Chicago Grade Landfill

Attachment C – Supporting Documentation

Application Materials

TIER 2 NMOC EMISSION RATE CALCULATION FORM

NMOC EMISSION RATE REPORT
ESTIMATED GENERATION RATE FOR 2010
EQUATION 1: TIER 2 CALCULATION FORM

This calculation form presents the equations and default values used in the Tier 2 NMOC emission rate analysis. Completing this form will yield the annual NMOC emission rate, which should be entered in the space provided in the cover letter. Note that the first emission rate equation is for landfills where the annual MSW acceptance rate is not known. The second emission rate equation is to be used if the annual acceptance rate is known. These equations are formulated in a simple and interactive model that may be requested free of charge from the USEPA (Telephone No. 919-541-5742).

Equation 1:

$$M_{NMOC} = 2L_0R\,(e^{(-kc)}-e^{(-kt)})\,(C_{NMOC})\,(3.6 \times 10^{(-9)})$$

where:

M_{NMOC} = total mass emission rate of NMOC from the landfill, Mg/yr

1. Refuse methane generation potential:	170*	L_o (m^3/Mg)
2. Average annual acceptance rate:	36,051	R (Mg/yr)
3. Methane generation rate constant:	0.02*	k (1/yr)
4. Years since closure (c = 0 for active and/or new landfills)	0	c (yrs)
5. Age of landfill:	35	t (yrs)
6. Concentration of NMOC:	303	C_{NMOC} (ppm as hexane)
7. Conversion factor:	3.6 x 10^(-9)	

The equation below has the default values inserted:

M_{NMOC} = 2(170)(167,205) (e^[-(0.02)(0)])-e^[-(0.02)(39)]) (172) (3.6 x 10^(-9))

M_{NMOC} = 6.7 Mg/yr

* Arid Area default value

PREP. BY: JN
DATE: 3/25/10

Chicago Grade Landfill
NMOC Emission Rate

CHKD. BY: RM
DATE: 3/25/10

TIER 2 NMOC EMISSION RATE CALCULATION FORM

NMOC EMISSION RATE REPORT
ESTIMATED GENERATION RATE FOR 2011
EQUATION 1: TIER 2 CALCULATION FORM

This calculation form presents the equations and default values used in the Tier 2 NMOC emission rate analysis. Completing this form will yield the annual NMOC emission rate, which should be entered in the space provided in the cover letter. Note that the first emission rate equation is for landfills where the annual MSW acceptance rate is not known. The second emission rate equation is to be used if the annual acceptance rate is known. These equations are formulated in a simple and interactive model that may be requested free of charge from the USEPA (Telephone No. 919-541-5742).

Equation 1:

$$M_{NMOC} = 2L_0R\,(e^{(-kc)}-e^{(-kt)})\,(C_{NMOC})\,(3.6 \times 10^{(-9)})$$

where:

M_{NMOC} = total mass emission rate of NMOC from the landfill, Mg/yr

1. Refuse methane generation potential:	170*	L_o (m^3/Mg)
2. Average annual acceptance rate:	37,269	R (Mg/yr)
3. Methane generation rate constant:	0.02*	k (1/yr)
4. Years since closure (c = 0 for active and/or new landfills)	0	c (yrs)
5. Age of landfill:	36	t (yrs)
6. Concentration of NMOC:	303	C_{NMOC} (ppm as hexane)
7. Conversion factor:	3.6 x 10^(-9)	

The equation below has the default values inserted:

M_{NMOC} = 2(170)(167,205) (e^[-(0.02)(0)])-e^[-(0.02)(39)]) (172) (3.6 x 10^(-9))

M_{NMOC} = 7.1 Mg/yr

* Arid Area default value

PREP. BY: JN
DATE: 3/25/10

Chicago Grade Landfill
NMOC Emission Rate

CHKD. BY: RM
DATE: 3/25/10

TIER 2 NMOC EMISSION RATE CALCULATION FORM

NMOC EMISSION RATE REPORT
ESTIMATED GENERATION RATE FOR 2012
EQUATION 1: TIER 2 CALCULATION FORM

This calculation form presents the equations and default values used in the Tier 2 NMOC emission rate analysis. Completing this form will yield the annual NMOC emission rate, which should be entered in the space provided in the cover letter. Note that the first emission rate equation is for landfills where the annual MSW acceptance rate is not known. The second emission rate equation is to be used if the annual acceptance rate is known. These equations are formulated in a simple and interactive model that may be requested free of charge from the USEPA (Telephone No. 919-541-5742).

Equation 1:

$$M_{NMOC} = 2L_oR\,(e^{(-kc)}-e^{(-kt)})\,(C_{NMOC})\,(3.6 \times 10^{(-9)})$$

where:

M_{NMOC} = total mass emission rate of NMOC from the landfill, Mg/yr

1. Refuse methane generation potential:	170*	L_o (m^3/Mg)
2. Average annual acceptance rate:	38,464	R (Mg/yr)
3. Methane generation rate constant:	0.02*	k (1/yr)
4. Years since closure (c = 0 for active and/or new landfills)	0	c (yrs)
5. Age of landfill:	37	t (yrs)
6. Concentration of NMOC:	303	C_{NMOC} (ppm as hexane)
7. Conversion factor:	3.6 x 10^(-9)	

The equation below has the default values inserted:

M_{NMOC} = 2(170)(167,205) (e^[-(0.02)(0)])-e^[-(0.02)(39)]) (172) (3.6 x 10^(-9))

M_{NMOC} = 7.4 Mg/yr

* Arid Area default value

PREP. BY: JN
DATE: 3/25/10

Chicago Grade Landfill
NMOC Emission Rate

CHKD. BY: RM
DATE: 3/25/10

TIER 2 NMOC EMISSION RATE CALCULATION FORM

NMOC EMISSION RATE REPORT
ESTIMATED GENERATION RATE FOR 2013
EQUATION 1: TIER 2 CALCULATION FORM

This calculation form presents the equations and default values used in the Tier 2 NMOC emission rate analysis. Completing this form will yield the annual NMOC emission rate, which should be entered in the space provided in the cover letter. Note that the first emission rate equation is for landfills where the annual MSW acceptance rate is not known. The second emission rate equation is to be used if the annual acceptance rate is known. These equations are formulated in a simple and interactive model that may be requested free of charge from the USEPA (Telephone No. 919-541-5742).

Equation 1:

$$M_{NMOC} = 2L_oR\,(e^{(-kc)}-e^{(-kt)})\,(C_{NMOC})\,(3.6 \times 10^{(-9)})$$

where:

M_{NMOC} = total mass emission rate of NMOC from the landfill, Mg/yr

1. Refuse methane generation potential:	170*	L_o (m^3/Mg)
2. Average annual acceptance rate:	39,639	R (Mg/yr)
3. Methane generation rate constant:	0.02*	k (1/yr)
4. Years since closure (c = 0 for active and/or new landfills)	0	c (yrs)
5. Age of landfill:	38	t (yrs)
6. Concentration of NMOC:	303	C_{NMOC} (ppm as hexane)
7. Conversion factor:	3.6 x 10^(-9)	

The equation below has the default values inserted:

M_{NMOC} = 2(170)(167,205) (e^[-(0.02)(0)])-e^[-(0.02)(39)]) (172) (3.6 x 10^(-9))

M_{NMOC} = 7.8 Mg/yr

* Arid Area default value

PREP. BY: JN
DATE: 3/25/10

Chicago Grade Landfill
NMOC Emission Rate

CHKD. BY: RM
DATE: 3/25/10

TIER 2 NMOC EMISSION RATE CALCULATION FORM

NMOC EMISSION RATE REPORT
ESTIMATED GENERATION RATE FOR 2014
EQUATION 1: TIER 2 CALCULATION FORM

This calculation form presents the equations and default values used in the Tier 2 NMOC emission rate analysis. Completing this form will yield the annual NMOC emission rate, which should be entered in the space provided in the cover letter. Note that the first emission rate equation is for landfills where the annual MSW acceptance rate is not known. The second emission rate equation is to be used if the annual acceptance rate is known. These equations are formulated in a simple and interactive model that may be requested free of charge from the USEPA (Telephone No. 919-541-5742).

Equation 1:

$$M_{NMOC} = 2L_oR\,(e^{(-kc)}-e^{(-kt)})\,(C_{NMOC})\,(3.6 \times 10^{(-9)})$$

where:

M_{NMOC} = total mass emission rate of NMOC from the landfill, Mg/yr

1. Refuse methane generation potential:	170*	L_o (m^3/Mg)
2. Average annual acceptance rate:	40,797	R (Mg/yr)
3. Methane generation rate constant:	0.02*	k (1/yr)
4. Years since closure (c = 0 for active and/or new landfills)	0	c (yrs)
5. Age of landfill:	39	t (yrs)
6. Concentration of NMOC:	303	C_{NMOC} (ppm as hexane)
7. Conversion factor:	3.6 x 10^(-9)	

The equation below has the default values inserted:

M_{NMOC} = 2(170)(167,205) (e^[-(0.02)(0)])-e^[-(0.02)(39)]) (172) (3.6 x 10^(-9))

M_{NMOC} = 8.2 Mg/yr

* Arid Area default value

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1.0 INTRODUCTION

Chicago Grade Landfill Inc. owns and operates the Chicago Grade Landfill (CGL). The CGL contracted Golder Associates Inc. (Golder) to prepare a Tier 2-equivalent non-methane organic compound (NMOC) emission report for the CGL, located at 2290 Homestead Road, Templeton, California. The Landfill is a Class III sanitary landfill that accepts municipal solid waste (MSW) from the City of Templeton and surrounding areas.

The CGL has a design capacity that exceeds the 2.5 million cubic meter (2.5 million megagram (Mg)) threshold specified in 40 Code of Federal Regulations (CFR) Part 60, the New Source Performance Standards (NSPS) Subpart WWW/Emission Guidelines (EG), Subpart Cc. To be subject to all of the conditions of the standards, the generation rate of non-methane organic compounds (NMOCs) must also exceed the 50 Mg per year (Mg/yr) threshold. The purpose of this report is to present the NMCO emission estimates for the CGL and to demonstrate that the NMOC generation rate is less than the threshold.

2.0 SAMPLING PROGRAM

Three landfill gas (LFG) samples were collected from the main header by Horizon Air Measurement Services, Inc. (Horizon) during the most recent flare source test conducted on November 25, 2008. Horizon collected three integrated LFG samples in summa canisters from the main header line to the flare. The sample line was purged with sample gas prior to sampling. The samples were analyzed within the method holding times. The samples were analyzed for total gaseous non-methane organic compounds as measured by EPA Method 25 by AtmAA Inc. in Calabasas, California. The laboratory report is contained in Appendix A. These data were used for the NMOC generation rate calculation.

3.0 NMOC CONCENTRATION AND GENERATION RATE CALCULATIONS

NMOC emissions have been calculated using the results of the laboratory analytical results and the amount of waste in the landfill.

3.1 Analytical Results

The laboratory results for the LFG analysis were presented in the certified analytical report as total NMOC, parts per million by volume (ppmv) as carbon. The laboratory analysis also reported the measured concentration of ethane separately from the other NMOCs. The average value of the NMOC concentration in the LFG (including ethane) was 2160 ppmv as carbon. To convert total NMOC ppmv as carbon to total NMOC ppmv as hexane (for use in the generation rate calculation), the final result was multiplied by the ratio of the molecular weight of carbon to hexane, 0.1395 (12/86). The average value of NMOC concentration in the LFG is, therefore, 302.5 ppmv as hexane. This value has been used to calculate the NMOC generation rate of the CGL.

3.2 NMOC Generation Rate

The year 2010 NMOC generation rate was estimated using the site-specific NMOC concentration and LFG generation estimate for the landfill. The calculation uses emissions estimating equation §60.754(a)(1) shown in Appendix B. The k value (exponential decay factor) of 0.02 provided by the EPA for arid areas (<25 inches precipitation per year) and the default methane generation (L_o) value of 170 cubic meters of methane per megagram of waste in place were specified.

The year-end 2010 estimated total waste in-place mass is 1.39 million tons (1.26 million megagrams). The landfill average annual refuse acceptance rate over a 35-year operating life was calculated as 36,051 Mg/year. Using the measured NMOC concentration and annual average refuse acceptance rate, the estimated 2010 NMOC generation rate was calculated to be 6.7 Mg/yr.

3.3 Projection of NMOC Generation Rates

The results indicate that the NMOC generation rate for the year 2010 is below the regulatory compliance limit of 50 Mg/yr specified in the NSPS/EG. In accordance with the requirements within 40 CFR 60.754 (a)(3)(iii), the owner or operator is required to retest the site-specific NMOC concentration every 5 years using the methods specified in 60.754 (a)(3) unless the projected generation rate exceeds 50 Mg/yr. At that time, the sampling requirements revert to annual testing.

A 5-year projection of NMOC generation rate is presented in Table 1 and indicates no exceedance of the 50 Mg/yr threshold through 2014. The U.S. Environmental Protection Agency (EPA) Landfill Air Emissions Estimation Model (LAEEM) model output for each of the calculated years is presented in Appendix B.

TABLE 1
SUMMARY OF 5-YEAR NMOC GENERATION RATES

Year	Projected Annual Waste Acceptance (Mg)	Total Waste In Place (Mg)	Annual Average Waste Acceptance Rate (Mg/yr)	NMOC Generation Rate (Mg/yr)
2010	78,325	1,261,793	36,051	6.7
2011	79,890	1,341,684	37,269	7.1
2012	81,489	1,423,172	38,464	7.4
2013	83,118	1,506,290	39,639	7.8
2014	84,781	1,591,071	40,797	8.2

Since the generation rate of NMOC is projected to remain below 50 Mg/yr, the next NMOC sampling activity for estimation of NMOC generation rate will be in 2012 – within 5 years of the previous sampling event.

4.0 CLOSING

The material and data in this report were prepared and reviewed by the undersigned.

GOLDER ASSOCIATES INC.

Jason Nettleton
Senior Project Engineer

Richard S. Merrill
Senior Consultant

APPENDIX A
ANALYTICAL RESULTS

AtmAA Inc.
23917 Craftsman Rd., Calabasas, CA 91302 • (818) 223-3277 • FAX (818) 223-8250
environmental consultants
laboratory services

LABORATORY ANALYSIS REPORT

Permanent Gases and TGNMO Analysis in Steel Tank Samples

Report Date: December 22, 2008
Client: Horizon Air Measurement Services
Site: Chicago Grade
Location: Templeton, CA
Project No.: C49-004

Date Received: November 26, 2008
Date Analyzed: December 4, & 16, 2008

ANALYSIS DESCRIPTION

Permanent gases are measured by thermal conductivity detection/gas chromatography (TCD/GC), EPA 3C. TGNMO is measured by Method 25 analysis, FID/TCA, total combustion analysis.

AtmAA Lab No.:	03318-36	03318-37	03318-38
Sample ID:	In R1 Tank F	In R2 Tank L	In R3 Tank J
	(Concentration in %v)		
Methane	35.0	35.5	35.1
Carbon Dioxide	28.9	29.4	29.3
Oxygen	3.82	3.29	3.53
	(Concentration in ppmv)		
Ethane	5.69	6.34	5.36
TGNMO	1820	2400	2240

TGNMO is total gaseous non-methane organics (excluding ethane), reported as ppmvC.
Ethane is reported as ppmvC.

Michael L. Porter
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Site: Chicago Grade
Date Received: November 26, 2008
Date Analyzed: December 4, & 16, 2008

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration in %v)			
Methane	In R1	35.1	34.8	35.0	0.43
	In R2	no repeat			
	In R3	no repeat			
Carbon Dioxide	In R1	29.0	28.7	28.9	0.52
	In R2	no repeat			
	In R3	no repeat			
Oxygen	In R1	3.68	3.95	3.82	3.5
	In R2	no repeat			
	In R3	no repeat			
		(Concentration in ppmv)			
Ethane	In R1	5.90	5.47	5.69	3.8
	In R2	6.22	6.46	6.34	1.9
	In R3	5.21	5.50	5.36	2.7
TGNMO	In R1	1840	1810	1820	0.82
	In R2	2420	2370	2400	1.0
	In R3	2240	2240	2240	0.0

Three steel tank samples, laboratory numbers 03318-(36 - 38), were analyzed for permanent gases. and TGNMO. Agreement between repeat analyses is a measure of precision and is shown in the column "% Difference from Mean". The average % Difference from Mean for 9 repeat measurements from three tank samples is 1.5%.

AtmAA Inc.
23917 Craftsman Rd., Calabasas, CA 91302 • (818) 223-3277 • FAX (818) 223-8250
environmental consultants
laboratory services

LABORATORY ANALYSIS REPORT

Methane and Total Gaseous Non-Methane Organics Analysis in Steel Tank Samples

Report Date: December 22, 2008
Client: Horizon Air Measurement Services
Site: Chicago Grade
Location: Templeton, CA
Project No.: C49-004

Date Received: November 26, 2008
Date Analyzed: December 16, 2008

ANALYSIS DESCRIPTION

Methane, ethane, and TGNMO were measured by Method 25 analysis, (FID/TCA).

AtmAA Lab No.:	03318-39	03318-40	03318-41
Sample ID:	Out R-1	Out R-2	Out R-3
	26	22	20
	(Concentration, ppmv)		
Methane	<1	<1	<1
Ethane	<1	<1	<1
TGNMO	<1	4.07	3.80

TGNMO is total gaseous non-methane organics (excluding ethane), reported as ppmvC.
Ethane is reported as ppmvC.

Michael L. Porter
Laboratory Director

QUALITY ASSURANCE SUMMARY
(Repeat Analyses)

Site: Chicago Grade
Date Received: November 26, 2008
Date Analyzed: December 16, 2008

Components	Sample ID	Repeat Analysis Run #1	Repeat Analysis Run #2	Mean Conc.	% Diff. From Mean
		(Concentration, ppmv)			
Methane	Out R-1	<1	<1	---	---
	Out R-2	<1	<1	---	---
	Out R-3	<1	<1	---	---
Ethane	Out R-1	<1	<1	---	---
	Out R-2	<1	<1	---	---
	Out R-3	<1	<1	---	---
TGNMO	Out R-1	<1	<1	---	---
	Out R-2	4.30	3.84	4.07	5.7
	Out R-3	4.02	3.57	3.80	5.9

Three tank samples, laboratory numbers 03318-(39-41), were analyzed for methane, ethane, and TGNMO. Agreement between repeat analyses is a measure of precision and is shown in the column "% Difference from Mean". The average % Difference from Mean for 2 repeat measurements from three tank samples is 5.8%.

Project No. Chicago Grade Landfill C49-004

Project Location Templeton Ca

Field Logbook No.

Sampler: (Signature) [signature]

Chain of Custody Tape No.

ANALYSES

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA 25 (modified No trap)	O_2, CO_2					REMARKS
Tank F	11/25/08		03318-36		X	X					Flare
" L			37		X	X					inlet R-1
" J			38		X	X					" " 2
" 26			39		X						" " 3
" 22			40		X						Outlet R. 1
" 20			41		X						" 2
											" 3

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	11/25/08	1800	[signature]	11/25/08	1800
[signature]	11/26/08	1415			

Sample Disposal Method:

Disposed of by: (Signature) [signature]

Received for Laboratory: (Signature) [signature] Date 11-26-08 Time 2:15

SAMPLE COLLECTOR

HORIZON AIR MEASUREMENT SERVICES, INC
996 Lawrence Drive, Suite 108
Newbury Park, CA 91320
(805) 498-8781 Fax (805) 498-3173

ANALYTICAL LABORATORY

Atm A.A.
Calabasas

№ 10155

APPENDIX D - Field Data Sheets

TOTAL COMBUSTION ANALYSIS
SCAQMD METHOD 25
FIELD SAMPLING DATA SHEET

Job #: C49-004
Facility: - Chicago Grade
Location: Templeton
Date: 11/25/08
Operator: EL

Control Device: Flare
Sample Location: inlet
Ambient Temp.: 53°
Baro. Pressure: 28.76

Run 1
SAMPLE A

Tank #: F **Trap #:** -
Roto # In 2B **Probe #** -
Initial Vacuum: 2.5
Final Vacuum:
Start Time: 915 - 1005

Run 2
SAMPLE B

Tank #: ~~F~~ L **Trap #:** -
Roto # In 2B **Probe #** -
Initial Vacuum: 2.5
Final Vacuum:
End Time: 1012 - 1052

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00	30	200
05	27.5	
10	25	
15	22.5	
20	20	
25	17.5	
30	15	
35	12.5	
40 end	10	
45		
50		
55		
60		

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00	30	200
05	27.5	
10	25	
15	22.5	
20	20	
25	17.5	
30	15	
35	12.5	
40 end	10	
45		
50		
55		
60		

LEAK RATE

Pre Test : ✓
Post Test: ✓

Pre Test : ✓
Post Test: ✓

TOTAL COMBUSTION ANALYSIS
SCAQMD METHOD 25
FIELD SAMPLING DATA SHEET

Job #: C49-004
Facility: Chicago Grade
Location: Templeton
Date: 11/25/08
Operator: EL

Control Device: Flare
Sample Location: inlet
Ambient Temp.: 58
Baro. Pressure: 28.76

Run 3

SAMPLE A

Tank #: J **Trap #:** –
Roto # 1n 2B **Probe #** –
Initial Vacuum: 2.5
Final Vacuum:
Start Time: 1108

SAMPLE B

Tank #: **Trap #:**
Roto # **Probe #**
Initial Vacuum:
Final Vacuum:
End Time: 1148

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00	30	200
05	27.5	
10	25	
15.	22.5	
20	20	
25	EL 17.5	
30	15	
35	12.5	
40 end	10	
45		
50		
55		
60		

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00		
05		
10		
15		
20		
25		
30		
35		
40		
45		
50		
55		
60		

LEAK RATE

Pre Test : ✓
Post Test: ✓

Pre Test :
Post Test:

TOTAL COMBUSTION ANALYSIS
SCAQMD METHOD 25
FIELD SAMPLING DATA SHEET

Job #: C49-004

Facility: CHICAGO GRADE L.F.

Location: SAN LUIS OBISPO, CA

Date: 11-24-08

Operator: VB

Control Device: FLARE

Sample Location: OUTLET

Ambient Temp.: 53

Baro. Pressure: 28.76

SAMPLE A (Run 1)

Tank #: 26 **Trap #:** —

Roto # OUT 1B **Probe #** 25C 1

Initial Vacuum: ~~-30~~ -28

Final Vacuum: -8

Start Time: 915 - 1005

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00	~~-30~~ -28	
05	-27	
10	-25	
15	-23	
20	-20	
25	-18	
30	-15	
35	-12	
40	-8	
45		
50		
55		
60		

SAMPLE B (Run 2)

Tank #: 22 **Trap #:** —

Roto # OUT 1B **Probe #** 25C 1

Initial Vacuum: ~~-30~~ -28

Final Vacuum: -8

End Time: 1012 - 1052

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00	~~-30~~ -28	
05	-26	
10	-25	
15	-22	
20	-19	
25	-15	
30	-13	
35	-10	
40	-8	
45		
50		
55		
60		

LEAK RATE

Pre Test : ✓
Post Test: ✓

Pre Test : ✓
Post Test: ✓

TOTAL COMBUSTION ANALYSIS
SCAQMD METHOD 25
FIELD SAMPLING DATA SHEET

Job #: C49-004

Facility: CHICAGO GRADE L.F.

Location: SAN LUIS OBISPO, CA

Date: 11-24-08

Operator: VB

Control Device: Flare

Sample Location: OUTLET

Ambient Temp.: 58

Baro. Pressure: 28.76

Run 3

SAMPLE A

Tank #: 20 **Trap #:** —

Roto # 007 1A **Probe #** 25 C 1

Initial Vacuum: -28

Final Vacuum: -8

Start Time: 1108

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00	-28	
05	-26	
10	-24	
15	-20	
20	-17	
25	-15	
30	-12	
35	-11	
40	-8	
45		
50		
55		
60		

SAMPLE B

Tank #: _____ **Trap #:** _____

Roto # _____ **Probe #** _____

Initial Vacuum: _____

Final Vacuum: _____

End Time: 1148

TIME (min.)	VACUUM ("Hg)	FLOW (cc/min)
00		
05		
10		
15		
20		
25		
30		
35		
40		
45		
50		
55		
60		

LEAK RATE

Pre Test : ✓

Post Test: ✓

Pre Test : _____

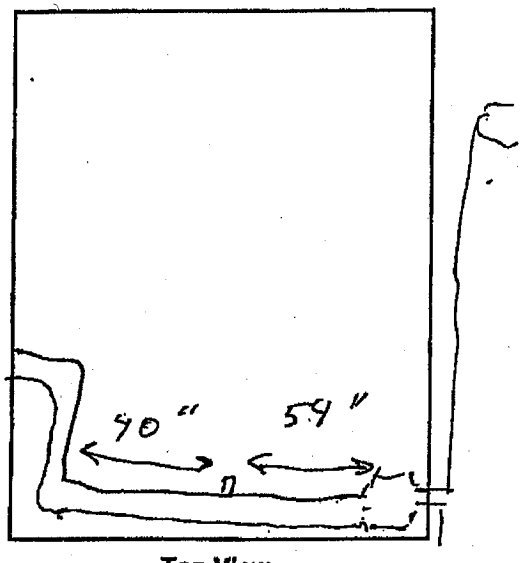
Post Test: _____

VELOCITY DATA SHEET - METHOD 2

Facility:	Chicago	Baro. Press:	28.76	D_1 upstream:	9.0
Source:	LFG inlet	Static Press:	–	D_1 downstream:	6.7
Job #:	649-004	Pitot Tube #:	–	Stack Diameter:	6
Date:	11/25/08	Pitot Tube Type:	–	Leak Check	
Operator:	[illegible]	Magnahelic:	–	Initial:	Final:
Run #:	PRE				

Point #	Position in.	Velocity Head in. H_2O	Stack Temp °F	Cyclonic Flow Angle
A.1				
Average		√ΔP=	T_s=	∠=

Side View



Top View

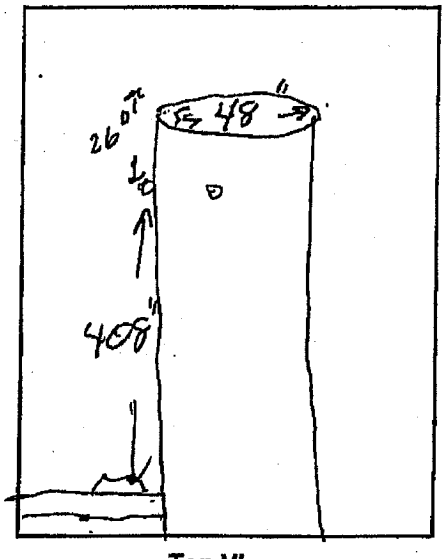
VELOCITY DATA SHEET - METHOD 2

Facility:	Chicago Crude	Baro. Press:	28.76	D_1 upstream:	0.5
Source:	Flare out	Static Press:	–	D_1 downstream:	8.5
Job #:	C49-004	Pitot Tube #:	–	Stack Diameter:	48
Date:	11/25/08	Pitot Tube Type:	–	Leak Check	
Operator:	ES, VB	Magnahelic:	–	Initial:	Final:

Run #: Pre

Point #	Position in.	Velocity Head in. H_2O	Stack Temp °F	Cyclonic Flow Angle
A-8	46.5			
7	43			
6	38.7			
5	32.5			
4	15.5			
3	9.3			
2	5.0			
1	1.5			
B-8				
7				
6				
5				
4				
3				
2				
1				
Average		√ΔP=	T_s=	∠=

Side View



Top View

APPENDIX F - Process Data

FUEL GAS FLOW RATE
FOR LANDFILL FLARES

Facility: Chicago Grade Date: 11/25/08

Job No.: C49 - 004 Run #: 1

Source: Flare

	Time	Fuel Gas Flow Rate (acfm)	Fuel Pressure in. w.g.	~~Fuel~~ Flare Temperature (°F)	
1	R-1 0	248		1608	WB DB
2	10	247		1589	80 95
3	20	247		1617	2.9%
4	30	247		1608	
5	40	248		1600	
6					
7	R-2 0	249		1599	
8	10	249		1584	82 97
9	20	249		~~1~~ 1590	
10	30	249		1596	3%
11	40	249			
12					
13					
14					
15					

Facility: Chicago Grade

Job No.: C49 - 004

Source: Flare

Date: 11/25/08

Run #: 1

	Time Run 3	Fuel Gas Flow Rate (acfm)	Fuel Pressure in. w.g.	~~Fuel~~ Flare Temperature (°F)	
1	0	249		1611	WB DB
2	10	249		1604	83 97
3	20	249		1589	
4	30	249		1608	3.1
5	40	248		1616	
6	~~5~~				
7					
8					
9					
10					
11					
12					
13					
14					
15					

APPENDIX G - Calibration Data

Horizon Air
996 Lawrence Dr Ste 108
Newbury Park, CA
USA 91320

10/10/2008

Praxair Order No. **07784399-00**
Customer Reference No. **8A065**
Intended End User: **HORIZON AIR MEASUREMENTS**

Product Lot/Batch No. **109811508**
Praxair Part No. **EV NICDOXP1-AS**

CERTIFICATE OF ANALYSIS
Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Principle	Analytical Accuracy
Carbon dioxide	**7 %**	**6.98 %**	**L**	**±1 %**
Oxygen	**12 %**	**12.00 %**	**O**	**±1 %**
Nitrogen	**balance**	**balance**		

Analytical Instruments: **Siemens~Ultramat 5E~NDIR~Non-dispersive Infrared**
Siemens~Oxymat 5E~Oxygen Analyzer~Paramagnetic

Cylinder Style: **AS**
Cylinder Pressure @70F: **2000 psig**
Cylinder Volume: **147 ft3**
Valve Outlet Connection: **CGA-590**
Cylinder No(s). **CC 174432**
Comments: **All values not valid below 150 psig.**

Filling Method: **Gravimetric**
Date of Fill: **4/24/2008**
Expiration Date: **10/10/2011**

Analyst: **Keesuk Kim**

QA Reviewer: **George Wahba**

The gas calibration cylinder standard prepared by Praxair Distribution is considered a certified standard. It is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard provided is certified against Praxair Reference Materials which are either prepared by weights traceable to the National Institute of Standards and Technology (NIST) or by using NIST Standard Reference Materials where available.

Note: All expressions for concentration (e.g., % or ppm) are for gas phase, by volume (e.g. ppmv) unless otherwise noted

Key to Analytical Techniques:

A Flame Ionization with Methanizer	B Gas Chromatography with Discharge Ionization Detector	C Gas Chromatography with Electrolytic Conductivity Detector	D Gas Chromatography with Flame Ionization Detector
E Gas Chromatography with Flame Photometric Detector	F Gas Chromatography with Helium Ionization Detector	G Gas Chromatography with Methanizer Carbonizer	H Gas Chromatography with Photoionization Detector
I Gas Chromatography with Reduction Gas Analyzer	J Gas Chromatography with Thermal Conductivity Detector	K Gas Chromatography with Ultrasonic Detector	L Infrared - FTIR or NDIR
M Mass Spectrometry - MS or GC/MS	N Proprietary	O Paramagnetic	P Specific Water Analyzer

PRAXAIR

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

2/4/2008
ES

Horizon Air
996 Lawrence Dr Ste 108
Newbury Park, CA
USA 91320

Praxair Order No. **05107377-00** Product Lot/Batch No. **109724302**
Customer Reference No. **BA065** Praxair Part No. **NI CDOXP80-AS**
Intended End User: **HORIZON AIR MEASUREMENTS**

CERTIFICATE OF ANALYSIS
Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Principle	Analytical Accuracy
Carbon dioxide	12%	12.01 %	V	±1%
Oxygen	20%	19.98 %	V	±1%
Nitrogen	balance	balance		

Analytical Instruments: **Mettler~ID5~Gravimetric~Gravimetric**
Cylinder Style: **AS**
Cylinder Pressure @70F: **2000 psig**
Cylinder Volume: **151 ft3**
Valve Outlet Connection: **CGA-590**
Cylinder No(s). **CC 172059**
Comments: **Values not valid below 150 psig.**

Filling Method: **Gravimetric**
Date of Fill: **8/31/2007**
Expiration Date: **8/31/2010**

Analyst: **Keesuk Kim** QA Reviewer: **Phu Tien Nguyen**

gas calibration cylinder standard prepared by Praxair Distribution is considered a certified standard It is prepared by gravimetric, volumetric, or partial pressure techniques The calibration standard vided is certified against Praxair Reference Materials which are either prepared by weights traceable to the National Institute of Standards and Technology (NIST) or by using NIST Standard Reference erials where available.

e: All expressions for concentration (e g , % or ppm) are for gas phase, by volume (e g , ppmv) unless otherwise noted

lo Analytical Techniques:

	Flame Ionization with Methanizer	B	Gas Chromatography with Discharge Ionization Detector	C	Gas Chromatography with Electrolytic Conductivity Detector	D	Gas Chromatography with Flame Ionization Detector
	Gas Chromatography with Flame Photometric Detector	F	Gas Chromatography with Helium Ionization Detector	G	Gas Chromatography with Methanizer Carbonizer	H	Gas Chromatography with Photoionization Detector
	Gas Chromatography with Reduction Gas Analyzer	J	Gas Chromatography with Thermal Conductivity Detector	K	Gas Chromatography with Ultrasonic Detector	L	Infrared - FTIR or NDIR
	Mass Spectrometry - MS or GC/MS	N	Proprietary	O	Paramagnetic	P	Specific Water Analyzer
	Halocarbon Analyzer	R	Wet Chemical	S	Detector Tube	T	Odor
	Chemiluminescence	V	Gravimetric	W	Electrolytic Cell/Electrochemical	X	Photoionization
	Fluorescence	Z	UV Spectrometry				

ORTANT
information contained herein has been prepared at your request by personnel within Praxair Distribution While we believe the information is accurate within the limits of the analytical methods loyed 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 mation 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 liability of Praxair Distribution, Inc arising out of the use of the mation contained herein exceed the fee established for providing such information

Customer & Ord[illegible] Information:

HORIZO[illegible] MEASUREMENT

Praxair Order Number: 07044754-00
Customer P. O. Number:
Customer Reference Number: WA237

Fill Date:
Part Number: EV NINO12.5MEAS
Lot Number: 109807410
Cylinder Style & Outlet: AS 660
Cylinder Pressure & Volume: 2000 psi 140 cu ft

5B

Certified Concentration:

Expiration Date:		8/4/2010	
Cylinder Number:		CC 110332	Analytical Uncertainty:
12.6	ppm	NITRIC OXIDE	± 1 %
	Balance	NITROGEN	

NOx ppm = 12.6 ppm NOX Values for Reference Only

Certification Information: *Certification Date:* 8/4/2008 *Term:* 24 Months *Expiration Date:* 8/4/2010

This cylinder was certified according to the 1997 EPA Traceability Protocol, Document #EPA-600/R-97/121, using Procedure G1

Do Not Use this Standard if Pressure is less than 150 PSIG

Analytical Data: *(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)*

1. Component: NITRIC OXIDE

Requested Concentration: 12.5 ppm
Certified Concentration: 12.6 ppm
Instrument Used: Thermo Electron 42C S/N 518112467
Analytical Method Chemiluminescence
Last Multipoint Calibration: 7/19/2008

First Analysis Data: Date: 3/21/2008

Z:	0	R:	24.6	C:	12.68	Conc:	12.7
R:	24.6	Z:	0	C:	12.64	Conc:	12.6
Z:	0	C:	12.64	R:	24.6	Conc:	12.6

UOM: ppm Mean Test Assay: 12.6 ppm

Analyzed by: (PN)
Henry Koung

Reference Standard Type: GMIS
Ref. Std. Cylinder # : CC 240520
Ref. Std. Conc: 24.56 ppm
Ref. Std. Traceable to SRM # : vs 2649a
SRM Sample # : 50-G-[illegible]01
SRM Cylinder # : FF 31652

Second Analysis Data: Date: 8/4/2008

Z:	0	R:	24.6	C:	12.49	Conc:	12.5
R:	24.6	Z:	0	C:	12.5	Conc:	12.5
Z:	0	C:	12.5	R:	24.6	Conc:	12.5

UOM: ppm Mean Test Assay: 12.5 ppm

Certified by:
Ben McCauley

PRAXAIR

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

Horizon Air
996 Lawrence Dr Ste 108
Newbury Park, CA 91320
USA

12/11/2006
ES

Praxair Order No. **01094378-00**
Customer Reference No. **PO#9001**
Intended End User: **HORIZON AIR MEASUREMENTS**

Product Lot/Batch No. **109517305**
Praxair Part No. **EV NINX19MP-AS**

CERTIFICATE OF ANALYSIS
Primary Standard

Component	Requested Concentration	Certified Concentration	Analytical Principle	Analytical Accuracy
Nitrogen dioxide (as NOx)	**19 ppm**	**17.9 ppm**	**U**	**±1 %**
Nitrogen	**balance**	**balance**		

Analytical Instruments: **Thermo Environmental~42H~Chemiluminescence~Chemiluminescence**
Cylinder Style: **AS**
Cylinder Pressure @70F: **1800 psig.**
Cylinder Volume: **127 ft3**
Valve Outlet Connection: **CGA-660**
Cylinder No(s). **CC 141408**
Comments: **All values not valid below 150 psig. NO=0.6 ppm value for reference use only. Last certified conc. on 06/02/06 was NO2=17.9 ppm.**

Filling Method: **Gravimetric**
Date of Fill: **6/22/2005**
Expiration Date: **12/6/2008**

Analyst: **Henry Koung**

QA Reviewer: **Phu Tien Nguyen**

he gas calibration cylinder standard prepared by Praxair Distribution is considered a certified standard. It is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard rovided is certified against Praxair Reference Materials which are either prepared by weights traceable to the National Institute of Standards and Technology (NIST) or by using NIST Standard Reference aterials where available.

ote: All expressions for concentration (e.g., % or ppm) are for gas phase, by volume (e.g., ppmv) unless otherwise noted.

y to Analytical Techniques:

- Flame Ionization with Methanizer
- B Gas Chromatography with Discharge Ionization Detector
- C Gas Chromatography with Electrolytic Conductivity Detector
- D Gas Chromatography with Flame Ionization Detector
- Gas Chromatography with Flame Photometric Detector
- F Gas Chromatography with Helium Ionization Detector
- G Gas Chromatography with Methanizer Carbonizer
- H Gas Chromatography with Photoionization Detector
- Gas Chromatography with Reduction Gas Analyzer
- J Gas Chromatography with Thermal Conductivity Detector
- K Gas Chromatography with Ultrasonic Detector
- L Infrared - FTIR or NDIR
- Mass Spectrometry - MS or GCMS
- T Total Hydrocarbon Analyzer
- N Proprietary
- O Paramagnetic
- P Specific Water Analyzer
- Chemiluminescence
- R Wet Chemical
- S Detector Tube
- T Odor
- Photoluminescence
- V Gravimetric
- W Electrolytic Cell/Electrochemical
- X Photoionization
- Z UV Spectrometry

PORTANT

e information contained herein has been prepared at your request by personnel within Praxair Distribution. While we believe the information is accurate within the limits of the analytical methods ployed 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 rmation 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 liability of Praxair Distribution, Inc. arising out of the use of the rmation contained herein exceed the fee established for providing such information.

Customer & Order Information:

HORIZON MEASUREMENT

Praxair Order Number: 07044767-00
Customer P. O. Number:
Customer Reference Number: WA237

Fill Date:
Part Number: EV NINO24ME-AS
Lot Number: 109810506
Cylinder Style & Outlet: AS 660
Cylinder Pressure & Volume: 2000 psi 140 cu ft

Certified Concentration:

Expiration Date:	8/4/2010		
Cylinder Number:	SA 6281		Analytical Uncertainty:
24	ppm	NITRIC OXIDE	± 1 %
Balance		NITROGEN	

NOx ppm = 24.2 ppm NOX Values for Reference Only

Certification Information: *Certification Date:* 8/4/2008 *Term:* 24 Months *Expiration Date:* 8/4/2010

This cylinder was certified according to the 1997 EPA Traceability Protocol, Document #EPA-600/R-97/121, using Procedure G1

Do Not Use this Standard if Pressure is less than 150 PSIG

Analytical Data: *(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)*

1. Component: NITRIC OXIDE

Requested Concentration:	24 ppm
Certified Concentration:	24 ppm
Instrument Used:	Thermo Electron 42C S/N 518112467
Analytical Method:	Chemiluminescence
Last Multipoint Calibration:	7/19/2008

First Analysis Data: Date: 4/21/2008

Z:	0	R:	24.6	C:	24.1	Conc:	24.1
R:	24.6	Z:	0	C:	24	Conc:	24
Z:	0	C:	24	R:	24.6	Conc:	24

UOM: ppm Mean Test Assay: 24 ppm

Analyzed by: Henry K (FF)
Henry Koting

Reference Standard Type:	GMIS
Ref. Std. Cylinder #:	CC 240520
Ref. Std. Conc:	24.56 ppm
Ref. Std. Traceable to SRM #:	vs 2629a
SRM Sample #:	50-G-101
SRM Cylinder #:	FF 31652

Second Analysis Data: Date: 8/4/2008

Z:	0	R:	24.6	C:	24	Conc:	24
R:	24.6	Z:	0	C:	24.1	Conc:	24.1
Z:	0	C:	24	R:	24.6	Conc:	24

UOM: ppm Mean Test Assay: 24 ppm

Certified by:
Ben McCauley

PRAXAIR

DocNumber: 00000008978

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

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

HORIZON AIR MEASUREMENT

Praxair Order Number: 07796400-00
Customer P. O. Number: 9439
Customer Reference Number: 8A065

Fill Date:
Part Number: EV NICONOE19-AS
Lot Number: 109816407
Cylinder Style & Outlet: AS 660
Cylinder Pressure & Volume: 2000 psi 140 cu ft

Certified Concentration:

Expiration Date: 10/14/2010
Cylinder Number: CC 155632

			Analytical Uncertainty:
51.6	ppm	CARBON MONOXIDE	± 1 %
50.8	ppm	NITRIC OXIDE	± 1 %
	Balance	NITROGEN	

NOx ppm = 50.9 ppm NOX Values for Reference Only

Certification Information: *Certification Date:* 10/14/2008 *Term:* 24 Months *Expiration Date:* 10/14/2010

This cylinder was certified according to the 1997 EPA Traceability Protocol, Document #EPA-600/R-97/121, using Procedure G1

Do Not Use this Standard if Pressure is less than 150 PSIG

CO FIRST ANALYSIS DONE W/49.07 ppm GMIS. NO FIRST ANALYSIS DONE W/50.2 ppm GMIS.

Analytical Data: *(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)*

1. Component: CARBON MONOXIDE

Requested Concentration: 50 ppm
Certified Concentration: 51.6 ppm
Instrument Used: HORIBA VIA-510 578 876 015
Analytical Method: INFRARED
Last Multipoint Calibration: 10/12/2008

Reference Standard Type: GMIS
Ref. Std. Cylinder # : SA 14358
Ref. Std. Conc: 49.07 ppm
Ref. Std. Traceable to SRM # : vs. 1678c
SRM Sample # : 4-J-21
SRM Cylinder # : XF001068b

First Analysis Data: Date: 6/19/2008

Z:	0	R:	48.8	C:	51.4	Conc:	51.7
R:	48.8	Z:	0	C:	51.3	Conc:	51.6
Z:	0	C:	51.3	R:	48.8	Conc:	51.6

UOM: ppm Mean Test Assay: 51.6 ppm

Second Analysis Data: Date: 10/14/2008

Z:	0	R:	49.1	C:	51.4	Conc:	51.4
R:	49.1	Z:	0	C:	51.6	Conc:	51.6
Z:	0	C:	51.5	R:	49.1	Conc:	51.5

UOM: ppm Mean Test Assay: 51.5 ppm

2. Component: NITRIC OXIDE

Requested Concentration: 50 ppm
Certified Concentration: 50.0 ppm
Instrument Used: Thermo Electron 42C S/N 516112467
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 9/19/2008

Reference Standard Type: GMIS
Ref. Std. Cylinder # : CC 24541
Ref. Std. Conc: 50.3 ppm
Ref. Std. Traceable to SRM # : vs 1683b
SRM Sample # : 45-U-65
SRM Cylinder # : CAL015626

First Analysis Data: Date: 6/19/2008

Z:	0	R:	49.7	C:	50.2	Conc:	50.7
R:	49.7	Z:	0	C:	50.2	Conc:	50.7
Z:	0	C:	50.2	R:	49.7	Conc:	50.7

UOM: ppm Mean Test Assay: 50.7 ppm

Second Analysis Data: Date: 10/14/2008

Z:	0	R:	50.3	C:	50.9	Conc:	50.9
R:	50.3	Z:	0	C:	50.9	Conc:	50.9
Z:	0	C:	50.9	R:	50.3	Conc:	50.9

UOM: ppm Mean Test Assay: 50.9 ppm

Analyzed by: Peter Ngo

Certified by: Jack Fu

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 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.

Customer & [illegible]er Information:
HOR[illegible] AIR MEASUREMENT

Praxair Order Number: 06537764-00
Customer P. O. Number: 01525319
Customer Reference Number: 6537749-00

Fill Date:
Part Number: EV NICONOE34-AS
Lot Number: 109725602
Cylinder Style & Outlet: AS 660
Cylinder Pressure & Volume: 2000 psi 140 cu ft

Certified Concentration:

Expiration Date:		6/17/2010	
Cylinder Number:		CC 244266	Analytical Uncertainty:
79.9	ppm	CARBON MONOXIDE	± 1 %
79.4	ppm	NITRIC OXIDE	± 1 %
	Balance	NITROGEN	

NOx ppm = 80.1 ppm NOX Values for Reference Only

Certifcation Information: *Certification Date:* 6/17/2008 *Term:* 24 Months *Expiration Date:* 6/17/2010

This cylinder was certified according to the 1997 EPA Traceability Protocol, Document #EPA-600/R-97/121, using Procedure G1
Do Not Use this Standard if Pressure is less than 150 PSIG
1ST ANALYSIS WAS DONE USING 103.3 ppm CO GMIS & 99.4 ppm NO GMIS.

Analytical Data: *(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)*

1. Component: CARBON MONOXIDE

Requested Concentration: 80 ppm
Certified Concentration: 79.9 ppm
Instrument Used: HORIBA, VIA-510 576 876 015
Analytical Method: INFRARED
Last Multipoint Calibration: 5/17/2008

Reference Standard Type: GMIS
Ref. Std. Cylinder # : SA 14444
Ref. Std. Conc: 100.3 ppm
Ref. Std. Traceable to SRM # : vs. 1679c
SRM Sample # : 3-I-45
SRM Cylinder # : FF28593

First Analysis Data: Date: 9/17/2007

Z:	0	R:	103.3	C:	79.9	Conc:	79.9
R:	103.3	Z:	0	C:	80	Conc:	80
Z:	0	C:	79.9	R:	103.3	Conc:	79.9

UOM: ppm Mean Test Assay: 79.9 ppm

Second Analysis Data: Date: 6/17/2008

Z:	0	R:	100.3	C:	79.9	Conc:	79.9
R:	100.3	Z:	0	C:	79.8	Conc:	79.8
Z:	0	C:	79.8	R:	100.3	Conc:	79.8

UOM: ppm Mean Test Assay: 79.8 ppm

2. Component: NITRIC OXIDE

Requested Concentration: 80 ppm
Certified Concentration: 79.4 ppm
Instrument Used: Thermo Electron 42i S/N 072602432C
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 5/17/2008

Reference Standard Type: GMIS
Ref. Std. Cylinder # : CC 244839
Ref. Std. Conc: 98.5 ppm
Ref. Std. Traceable to SRM # : vs. 1687b
SRM Sample # : 41-J-13
SRM Cylinder # : FF14758

First Analysis Data: Date: 9/17/2007

Z:	0	R:	847	C:	680	Conc:	79.8
R:	847	Z:	0	C:	679	Conc:	79.7
Z:	0	C:	677	R:	846	Conc:	79.5

UOM: ppm Mean Test Assay: 79.7 ppm

Second Analysis Data: Date: 6/17/2008

Z:	0	R:	98.6	C:	79	Conc:	78.9
R:	98.5	Z:	0	C:	79.2	Conc:	79.2
Z:	0	C:	79.3	R:	98.5	Conc:	79.3

UOM: ppm Mean Test Assay: 79.1 ppm

Analyzed by: KOMAL PATEL

Certified by: Jack Fu

Chicago Grade Landfill
Insignificant Activities

a	b
Equipment Description	**Basis of Insignificance**
wood waste stockpile	Rule 201.A.1
leachate storage tanks	Rule 201.A.1
maintenance machining equipment	Rule 201.A.1
household hazardous waste facility	Rule 201.A.1
grounds maintenance equipment	Rule 201.B.1
internal combustion engines rated <50 bhp	Rule 201.B.1
domestic hot water heaters	Rule 201.B.2
graders, loaders, utility trucks, and other mobile equipment	Rule 201.C.1
storage tanks with <250 gallon capacity	Rule 201.I.1
diesel storage tanks used for vehicle refueling	Rule 201.I.3
lubricating oil storage	Rule 201.I.8
gasoline storage tanks used for vehicle refueling	Rule 201.I.9
architectural surface coating equipment	Rule 201.J.1
cold solvent cleaners	Rule 201.J.2
comfort air conditioning	Rule 201.M.1
pressure washer cleaning equipment	Rule 201.M.4
comfort space heating	Rule 201.M.5
welding equipment	Rule 201.N.2