage filled in the previous 12 months. This information shall be used to re-evaluate the uncontrolled portion of the landfill for compliance with Regulation 8, Rule 34.~~
8. The Heat Input to the A-3 Landfill Gas Flare shall not exceed 720 million BTU per day and shall not exceed 262,800 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: (a) the landfill gas flow rate recorded pursuant to Regulation 8-34-508 and 8-34-501.10, (b) the average methane concentration in the landfill gas measured in most recent source test, and (c) a high heating value for methane of 1013 BTU per cubic foot at 60 degrees F. (basis: Regulation 2-1-301)

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

6. ~~A temperature monitor with readout display and continuous recorder (recording thermocouple) shall be installed and maintained on the Sur-Lite flare. One or more thermocouples shall be placed in the primary combustion zone of the flare and shall accurately indicate flare combustion temperature at all times. Temperature charts shall be retained for at least one year and made available at all times for District inspection.~~
7. ~~The combustion temperature of the Sur-Lite flare shall be maintained at a minimum of 1400 degrees F and a residence time of at least 0.3 seconds. These operating conditions are subject to adjustment if source test data demonstrates significant NOx or CO reduction at a different temperature and/or residence time.~~
9. The combustion zone temperature of the A-3 Landfill Gas Flare shall be maintained at a minimum of 1470 degrees Fahrenheit, averaged over any 3-hour period. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise the minimum combustion zone temperature limit, in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature measured during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature shall not be less than 1400 degrees F. (basis: Toxic Risk Management Policy and Regulation 8-34-301.3)
8. ~~If inconsistent or erratic temperature control is exhibited by the Sur-Lite flare, automatic temperature-controlled louvers or other equipment shall be installed as necessary to stabilize combustion temperature and residence time.~~
- 9/10. The Sur-Lite flare A-3 Landfill Gas Flare shall be equipped with both local and remote alarm systems. (basis: Regulation 8-34-301)
11. Nitrogen oxide (NO_x) emissions from the A-3 Landfill Gas Flare shall not exceed 32 ppmv of NO_x, corrected to 15% oxygen, dry basis. (basis: Cumulative Increase)
10. ~~If source test data indicates that CO emissions from the Sur-Lite flare exceed 550 lb/day, the applicant shall provide modeling as required by Regulation 2-2-306.~~

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

12. Carbon monoxide (CO) emissions from the A-2 Landfill Gas Flare shall not exceed 208 ppmv of CO, corrected to 15% oxygen, dry basis. (basis: Cumulative Increase)
- ~~13. If the Total chlorinated compound concentration exceeding 104 ppm, detected in the landfill gas samples is determined to exceed 104 ppmv (dry), shall require the applicant to apply. Permit Holder shall submit a permit application to the District for a change in permit conditions within 30 days of receipt of the test results. (Basis: Toxic Risk Management Policy)~~
14. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in control system's 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 as hydrogen sulfide in collected landfill gas on a quarterly basis using a dräger 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 dräger tube and interpreting the results. The Permit Holder shall conduct the first dräger tube test no later than 3 months after the issue date of the MFR Permit and quarterly thereafter. (Basis: Regulation 9-1-302)
15. To demonstrate compliance with Parts 8-12 above and Regulation 8, Rule 34, Sections 301.3 and 412, the Permit Holder shall ensure that a District approved source test is conducted annually on the Landfill Gas Flare (A-3). As a minimum, the annual source test shall determine the following:
 - a. landfill gas flow rate to the flare (dry basis);
 - b. concentrations (dry basis) of carbon dioxide (CO₂), nitrogen (N₂), oxygen (O₂), total hydrocarbons (THC), methane (CH₄), and total non-methane organic compounds (NMOC) in the landfill gas;
 - c. stack gas flow rate from the flare (dry basis);
 - d. concentrations (dry basis) of NO_x, CO, THC, CH₄, NMOC, and O₂ in the flare stack gas;
 - e. the NMOC destruction efficiency achieved by the flare; and
 - f. the average combustion zone temperature in the flare during the test period.

Facility Name: City of Palo Alto Landfill
 Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

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

16. To demonstrate compliance with Part 13 above and Regulation 8-34-412, the Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by Part 15 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in part 15b, the landfill gas shall be analyzed for the organic and sulfur compounds listed below. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 45 days of the test date. After conducting three annual landfill gas characterization tests, the Permit Holder may request to remove specific compounds from the lists below if the compounds have not been detected and have no significant impacts on the cancer risk or hazard index determinations for the site.

Organic Compounds

acrylonitrile
benzene
carbon tetrachloride
chlorobenzene
chlorodifluoromethane
chloroethane
chloroform
1,1 dichloroethane
1,1 dichloroethene
1,2 dichloroethane
1,4 dichlorobenzene
dichlorodifluoromethane
dichlorofluoromethane
ethylbenzene

Organic Compounds

ethylene dibromide
fluorotrichloromethane
hexane
isopropyl alcohol
methyl ethyl ketone
methylen chloride
perchloroethylene
toluene
1,1,1 trichloroethane
1,1,2,2 tetrachloroethane
trichloroethylene
vinyl chloride
xlenes

Sulfur Compounds

carbon disulfide
carbonyl sulfide
dimethyl sulfide
ethyl mercaptan
hydrogen sulfide
methyl mercaptan

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

(basis: Toxic Risk Management Policy and Regulations 8-34-412 and 9-1-302)

17. To demonstrate compliance with the above conditions, the Permit Holder shall maintain the following records in a District approved logbook.
- a. Record the total amount of municipal solid waste received at S-1 on a daily basis. Summarize the daily waste acceptance records for each calendar month.
 - b. For each area or cell that is not controlled by a landfill gas collection system, maintain a record of the date that waste was initially placed in the area or cell. Record the cumulative amount of waste placed in each uncontrolled area or cell on a monthly basis.
 - c. If the Permit Holder plans to exclude an uncontrolled area or cell from the collection system requirement, the Permit Holder shall also record the types and amounts of all non-decomposable waste placed in the area and the percentage (if any) of decomposable waste placed in the area.
 - d. Record of the dates, locations, and frequency per day of all watering activities on unpaved roads or active soil or fill areas. Record the dates, locations, and type of any dust suppressant applications. Record the dates and description of all paved road-cleaning activities. All records shall be summarized on monthly basis.
 - e. Record the initial operation date for each new landfill gas well and collector.
 - f. Maintain an accurate map of the landfill that indicates the locations of all refuse boundaries and the locations of all wells and collectors (using unique identifiers) that are required to be operating continuously pursuant to part 7a. Any areas containing only non-decomposable waste shall be clearly identified. This map shall be updated at least once a year to indicate changes in refuse boundaries and to include any newly installed wells and collectors.
 - g. Calculate and record the heat input to A-3, pursuant to Part 8.
 - h. Maintain records of all test dates and test results performed to maintain compliance Parts 14-16 above or to maintain compliance with any applicable rule or regulation.

Facility Name: City of Palo Alto Landfill
Permit for Facility #: A2721

VI. Permit Conditions

Condition # 1028

For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

All records shall be maintained on site or shall be made readily available to District staff upon request for a period of at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable rules or regulations. (basis: Cumulative Increase, Toxic Risk Management Policy and Regulations 2-1-301, 2-6-501, 6-301, 6-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)

18. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting period for the first increment of the Regulation 8-34-411 annual report that is submitted subsequent to the issuance of the MFR Permit for this site shall be from December 1, 2002 through [last day of the month that is 6 months after MFR Permit issuance date]. This first increment report shall be submitted by [last day of the month following the end of the reporting period]. The reporting periods and report submittal due dates for all subsequent increments of the Regulation 8-34-411 report shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F. of the MFR Permit for this site. (basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))