San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

JUL 06 2015

Mr. Ahmad Alkhayyat
County of Madera - Fairmead Landfill
2037 W Cleveland Ave
Madera, CA 93637

Re: Notice of Preliminary Decision – ATC / Certificate of Conformity
District Facility # C-2913
Project # C-1151227

Dear Mr. Alkhayyat:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The facility proposes to install a 45 MMBtu/hr enclosed flare.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Mike Tollstrup, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Install 45 MMBtu/hr Landfill Gas-Fired Flare

Facility Name:	County of Madera - Fairmead Landfill	Date:	June 1, 2015
Mailing Address:	2037 W Cleveland Ave Madera, CA 93637	Engineer:	Stanley Tom
		Lead Engineer:	Joven Refuerzo
Contact Person:	Ahmad M. Alkhayyat		
Telephone:	(559) 675-7811 ext 3527		
Application #(s):	C-2913-1-6		
Project #:	C-1151227		
Deemed Complete:	April 30, 2015		

I. Proposal

County of Madera – Fairmead Landfill is proposing to install a 45 MMBtu/hr landfill gas (LFG) fired flare to replace the existing 33.33 MMBtu/hr LFG-fired flare, retain the 33.33 MMBtu/hr flare as backup. In addition, the applicant is proposing to install additional landfill gas extraction wells. Over time, the LFG generation zone "migrates" throughout the landfill thus requiring the collection system to be expanded to areas of a landfill that are expected to have elevated concentration of gas. Because the maximum LFG flowrate used to design and size the gas collection system is incorporated into the air permit, and the potential emissions from the LFG collection and control system are based on this permitted maximum LFG flowrate, the permitted maximum LFG flowrate will remain the same with the addition of landfill gas extraction wells.

The facility currently has non-methane organic compound (NMOC) emissions below 50 Mg/year. 40 CFR Part 60 Subpart WWW Section 60.752(b)(iii)(B) requires the control system to be designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3% oxygen. Although the landfill is not yet subject to Subpart WWW, the applicant has proposed a flare system with a VOC destruction efficiency of 98% by weight which will be source tested upon startup.

The facility has proposed to perform annual NMOC emissions for the landfill to determine Subpart WWW applicability.

Fairmead Landfill has received their Title V Permit. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied

prior to the issuance of the Authority to Construct permit. Fairmead Landfill must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4202 Particulate Matter Emission Rate (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4311 Flares (6/18/09)
Rule 4642 Solid Waste Disposal Sites (4/16/98)
Rule 4651 Volatile Organic Compounds from Decontamination of Soil (9/20/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines
California Code of Regulations Title 17, Subchapter 10, Article 4, Subarticle 6, sections 95460 through 95476: Methane Emissions from Municipal Solid Waste Landfills

III. Project Location

The project is located at 21739 Road 19 in Chowchilla, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Fairmead Landfill is a Class III Municipal Solid Waste (MSW) landfill owned by Madera County. Madera County contracts the day-to-day site development and refuse disposal operations to Madera Disposal Systems, Inc. (MDSI), a subsidiary of Waste Connections, Inc. (WCI) who operates the landfill.

The landfill is currently permitted and operates as a Class III MSW landfill. As a Class III landfill, only non-hazardous industrial wastes, non-hazardous construction/demolition wastes, agricultural, asbestos (non-friable), and wood wastes are currently accepted at the Fairmead Landfill.

Fairmead Landfill is currently approximately 121 acres with a design capacity of approximately 13.1 million cubic yards.

V. Equipment Listing

Permit #	Pre-Project Equipment Description
C-2913-1-5	13.1 MILLION CUBIC YARD (40.4 ACRES) MUNICIPAL SOLID WASTE LANDFILL WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A CALLIDUS TECHNOLOGIES 33.33 MMBTU/HR ENCLOSED FLARE

Permit #	ATC Equipment Description
C-2913-1-6	MODIFICATION OF 13.1 MILLION CUBIC YARD (40.4 ACRES) MUNICIPAL SOLID WASTE LANDFILL WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A CALLIDUS TECHNOLOGIES 33.33 MMBTU/HR ENCLOSED FLARE: INSTALLATION OF 45 MMBTU/HR PERENNIAL ENERGY PRIMARY ENCLOSED FLARE A TO REPLACE EXISTING 33.33 MMBTU/HR FLARE, RETAIN THE 33.33 MMBTU/HR FLARE AS BACKUP, AND INSTALL ADDITIONAL GAS EXTRACTION WELLS

Permit #	Post-Project Equipment Description
C-2913-1-6	13.1 MILLION CUBIC YARD (40.4 ACRES) MUNICIPAL SOLID WASTE LANDFILL WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY 45 MMBTU/HR PERENNIAL ENERGY PRIMARY ENCLOSED FLARE AND A CALLIDUS TECHNOLOGIES 33.33 MMBTU/HR BACKUP ENCLOSED FLARE

VI. Emission Control Technology Evaluation

As part of the landfill design, Fairmead Landfill has included a horizontal gas collection system as part of the bottom liner system. These were installed at the same time as each module of the expansion area of the landfill is constructed. As the waste in the expansion landfill area ages, it is the deepest waste that will begin to generate appreciable quantities of landfill gas first. As such, the bottom layer gas collection system will be able to intercept this gas.

As each additional module of the expansion area is approved for construction, a similar landfill gas collection component will be included. Each horizontal collection pipe in the

landfill will be connected to vertical riser pipe(s), which will appear above ground near the edge of the landfill.

A valve, sample port, and wellhead assembly has been installed on each riser pipe to allow collection of gas, testing, and control of landfill gas flow and vacuum for the collector. When the collection system is actuated, the landfill gas is drawn from the collection piping using a landfill gas blower and routed to the current landfill gas capture and control system which is currently controlled with a 33.33 MMBtu/hr flare for VOC control. The flare will reduce VOCs by 98% by weight or to an outlet concentration of 20 parts per million by volume (ppmv) as hexane at 3% oxygen per 40 CFR Part 60 Subpart WWW. The 33.33 MMBtu/hr flare will be replaced with a 45 MMBtu/hr flare and the existing 33.33 MMBtu/hr flare will be used as backup.

The applicant has proposed a VOC collection efficiency of 85% by weight. AP-42 Section 2.4.4.2 (1/98) states collection efficiencies range from 60-85%. To justify the 85% collection efficiency assumption, the applicant has proposed to follow Subpart WWW surface monitoring requirements as explained in the Rule 2201 monitoring section of this evaluation.

Once the site exceeds NMOC emission rate of 50 Mg/year, the gas collection and control system (GCCS) will be expanded to include additional vertical and/or horizontal collection components as necessary to meet 40 CFR Part 60 Subpart WWW.

Flare

The Landfill Gas Extraction System (LGES) uses an enclosed flare. According to the applicant, the flare is expected to have a 98 to 99% VOC destruction efficiency when operating at the design temperature range of 1,550 to 1,800 °F.

An electrical pump creates a vacuum on the subsurface soil, drawing landfill gases through buried, slotted, PVC piping. The collected vapors are ducted through the piping to a flare.

VII. General Calculations

A. Assumptions

- Facility operates 24 hours per day (worst-case)
- For PM_{10} emissions calculations, the facility is assumed to cover the entire landfill with soil one time during the year, which for this facility is approximately 121 acres (worst-case District assumption to maximize PM_{10} emissions)
- Final Cover Thickness = 4 feet
- Soil density = 120 lb/cu ft
- USEPA Landfill Gas Emissions Model (LandGEM) will be used to calculate PE1 and PE2

- The permitted amount of waste accepted to facility is 1,100 tons/day and 401,500 tons/yr (current PTO)
- Methane generation potential "L_o" = 170 cubic meters per megagram (LandGEM default value for estimating NMOC emissions)
- Methane generation rate constant "k" = 0.020 per year (AP-42 default for dry sites)
- Molecular weight of Hexane = 86.18 lb/lb-mole (AP-42, 11/98, Section 2.4.4.2)
- Standard molar volume of gas = 379.5 ft^3/lb-mole (universal constant)
- NMOC concentration = 4,000 ppmv as hexane (worst-case, proposed by the Applicant)
- VOC concentration = 232 ppmv as hexane (worst-case, proposed by the Applicant)
- 1 Mg = 2,204.623 lb
- VOC collection system efficiency = 85% (as proposed by Applicant per AP-42 (11/98) Section 2.4.4.2)
- VOC control efficiency of the flare: 98% (current PTO)
- Pre-project flare heat input limit = 33.33 MMBtu/hr (current PTO)
- Post-project flare heat input limit for the 45 MMBtu/hr flare = 45 MMBtu/hr (per applicant)
- Post-project flare heat input limit for the 33.33 MMBtu/hr flare = 33.33 MMBtu/hr (per applicant)
- 33.33 MMBtu/hr flare exhaust flow rate = 8,786 scfm (per applicant)
- 45 MMBtu/hr flare exhaust flow rate = 1,659 scfm (per applicant)

B. Emission Factors

Landfill VOC Emissions

As shown in Attachment B, the maximum uncontrolled VOC emission rate is 231.9 Mg/year (25.56 ton/year) based on a worst-case waste acceptance rate of 401,500 tons/year. This value is based upon an uncontrolled landfill and a worst case VOC concentration of 232 ppmv as hexane.

There is no proposed change in landfill VOC emissions in this project as the waste acceptance or VOC concentration is not being modified.

PM_{10} Emissions from Earthmoving Activities – Final Covering

PM_{10} emissions are calculated according to US EPA's AP-42 equation for material handling and drop-equation in Section 13.2.4.

$$E = k(0.0032) \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

Where k is equal to 1 (worst-case particle size), U is equal to 15 mph (worst-case for SJV wind patterns), and M is equal to 7% (driest the soil would be during summer months per applicant).

$$EF = (1)(0.0032) \frac{\left(\frac{15}{5}\right)^{1.3}}{\left(\frac{7}{2}\right)^{1.4}} = \textbf{0.0023 lbs PM10/ton} \text{ of soil moved}$$

Flare Emission Factors

Existing 33.33 MMBtu/hr Flare

Flare Emission Factors Landfill Gas Fuel (33.33 MMBtu/hr Flare)		
Pollutant	lb/MMBtu	Source
NO_X	0.06	Current PTO
SO_X	0.033	Current PTO
PM_{10}	0.02	Current PTO
CO	0.2	Current PTO
VOC	20 ppmv or 98% control efficiency	Current PTO

New 45 MMBtu/hr Flare (or 33.33 MMBtu/hr backup flare)

Flare Emission Factors Landfill Gas Fuel (45 MMBtu/hr Flare or 33.33 MMBtu/hr backup flare)		
Pollutant	lb/MMBtu	Source
NO_X	0.05	Applicant Proposed
SO_X	0.033	Applicant Proposed
PM_{10}	0.02	Applicant Proposed
CO	0.2	Applicant Proposed
VOC	20 ppmv or 98% control efficiency	Applicant Proposed

For the 33.33 MMBtu/hr backup flare, although the pre-project NOx emission factor is limited to 0.06 lb/MMBtu, the applicant has proposed to limit the flare to a post-project NOx emission factor of 0.05 lb/MMBtu to be consistent with the new 45 MMBtu/hr flare.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Landfill PM_{10} Emissions

Soil moved = 121 acres x 43,560 sq ft/acre x 4 ft x 120 lb/cu ft x ton/2000 lb
= 1,264,982.4 tons

Annual PM_{10} = 1,264,982.4 tons x 0.0023 lb-PM_{10}/ton = 2,909 lb-PM_{10}/year

Assuming 365 days per year operation,

Daily PM_{10} = 2,909 lb-PM_{10}/year ÷ 365 days/year = 8.0 lb-PM_{10}/day

Pre-Project Potential to Emit (PE1)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
PM_{10}	8.0	2,909

Landfill VOC Emissions

The facility has provided an updated LandGEM model run with updated waste acceptance rate values (see Attachment B) and the worst case annual VOC emissions (occurs at year 2021),

Annual VOC emissions = 23.19 Mg/year x 2204.623 lb/Mg = 51,125 lb/year
Daily VOC emissions = 51,125 lb/year ÷ 365 day/year = 140.1 lb/day

When specific conditions are met, the collectors (wells) are opened and the landfill gas is sent to the control device. In addition, the applicant performs surface monitoring per 40 CFR Part 60 Subpart WWW to ensure the 85% collection efficiency assumption is justified. AP-42 (11/98) Section 2.4.4.2 states typical gas collection efficiencies range from 60-85%. The flare unit has a VOC control efficiency requirement of 98%. Therefore, the VOC emissions are as follows:

Daily VOC emissions = 140.1 lb/day x (1-0.85) + 140.1 lb/day x 0.85 x (1-0.98)
= 23.4 lb-VOC/day

Annual VOC emissions = 51,125 lb/year x (1-0.85) + 51,125 lb/year x 0.85 x (1-0.98)
= 8,538 lb-VOC/year

33 MMBtu/hr Flare Emissions

40 CFR Part 60 Subpart WWW allows for compliance to be shown via 98% control efficiency or 20 ppmv VOC in the exhaust. Comparison of 98% control efficiency to 20 ppmv for VOC emissions is calculated as follows:

Daily VOC emissions = (effluent VOC ppmv) x (lb to lb-mole conversion) x (lb-mole/379.5 ft^3) x (effluent flowrate) x (minutes per day)

Daily VOC emissions = (20 parts/1,000,000 parts) x (86.18 lb/lb-mole) x (lb-mole/379.5 ft^3) x (8,786 ft^3/min) x (1,440 min/day)

Daily VOC emissions = 57.5 lb/day

Annual VOC emissions = Daily VOC emissions x 365 days/year
= 57.5 lb/day x 365 days/year
= 20,974 lb/year

Therefore, the 20 ppmv VOC emissions requirement is the worst case scenario. However per the current PTO, the applicant has proposed to limit the facility-wide emissions to 19,999 lb/year. The applicant will monitor the VOC emissions from the facility and submit an ATC application to supply the required ERCs when the facility exceeds the offset threshold for VOC emissions.

Pre-Project Potential to Emit (PE1)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
VOC	57.5	19,999

Combustion Emissions

The PE1 for each pollutant is calculated with the following equation:

Daily PE1 (lb/day) = Flare Heat Input (MMBtu/hr) x EF (lb/MMBtu) x 24 hr/day
Annual PE1 (lb/year) = Flare Heat Input (MMBtu/hr) x EF (lb/MMBtu) x 8,760 hr/day

Daily Pre-Project Potential to Emit - Flare										
NO_X	0.06	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	24	(hr/day)	=	48.0 (lb/day)
SO_X	0.033	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	24	(hr/day)	=	26.4 (lb/day)
PM_{10}	0.02	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	24	(hr/day)	=	16.0 (lb/day)
CO	0.2	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	24	(hr/day)	=	160.0 (lb/day)

Annual Pre-Project Potential to Emit - Flare											
NO_X	0.06	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	8760	(hr/yr)	=	17,518	(lb/yr)
SO_X	0.033	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	8760	(hr/yr)	=	9,635	(lb/yr)
PM_{10}	0.02	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	8760	(hr/yr)	=	5,839	(lb/yr)
CO	0.2	(lb/MMBtu)	x	33.33	(MMBtu/hr)	x	8760	(hr/yr)	=	58,394	(lb/yr)

Total

PM_{10} Emissions = Flare Emissions + Landfill Emissions

Pre-Project Potential to Emit (PE1) Summary		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NOx	48.0	17,518
SOx	26.4	9,635
PM_{10}	16.0 + 8.0 = 24.0	5,839 + 2,909 = 8,748
CO	160.0	58,394
VOC	57.5	19,999

2. Post-Project Potential to Emit (PE2)

Landfill PM_{10} Emissions

The landfill area is not changing and applicant is not proposing a change in the amount of cover soil. Therefore, PE2 = PE1.

Landfill VOC Emissions

The facility is not proposing a change in the waste acceptance rate, the NMOC concentration, or the VOC collection and control efficiency values. Therefore, PE2 = PE1.

45 MMBtu/hr Flare Emissions

40 CFR Part 60 Subpart WWW allows for compliance to be shown via 98% control efficiency or 20 ppmv VOC in the exhaust. Comparison of 98% control efficiency to 20 ppmv for VOC emissions is calculated as follows:

Daily VOC emissions = (effluent VOC ppmv) x (lb to lb-mole conversion)
x (lb-mole/379.5 ft^3) x (effluent flowrate) x (minutes per day)

Daily VOC emissions = (20 parts/1,000,000 parts) x (86.18 lb/lb-mole)
x (lb-mole/379.5 ft^3) x (1,659 ft^3/min) x (1,440 min/day)

Daily VOC emissions = 10.9 lb/day

Annual VOC emissions = Daily VOC emissions x 365 days/year
= 10.9 lb/day x 365 days/year
= 3,960 lb/year

Therefore, the 98% control efficiency VOC emissions requirement is the worst case scenario and will be established as the potential to emit for this operation.

Post-Project Potential to Emit (PE2)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
VOC	23.4	8,538

Combustion Emissions (45 MMBtu/hr flare)

The PE2 for each pollutant is calculated with the following equation:

Daily PE2 (lb/day) = Flare Heat Input (MMBtu/hr) x EF (lb/MMBtu) x 24 hr/day
Annual PE2 (lb/year) = Flare Heat Input (MMBtu/hr) x EF (lb/MMBtu) x 8,760 hr/day

Daily Post-Project Potential to Emit - Flare											
NO_X	0.05	(lb/MMBtu)	x	45	(MMBtu/hr)	x	24	(hr/day)	=	54.0	(lb/day)
SO_X	0.033	(lb/MMBtu)	x	45	(MMBtu/hr)	x	24	(hr/day)	=	35.6	(lb/day)
PM_{10}	0.02	(lb/MMBtu)	x	45	(MMBtu/hr)	x	24	(hr/day)	=	21.6	(lb/day)
CO	0.2	(lb/MMBtu)	x	45	(MMBtu/hr)	x	24	(hr/day)	=	216.0	(lb/day)

Annual Post-Project Potential to Emit - Flare											
NO_X	0.05	(lb/MMBtu)	x	45	(MMBtu/hr)	x	8,760	(hr/yr)	=	19,710	(lb/yr)
SO_X	0.033	(lb/MMBtu)	x	45	(MMBtu/hr)	x	8,760	(hr/yr)	=	13,009	(lb/yr)
PM_{10}	0.02	(lb/MMBtu)	x	45	(MMBtu/hr)	x	8,760	(hr/yr)	=	7,884	(lb/yr)
CO	0.2	(lb/MMBtu)	x	45	(MMBtu/hr)	x	8,760	(hr/yr)	=	78,840	(lb/yr)

<u>33.33 MMBtu/hr Flare Emissions</u>

The backup flare emissions are less than the primary 45 MMBtu/hr flare emissions for all pollutants. Therefore, the primary 45 MMBtu/hr emissions will be used for worst case scenario as the post-project potential to emit in this project.

<u>Total</u>

PM_{10} Emissions = Flare Emissions + Landfill Emissions

Post-Project Potential to Emit (PE2) Summary		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NOx	54.0	19,710
SOx	35.6	13,009
PM_{10}	21.6 + 8.0 = 29.6	7,884 + 2,909 = 10,793
CO	216.0	78,840
VOC	23.4	8,538

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the Pre-project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-3839-1-5	17,518	9,635	8,748	58,394	19,999
Pre Project SSPE (SSPE1)	17,518	9,635	8,748	58,394	19,999

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the post project Stationary Source Potential to Emit (SSPE2) is the sum of the Potential to Emit of the post-project Authority to Construct for new or modified units, provided that the ATC will include new conditions canceling the existing ATC or PTO for those units, otherwise the ATC or PTO with the highest potential emissions is used plus all existing units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) with the highest potential emissions at the Stationary Source, added to the quantity of emission reduction credits (ERC) that have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
ATC C-3839-1-6	19,710	13,009	10,793	78,840	8,538
Post Project SSPE (SSPE2)	19,710	13,009	10,793	78,840	8,538

5. Major Source Determination

Rule 2201 Major Source Determination

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Pre-Project SSPE (SSPE1)	17,518	9,635	8,748	58,394	19,999
Post Project SSPE (SSPE2)	19,710	13,009	10,793	78,840	8,538
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	8.8	10.0	4.8	29.2	4.4	4.4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing major source for PSD for at least one pollutant. Therefore, the facility is not an existing major source for PSD.

6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project, to calculate the QNEC and if applicable, to determine the amount of offsets required.

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historical Actual Emissions (HAE), calculated pursuant to Rule 2201

Flare

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

Landfill

PM_{10}

Unit Located at a Non-Major Source
As shown in Section VII.C.5 above, the facility is not a major source for PM_{10} emissions.

Therefore Baseline Emissions (BE) are equal to the Pre-project Potential to Emit (PE1).

VOC

Unit Located at a Non-Major Source
As shown in Section VII.C.5 above, the facility is not a major source for VOC emissions.

Therefore Baseline Emissions (BE) are equal to the Pre-project Potential to Emit (PE1).

Baseline Emissions (BE)	
Pollutant	Annual Emissions (lb/year)
PM_{10}	2,909
VOC	19,999

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM_{10} (140,000 lb/year), it is not a major source for $PM_{2.5}$ (200,000 lb/year).

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM_{10}

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD major source threshold, and if total project potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	9.9	4.3	6.5	39.4	5.4	5.4
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	NEC (lb/qtr)
NOx	4,928	4,380	548
SOx	3,252	2,409	843
PM_{10}	2,698	2,187	511
CO	19,710	14,599	5,111
VOC	2,135	5,000	-2,865

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

Flare VOC Emissions

Flare Emission Factors Landfill Gas Fuel (45 MMBtu/hr Flare)		
VOC	0.0084	Applicant Proposed

Daily Post-Project Potential to Emit - Flare											
VOC	0.0084	(lb/MMBtu)	x	45	(MMBtu/hr)	x	24	(hr/day)	=	9.1	(lb/day)

As seen above and in Section VII.C.2, the applicant is proposing to install a new flare with a PE greater than 2 lb/day for NO_X, SO_X, PM_{10}, CO, and VOC. See discussion in Section VIII.A.2 below regarding BACT for flares.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

AIPE = PE2 – HAPE

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

Landfill PM_{10} Emissions

There are no PM_{10} emission factor changes in this project. Therefore, EF2 / EF1 = 1.

AIPE = 8.0 – (8.0 * (1))
= 8.0 – 8.0
= 0.0 lb-PM_{10}/day

As demonstrated above, the AIPE is not greater than 2 lb/day. Therefore BACT is not triggered for landfill PM_{10} emissions.

Landfill VOC Emissions

There are no VOC emission factor changes in this project. Therefore, EF2 / EF1 = 1.

AIPE = 23.4 – (23.4 * (1))
= 23.4 – 23.4
= 0.0 lb-VOC/day

As demonstrated above, the AIPE is not greater than 2 lb/day. Therefore BACT is not triggered for landfill VOC emissions.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification. Therefore BACT is not triggered for any pollutant.

2. BACT Discussion

The flare is used to control the landfill gas that is generated by the landfill and therefore is an emission control device. In accordance with District definitions, an emission control device is not an emission unit. Per District Rule 2201, only emission units can trigger BACT. Therefore, an emission control device cannot be subject to BACT requirements.

District BACT Guideline 1.4.3 applies to landfill gas-fired flares. This BACT guideline was established prior to the District formalizing a position of BACT on control equipment. The guideline was simply a place to list the criteria to be a well controlled flare, but as the flare would not trigger BACT, it is inappropriate to have a BACT guideline for a flare. However, upon review of the BACT Guideline 1.4.3, the proposed flare will operate with NOx emissions of 0.05 lb/MMBtu which meets the technologically feasible BACT requirements for this type of operation. Therefore, the proposed flare is minimizing the generation of collateral pollutants and is equivalent to the best control alternatives available for this type of operation.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	19,710	13,009	10,793	78,840	8,538
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
e. Any project which results in a Title V significant permit modification.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

The PE2 for the new flare is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO_X	54.0	100 lb/day	No
SO_X	35.6	100 lb/day	No
PM_{10}	21.6	100 lb/day	No
CO	216.0	100 lb/day	Yes
VOC	9.1	100 lb/day	No

Therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	17,518	19,710	20,000 lb/year	No
SO_X	9,635	13,009	54,750 lb/year	No
PM_{10}	8,748	10,793	29,200 lb/year	No
CO	58,394	78,840	200,000 lb/year	No
VOC	19,999	8,538	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	19,710	17,518	2,192	20,000 lb/year	No
SO_x	13,009	9,635	3,374	20,000 lb/year	No
PM_{10}	10,793	8,748	2,045	20,000 lb/year	No
CO	78,840	58,394	20,446	20,000 lb/year	Yes
VOC	8,538	19,999	-11,461	20,000 lb/year	No

As demonstrated above, the SSIPE for CO is greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

2. Public Notice Action

As discussed above, public noticing is required for this project for CO emissions in excess of 100 lb/day and for SSIPE greater than 20,000 lb/year for CO emissions. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local

newspaper of general circulation prior to the issuance of the ATC permit for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC permit and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

- Total Class III waste material rate received at the facility shall not exceed either 1,100 tons/day or 401,500 tons/yr. [District Rule 2201]
- VOC emissions from the landfill and the flare shall not exceed 23.4 lb/day. [District Rule 2201]
- Emissions from the flare shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu, 0.033 lb-SOx/MMBtu, 0.02 lb-PM10/MMBtu, 0.2 lb-CO/MMBtu, or 0.0084 lb-VOC/MMBtu. [District Rule 2201]
- Total PM10 emissions from the handling of soil cover shall not exceed 0.0023 lb-PM10/ton of material handled. [District Rule 2201]

Using daily post project PM_{10} emissions, the amount of total soil cover usage can be calculated as follows:

Daily total soil coverage (ton/day)	=	Landfill daily post project PM_{10} emissions (lb-PM_{10}/day) ÷ (0.0023 lb-PM_{10}/ton)
Daily total soil coverage ton/day	=	8.0 lb-PM_{10}/day ÷ 0.0023 lb-PM_{10}/ton
Daily total soil coverage	**=**	**3,478 ton/day**

Therefore, the following condition will be listed on the ATC permit to ensure compliance:

- Total soil cover usage rate shall not exceed 3,478 tons per day. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Per District Source Testing Frequency policy APR-1705, dated 10/9/97, Units equipped with an afterburner, a thermal incinerator, or a catalytic incinerator for controlling VOCs must be tested upon initial start-up and annually thereafter. As this landfill operation is using a flare to control VOC emissions, source testing will be required of this permit unit upon initial start-up and annually thereafter to demonstrate compliance with Rule 2201. Therefore, the following conditions will be listed on the permit to ensure compliance:

- Source testing on the Perennial Energy flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98% or less than 20 ppmv dry basis as hexane NMOC outlet concentration at 3 percent oxygen as required by this permit shall be conducted within 60 days of startup. [District Rule 2201]
- Source testing on the Perennial Energy flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98%, or 20 ppmvd @ 3% O2 as hexane, as required by this permit shall be conducted annually. [District Rule 2201]
- The Perennial Energy flare shall be tested for compliance with the NOx, CO, and VOC/NMOC emissions limit at least once every 12 months. Source testing for the backup Callidus Technology flare shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform source testing. Source testing for compliance with the NOx, CO, and VOC/NMOC emissions limit for the backup Callidus Technology flare shall be performed within 12 months of operating the unit. [District Rule 2201]
- Gas combusted in the flare shall be tested for H2S content on a quarterly basis using draeger tubes. If compliance is shown for two consecutive quarters, the testing frequency may be changed to annual. Quarterly testing shall resume if any annual test shows noncompliance. [District Rule 1081]
- Sulfur content of the landfill gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or double GC for H2S and mercaptans, or draeger tubes for H2S, or an equivalent method approved by the District. [District Rule 2201]
- The following test methods shall be used for VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rule 1081]
- Flare VOC emissions shall be conducted using USEPA Test Method 18, 25, 25A, or 25C. [District Rule 2201]
- Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 2201]
- Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 2201]
- Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201]

2. Monitoring

In order to ensure all of the NSR requirements are met, the applicant performs the following monitoring.

Initial Monitoring of Gas Collection Devices

The performance of the collectors installed in relatively new waste is variable as the rate at which waste decomposition changes from an aerobic process to an anaerobic process, which is dependent on many factors including waste depth, moisture, climate, and waste compaction. In addition, there are early interim stages of the anaerobic state where methanogen populations are not stabilized and the "typical" mature LFG composition is not yet present. Early waste and the bacteria populations in these early LFG stages are sensitive to introduction of air and therefore early collectors are prone to operational problems such as excessive air infiltration. Air infiltration can kill methanogen populations and lead to landfill fires. Therefore, the collectors must be operated with consideration for these issues and with optimal flexibility.

Once installed and prior to initial operation (i.e. opening of wellhead control valves), the facility monitors the collectors to measure gas composition, quantity, and assess potential performance. Initial monitoring is performed once per quarter. Initial monitoring, at a minimum, consists of the following parameters:

- Static pressure, in inches water column,
- Percent methane,
- Percent oxygen, and
- Temperature.

Monitoring is conducted using a portable LFG analyzer such as the Landtec GEM-500 or equivalent. Monitoring data is recorded along with time and date of monitoring and weather conditions at the time of monitoring.

These parameters are chosen, with input from USEPA Region 1, because they provide the information the District would need to determine whether there is a sufficient quality (methane content) and quantity (pressure buildup) to allow gas collection while at the same time monitoring for oxygen intrusion and potential subsurface fire (change in temperature).

Commissioning of Early Collection Devices

During the initial monitoring period, several monitoring parameters are assessed to determine if the collectors should be commissioned. The following parameter are used in this determination:

- Methane: 45% methane or greater (evidence of sufficient methane quality).
- Oxygen: 5% or less (40 CFR Part 60 Subpart WWW limit as to maximum amount of allowable oxygen based on risk of subsurface fire).
- Temperature: Less than 131 °F (40 CFR Part 60 Subpart WWW limit as to maximum temperature based on risk of subsurface fire).

- Static Pressure at wellhead is 5.0 inches of water column or greater (evidence of enough gas buildup to allow collection without significant air intrusion).

If all the parameters are met, the facility initiates collection of LFG from the collector(s) immediately by opening the valve on the wellhead assembly and actuating the LFG blower. Once the system is commissioned, the control valve is opened in such a manner so as to allow operation and equalization until the next scheduled monitoring event.

During the first six months of operation, the system is monitored weekly with provisions for allowing a reduction in monitoring frequency to monthly after that time. During the next monitoring event, the appropriate well control valve adjustment shall be made based on performance and as determined by the permittee. In some cases, the control valve may need to be closed again (e.g. if oxygen is above 5%, if methane is below 45%, etc.) so as not to induce air intrusion and the risk of fire.

Operation of Early Collection Devices

Subsequent to commissioning, the collectors are monitored once per week (with possible reduction in frequency after six months as noted above). Initial monitoring consists of measuring the following parameters:

- Static pressure, in inches water column,
- Percent methane,
- Percent oxygen, and
- Gas temperature at the wellhead.

Monitoring is conducted using a portable LFG analyzer such as the Landtec GEM-500, or equivalent. Monitoring data is recorded along with well valve adjustments made, time and date of monitoring, and weather conditions at the time of monitoring. The collectors are operated with the following parameters used as minimum operating guidelines:

- Methane: 40% or greater,
- Oxygen: 10% or less,
- Vacuum at wellhead: 0.1 inch water column or greater, and
- Temperature: 131 °F and an increase in temperature of less than 10 °F

Appropriate well control valve adjustment shall be made based on the performance of the device. In some cases, the control valve may need to be closed entirely. Generally the control valve adjustments shall be in such a manner so as to allow operation and equalization until the next scheduled monitoring event as the valve adjustment may take some time to take effect.

Surface Emissions Monitoring:

In order to ensure the 85% collection efficiency assumption is justified, the applicant performs surface emissions monitoring per 40 CFR Part 60 Subpart WWW requirements.

Surface monitoring for the expansion area would be initiated once an area reaches final waste grade and has intermediate cover placed, or within 90 days after collection is initiated in the expansion area (based on the procedures outlined above), whichever comes first. The surface emission monitoring is conducted in accordance with the procedures and alternatives in 40 CFR Part 60 Subpart WWW, including all corrective action and reporting requirements.

After an exceedance, the permittee initiates corrective action within 5 days and conduct re-monitoring within 10 days after the initial exceedance. If this reading shows compliance has been achieved, then an additional re-monitoring event is conducted within one month of the initial exceedance for confirmation. If the 10-day event still shows an exceedance, the permittee initiates corrective action within 5 days and conducts re-monitoring within 10 days after the second exceedance. If this reading shows compliance has been achieved, then an additional re-monitoring event is conducted within one month of the initial exceedance for confirmation. If the second 10-day event also shows an exceedance, then the permittee would be required to permit and install additional LFG wells to correct the problem within 120 days of the initial exceedance.

The monitoring is conducted quarterly. However, if there are any exceedances during a quarterly event, monitoring reverts to monthly until there are three consecutive months without exceedances, which would allow a return to quarterly monitoring.

At no time shall an area that is actively receiving waste be monitored due to safety concerns. Per applicant, any area excluded due to a safety concern such as active operation, is documented and kept on file at the site. Once an area is under final cover and has demonstrated three consecutive clean quarters of surface emissions monitoring, the area may switch to annual monitoring. If any area under annual monitoring exceed 500 ppmv as methane during surface emissions monitoring, that area will return to quarterly monitoring until three consecutive quarters demonstrate less than 500 ppmv.

40 CFR 60 Subparts Cc or WWW-based monitoring conditions to address a collection and control system is listed on the permit. Therefore, the following conditions are listed on the permit to ensure compliance:

- All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]

- Permittee shall operate the flare at all times when the collected gas is routed to it. [District Rule 2201]
- Gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system. [District Rule 2201]
- During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District Rules 2020 and 2201]
- Maintenance is defined as work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction. [District Rule 2201]
- The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District Rule 2201]
- Landfill gas line from collection header shall be equipped with a gas flow rate measurement device. [District Rule 2201]
- A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter, or other APCO approved alternative, to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District Rule 2201]
- Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081]
- For initial monitoring of collection devices in the expansion area, prior to initial operation, the permittee shall monitor the collectors at least once per quarter for static pressure, percent methane, percent oxygen, and temperature utilizing a District-approved portable landfill gas analyzer. [District Rule 2201]
- For commissioning of collection devices in the expansion area, collectors shall be commissioned and continually operated if all of the following parameters are met: (1) methane percent 45% or greater; (2) oxygen percent 5% or less; (3) temperature less than 131 degrees F; and (4) static pressure 5.0 in H2O or greater. [District Rule 2201]
- For operation of collection devices in the expansion area, once the collectors are commissioned, the permittee shall monitor the collectors weekly for the first six months of operation and may switch to monthly monitoring thereafter. [District Rule 2201]
- For surface emissions monitoring, once an area has reached final grade or within 90 days when the LFG system in the area is commissioned, whichever comes first, surface emissions shall not exceed a methane concentration of 500 parts per million above background at the surface of the landfill. [District Rule 2201]
- For surface emissions monitoring, surface monitoring for the landfill area shall be performed quarterly. If there are any exceedances during a

quarterly event, monitoring will be required monthly until three consecutive months without exceedances, which would allow a return to quarterly monitoring. [District Rule 2201]

- For surface emissions monitoring, after an exceedance, the permittee shall initiate corrective action within five days and conduct remonitoring within ten days from the initial exceedance. If compliance is shown, an additional remonitoring event is required within one month of the initial exceedance. If the ten day event shows an exceedance, the permittee shall initiate corrective action within five days and conduct remonitoring within ten days from the second exceedance. If compliance is shown, an additional remonitoring is required within one month of the initial exceedance. If the second ten day event shows an exceedance, the permittee shall permit and install additional landfill gas wells to correct the problem within 120 days of the initial exceedance. The permittee may utilize an alternative corrective action with prior approval from the APCO. [District Rule 2201]
- For surface emissions monitoring, permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals (or a site-specific established spacing) and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. [District Rule 2201]
- For surface emissions monitoring, surface testing shall be performed using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [District Rule 2201]
- The portable analyzer shall meet the instrument specifications of Method 21, section 3 (except that "methane" shall replace all references to VOC). The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. To meet the performance evaluation requirements of Method 21, section 3.1.3, the instrument evaluation procedures of Method 21, section 4.4. The calibration procedures provided in Method 21, section 4.2 shall be followed immediately before commencing a surface monitoring survey. The provisions of this condition apply at all times, except during periods of start-up, shutdown, or malfunction (as defined in 40 CFR 60.755(e)). [District Rule 2201]
- Permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [District Rule 2201]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. Therefore, the following conditions will be listed on the permit to ensure compliance:

- Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 2201]
- Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 2201]
- The operator shall record emission control device source tests (emissions of CO, NOx, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 2201]
- Permittee shall maintain daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications. [District Rule 2201]
- A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, landfill gas H2S measurements, daily landfill gas fuel consumption, and hourly heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District Rule 2201]
- Records of daily landfill gas flow rate and annual test results of higher heating value of landfill gas. [District Rule 2201]
- Records of calculated landfill and flare annual VOC emissions and facility-wide VOC emissions shall be maintained. [District Rule 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070]

4. Reporting

The permittee shall submit initial startup test report and maintain all other monitoring records on site. Such records shall be made available for District inspection upon request.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Attachment D of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

Therefore, compliance with the requirements of this rule is expected.

Rule 2410 Prevention of Significant Deterioration

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated above, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
   a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
   b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC) (see Attachment C). Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC permit upon submittal of the Title V administrative amendment application.

Rule 4001 New Source Performance Standards

This landfill is potentially subject to the requirements of 40 CFR 60 Subpart Cc and Subpart WWW for Municipal Solid Waste Landfills.

Subpart Cc

This subpart requires the installation of a LFG collection system when a landfill facility exceeds 50 megagrams of NMOC per year and its designed capacity exceeds 2.5 million cubic meters.

60.32c(a): The requirements of this subpart apply to each existing municipal solid waste landfill for which construction, reconstruction, or modification was commenced before May 30, 1991.

60.33c(a): Municipal solid waste landfills meeting the following three conditions shall control the landfill emissions:

(a)(1): The landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition;

(a)(2): The landfill has a design capacity equal to or greater than 2.5 million cubic meters; and

(a)(3): The landfill has a non-methane organic compound emission rate of 50 megagrams per year or more.

This landfill has a capacity greater than 2.5 million cubic meters, and will have non-methane organic compound emissions in excess of 50 megagrams per year. Therefore, this landfill must control its emissions.

60.33c(b): Municipal solid waste landfills subject to this subpart shall install a collection and control system meeting the conditions provided in 40 CFR 60.752(b)(2)(ii), which are summarized below:

60.752(b)(2)(ii): Install a collection and control system that captures the gas generated within the landfill within 30 months after the first annual report in which the emission rate exceeds 50 megagrams per year; and

60.752(b)(2)(iii): Route all the collected gas to one of the following control systems:

60.752 (b)(2)(iii)(A): An open flare designed and operated in accordance with §60.18; or

60.752 (b)(2)(iii)(B): A control system designed and operated to reduce non-methane organic compound emissions by 98 weight percent, or, when an enclosed combustion device is used for control, to either reduce the non-methane organic compound emission concentration to less than 20 ppmvd @ 3% O_2 (as hexane); or

60.752 (b)(2)(iii)(C): route the collected gas to a treatment system that processes the collected gas for subsequent sale or use.

The applicant has chosen to install a landfill gas collection system vented to a control system (an enclosed flare), designed and operated to reduce non-methane organic compound emissions by 98% by weight.

The requirements of Subpart Cc reference those in Subpart WWW, therefore compliance with Subpart WWW will be deemed compliance with Subpart Cc (as discussed below).

Subpart WWW

60.750(a): The requirements of this subpart apply to each existing municipal solid waste landfill for which construction, reconstruction, or modification was commenced on or after May 30, 1991.

60.752: The applicable requirements of this section will be added to the permit.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- The NMOC emission rate shall be recalculated and reported to the APCO annually, except as otherwise provided in this permit, until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams/year and a collection and control system is installed or until the landfill is closed. [40 CFR 60.752(b)(1), 60.754(a), 60.757(b)]
- If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756]

60.753(b): Operate the collection system with negative pressure at each wellhead, except under the following conditions:

- A fire or increased well temperature;
- Use of a geomembrane or synthetic cover;
- A decommissioned well.

60.753(c): Operate each wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or and oxygen content less than percent. However, the owner/operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well.

(d): Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill.

(e): Operate the system such that all collected gasses are vented to a control system designed and operated in compliance with 60.752(b)(2)(ii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves contributing to venting of the gas to the atmosphere shall be closed within one hour.

(f): Operate the control sysytem at all times when the collected gas is routed to the system.

Therefore, the following condition will be listed on the permit to ensure compliance:

- If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756]

60.754: This section primarily lists procedures for calculating the landfill gas emission rate to show that it is below 50 megagrams per year. Since the applicant has proposed to install an active collection and control system, none of these calculations are necessary.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- The NMOC emission rate shall be calculated using the equation in 40CFR60.754(a)(1)(i), if the actual year-to-year solid waste acceptance rate is known or the equation in 40CFR60.754(a)(1)(ii), if the actual year-to-year solid waste acceptance rate is unknown. The values for k, Lo, and CNMOC for both equations shall be taken from 40CFR60.754(a)(1), as appropriate. Both equations may be used if the actual year-to-year acceptance rate is known for a part of the landfill life, but unknown for another part of the landfill life. The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating R, if documentation of the nature and amount of such wastes is maintained. (Tier 1 specifications) [40 CFR 60.754(a)(1)]
- If the calculated NMOC emission rate is equal to or greater than 50 megagrams/year, then the landfill owner or operator shall either comply with the requirements of this permit to submit a collection and control design plan and install the system, or determine a site-specific NMOC concentration and

recalculate the NMOC emission rate using Tier 2 specifications. [40 CFR 60.754(a)(2)(ii)]

- Tier 2 specifications to determine the site-specific NMOC concentration shall include the following: 1) For sampling, at least 2 sample probes shall be installed per hectare of landfill surface that has retained waste for at least 2 years, up to a maximum of 50 required probes. Probes should be located in known areas of degradable solid waste. One sample of landfill gas shall be collected from each probe to determine the NMOC concentration, using EPA Method 25, 25C, another method approved by the EPA, or 18, in accordance with 40 CFR 60.754(a)(3). If EPA Method 18 is used, the minimum list of compounds to be tested shall be those published in the most recent Compilation of AP-42. If composite sampling is used, equal sample volumes are required. All samples taken shall be used in the analysis. The NMOC concentration from Method 25 or 25C shall be divided by 6 to convert from C-NMOC, as carbon to as hexane. 2) For landfills equipped with active collection systems, samples may be collected from the common header pipe before gas moving or condensate removal equipment; a minimum of 3 samples must be collected . [40 CFR 60.754(a)(3), (a)(5)]
- Tier 2 specifications to determine the site-specific NMOC concentration shall include the following: 1)The NMOC mass emission rate shall be recalculated using the average site-specific concentration, instead of the default value, 2) If the resulting calculated mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall either comply with 60.752(b)(2), or determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using Tier 3 specifications. [40 CFR 60.754(a)(3)(i)&(ii)]
- If the calculated NMOC mass emission rate, using the site-specific NMOC concentration, is less than 50 megagrams/year, then a periodic estimate of the emission rate report, pursuant to 60.757(b)(1) shall be submitted to the Administrator. The site-specific NMOC concentration shall be retested every 5 years, using Tier 2 specifications. [40 CFR 60.754(a)(3)(iii)]
- Tier 3 specifications to determine the site-specific methane generation rate constant shall include the following: 1) EPA Method 2E or another method approved by the EPA shall be used, 2) The NMOC mass emission rate shall be recalculated using the average site-specific NMOC concentration and the site-specific methane generation rate constant k, instead of the default values in 40 CFR 60(a)(1), and 3) If the resulting calculated NMOC mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall comply with 60.752(b)(2). [40 CFR 60.754(a)(4), (a)(5) and (i)]
- If Tier 3 specifications are used to determine the site-specific methane generation rate and the calculated NMOC mass emission rate is less than 50 megagrams/year, then a periodic emission rate report shall be submitted to the Administrator, pursuant to 60.757(b)(1) and the NMOC concentration shall be recalculated annually, pursuant to 60.757(b)(1), using the site-specific methane generation rate constant and the NMOC concentration obtained using Tier 2 specifications. Determination of the site-specific methane generation rate

constant is performed once and used in all subsequent annual NMOC emission rate calculations. [40 CFR 60.754(a)(4)(ii)]

- The NMOC emission rate shall be recalculated and reported to the APCO annually, except as otherwise provided in this permit, until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams/year and a collection and control system is installed or until the landfill is closed. [40 CFR 60.752(b)(1), 60.754(a), 60.757(b)]
- Control system VOC emissions shall be determined by Method 25, 25C, or Method 18. [40 CFR 60.754(d)]

60.755(a)(3): The owner/operator shall monitor the gauge pressure in the gas collection header at each individual well on a monthly basis. If a positive pressure exists, corrective action shall be initiated within five celandar days.

(a)(5): The owner/operator shall monitor each individual well on a monthly basis for temperature and nitrogen or oxygen as provided 60.753(c). If a well exceeds one of these operating parameters, corrective action shall be initiated within five celandar days.

(c)(1): The owner/operator shall monitor the surface concetrations of methane at the landfill on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 60.755(d).

(e): The provisions of this subpart apply at all times, except during periods of startup, shutdown, or malfunction, provided that the duration of startup, shutdown, or malfunction does not exceed five days for the collection system and does not exceed one one hour for the control system.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756]

60.756(a)(1): The owner/operator shall measure the gauge pressure in the gas collection header on a monthly basis as provided in 60.755(a)(3); and

(a)(2): The owner/operator shall monitor the nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 60.755(a)(5); and

(a)(3): The owner/operator shall monitor the temperature of the landfill gas on a monthly basis as provided in 60.755(a)(5).

(c): The owner/operator using an open flare shall install, calibrate, maintain and operate according to the manufacturer's specification the following equipment:

(c)(1): A heat sensing device, such as an ultraviolet bean sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(c)(2): A gas flow rate measuring device that records the flow at least once every 15 minutes and is capable of measuring gas flow to the flare as well as gas flow that bypasses the flare.

Therefore, the following condition will be listed on the permit to ensure compliance:

- If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756]

60.757: This section lists the reporting requirements of Subpart WWW. The applicant has submitted the initial design report and NMOC emission rate report.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- The NMOC emission rate shall be recalculated and reported to the APCO annually, except as otherwise provided in this permit, until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams/year and a collection and control system is installed or until the landfill is closed. [40 CFR 60.752(b)(1), 60.754(a), 60.757(b)]
- If the NMOC emission rate, as reported in the annual report is less than 50 megagrams/year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual reports for those 5 years. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years. All data and calculations upon which this estimate is based shall be provided to the APCO. This estimate shall be revised at least once every 5 years. [40 CFR 60.757(b)(1)(ii)]
- If the actual waste acceptance rate exceeds the estimated rate used in any year reported in a 5-year estimate of the NMOC emission rate, then a revised 5-year estimate shall be submitted to the APCO. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated acceptance rate. [40 CFR 60.757(b)(1)(ii)]
- The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions. [40 CFR 60.757(b)(2)]

- If the owner or operator elects to recalculate the NMOC emission rate using Tier 2 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 2 specifications, shall be submitted within 180 days of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(1)]
- If the owner or operator elects to recalculate the NMOC emission rate using Tier 3 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 3 specifications, shall be submitted within 1 year of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(2)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall submit an equipment removal report to the District 30 days prior to removal or cessation of operation of the control equipment. The report shall conform to the requirements of 40 CFR 60.757(e)(1). [40 CFR 60.757(e)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, the initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. The initial report shall include information specified in 40 CFR 60.757(g)(1-6). [40 CFR 60.757(f), (g)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) shall include information specified in 40 CFR 60.757(g)(1-6) with the initial performance test report required under 40 CFR Part 60.8. [40 CFR 60.757(g)]

60.758(b)(1)(i): The owner/operator shall keep up-to-date, readily available records of the maximum expected gas generation flow rate.

(b)(1)(ii): The owner/operator shall maintain records of the density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 30.759(a)(1).

(b)(4): The owner/operator of an open flare used to comply with this subpart shall maintain records of all visible emission readings, landfill gas heat content determinations, gas flow rate measurements, and exit velocity determinations made during the

performance tests specified in 40 CFR 60.18; and continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operation during which the pilot flame or flare flame is absent.

(b)(4)(c): All records shall be kept for five years.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, each owner or operator shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. [District Rule 2520, 9.4.2 and 40 CFR 60.758(a)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, the following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f): All 3-hour periods of operation during which the average combustion temperature was more than 28 °C below the average combustion temperature during the most recent performance test (flare source test). [40 CFR 60.758(c)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs 60.758(b)(1) through (b)(4) as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal. [40 CFR 60.758(b)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall keep the following records: (1)(i) the maximum expected gas generation flow rate as calculated in 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the APCO; (ii) the density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 60.759(a)(1); (2)(i) the average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test; (ii) the percent reduction of NMOC determined as specified in 60.752(b)(2)(ii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the enclosed flare, or the indication of bypass flow, or records of monthly inspections of car-

seals or lock-and-key configurations used to seal bypass lines, if applicable. [40 CFR 60.758(c) and 60.34c]

- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), permittee shall keep, for the life of the collection system, an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector. Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or non-degradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)]
- Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [40 CFR 60.758(e)]

Therefore, compliance with the requirements of this Rule is expected.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

Therefore, compliance with the requirements of this rule is expected.

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance.

Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained.

Therefore, compliance with the requirements of this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Attachment D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-3839-1-6	2.39 per million	Yes

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for VOC. T-BACT is satisfied with a well controlled flare. District BACT Guideline 1.4.3 applies to landfill gas-fired flares. BACT Guideline 1.4.3 states BACT for VOC is a flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O2 as the Achieved in Practice option. The proposed flare has a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O2 and conditions will be imposed to ensure the requirements of BACT are satisfied. The following condition will be listed on the permit to ensure compliance:

- Source testing on the Perennial Energy flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98%, or 20 ppmvd @ 3% O2 as hexane, as required by this permit shall be conducted annually. [District Rule 2201]

Therefore, the proposed flare is equivalent to the best control alternatives available for this type of operation. Compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Attachment D of this report, the emissions increases for this project was determined to be less than significant.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Particulate matter calculations were performed for each piece of equipment by the following equation:

F-Factor for LFG:	9,120 dscf/MMBtu at 60 °F (assuming 55% CH4 per AP-42)
PM_{10} Emission Factor:	0.02 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust:	100%

$$GL = \left(\frac{0.02\ lb - PM}{MMBtu} \times \frac{7{,}000\ grain}{lb - PM} \right) / \left(\frac{9{,}120\ ft^3}{MMBtu} \right)$$

$$GL = 0.015\ grain/dscf < 0.1\ grain/dscf$$

Since the particulate matter concentration is ≤ 0.1 grains per dscf, compliance with Rule 4201 is expected.

Rule 4202 Particulate Matter Emission Rate

Rule 4202 establishes PM emission limits as a function of process weight rate in tons/hr. Gas and liquid fuels are excluded from the definition of process weight.

The proposed flare runs on landfill gas.

Therefore, the requirements of this rule do not apply to this project.

Rule 4301 Fuel Burning Equipment

Rule 4301 limits air contaminant emissions from fuel burning equipment as defined in the rule. Section 3.1 defines fuel burning equipment as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer".

Section 5.0 gives the requirements of the rule.

A person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

A person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

- 200 pound per hour of sulfur compounds, calculated as sulfur dioxide (SO_2)
- 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO_2)
- Ten pounds per hour of combustion contaminants as defined in Rule 1020 and derived from the fuel.

District Rule 4301 Limits			
Pollutant	NO_2	Total PM	SO_2
C-2913-1-6 (lb/hr)	1.67	0.67	1.10
Rule Limit (lb/hr)	140	10	200

Therefore, compliance with the requirements of this rule is expected.

Rule 4311 Flares

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) from the operation of flares. Section 4.3 of this Rule states that "Except for the recordkeeping requirements in Section 6.2.4, the requirements of this rule shall not apply to any stationary source that has the potential to emit, for all processes, less than ten (10.0) tons per year of VOC and less than ten (10.0) tons per year of NO_X. As shown previously in Section VII.C.5 this facility has an SSPE2 less than ten tons per year of VOC and less than ten tons per year of NO_X. Therefore, the flare at this facility is only subject to the recordkeeping requirements in Section 6.2.4 of this Rule.

Section 6.2.4 states that beginning January 1, 2007, facilities claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section. Therefore, the following condition will be listed on the ATC to ensure compliance:

- The facility shall maintain records of annual throughput, material usage, or other information necessary to demonstrate that facility-wide emissions are less than ten tons per year for both NOx and VOC. [District Rule 4311]

Rule 4642 Solid Waste Disposal Sites

Pursuant to Section 2.0, this Rule is applicable to solid waste disposal sites which have a gas collection system and/or a control device in operation, or are undergoing maintenance or repair.

Pursuant to Section 4.1.2, any solid waste disposal site which is subject to the requirements of 40 CFR 60 Subpart WWW (Standards of Performance for Municipal Waste Landfills), or Subpart Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) is exempt from the requirements of this Rule.

This landfill is subject to 40 CFR 60 Subpart WWW and Subpart Cc. Therefore, the requirements of this Rule do not apply to this project.

Rule 4651 Volatile Organic Compounds From Decontamination of Soil

The purpose of this rule is to limit VOC emissions from soil that has been contaminated with a VOC-containing liquid.

Pursuant to Section 5.1, any operator excavating contaminated soil shall comply with the following requirements:

- A written notice, according to Section 6.1, shall be submitted to the APCO prior to commencement of excavation of known contaminated soil.
- Any excavation of soil resulting from operations related to contaminated soil shall be monitored for VOC contamination during the excavation and at least once every 15 minutes, unless the excavated soil is treated according to Section 5.2.1.
- Excavated soil that has been detected as contaminated soil shall be placed in storage piles and handled as required by Section 5.2.
- Excavated contaminated soil shall be decontaminated, recycled, disposed of in an approved facility, returned to excavation and permanently covered with at least six (6) inches of uncontaminated soil, or transported to a location outside of the SJVAB within thirty (30) calendar days from the time of excavation or as directed by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer having jurisdiction.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall comply with the following when excavating contaminated soil: 1) Submit a written notice according to Section 6.1 prior to commencement of excavation of known contaminated soil; 2) Monitor operation for VOC contamination at least once every 15 minutes unless the excavated soil is treated according to Section 5.2.1; 3) Excavated soil that has been detected as contaminated shall be placed in storage piles or handled as required by Section 5.2 and; 4) Excavated contaminated soil shall be decontaminated, recycled, disposed of in an approved facility, returned to excavation and permanently covered with at least six (6) inches of uncontaminated soil, or transported to a location outside of the SJVAB within thirty (30) calendar days from the time of excavation or as directed by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer having jurisdiction. [District Rule 4651]

Pursuant to Section 5.2, any operator handling contaminated soil shall comply with the following requirements:

1. For VOC concentration of the excavated contaminated soil measuring at 1,000 ppm or greater, the contaminated soil shall be sprayed with water or vapor suppressant and be subject to the following requirements in addition to all applicable requirements of the rule:
   - Place the contaminated soil in sealed containers as soon as possible, but no more than 30 minutes after excavation, and handle pursuant to Section 5.1.4, or
   - Load the contaminated soil into trucks as soon as possible but no more than 30 minutes after excavation, moisten with additional water, cover as required in Section 5.3, and transport immediately to an approved facility, or
   - Implement other approved alternative storage methods and handle pursuant to Section 5.1.4.
   - Storage piles of contaminated soil shall be clearly isolated and identifiable from storage piles of uncontaminated soil according to Section 6.3.2

2. Storage piles of contaminated soil that have been inactive for more than 60 consecutive minutes shall be subject to one of the following:

   - Treat with water or a vapor suppressant and cover with heavy-duty plastic sheeting to reduce VOC emissions. The covering shall have at least a six-feet overlap of adjacent sheets, be securely anchored, and have minimal headspace where vapors may accumulate, or
   - Cover with a layer of uncontaminated soil no less than six (6) inches deep.
   - A visual inspection of all storage piles of contaminated soil shall be conducted at least once every 24 hours, except when operators do not report to the facility for a given 24-hour period, to ensure the integrity of the covered surfaces and compliance with Section 5.2.5. Record of the visual inspections shall be maintained pursuant to Section 6.3.3.
   - Aeration of contaminated soil shall not be allowed except that which occurs during removal or addition of contaminated soil to a storage pile. This prohibition includes the use of contaminated soil in daily, intermediate, or final cover operations at disposal sites.

Therefore, the following condition will be listed on the permit to ensure compliance:

- When handling excavated contaminated soil with VOC concentration measuring at 1,000 ppm or greater, the contaminated soil shall be sprayed with water or vapor suppressant and contaminated soil placed in sealed containers as soon as possible, but no more than 30 minutes after excavation, and handle pursuant to Section 5.1.4, or the contaminated soil loaded into trucks as soon as possible but no more than 30 minutes after excavation, moisten with additional water, cover as required in Section 5.3, and transport immediately to an approved facility, or

implement other approved alternative storage methods and handle pursuant to Section 5.1.4. [District Rule 4651]

- When handling storage piles of contaminated soil the piles shall be clearly isolated and identifiable from storage piles of uncontaminated soil. The following is required for identification: 1) Location of the storage pile. 2) Unique identification of the storage pile. 3). The date that the storage pile was excavated. 4). Any other information deemed necessary for identification. [District Rule 4651]
- When handling storage piles of contaminated soil that have been inactive for more than 60 consecutive minutes, the piles shall be treated with water or a vapor suppressant and cover with heavy-duty plastic sheeting to reduce VOC emissions and the covering shall have at least a six-feet overlap of adjacent sheets, be securely anchored, and have minimal headspace where vapors may accumulate, or covered with a layer of uncontaminated soil no less than six (6) inches deep. [District Rule 4651]
- When handling contaminated soil, a visual inspection of all storage piles of contaminated soil shall be conducted at least once every 24 hours, except when operators do not report to the facility for a given 24-hour period, to ensure the integrity of the covered surfaces and compliance with Section 5.2.5. [District Rule 4651]
- When handling contaminated soil, aeration of contaminated soil shall not be allowed except that which occurs during removal or addition of contaminated soil to a storage pile and this includes the use of contaminated soil in daily, intermediate, or final cover operations at disposal sites. [District Rule 4651]

Pursuant to Section 5.3, any operator transporting contaminated soil, whether by truck or other means of transportation, shall comply with all of the following requirements prior to leaving the facility:

i. Any truck or trailer transporting contaminated soil shall be filled such that contaminated soil does not extend above the sides or rear of the truck
ii. Contaminated soil shall be treated with water or vapor suppressant and covered with an continuous heavy duty plastic sheeting or other covering to prevent spillage of contaminated soil during transport, and
iii. Chain-of-custody records shall be maintained according to Section 6.3.1 by the operators to document transfer of the transported contaminated soil.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall comply with the following when transporting contaminated soil: 1) Any truck or trailer transporting contaminated soil shall be filled such that contaminated soil does not extend above the sides or rear of the truck; 2) Contaminated soil shall be treated with water or vapor suppressant and covered with an continuous heavy duty plastic sheeting or other covering to prevent spillage of contaminated soil during transport, and; 3) Chain-of-custody records shall be maintained according to Section 6.3.1 by the operators to document transfer of the transported contaminated soil. [District Rule 4651]

Pursuant to Section 5.4, any operator de-contaminating soil shall comply with the following:

1. VOC emissions from the decontamination of contaminated soil shall be controlled by one of the following:

   - Installation and operation of a VOC collection and control device with a VOC destruction or removal efficiency of at least 95%, or
   - Any other approved VOC control device demonstrated to be equivalent.
   - Key system operating parameters shall be monitored to demonstrate compliance of the VOC control device during decontamination operations. Examples of key system operating parameters may include, but are not limited to, temperatures, pressures, and flow rates.
   - VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations and any additional operating and maintenance standards determined necessary by the APCO and EPA to ensure proper operation of the VOC control device.

2. Decontaminated soil shall be subject to the following requirements:

   - Monitor soil for contamination using the test method in Section 6.5.2 and
   - Record all VOC concentration readings according to Section 6.3.4
   - Decontaminated soil measured as contaminated shall comply with all applicable requirements of this rule and be subject to one of the following:
   - Return the contaminated soil to the excavation and permanently cover with six (6) inches or more of uncontaminated soil, or
   - Decontaminate the contaminated soil to the extent that the soil is no longer considered contaminated as defined in Section 3.17, or
   - Transport the contaminated soil to an approved disposal facility, or
   - Transport the contaminated soil to a location outside of the SJVAB
   - Decontaminated soil that is to be treated as uncontaminated soil shall require soil samples to be obtained from each storage pile of according to Section 6.6 and tested using the applicable test methods in Section 6.5.3 or Section 6.5.4.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- When decontaminating soil, VOC emissions from the decontamination of contaminated soil shall be controlled by installation and operation of a VOC collection and control device with a VOC destruction or removal efficiency of at least 95%, or any other approved VOC control device demonstrated to be equivalent. [District Rule 4651]
- When decontaminating soil, the permittee shall monitor the temperature, pressure, and flow rates of the VOC control device. [District Rule 4651]

- When decontaminating soil, the VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations. [District Rule 4651]
- The permittee shall comply with one of the following regarding contaminated soil: 1) Return the contaminated soil to the excavation and permanently cover with six (6) inches or more of uncontaminated soil, or; 2) Decontaminate the contaminated soil to the extent that the soil is no longer considered contaminated as defined in Section 3.17, or; 3) Transport the contaminated soil to an approved disposal facility, or; 4) Transport the contaminated soil to a location outside of the SJVAB. [District Rule 4651]
- When decontaminating soil, the samples from decontaminated soil (that is to be treated as uncontaminated soil) shall be obtained by using the soil sampling methods specified in this permit and shall be tested using the applicable soil sample test methods specified in the permit. [District Rule 4651]

Pursuant to Section 6.1, the operator shall include the following information in the notice of excavation activities as required by Sections 4.3 and 5.1:

- Names and addresses of operator(s) performing and responsible for excavation,
- Location of site where excavation will occur,
- Scheduled starting date of excavation. If the excavation does not commence on the start date, re-notification is required,
- Estimated volume of soil to be excavated,
- Estimated volume (in gallons) of VOC liquid spilled in the soil, if known, and
- Where emergency excavation is conducted at the direction of an authorized officer, pursuant to Section 4.3: name, title and contact information of the authorized officer, and a copy of the signed emergency declaration from the authorized officer.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- The permittee shall include the following information in the notice of excavation activities: Names and addresses of operator(s) performing and responsible for excavation, location of site where excavation will occur, scheduled starting date of excavation (if the excavation does not commence on the start date, re-notification is required), estimated volume of soil to be excavated, estimated volume (in gallons) of VOC liquid spilled in the soil, if known. [District Rule 4651]
- Where emergency excavation is conducted at the direction of an authorized officer, the permittee shall include the following information: Name, title and contact information of the authorized officer, and a copy of the signed emergency declaration from the authorized officer. [District Rule 4651]

Pursuant to Section 6.2, the operator shall include the following information in the written verification as required by Section 4.3 and Section 5.1.

- Names and addresses of operator(s) performing and responsible for excavation,
- Address of site where excavation occurred,
- Date(s) of excavation,
- Estimated volume of contaminated soil excavated,
- Estimated average VOC content of the contaminated soil or estimated volume of VOC contaminant, and
- Final disposition of the contaminated soil.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall include the following information in the written notice when excavating contaminated soil: Names and addresses of operator(s) performing and responsible for excavation, address of site where excavation occurred, date(s) of excavation, estimated volume of contaminated soil excavated, estimated average VOC content of the contaminated soil or estimated volume of VOC contaminant, and final disposition of the contaminated soil. [District Rule 4651]

Pursuant to Section 6.3, records shall be retained for at least five (5) years, shall be readily available, and shall be made available to the APCO upon request.

Pursuant to Section 6.3.1, operators shall maintain records at the time custody is transferred. Records shall include but are not limited to the following:

- The identities and business addresses of the relevant parties such as the generator, transporter, and storage/treatment facilities,
- The volume of contaminated soil generated or received,
- All analytical data associated with the contaminated soil (this section does not apply to Section 4.3)
- The date and location of excavation of the contaminated soil, and
- The date and signatures of the operators at the time custody is transferred.
-

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall maintain the following records at the time custody is transferred: the identities and business addresses of the relevant parties such as the generator, transporter, and storage/treatment facilities, the volume of contaminated soil generated or received, all analytical data associated with the contaminated soil (except during an emergency evacuation of soil), the date and location of excavation of the contaminated soil, and the date and signatures of the operators at the time custody is transferred. [District Rule 4651]

Pursuant to Section 6.3.2, each storage pile shall be identified according to, but not limited to, the following information:

- Location of storage pile.
- Unique identification of storage pile.
- Date that soil storage pile was excavated.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall identify each storage pile with the following information: Location of the storage pile, unique identification of the storage pile, and the date that the soil storage pile was excavated. [District Rule 4651]

Pursuant to Section 6.3.3, operators shall maintain visual inspection records at least once every 24 hours except when operators do not report to the facility for that given 24 hours. The records shall include, but are not limited to the following information:

- Location and unique identification of each specific pile.
- Name, date, and signature of operator inspecting the storage piles.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall maintain visual inspection records at least once every 24 hours except when operators do not report to the facility for that given 24 hours and the records shall include location and unique identification of each specific pile and name, date, and signature of operator inspecting the storage piles. [District Rule 4651]

Pursuant to Section 6.3.4, recordkeeping requirements for VOC concentration readings pursuant to Section 5.1 and 5.4:

- The identities and business addresses of the relevant parties such as the generator or storage/treatment facilities
- The volume of contaminated or decontaminated soil,
- Date of contaminated or decontaminated soil,
- VOC concentration reading, and
- The origin of the contaminated or decontaminated soil.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall maintain the following records for VOC concentration readings: the identities and business addresses of the relevant parties such as the generator or storage/treatment facilities, the volume of contaminated or decontaminated soil, date of contaminated or decontaminated soil, VOC concentration reading, and the origin of the contaminated or decontaminated soil. [District Rule 4651]

Pursuant to Section 6.3.5, calibrations for all approved monitoring instruments shall be recorded and kept available onsite.

Therefore, the following condition will be listed on the permit to ensure compliance:

- The permittee shall maintain records of calibrations for all approved monitoring instruments. [District Rule 4651]

Pursuant to Section 6.4, the testing requirements are as follows:

- The operator of a VOC control device used to decontaminate excavated soil shall demonstrated compliance with the requirements of Section 5.4.1 before operation of such system.
- Source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel.
- The operator of the facility shall maintain a copy of the source test protocol. A copy of the source test results must be maintained for at least five years and be readily available to the APCO upon written or oral request.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- The operator of a VOC control device used to decontaminate excavated soil shall demonstrated compliance with a VOC destruction or removal efficiency of at least 95%, or any other approved VOC control device demonstrated to be equivalent, before operation of such system. [District Rule 4651]
- Source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel. [District Rule 4651]
- The operator of the facility shall maintain a copy of the source test protocol. A copy of the source test results must be maintained for at least five years and be readily available to the APCO upon written or oral request. [District Rule 4651]

Pursuant to Section 6.5, test methods referenced shall be the latest approved method. The following methods shall be used:

1. The initial boiling point of a liquid from samples of contaminated soil shall be measured in accordance with one of the following applicable methods:

   - ASTM D86 for soil contaminated with petroleum liquid, or
   - ASTM D-1078-93 for soil contaminated with known organic chemical.
   - The VOC concentration of soils shall be measured as hexane using an organic vapor analyzer, complying with EPA Reference Method 21.
   - The VOC content of the soil that can be reasonably demonstrated to be contaminated only with petroleum shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D
   - The VOC content of soil that is contaminated by unknown VOC-containing liquids, or that cannot be reasonably demonstrated to be contaminated only

with petroleum, shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. In addition to one of the aforementioned methods, the operator shall use EPA Reference Method 8260B or the gas chromatographic method in the Leaking Underground Fuel Tank (LUFT) Manual (October 1989).

- An operator may use an equivalent alternative test method to those listed in Sections 6.5.1 through 6.5.4 for which APCO and EPA approval has been obtained.
- When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

Therefore, the following conditions will be listed on the permit to ensure compliance:

- The initial boiling point of a liquid from samples of contaminated soil shall be measured in accordance with ASTM D86 for soil contaminated with petroleum liquid or ASTM D-1078 for soil contaminated with known organic chemical. [District Rule 4651]
- The VOC concentration of soils shall be measured as hexane using an organic vapor analyzer, complying with EPA Reference Method 21. [District Rule 4651]
- The VOC content of the soil that can be reasonably demonstrated to be contaminated only with petroleum shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. [District Rule 4651]
- The VOC content of soil that is contaminated by unknown VOC-containing liquids, or that cannot be reasonably demonstrated to be contaminated only with petroleum, shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. In addition to one of the aforementioned methods, the operator shall use EPA Reference Method 8260B or the gas chromatographic method in the Leaking Underground Fuel Tank (LUFT) Manual (October 1989). [District Rule 4651]
- An operator may use an equivalent alternative test method other than those listed if APCO and EPA approval has been obtained. [District Rule 4651]
- When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this permit. [District Rule 4651]

Pursuant to Section 6.6, the following soil sampling procedure for decontaminated soil shall be followed:

- One composite sample shall be collected and analyzed for VOC for every 50 cubic yards of excavated soil that has been determined to be uncontaminated by the test method in Section 6.5.2. At least one (1) composite sample shall be collected from each storage pile within 12 hours of soil decontamination.

- A composite sample shall consist of one sample taken from the center of each of four (4) equal sectors using the procedures described in Section 6.6.3 or other approved methods.
- Samples shall be taken from at least twelve (12) inches below the surface of the pile using a driven-tube type sampler, capped and sealed with inert materials, and extruded in the lab in order to reduce the loss of volatile materials; or by using a clean brass or stainless steel tube (at least twelve (12) inches long) driven into the soil with a suitable instrument. The ends of the brass tube shall then be covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape. The samples shall then be immediately placed on ice, or dry ice, for transport to a laboratory.
- Chain-of-custody records shall be kept by the operators to document possession of a sample from the time it is taken in the field until it is analyzed

Therefore, the following conditions will be listed on the permit to ensure compliance:

- One composite sample shall be collected and analyzed for VOC for every 50 cubic yards of excavated soil that has been determined to be uncontaminated by the test method(s) specified in this permit. At least one (1) composite sample shall be collected from each storage pile within 12 hours of soil decontamination. [District Rule 4651]
- A composite sample shall consist of one sample taken from the center of each of four (4) equal sectors using the procedures specified in this permit. [District Rule 4651]
- Samples shall be taken from at least twelve (12) inches below the surface of the pile using a driven-tube type sampler, capped and sealed with inert materials, and extruded in the lab in order to reduce the loss of volatile materials; or by using a clean brass or stainless steel tube (at least twelve (12) inches long) driven into the soil with a suitable instrument. The ends of the brass tube shall then be covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape. The samples shall then be immediately placed on ice, or dry ice, for transport to a laboratory. [District Rule 4651]
- Chain-of-custody records shall be kept by the operators to document possession of a sample from the time it is taken in the field until it is analyzed. [District Rule 4651]

Pursuant to Section 7.1, the following compliance schedule applies:

- All contaminated soil excavation, handling, transporting, and decontamination projects shall be in compliance with the rule on and after March 20, 2008.
- Any VOC control device whose initial installation occurs on or after September 20, 2007 shall be in full compliance with the requirements of the rule upon initial operation.
- Any VOC control device installed prior to September 20, 2007 shall be in full compliance with the requirements of the rule no later than March 20, 2008.

Therefore, compliance with the requirements of this rule is expected.

Rule 4801 Sulfur Compounds

The purpose of this rule is to limit the emissions of sulfur compounds. The limit is that sulfur compound emissions (as SO_2) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

The ratio of the volume of the SO_X exhaust to the entire exhaust for one MMBtu of fuel combusted is:

Volume of SO_X: $V = \frac{n \cdot R \cdot T}{P}$

Where:

- n = number of moles of SO_X produced per MMBtu of fuel.
- Weight of SO_X as SO_2 is 64 lb/(lb-mol)
- $n = \frac{0.033\ lb}{MMBtu}\ X\ \frac{1\ (lb-mol)}{64\ lb} = 0.00052\ (lb-mol)$
- $R = \frac{0.7302\ ft^3 - atm}{(lb-mol) - °R}$
- T = 500 °R
- P = 1 atm

Thus, volume of SO_X per MMBtu is:

$$V = \frac{n \cdot R \cdot T}{P}$$

$$V = \frac{0.0033\ (lb\ -\ mol) \cdot \frac{0.7302\ \ ft^3 - atm}{(lb\ -\ mol) - °R} \cdot 500\ °R}{1\ atm}$$

$$V = 1.20\ ft^3$$

Since the total volume of exhaust per MMBtu is 9,120 scf, the ratio of SO_X volume to exhaust volume is:

$$= \frac{1.20}{9{,}120} = 0.000132 = 132\ ppmv = 0.00132\%\ by\ volume$$

Therefore, compliance with District Rule 4801 requirements is expected.

California Code of Regulations Title 17, Subchapter 10, Article 4, Subarticle 6, sections 95460 through 95476: Methane Emissions from Municipal Solid Waste Landfills

The purpose of this CARB regulation is to reduce methane emissions from municipal solid waste landfills pursuant to the California Global Warming Solutions Act of 2006. Facilities that have MSW landfills with greater than 450,000 tons waste-in-place are required to calculate the landfill gas heat input capacity per section 95471(b) of the regulation. The facility has submitted documentation of the waste-in-place as well as the landfill gas heat input capacity. The current average heat input rate for landfill gas collected from this site is 4.65 MMBtu/hour.

Gas Collection and Control System

The facility currently has a collection and control system permitted with the District (C-2913-1). The system controls the methane emissions from the surface of the landfill. The landfill is required to operate the gas collection system continuously pursuant to Section 95464(b)(1)(A), except during maintenance, repairs, and temporary shutdowns as allowed pursuant to Section 95454(e).

Landfill gas collection system wellheads must be operated under vacuum (Section 95464(c)). Monthly wellhead monitoring is required (Section 95469(c)) to demonstrate compliance with this requirement.

Any landfill gas collection system components downstream of the blower that are intended to be operated under positive pressure have a component leak limit of 500 ppmv, measured as methane (Section 95464(b)(1)(B)). Section 95469(b)(3) requires quarterly leak checks to demonstrate compliance with this limit.

The gas must be sent to a control device or devices that meet the requirements of section 95464. Fairmead Landfill has installed an enclosed ground flare. The enclosed flare must meet the requirements in Section 95464(b)(2), including compliance with a methane destruction efficiency of at least 99% by weight. Compliance with this limit is demonstrated by annual source testing. The flare must also be operated within the temperature range established during the initial source test and this temperature and landfill gas flow rate must be monitored continuously per Section 95469(b)(1).

Surface methane emissions

Section 95465 contains the two landfill surface emission standards: the instantaneous surface emission limit is 500 ppmv as methane; the integrated surface emission limit is 25 ppmv as methane for each grid. Section 95469(a) requires quarterly surface monitoring to demonstrate compliance with these standards.

Records

According to Section 95470 the landfill is required to keep records of the following:

(A) All gas collection system downtime exceeding five calendar days, including individual well shutdown and disconnection times, and the reason for the downtime.

(B) All gas control system downtime in excess of one hour, the reason for the downtime, and the length of time the gas control system was shutdown.

(C) Expected gas generation flow rate calculated pursuant to section 95471(e).

(D) Records of all instantaneous surface readings of 200 ppmv or greater; all exceedances of the limits in sections 95464(b)(1)(B) or 95465, including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during surface sampling; and the installation date and location of each well installed as part of a gas collection system expansion.

(E) Records of any positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken.

(F) Annual solid waste acceptance rate and the current amount of waste-in-place.

(G) Records of the nature, location, amount, and date of deposition of non-degradable waste for any landfill areas excluded from the collection system.

(H) Results of any source tests conducted pursuant to section 95464(b)(4).

(I) Records describing the mitigation measures taken to prevent the release of methane or other emissions into the atmosphere:

1. When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment;
2. During repairs or the temporary shutdown of gas collection system components; or,
3. When solid waste was excavated and moved.

(J) Records of any construction activities pursuant to section 95466. The records must contain the following information:

1. A description of the actions being taken, the areas of the MSW landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions.

2. Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components.
3. A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts.

(K) Records of the equipment operating parameters specified to be monitored under sections 95469(b)(1) and 95469(b)(2) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded. The records must include the following information:

1. For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 degrees Celsius (or 50 degrees Fahrenheit) below the average combustion temperature during the most recent source test at which compliance with sections 95464(b)(2) and 95464(b)(3)(A) was determined.

Reporting

According to Section 95470(b) the landfill must submit the following reports as required. Closure notification, Equipment removal report, Annual report, Waste-in-place report, and Landfill gas heat input capacity report. Any reports must be accompanied by a certification of truth, accuracy, and completeness signed by a responsible official.

This landfill is expected to comply with these new requirements.

California Health & Safety Code 42301.6 (School Notice)

This site is not located within 1,000 feet of a K-12 school.

Therefore, pursuant to California Health & Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue ATC permit C-2913-1-6 subject to the permit conditions on the attached draft ATC permit in Attachment E.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-2913-1-6	3020-12-U	121 acres	$2,848

Attachments

A. Current Permit to Operate
B. LandGEM Model Emission Calculations
C. Certificate of Conformity
D. Health Risk Assessment and Ambient Air Quality Analysis
E. Draft Authority to Construct Permit

ATTACHMENT A

Current Permit to Operate

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-2913-1-5 **EXPIRATION DATE:** 03/31/2016

EQUIPMENT DESCRIPTION:
MUNICIPAL SOLID WASTE LANDFILL SERVED BY A 33.33 MMBTU/HR LEACHATE/LANDFILL GAS CONDENSATE COLLECTION SYSTEM SERVED BY A CALLIDUS TECHNOLOGIES ENCLOSED FLARE WITH UP TO 100 GAS EXTRACTION WELLS

PERMIT UNIT REQUIREMENTS

1. The landfill facility, associated equipment, and surrounding Fairmead Landfill property shall be operated and maintained in such a manner as to prevent the generation of odors which may constitute a nuisance. [District Rule 4102]
2. Air pollution control equipment shall be maintained in good operating condition and shall be operated in accordance with the manufacturer's instructions. [District Rule 4102]
3. Equipment shall be operated in such a manner as to not constitute a nuisance or annoyance to a considerable number of people. [District Rule 4102]
4. Refuse delivery trucks shall be unloaded within two hours after entering the property. [District Rule 4102]
5. Refuse shall not be stockpiled anywhere outside of the designated refuse disposal areas. Trucks waiting their turn to unload within the 2 hour unload time limitation are not considered stockpiled outside the designated refuse disposal areas. [District Rule 4102]
6. All trucks delivering refuse shall be maintained in condition to prevent leakage of solid or liquid material and shall not be leaking solid or liquid material prior to exiting the landfill site. Trucks shall be cleared of any debris to minimize nuisance emissions. [District Rule 4102]
7. The designated refuse disposal areas shall be covered at the end of each operating day and maintained as necessary to prevent the emission of nuisance odors. [District Rule 4102]
8. Permittee shall maintain an updated odor control plan detailing all methods of nuisance odor control as it applies to the facility. The odor control plan shall be made available to all employees and shall be used as a training aid for new employees. The odor control plan shall be made available for District inspection upon request. [District Rule 4102]
9. The District shall have authority to investigate possible odors alleged to originate from the facility and to make a determination of whether or not a nuisance exists, either in response to a complaint or on its own initiative. [District Rules 1070 and 4102]
10. Composting shall not be performed as part of this expansion of the landfill. If composting is proposed in the future, a new application for an Authority to Construct must be submitted. The CEQA health risk assessment for this expansion must be revised to include the impacts of additional off-road equipment that will operate at the proposed composting site and associated truck traffic if composting or any other operation that would increase off-road equipment emissions or truck traffic on-site is proposed in the future. [California Environmental Quality Act]
11. All new diesel-fueled off-road equipment greater than 25 hp that will be added in the future beyond what is currently in use shall meet an emission limit of 0.15 g-PM10/bhp-hr. [California Environmental Quality Act]
12. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. The District shall be notified in writing ten days prior to the acceptance of new types of waste streams, or waste streams with significant malodorous qualities. [District Rule 4102]
14. Total Class III waste material rate received at the facility shall not exceed either 1,100 tons/day or 401,500 tons/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Facility-wide VOC emissions shall not exceed 19,999 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
16. VOC emissions from the landfill and the flare shall not exceed 70.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu, 0.033 lb-SOx/MMBtu, 0.02 lb-PM10/MMBtu, 0.2 lb-CO/MMBtu, or 0.0084 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Total PM10 emissions from the handling of soil cover shall not exceed 0.0023 lb-PM10/ton of material handled. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Total soil cover usage rate shall not exceed 3,478 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
20. The heat input of the landfill gas being combusted in the flare shall not exceed 33.33 MMBtu/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
21. The flare shall be tested for compliance with the VOC emissions limit at least once every 12 months. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Source testing on the flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98%, or 20 ppmvd @ 3% O2 as hexane, as required by this permit shall be conducted annually. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Methane destruction efficiency of the flare shall be at least 99% by weight. [17 CCR 95464]
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. The following test methods shall be used for VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit
27. Sulfur content of the landfill gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or double GC for H2S and mercaptans, or draeger tubes for H2S, or an equivalent method approved by the District. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Flare NMOC emissions shall be conducted using USEPA Test Method 18, 25, 25A, or 25C. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
32. For initial monitoring of collection devices in the expansion area, prior to initial operation, the permittee shall monitor the collectors at least once per quarter for static pressure, percent methane, percent oxygen, and temperature utilizing a District-approved portable landfill gas analyzer. [District Rule 2201] Federally Enforceable Through Title V Permit

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33. For commissioning of collection devices in the expansion area, collectors shall be commissioned and continually operated if all of the following parameters are met: (1) methane percent 45% or greater; (2) oxygen percent 5% or less; (3) temperature 131 degrees F; and (4) static pressure 5.0 in H2O or greater. [District Rule 2201] Federally Enforceable Through Title V Permit

34. For operation of collection devices in the expansion area, once the collectors are commissioned, the permittee shall monitor the collectors weekly for the first six months of operation and may switch to monthly monitoring thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit

35. For surface emissions monitoring, once an area has reached final grade or within 90 days when the LFG system in the area is commissioned, whichever comes first, surface emissions shall not exceed a methane concentration of 500 parts per million above background at the surface of the landfill. [District Rule 2201] Federally Enforceable Through Title V Permit

36. For surface emissions monitoring, surface monitoring for the landfill area shall be performed quarterly. If there are any exceedances during a quarterly event, monitoring will be required monthly until three consecutive months without exceedances, which would allow a return to quarterly monitoring. [District Rule 2201] Federally Enforceable Through Title V Permit

37. For surface emissions monitoring, after an exceedance, the permittee shall initiate correction action within five days and conduct remonitoring within ten days from the initial exceedance. If compliance is shown, an additional remonitoring event is required within one month of the initial exceedance. If the ten day event shows an exceedance, the permittee shall initiate correction action within five days and conduct remonitoring within ten days from the second exceedance. If compliance is shown, an additional remonitoring is required within one month of the initial exceedance. If the second ten day event shows an exceedance, the permittee shall permit and install additional landfill gas wells to correct the problem within 120 days of the initial exceedance. The permittee may utilize an alternative corrective action with prior approval from the APCO. [District Rule 2201] Federally Enforceable Through Title V Permit

38. For surface emissions monitoring, permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals (or a site-specific established spacing) and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. [District Rule 2201] Federally Enforceable Through Title V Permit

39. For surface emissions monitoring, surface testing shall be performed using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [District Rule 2201] Federally Enforceable Through Title V Permit

40. For surface emissions monitoring, the portable analyzer shall meet the instrument specifications of Method 21, section 3 (except that "methane" shall replace all references to VOC). The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. To meet the performance evaluation requirements of Method 21, section 3.1.3, the instrument evaluation procedures of Method 21, section 4.4. The calibration procedures provided in Method 21, section 4.2 shall be followed immediately before commencing a surface monitoring survey. [District Rule 2201] Federally Enforceable Through Title V Permit

41. The provisions of this permit apply at all times, except during periods of start-up, shutdown, or malfunction (as defined in 40 CFR 60.755(e)). [District Rule 2201] Federally Enforceable Through Title V Permit

42. For site-wide VOC emissions monitoring, permittee shall perform site-wide VOC emissions monitoring on an annual basis. Samples shall be collected from the existing landfill and expansion areas per the LFG collection pipes, permanent LFG sampling wells, or Tier 2 procedures as described in this permit. Collected samples shall be analyzed using EPA Methods 25C and 3C. The results shall be submitted to the District quarterly for projected site-wide VOC emissions for the following year. If the projected site-wide VOC emissions exceeds the VOC offset threshold, the applicant shall submit an Authority to Construct application to install a GCCS one year prior to the site-wide VOC emissions projected to exceed the offset threshold for the following year. [District Rule 2201] Federally Enforceable Through Title V Permit

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43. Permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [District Rule 2201] Federally Enforceable Through Title V Permit

44. The NMOC emission rate shall be calculated using the equation in 40CFR60.754(a)(1)(i), if the actual year-to-year solid waste acceptance rate is known or the equation in 40CFR60.754(a)(1)(ii), if the actual year-to-year solid waste acceptance rate is unknown. The values for k, Lo, and CNMOC for both equations shall be taken from 40CFR60.754(a)(1), as appropriate. Both equations may be used if the actual year-to-year acceptance rate is known for a part of the landfill life, but unknown for another part of the landfill life. The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating R, if documentation of the nature and amount of such wastes is maintained. (Tier 1 specifications) [40 CFR 60.754(a)(1) and 60.34c] Federally Enforceable Through Title V Permit

45. If the calculated NMOC emission rate is equal to or greater than 50 megagrams/year, then the landfill owner or operator shall either comply with the requirements of this permit to submit a collection and control design plan and install the system, or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using Tier 2 specifications. [40 CFR 60.754(a)(2)(ii)] Federally Enforceable Through Title V Permit

46. Tier 2 specifications to determine the site-specific NMOC concentration shall include the following: 1) For sampling, at least 2 sample probes shall be installed per hectare of landfill surface that has retained waste for at least 2 years, up to a maximum of 50 required probes. Probes should be located in known areas of degradable solid waste. One sample of landfill gas shall be collected from each probe to determine the NMOC concentration, using EPA Method 25, 25C, another method approved by the EPA, or 18, in accordance with 40 CFR 60.754(a)(3). If EPA Method 18 is used, the minimum list of compounds to be tested shall be those published in the most recent Compilation of AP-42. If composite sampling is used, equal sample volumes are required. All samples taken shall be used in the analysis. The NMOC concentration from Method 25 or 25C shall be divided by 6 to convert from C-NMOC, as carbon to as hexane. 2) For landfills equipped with active collection systems, samples may be collected from the common header pipe before gas moving or condensate removal equipment; a minimum of 3 samples must be collected . [40 CFR 60.754(a)(3), (a)(5)] Federally Enforceable Through Title V Permit

47. Tier 2 specifications to determine the site-specific NMOC concentration shall include the following: 1)The NMOC mass emission rate shall be recalculated using the average site-specific concentration, instead of the default value, 2) If the resulting calculated mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall either comply with 60.752(b)(2), or determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using Tier 3 specifications. [40 CFR 60.754(a)(3)(i)&(ii)] Federally Enforceable Through Title V Permit

48. If the calculated NMOC mass emission rate, using the site-specific NMOC concentration, is less than 50 megagrams/year, then a periodic estimate of the emission rate report, pursuant to 60.757(b)(1) shall be submitted to the Administrator. The site-specific NMOC concentration shall be retested every 5 years, using Tier 2 specifications. [40 CFR 60.754(a)(3)(iii)] Federally Enforceable Through Title V Permit

49. Tier 3 specifications to determine the site-specific methane generation rate constant shall include the following: 1) EPA Method 2E or another method approved by the EPA shall be used, 2) The NMOC mass emission rate shall be recalculated using the average site-specific NMOC concentration and the site-specific methane generation rate constant k, instead of the default values in 40 CFR 60(a)(1), and 3) If the resulting calculated NMOC mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall comply with 60.752(b)(2). [40 CFR 60.754(a)(4), (a)(5) and (i)] Federally Enforceable Through Title V Permit

50. If Tier 3 specifications are used to determine the site-specific methane generation rate and the calculated NMOC mass emission rate is less than 50 megagrams/year, then a periodic emission rate report shall be submitted to the Administrator, pursuant to 60.757(b)(1) and the NMOC concentration shall be recalculated annually, pursuant to 60.757(b)(1), using the site-specific methane generation rate constant and the NMOC concentration obtained using Tier 2 specifications. Determination of the site-specific methane generation rate constant is performed once and used in all subsequent annual NMOC emission rate calculations. [40 CFR 60.754(a)(4)(ii)] Federally Enforceable Through Title V Permit

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51. The NMOC emission rate shall be recalculated and reported to the APCO annually, except as otherwise provided in this permit, until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams/year and a collection and control system is installed or until the landfill is closed. [40 CFR 60.752(b)(1), 60.754(a), 60.757(b)] Federally Enforceable Through Title V Permit

52. If the NMOC emission rate, as reported in the annual report is less than 50 megagrams/year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual reports for those 5 years. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years. All data and calculations upon which this estimate is based shall be provided to the APCO. This estimate shall be revised at least once every 5 years. [40 CFR 60.757(b)(1)(ii)] Federally Enforceable Through Title V Permit

53. If the actual waste acceptance rate exceeds the estimated rate used in any year reported in a 5-year estimate of the NMOC emission rate, then a revised 5-year estimate shall be submitted to the APCO. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated acceptance rate. [40 CFR 60.757(b)(1)(ii)] Federally Enforceable Through Title V Permit

54. The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions. [40 CFR 60.757(b)(2)] Federally Enforceable Through Title V Permit

55. If the owner or operator elects to recalculate the NMOC emission rate using Tier 2 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 2 specifications, shall be submitted within 180 days of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(1)] Federally Enforceable Through Title V Permit

56. If the owner or operator elects to recalculate the NMOC emission rate using Tier 3 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 3 specifications, shall be submitted within 1 year of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(2)] Federally Enforceable Through Title V Permit

57. If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756] Federally Enforceable Through Title V Permit

58. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit

59. Permittee shall operate the flare at all times when the collected gas is routed to it. [District Rule 2201] Federally Enforceable Through Title V Permit

60. Gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

61. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District Rules 2020, 7.3 and 2201] Federally Enforceable Through Title V Permit

62. Maintenance is defined as work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction. [District Rule 2201] Federally Enforceable Through Title V Permit

63. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District Rule 2201] Federally Enforceable Through Title V Permit

64. Landfill gas line from collection header shall be equipped with a gas flow rate measurement device. [District Rule 2201] Federally Enforceable Through Title V Permit

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65. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter, or other APCO approved alternative, to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District NSR Rule] Federally Enforceable Through Title V Permit

66. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit

67. If the facility accepts contaminated soil for disposal, source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel. [District Rule 4651] Federally Enforceable Through Title V Permit

68. If the facility accepts contaminated soil for disposal, the operator of the facility shall maintain a copy of the source test protocol. A copy of the source test results must be maintained for at least five years and be readily available to the APCO upon written or oral request. [District Rule 4651] Federally Enforceable Through Title V Permit

69. If the facility accepts contaminated soil for disposal, one composite sample shall be collected and analyzed for VOC for every 50 cubic yards of excavated soil that has been determined to be uncontaminated by the test method(s) specified in this permit. At least one (1) composite sample shall be collected from each storage pile within 12 hours of soil decontamination. [District Rule 4651] Federally Enforceable Through Title V Permit

70. If the facility accepts contaminated soil for disposal, a composite sample shall consist of one sample taken from the center of each of four (4) equal sectors using the procedures specified in this permit. [District Rule 4651] Federally Enforceable Through Title V Permit

71. If the facility accepts contaminated soil for disposal, samples shall be taken from at least twelve (12) inches below the surface of the pile using a driven-tube type sampler, capped and sealed with inert materials, and extruded in the lab in order to reduce the loss of volatile materials; or by using a clean brass or stainless steel tube (at least twelve (12) inches long) driven into the soil with a suitable instrument. The ends of the brass tube shall then be covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape. The samples shall then be immediately placed on ice, or dry ice, for transport to a laboratory. [District Rule 4651] Federally Enforceable Through Title V Permit

72. If the facility accepts contaminated soil for disposal, the initial boiling point of a liquid from samples of contaminated soil shall be measured in accordance with ASTM D86 for soil contaminated with petroleum liquid or ASTM D-1078 for soil contaminated with known organic chemical. [District Rule 4651] Federally Enforceable Through Title V Permit

73. If the facility accepts contaminated soil for disposal, the VOC concentration of soils shall be measured as hexane using an organic vapor analyzer, complying with EPA Reference Method 21. [District Rule 4651] Federally Enforceable Through Title V Permit

74. If the facility accepts contaminated soil for disposal, the VOC content of the soil that can be reasonably demonstrated to be contaminated only with petroleum shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. [District Rule 4651] Federally Enforceable Through Title V Permit

75. If the facility accepts contaminated soil for disposal, the VOC content of soil that is contaminated by unknown VOC-containing liquids, or that cannot be reasonably demonstrated to be contaminated only with petroleum, shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. In addition to one of the aforementioned methods, the operator shall use EPA Reference Method 8260B or the gas chromatographic method in the Leaking Underground Fuel Tank (LUFT) Manual (October 1989). [District Rule 4651] Federally Enforceable Through Title V Permit

76. If the facility accepts contaminated soil for disposal, an operator may use an equivalent alternative test method other than those listed if APCO and EPA approval has been obtained. [District Rule 4651] Federally Enforceable Through Title V Permit

77. If the facility accepts contaminated soil for disposal, when more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this permit. [District Rule 4651] Federally Enforceable Through Title V Permit

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78. If the facility accepts contaminated soil for disposal, the permittee shall comply with the following when excavating contaminated soil: 1) Submit a written notice according to Section 6.1 prior to commencement of excavation of known contaminated soil; 2) Monitor operation for VOC contamination at least once every 15 minutes unless the excavated soil is treated according to Section 5.2.1; 3) Excavated soil that has been detected as contaminated shall be placed in storage piles or handled as required by Section 5.2 and; 4) Excavated contaminated soil shall be decontaminated, recycled, disposed of in an approved facility, returned to excavation and permanently covered with at least six (6) inches of uncontaminated soil, or transported to a location outside of the SJVAB within thirty (30) calendar days from the time of excavation or as directed by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer having jurisdiction. [District Rule 4651] Federally Enforceable Through Title V Permit

79. If the facility accepts contaminated soil for disposal, when handling excavated contaminated soil with VOC concentration measuring at 1,000 ppm or greater, the contaminated soil shall be sprayed with water or vapor suppressant and contaminated soil placed in sealed containers as soon as possible, but no more than 30 minutes after excavation, and handle pursuant to Section 5.1.4, or the contaminated soil loaded into trucks as soon as possible but no more than 30 minutes after excavation, moisten with additional water, cover as required in Section 5.3, and transport immediately to an approved facility, or implement other approved alternative storage methods and handle pursuant to Section 5.1.4. [District Rule 4651] Federally Enforceable Through Title V Permit

80. If the facility accepts contaminated soil for disposal, when handling storage piles of contaminated soil the piles shall be clearly isolated and identifiable from storage piles of uncontaminated soil. The following is required for identification: 1) Location of the storage pile. 2) Unique identification of the storage pile. 3). The date that the storage pile was excavated. 4). Any other information deemed necessary for identification. [District Rule 4651] Federally Enforceable Through Title V Permit

81. If the facility accepts contaminated soil for disposal, when handling storage piles of contaminated soil that have been inactive for more than 60 consecutive minutes, the piles shall be treated with water or a vapor suppressant and cover with heavy-duty plastic sheeting to reduce VOC emissions and the covering shall have at least a six-feet overlap of adjacent sheets, be securely anchored, and have minimal headspace where vapors may accumulate, or covered with a layer of uncontaminated soil no less than six (6) inches deep. [District Rule 4651] Federally Enforceable Through Title V Permit

82. If the facility accepts contaminated soil for disposal, when handling contaminated soil, a visual inspection of all storage piles of contaminated soil shall be conducted at least once every 24 hours, except when operators do not report to the facility for a given 24-hour period, to ensure the integrity of the covered surfaces and compliance with Section 5.2.5. [District Rule 4651] Federally Enforceable Through Title V Permit

83. If the facility accepts contaminated soil for disposal, when handling contaminated soil, aeration of contaminated soil shall not be allowed except that which occurs during removal or addition of contaminated soil to a storage pile and this includes the use of contaminated soil in daily, intermediate, or final cover operations at disposal sites. [District Rule 4651] Federally Enforceable Through Title V Permit

84. If the facility accepts contaminated soil for disposal, the permittee shall comply with the following when transporting contaminated soil: 1) Any truck or trailer transporting contaminated soil shall be filled such that contaminated soil does not extend above the sides or rear of the truck; 2) Contaminated soil shall be treated with water or vapor suppressant and covered with an continuous heavy duty plastic sheeting or other covering to prevent spillage of contaminated soil during transport, and; 3) Chain-of-custody records shall be maintained according to Section 6.3.1 by the operators to document transfer of the transported contaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

85. If the facility accepts contaminated soil for disposal, when decontaminating soil, VOC emissions from the decontamination of contaminated soil shall be controlled by installation and operation of a VOC collection and control device with a VOC destruction or removal efficiency of at least 95%, or any other approved VOC control device demonstrated to be equivalent. [District Rule 4651] Federally Enforceable Through Title V Permit

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86. If the facility accepts contaminated soil for disposal, when decontaminating soil, the permittee shall monitor the temperature, pressure, and flow rates of the VOC control device. [District Rule 4651] Federally Enforceable Through Title V Permit

87. If the facility accepts contaminated soil for disposal, when decontaminating soil, the VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations. [District Rule 4651] Federally Enforceable Through Title V Permit

88. If the facility accepts contaminated soil for disposal, the permittee shall comply with one of the following regarding contaminated soil: 1) Return the contaminated soil to the excavation and permanently cover with six (6) inches or more of uncontaminated soil, or; 2) Decontaminate the contaminated soil to the extent that the soil is no longer considered contaminated as defined in Section 3.17, or; 3) Transport the contaminated soil to an approved disposal facility, or; 4) Transport the contaminated soil to a location outside of the SJVAB. [District Rule 4651] Federally Enforceable Through Title V Permit

89. If the facility accepts contaminated soil for disposal, when decontaminating soil, the samples from decontaminated soil (that is to be treated as uncontaminated soil) shall be obtained by using the soil sampling methods specified in this permit and shall be tested using the applicable soil sample test methods specified in the permit. [District Rule 4651] Federally Enforceable Through Title V Permit

90. If the facility accepts contaminated soil for disposal, the permittee shall include the following information in the notice of excavation activities: Names and addresses of operator(s) performing and responsible for excavation, location of site where excavation will occur, scheduled starting date of excavation (if the excavation does not commence on the start date, re-notification is required), estimated volume of soil to be excavated, estimated volume (in gallons) of VOC liquid spilled in the soil, if known. [District Rule 4651] Federally Enforceable Through Title V Permit

91. If the facility accepts contaminated soil for disposal, where emergency excavation is conducted at the direction of an authorized officer, the permittee shall include the following information: Name, title and contact information of the authorized officer, and a copy of the signed emergency declaration from the authorized officer. [District Rule 4651] Federally Enforceable Through Title V Permit

92. If the facility accepts contaminated soil for disposal, the permittee shall include the following information in the written notice when excavating contaminated soil: Names and addresses of operator(s) performing and responsible for excavation, address of site where excavation occurred, date(s) of excavation, estimated volume of contaminated soil excavated, estimated average VOC content of the contaminated soil or estimated volume of VOC contaminant, and final disposition of the contaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

93. If the facility accepts contaminated soil for disposal, the permittee shall identify each storage pile with the following information: Location of the storage pile, unique identification of the storage pile, and the date that the soil storage pile was excavated. [District Rule 4651] Federally Enforceable Through Title V Permit

94. If the facility accepts contaminated soil for disposal, the operator of a VOC control device used to decontaminate excavated soil shall demonstrated compliance with a VOC destruction or removal efficiency of at least 95%, or any other approved VOC control device demonstrated to be equivalent, before operation of such system. [District Rule 4651] Federally Enforceable Through Title V Permit

95. Control system VOC emissions shall be determined by Method 25, 25C, or Method 18. [40 CFR 60.754(d)] Federally Enforceable Through Title V Permit

96. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall submit an equipment removal report to the District 30 days prior to removal or cessation of operation of the control equipment. The report shall conform to the requirements of 40 CFR 60.757(e)(1). [40 CFR 60.757(e)] Federally Enforceable Through Title V Permit

97. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

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98. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, the initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. The initial report shall include information specified in 40 CFR 60.757(g)(1-6). [40 CFR 60.757(f), (g)] Federally Enforceable Through Title V Permit

99. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) shall include information specified in 40 CFR 60.757(g)(1-6) with the initial performance test report required under 40 CFR Part 60.8. [40 CFR 60.757(g)] Federally Enforceable Through Title V Permit

100. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, each owner or operator shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. [District Rule 2520, 9.4.2 and 40 CFR 60.758(a)] Federally Enforceable Through Title V Permit

101. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, the following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f): All 3-hour periods of operation during which the average combustion temperature was more than 28 ÝC below the average combustion temperature during the most recent performance test (flare source test). [40 CFR 60.758(c)] Federally Enforceable Through Title V Permit

102. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs 60.758(b)(1) through (b)(4) as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal. [40 CFR 60.758(b)] Federally Enforceable Through Title V Permit

103. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall keep the following records: (1)(i) the maximum expected gas generation flow rate as calculated in 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the APCO; (ii) the density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 60.759(a)(1); (2)(i) the average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test; (ii) the percent reduction of NMOC determined as specified in 60.752(b)(2)(ii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)] Federally Enforceable Through Title V Permit

104. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the enclosed flare, or the indication of bypass flow, or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, if applicable. [40 CFR 60.758(c) and 60.34c] Federally Enforceable Through Title V Permit

105. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), permittee shall keep, for the life of the collection system, an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector. Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or non-degradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)] Federally Enforceable Through Title V Permit

106. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [40 CFR 60.758(e)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

107. The gas collection and control system shall comply with the operational standards of 40 CFR 60.753, the compliance provisions of 40 CFR 60.755, the monitoring provisions of 40 CFR 60.756, the reporting and record keeping requirements of 40 CFR 60.757 and 60.758, and the requirements of 40 CFR 60.759 (for active collection systems). [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756, 60.757, 60.758, 60.759, 62.14353]

108. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 2201] Federally Enforceable Through Title V Permit

109. Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit

110. The operator shall record emission control device source tests (emissions of CO, NOx, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit

111. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

112. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and hourly heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District Rule 2201 and 40 CFR 64] Federally Enforceable Through Title V Permit

113. Records of daily landfill gas flow rate and annual test results of higher heating value of landfill gas shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

114. The facility shall maintain records of annual throughput, material usage, and other information necessary to demonstrate that facility-wide emissions are less than ten tons per year for both NOx and VOC. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit

115. The permittee shall maintain the following records at the time custody is transferred: the identities and business addresses of the relevant parties such as the generator, transporter, and storage/treatment facilities, the volume of contaminated soil generated or received, all analytical data associated with the contaminated soil (except during an emergency evacuation of soil), the date and location of excavation of the contaminated soil, and the date and signatures of the operators at the time custody is transferred. [District Rule 4651] Federally Enforceable Through Title V Permit

116. The permittee shall maintain visual inspection records at least once every 24 hours except when operators do not report to the facility for that given 24 hours and the records shall include location and unique identification of each specific pile and name, date, and signature of operator inspecting the storage piles. [District Rule 4651] Federally Enforceable Through Title V Permit

117. The permittee shall maintain the following records for VOC concentration readings: the identities and business addresses of the relevant parties such as the generator or storage/treatment facilities, the volume of contaminated or decontaminated soil, date of contaminated or decontaminated soil, VOC concentration reading, and the origin of the contaminated or decontaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

118. The permittee shall maintain records of calibrations for all approved monitoring instruments. [District Rule 4651] Federally Enforceable Through Title V Permit

119. Chain-of-custody records shall be kept by the operators to document possession of a sample from the time it is taken in the field until it is analyzed. [District Rule 4651] Federally Enforceable Through Title V Permit

120. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

121. Each owner or operator, required by 40 CFR 60.752(b)(2) of subpart WWW to install a collection and control system, shall comply with the requirements in 40 CFR 63.1960 through 63.1985 and with the general provisions specified in Table 1 of 40 CFR 63 Subpart AAAA. [40 CFR 63.1955(b)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

122. For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, owner or operator must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR Part 60 Subpart WWW, these alternatives can be used to comply with 40 CFR 63 Subpart AAAA, except that all affected sources must comply with the startup, shutdown, and malfunction (SSM) requirements in Subpart A of 40 CFR 63 as specified in Table 1 of 40 CFR 63 Subpart AAAA and all affected sources must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average. [40 CFR 63.1955(c)] Federally Enforceable Through Title V Permit

123. During operation of the enclosed flare, the permittee shall continuously monitor and record combustion chamber temperature. The temperature readings shall not be less than 28 degree C (50 degree F) below the average combustion temperature determined during the most recent flare source test, averaged over a 3-hour period. Upon detecting any temperature excursion lower than 28 degree C (50 degree F) below the source test average combustion temperature, averaged over a 3-hour period, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR 64 and 40 CFR 60.758(c)(1)(i)] Federally Enforceable Through Title V Permit

124. The enclosed flare burner and its associated components and the vapor collection system shall be inspected on an annual basis. The records of inspection shall at least contain date and time of inspection, identification of the person performing an inspection, parts replacement and repairs, and all maintenance actions taken. The records shall be kept and maintained for compliance inspection upon request. [40 CFR 64] Federally Enforceable Through Title V Permit

125. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR 64] Federally Enforceable Through Title V Permit

126. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR 64] Federally Enforceable Through Title V Permit

127. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64] Federally Enforceable Through Title V Permit

128. Permittee may use actual landfill gas generation values in future expansion designs of the gas collection and control system(GCCS). All records and recovery data shall be submitted with GCCS plans. [17 CCR 95468]

129. Landfill gas collection system wellheads must be operated under vacuum. Monthly monitoring of wellheads is required. Landfill gas collection system wellheads may be operated under neutral or positive pressure when there is a fire or during other times as allowed in sections 95464(c), 95464(d), and 95464(e). [17 CCR 95464]

130. Landfill gas collection system components downstream of blower have a leak limit of 500 ppmv as methane. Components must be checked quarterly. If compliance with the methane limit has been demonstrated for 4 consecutive quarters, then the component checking frequency shall be annually. If an annual test fails to show compliance, quarterly testing shall resume. [17 CCR 95464]

131. The flare must operate within the parameter ranges established during the initial or most recent source test. [17 CCR 95464]

132. Landfill collection and control system must be operated such that landfill surface methane emissions shall not exceed instantaneous surface emission limit of 500 ppmv as methane or integrated surface emission limit of 25 ppmv as methane. [17 CCR 95464, 17 CCR 95465]

133. Instantaneous and integrated landfill surface emissions measurements shall be done quarterly. The landfill may monitor annually provided they comply with requirements of 17 CCR 95469 (a)(1). [17 CCR 95469]

134. Permittee shall keep records of all gas collection system downtime exceeding five days, including individual well shutdown and disconnection times and the reason for downtime. [17 CCR 95470]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

135. Permittee shall keep records of all gas control system downtime in excess of one hour, the reason for the downtime and the length of time the gas control system was shutdown. [17 CCR 95470]

136. Permittee shall keep records of the expected gas generation flow rate calculated pursuant to section 95471(e). [17 CCR 95470]

137. Permittee shall keep records of all instantaneous surface readings of 200 ppmv or greater; all exceedances of the limits in sections 95464(b)(1)(B) or 95465, including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during surface sampling; and the installation date and location of each well installed as part of a gas collection system expansion. [17 CCR 95470]

138. Permittee shall keep records of any positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken. [17 CCR 95470]

139. Permittee shall conduct surface emission monitoring using either the procedures specified in section 95471 or the Los Angeles County Sanitation District monitoring procedure. Permittee shall keep records of which procedure was used. [17 CCR 95468]

140. Permittee shall keep records of delays encountered during repair of leaks or repair of positive wellhead readings. Documentation of delays shall be submitted with the annual report. [17 CCR 95468]

141. Permittee shall keep records of alternate landfill gas collection system modifications being implemented to correct an exceedance in the landfill gas surface emissions or wellhead pressure. Any alternative to installing a new well shall be documented and submitted with the annual report. [17 CCR 95468]

142. Permittee shall identify areas which are dangerous and unable to be inspected. Areas shall be clearly identified on a map of the facility. A copy of the map shall be kept onsite as well as submitted with the annual report. [17 CCR 95468]

143. Permittee shall conduct monitoring of the landfill surface within 3 inches of the surface. The facility may monitor surface emissions with the probe tip at the height of the vegetation if there is vegetation and it is impractical to monitor at 3 inches from the landfill surface. [17 CCR 95468]

144. Permittee shall terminate surface emission testing when the measured average wind speed is over 10 mph or the instantaneous wind speed is over 15 mph. [17 CCR 95468, 17 CCR 95471]

145. Permittee shall only conduct surface emission testing when precipitation has met the following requirements. It has been 24 hours since measured precipitation of 0.01 to 0.15 inches. It has been 48 hours since measured precipitation of 0.16 to 0.24 inches. It has been 72 hours since measured precipitation of 0.25 or more inches. [17 CCR 95468]

146. Permittee shall keep records of the annual solid waste acceptance rate and the current amount of waste-in-place. [17 CCR 95470]

147. Permittee shall keep records of the nature, location, amount , and date of deposition of non-degradable waste for any landfill areas excluded from the collection system. [17 CCR 95470]

148. Permittee shall keep records of any source tests conducted pursuant to section 95464(b)(4). [17 CCR 95470]

149. Permittee shall keep records describing the mitigation measures taken to prevent the release of methane or other emissions into the atmosphere during the following activities: 1. When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; 2. During repairs or the temporary shutdown of gas collection system components; or, 3. When solid waste was excavated and moved. [17 CCR 95470]

150. Permittee shall keep records of any construction activities pursuant to section 95466. The records must contain the following information: 1. A description of the actions being taken, the areas of the MSW landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions. 2. Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components. 3. A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts. [17 CCR 95470]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

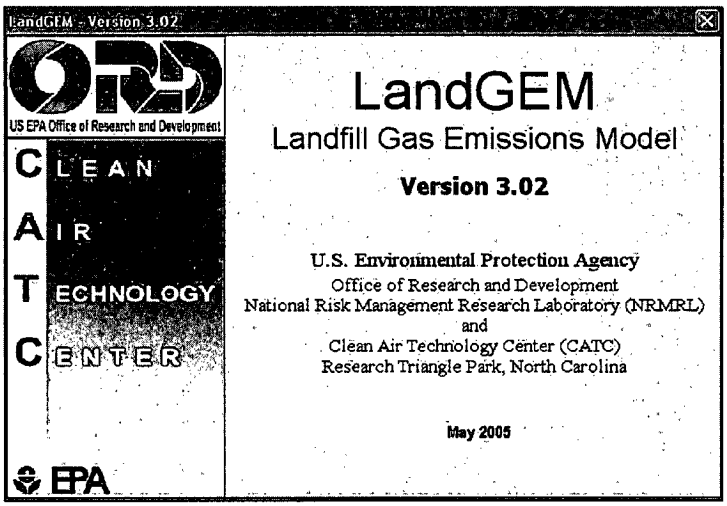
151. Permittee shall keep records of the equipment operating parameters specified to be monitored under section 95469(b)(1) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded. The records must include the following information: 1. For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 degrees Celsius (or 50 degrees Fahrenheit) below the average combustion temperature during the most recent source test at which compliance with sections 95464(b)(2) was determined and a gas flow rate device which must record the flow to the control device at least every 15 minutes. [17 CCR 95470]

152. Permittee shall submit the following reports as required in section 95470(b): Closure notification, Equipment removal report and Annual report. All reports must be accompanied by a certification of truth, accuracy, and completeness signed by a responsible official. [17 CCR 95470]

153. Permittee may comply with the CARB regulation for landfill methane control measures by using approved alternative compliance options. The permittee shall obtain written District approval for the use of any alternative compliance options not specifically approved by this permit. Changes to the approved alternate compliance options must be made and approved in writing. Documentation of approved alternative compliance options shall be available for inspection upon request. [17 CCR 95468]

ATTACHMENT B

LandGEM Model Emission Calculations



Summary Report

Landfill Name or Identifier: Fairmead Landfill

Date: Tuesday, May 05, 2015

Description/Comments:
Waste acceptance for 1971 through 2012 based on 2013 SCS Tier II Report. Waste acceptance for 2013 and 2014 from Madera County scale house records. Waste acceptance for 2015 through closure based on maximum annual waste acceptance rates.

About LandGEM:

First-Order Decomposition Rate Equation: $$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o \left(\frac{M_i}{10}\right) e^{-kt_{ij}}$$

Where,
Q_{CH4} = annual methane generation in the year of the calculation ($m^3/year$)
i = 1-year time increment
n = (year of the calculation) - (initial year of waste acceptance)
j = 0.1-year time increment
k = methane generation rate ($year^{-1}$)
L_o = potential methane generation capacity (m^3/Mg)
M_i = mass of waste accepted in the i^{th} year (Mg)
t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**1971**	
Landfill Closure Year (with 80-year limit)	**2020**	
Actual Closure Year (without limit)	***2020***	
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity	**5,976,976**	*short tons*

MODEL PARAMETERS

Methane Generation Rate, k	**0.020**	$year^{-1}$
Potential Methane Generation Capacity, L_o	**170**	m^3/Mg
NMOC Concentration	**4,000**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Total landfill gas**
Gas / Pollutant #2:	**Methane**
Gas / Pollutant #3:	**Carbon dioxide**
Gas / Pollutant #4:	**VOC as Hexane**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1971	54,545	60,000	0	0
1972	54,545	60,000	54,545	60,000
1973	54,545	60,000	109,091	120,000
1974	54,545	60,000	163,636	180,000
1975	54,545	60,000	218,182	240,000
1976	17,384	19,122	272,727	300,000
1977	32,291	35,520	290,111	319,122
1978	39,631	43,594	322,402	354,642
1979	41,055	45,161	362,033	398,236
1980	32,184	35,402	403,088	443,397
1981	33,045	36,349	435,272	478,799
1982	46,150	50,765	468,316	515,148
1983	49,367	54,304	514,466	565,913
1984	50,279	55,307	563,834	620,217
1985	57,198	62,918	614,113	675,524
1986	60,102	66,112	671,311	738,442
1987	54,125	59,538	731,413	804,554
1988	50,165	55,182	785,538	864,092
1989	75,607	83,168	835,704	919,274
1990	71,855	79,041	911,311	1,002,442
1991	70,034	77,037	983,166	1,081,483
1992	75,514	83,065	1,053,200	1,158,520
1993	76,561	84,217	1,128,714	1,241,585
1994	80,790	88,869	1,205,275	1,325,802
1995	73,208	80,529	1,286,065	1,414,671
1996	64,855	71,341	1,359,273	1,495,200
1997	75,691	83,260	1,424,128	1,566,541
1998	78,019	85,821	1,499,819	1,649,801
1999	81,539	89,693	1,577,838	1,735,622
2000	87,959	96,755	1,659,377	1,825,315
2001	91,945	101,140	1,747,336	1,922,070
2002	95,614	105,175	1,839,282	2,023,210
2003	103,141	113,455	1,934,895	2,128,385
2004	110,045	121,049	2,038,036	2,241,840
2005	129,051	141,956	2,148,081	2,362,889
2006	137,510	151,261	2,277,132	2,504,845
2007	138,882	152,770	2,414,642	2,656,106
2008	140,273	154,300	2,553,524	2,808,876
2009	141,673	155,840	2,693,796	2,963,176
2010	143,091	157,400	2,835,469	3,119,016

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
2011	94,909	104,400	2,978,560	3,276,416
2012	100,256	110,282	3,073,469	3,380,816
2013	175,997	193,597	3,173,725	3,491,098
2014	137,968	151,765	3,349,723	3,684,695
2015	365,000	401,500	3,487,691	3,836,460
2016	365,000	401,500	3,852,691	4,237,960
2017	365,000	401,500	4,217,691	4,639,460
2018	365,000	401,500	4,582,691	5,040,960
2019	365,000	401,500	4,947,691	5,442,460
2020	120,924	133,016	5,312,691	5,843,960
2021	0	0	5,433,615	5,976,976
2022	0	0	5,433,615	5,976,976
2023	0	0	5,433,615	5,976,976
2024	0	0	5,433,615	5,976,976
2025	0	0	5,433,615	5,976,976
2026	0	0	5,433,615	5,976,976
2027	0	0	5,433,615	5,976,976
2028	0	0	5,433,615	5,976,976
2029	0	0	5,433,615	5,976,976
2030	0	0	5,433,615	5,976,976
2031	0	0	5,433,615	5,976,976
2032	0	0	5,433,615	5,976,976
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2035	0	0	5,433,615	5,976,976
2036	0	0	5,433,615	5,976,976
2037	0	0	5,433,615	5,976,976
2038	0	0	5,433,615	5,976,976
2039	0	0	5,433,615	5,976,976
2040	0	0	5,433,615	5,976,976
2041	0	0	5,433,615	5,976,976
2042	0	0	5,433,615	5,976,976
2043	0	0	5,433,615	5,976,976
2044	0	0	5,433,615	5,976,976
2045	0	0	5,433,615	5,976,976
2046	0	0	5,433,615	5,976,976
2047	0	0	5,433,615	5,976,976
2048	0	0	5,433,615	5,976,976
2049	0	0	5,433,615	5,976,976
2050	0	0	5,433,615	5,976,976

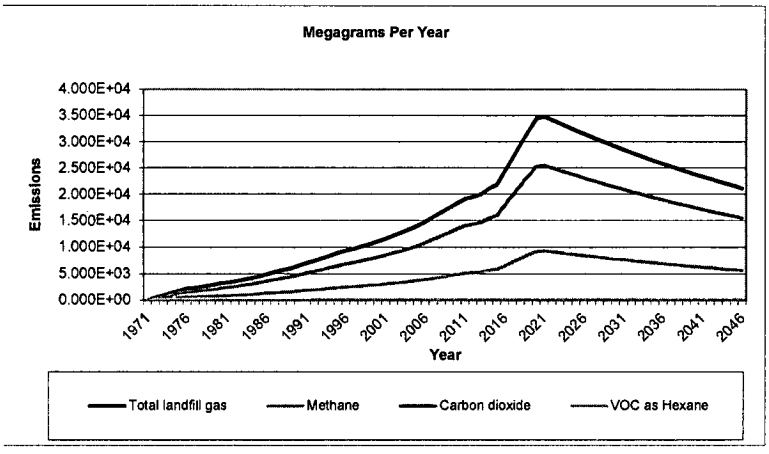
Pollutant Parameters

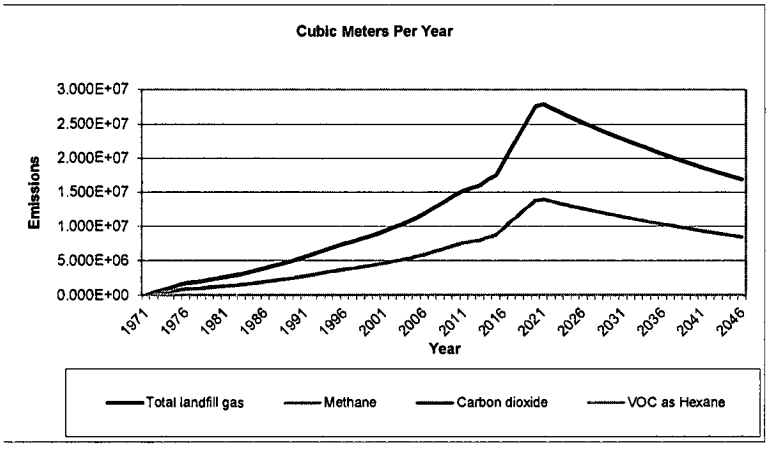
		Gas / Pollutant Default Parameters:		*User-specified Pollutant Parameters:*	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

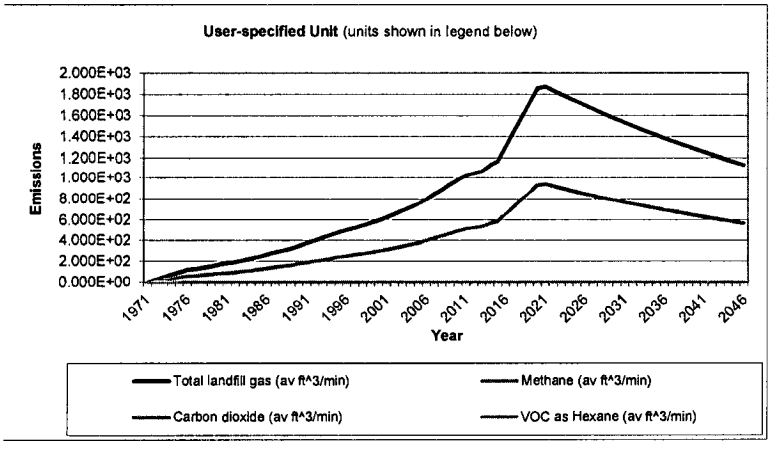
Pollutant Parameters (Continued)

		Gas / Pollutant Default Parameters:		*User-specified Pollutant Parameters:*	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2.3	62.13		
	Ethylbenzene - HAP/VOC	4.6	106.16		
	Ethylene dibromide - HAP/VOC	1.0E-03	187.88		
	Fluorotrichloromethane - VOC	0.76	137.38		
	Hexane - HAP/VOC	6.6	86.18		
	Hydrogen sulfide	36	34.08		
	Mercury (total) - HAP	2.9E-04	200.61		
	Methyl ethyl ketone - HAP/VOC	7.1	72.11		
	Methyl isobutyl ketone - HAP/VOC	1.9	100.16		
	Methyl mercaptan - VOC	2.5	48.11		
	Pentane - VOC	3.3	72.15		
	Perchloroethylene (tetrachloroethylene) - HAP	3.7	165.83		
	Propane - VOC	11	44.09		
	t-1,2-Dichloroethene - VOC	2.8	96.94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92.13		
	Toluene - Co-disposal - HAP/VOC	170	92.13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2.8	131.40		
	Vinyl chloride - HAP/VOC	7.3	62.50		
	Xylenes - HAP/VOC	12	106.16		
	VOC as Hexane			232.05	86.18

Graphs


Megagrams Per Year
Emissions
4.000E+04
3.500E+04
3.000E+04
2.500E+04
2.000E+04
1.500E+04
1.000E+04
5.000E+03
0.000E+00
1971 1976 1981 1986 1991 1996 2001 2006 2011 2016 2021 2026 2031 2036 2041 2046
Year
Total landfill gas
Methane
Carbon dioxide
VOC as Hexane


Cubic Meters Per Year
Emissions
3.000E+07
2.500E+07
2.000E+07
1.500E+07
1.000E+07
5.000E+06
0.000E+00
1971 1976 1981 1986 1991 1996 2001 2006 2011 2016 2021 2026 2031 2036 2041 2046
Year
Total landfill gas
Methane
Carbon dioxide
VOC as Hexane


User-specified Unit (units shown in legend below)
Emissions
2.000E+03
1.800E+03
1.600E+03
1.400E+03
1.200E+03
1.000E+03
8.000E+02
6.000E+02
4.000E+02
2.000E+02
0.000E+00
1971 1976 1981 1986 1991 1996 2001 2006 2011 2016 2021 2026 2031 2036 2041 2046
Year
Total landfill gas (av ft^3/min)
Methane (av ft^3/min)
Carbon dioxide (av ft^3/min)
VOC as Hexane (av ft^3/min)

Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
1971	0	0	0	0	0	0
1972	4.591E+02	3.676E+05	2.470E+01	1.226E+02	1.838E+05	1.235E+01
1973	9.090E+02	7.279E+05	4.891E+01	2.428E+02	3.640E+05	2.445E+01
1974	1.350E+03	1.081E+06	7.264E+01	3.606E+02	5.405E+05	3.632E+01
1975	1.782E+03	1.427E+06	9.590E+01	4.761E+02	7.136E+05	4.795E+01
1976	2.206E+03	1.767E+06	1.187E+02	5.893E+02	8.833E+05	5.935E+01
1977	2.309E+03	1.849E+06	1.242E+02	6.167E+02	9.244E+05	6.211E+01
1978	2.535E+03	2.030E+06	1.364E+02	6.771E+02	1.015E+06	6.819E+01
1979	2.818E+03	2.257E+06	1.516E+02	7.528E+02	1.128E+06	7.581E+01
1980	3.108E+03	2.489E+06	1.672E+02	8.302E+02	1.244E+06	8.361E+01
1981	3.317E+03	2.656E+06	1.785E+02	8.861E+02	1.328E+06	8.924E+01
1982	3.530E+03	2.826E+06	1.899E+02	9.428E+02	1.413E+06	9.495E+01
1983	3.848E+03	3.081E+06	2.070E+02	1.028E+03	1.541E+06	1.035E+02
1984	4.187E+03	3.353E+06	2.253E+02	1.119E+03	1.677E+06	1.126E+02
1985	4.528E+03	3.626E+06	2.436E+02	1.209E+03	1.813E+06	1.218E+02
1986	4.919E+03	3.939E+06	2.647E+02	1.314E+03	1.970E+06	1.323E+02
1987	5.328E+03	4.266E+06	2.866E+02	1.423E+03	2.133E+06	1.433E+02
1988	5.678E+03	4.547E+06	3.055E+02	1.517E+03	2.273E+06	1.527E+02
1989	5.988E+03	4.795E+06	3.221E+02	1.599E+03	2.397E+06	1.611E+02
1990	6.505E+03	5.209E+06	3.500E+02	1.738E+03	2.605E+06	1.750E+02
1991	6.981E+03	5.590E+06	3.756E+02	1.865E+03	2.795E+06	1.878E+02
1992	7.432E+03	5.952E+06	3.999E+02	1.985E+03	2.976E+06	1.999E+02
1993	7.921E+03	6.343E+06	4.262E+02	2.116E+03	3.171E+06	2.131E+02
1994	8.408E+03	6.733E+06	4.524E+02	2.246E+03	3.366E+06	2.262E+02
1995	8.922E+03	7.144E+06	4.800E+02	2.383E+03	3.572E+06	2.400E+02
1996	9.361E+03	7.496E+06	5.037E+02	2.500E+03	3.748E+06	2.518E+02
1997	9.722E+03	7.785E+06	5.230E+02	2.597E+03	3.892E+06	2.615E+02
1998	1.017E+04	8.141E+06	5.470E+02	2.715E+03	4.070E+06	2.735E+02
1999	1.062E+04	8.505E+06	5.715E+02	2.837E+03	4.253E+06	2.857E+02
2000	1.110E+04	8.886E+06	5.971E+02	2.964E+03	4.443E+06	2.985E+02
2001	1.162E+04	9.303E+06	6.251E+02	3.103E+03	4.652E+06	3.125E+02
2002	1.216E+04	9.739E+06	6.543E+02	3.249E+03	4.869E+06	3.272E+02
2003	1.273E+04	1.019E+07	6.847E+02	3.399E+03	5.095E+06	3.423E+02
2004	1.334E+04	1.068E+07	7.178E+02	3.564E+03	5.342E+06	3.589E+02
2005	1.400E+04	1.121E+07	7.534E+02	3.741E+03	5.607E+06	3.767E+02
2006	1.481E+04	1.186E+07	7.969E+02	3.957E+03	5.931E+06	3.985E+02
2007	1.568E+04	1.255E+07	8.434E+02	4.187E+03	6.276E+06	4.217E+02
2008	1.653E+04	1.324E+07	8.896E+02	4.417E+03	6.620E+06	4.448E+02
2009	1.739E+04	1.392E+07	9.355E+02	4.645E+03	6.962E+06	4.678E+02
2010	1.824E+04	1.460E+07	9.811E+02	4.871E+03	7.301E+06	4.906E+02
2011	1.908E+04	1.528E+07	1.027E+03	5.096E+03	7.639E+06	5.133E+02
2012	1.950E+04	1.561E+07	1.049E+03	5.209E+03	7.807E+06	5.246E+02
2013	1.996E+04	1.598E+07	1.074E+03	5.331E+03	7.991E+06	5.369E+02
2014	2.104E+04	1.685E+07	1.132E+03	5.621E+03	8.425E+06	5.661E+02
2015	2.179E+04	1.745E+07	1.172E+03	5.820E+03	8.723E+06	5.861E+02
2016	2.443E+04	1.956E+07	1.314E+03	6.525E+03	9.781E+06	6.572E+02
2017	2.702E+04	2.163E+07	1.454E+03	7.216E+03	1.082E+07	7.268E+02
2018	2.955E+04	2.367E+07	1.590E+03	7.894E+03	1.183E+07	7.950E+02
2019	3.204E+04	2.566E+07	1.724E+03	8.558E+03	1.283E+07	8.619E+02
2020	3.448E+04	2.761E+07	1.855E+03	9.209E+03	1.380E+07	9.275E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2021	3.481E+04	2.788E+07	1.873E+03	9.299E+03	1.394E+07	9.365E+02
2022	3.412E+04	2.732E+07	1.836E+03	9.115E+03	1.366E+07	9.180E+02
2023	3.345E+04	2.678E+07	1.800E+03	8.934E+03	1.339E+07	8.998E+02
2024	3.279E+04	2.625E+07	1.764E+03	8.757E+03	1.313E+07	8.820E+02
2025	3.214E+04	2.573E+07	1.729E+03	8.584E+03	1.287E+07	8.645E+02
2026	3.150E+04	2.522E+07	1.695E+03	8.414E+03	1.261E+07	8.474E+02
2027	3.088E+04	2.472E+07	1.661E+03	8.247E+03	1.236E+07	8.306E+02
2028	3.026E+04	2.423E+07	1.628E+03	8.084E+03	1.212E+07	8.142E+02
2029	2.967E+04	2.375E+07	1.596E+03	7.924E+03	1.188E+07	7.980E+02
2030	2.908E+04	2.328E+07	1.564E+03	7.767E+03	1.164E+07	7.822E+02
2031	2.850E+04	2.282E+07	1.533E+03	7.613E+03	1.141E+07	7.667E+02
2032	2.794E+04	2.237E+07	1.503E+03	7.463E+03	1.119E+07	7.516E+02
2033	2.738E+04	2.193E+07	1.473E+03	7.315E+03	1.096E+07	7.367E+02
2034	2.684E+04	2.149E+07	1.444E+03	7.170E+03	1.075E+07	7.221E+02
2035	2.631E+04	2.107E+07	1.416E+03	7.028E+03	1.053E+07	7.078E+02
2036	2.579E+04	2.065E+07	1.388E+03	6.889E+03	1.033E+07	6.938E+02
2037	2.528E+04	2.024E+07	1.360E+03	6.752E+03	1.012E+07	6.800E+02
2038	2.478E+04	1.984E+07	1.333E+03	6.619E+03	9.921E+06	6.666E+02
2039	2.429E+04	1.945E+07	1.307E+03	6.488E+03	9.724E+06	6.534E+02
2040	2.381E+04	1.906E+07	1.281E+03	6.359E+03	9.532E+06	6.404E+02
2041	2.334E+04	1.869E+07	1.256E+03	6.233E+03	9.343E+06	6.278E+02
2042	2.287E+04	1.832E+07	1.231E+03	6.110E+03	9.158E+06	6.153E+02
2043	2.242E+04	1.795E+07	1.206E+03	5.989E+03	8.977E+06	6.031E+02
2044	2.198E+04	1.760E+07	1.182E+03	5.870E+03	8.799E+06	5.912E+02
2045	2.154E+04	1.725E+07	1.159E+03	5.754E+03	8.625E+06	5.795E+02
2046	2.111E+04	1.691E+07	1.136E+03	5.640E+03	8.454E+06	5.680E+02
2047	2.070E+04	1.657E+07	1.114E+03	5.528E+03	8.287E+06	5.568E+02
2048	2.029E+04	1.624E+07	1.091E+03	5.419E+03	8.122E+06	5.457E+02
2049	1.989E+04	1.592E+07	1.070E+03	5.312E+03	7.962E+06	5.349E+02
2050	1.949E+04	1.561E+07	1.049E+03	5.206E+03	7.804E+06	5.243E+02
2051	1.911E+04	1.530E+07	1.028E+03	5.103E+03	7.649E+06	5.140E+02
2052	1.873E+04	1.500E+07	1.008E+03	5.002E+03	7.498E+06	5.038E+02
2053	1.836E+04	1.470E+07	9.876E+02	4.903E+03	7.350E+06	4.938E+02
2054	1.799E+04	1.441E+07	9.681E+02	4.806E+03	7.204E+06	4.840E+02
2055	1.764E+04	1.412E+07	9.489E+02	4.711E+03	7.061E+06	4.744E+02
2056	1.729E+04	1.384E+07	9.301E+02	4.618E+03	6.922E+06	4.651E+02
2057	1.695E+04	1.357E+07	9.117E+02	4.526E+03	6.784E+06	4.558E+02
2058	1.661E+04	1.330E+07	8.936E+02	4.437E+03	6.650E+06	4.468E+02
2059	1.628E+04	1.304E+07	8.759E+02	4.349E+03	6.518E+06	4.380E+02
2060	1.596E+04	1.278E+07	8.586E+02	4.263E+03	6.389E+06	4.293E+02
2061	1.564E+04	1.253E+07	8.416E+02	4.178E+03	6.263E+06	4.208E+02
2062	1.533E+04	1.228E+07	8.249E+02	4.096E+03	6.139E+06	4.125E+02
2063	1.503E+04	1.203E+07	8.086E+02	4.014E+03	6.017E+06	4.043E+02
2064	1.473E+04	1.180E+07	7.926E+02	3.935E+03	5.898E+06	3.963E+02
2065	1.444E+04	1.156E+07	7.769E+02	3.857E+03	5.781E+06	3.884E+02
2066	1.415E+04	1.133E+07	7.615E+02	3.781E+03	5.667E+06	3.808E+02
2067	1.387E+04	1.111E+07	7.464E+02	3.706E+03	5.555E+06	3.732E+02
2068	1.360E+04	1.089E+07	7.317E+02	3.632E+03	5.445E+06	3.658E+02
2069	1.333E+04	1.067E+07	7.172E+02	3.560E+03	5.337E+06	3.586E+02
2070	1.307E+04	1.046E+07	7.030E+02	3.490E+03	5.231E+06	3.515E+02
2071	1.281E+04	1.026E+07	6.890E+02	3.421E+03	5.128E+06	3.445E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2072	1.255E+04	1.005E+07	6.754E+02	3.353E+03	5.026E+06	3.377E+02
2073	1.230E+04	9.853E+06	6.620E+02	3.287E+03	4.927E+06	3.310E+02
2074	1.206E+04	9.658E+06	6.489E+02	3.222E+03	4.829E+06	3.245E+02
2075	1.182E+04	9.467E+06	6.361E+02	3.158E+03	4.733E+06	3.180E+02
2076	1.159E+04	9.279E+06	6.235E+02	3.095E+03	4.640E+06	3.117E+02
2077	1.136E+04	9.096E+06	6.111E+02	3.034E+03	4.548E+06	3.056E+02
2078	1.113E+04	8.915E+06	5.990E+02	2.974E+03	4.458E+06	2.995E+02
2079	1.091E+04	8.739E+06	5.872E+02	2.915E+03	4.369E+06	2.936E+02
2080	1.070E+04	8.566E+06	5.755E+02	2.857E+03	4.283E+06	2.878E+02
2081	1.049E+04	8.396E+06	5.641E+02	2.801E+03	4.198E+06	2.821E+02
2082	1.028E+04	8.230E+06	5.530E+02	2.745E+03	4.115E+06	2.765E+02
2083	1.007E+04	8.067E+06	5.420E+02	2.691E+03	4.033E+06	2.710E+02
2084	9.875E+03	7.907E+06	5.313E+02	2.638E+03	3.954E+06	2.656E+02
2085	9.679E+03	7.751E+06	5.208E+02	2.585E+03	3.875E+06	2.604E+02
2086	9.488E+03	7.597E+06	5.105E+02	2.534E+03	3.799E+06	2.552E+02
2087	9.300E+03	7.447E+06	5.003E+02	2.484E+03	3.723E+06	2.502E+02
2088	9.116E+03	7.299E+06	4.904E+02	2.435E+03	3.650E+06	2.452E+02
2089	8.935E+03	7.155E+06	4.807E+02	2.387E+03	3.577E+06	2.404E+02
2090	8.758E+03	7.013E+06	4.712E+02	2.339E+03	3.507E+06	2.356E+02
2091	8.585E+03	6.874E+06	4.619E+02	2.293E+03	3.437E+06	2.309E+02
2092	8.415E+03	6.738E+06	4.527E+02	2.248E+03	3.369E+06	2.264E+02
2093	8.248E+03	6.605E+06	4.438E+02	2.203E+03	3.302E+06	2.219E+02
2094	8.085E+03	6.474E+06	4.350E+02	2.160E+03	3.237E+06	2.175E+02
2095	7.925E+03	6.346E+06	4.264E+02	2.117E+03	3.173E+06	2.132E+02
2096	7.768E+03	6.220E+06	4.179E+02	2.075E+03	3.110E+06	2.090E+02
2097	7.614E+03	6.097E+06	4.097E+02	2.034E+03	3.048E+06	2.048E+02
2098	7.463E+03	5.976E+06	4.015E+02	1.993E+03	2.988E+06	2.008E+02
2099	7.315E+03	5.858E+06	3.936E+02	1.954E+03	2.929E+06	1.968E+02
2100	7.171E+03	5.742E+06	3.858E+02	1.915E+03	2.871E+06	1.929E+02
2101	7.029E+03	5.628E+06	3.782E+02	1.877E+03	2.814E+06	1.891E+02
2102	6.889E+03	5.517E+06	3.707E+02	1.840E+03	2.758E+06	1.853E+02
2103	6.753E+03	5.407E+06	3.633E+02	1.804E+03	2.704E+06	1.817E+02
2104	6.619E+03	5.300E+06	3.561E+02	1.768E+03	2.650E+06	1.781E+02
2105	6.488E+03	5.195E+06	3.491E+02	1.733E+03	2.598E+06	1.745E+02
2106	6.360E+03	5.093E+06	3.422E+02	1.699E+03	2.546E+06	1.711E+02
2107	6.234E+03	4.992E+06	3.354E+02	1.665E+03	2.496E+06	1.677E+02
2108	6.110E+03	4.893E+06	3.288E+02	1.632E+03	2.446E+06	1.644E+02
2109	5.989E+03	4.796E+06	3.222E+02	1.600E+03	2.398E+06	1.611E+02
2110	5.871E+03	4.701E+06	3.159E+02	1.568E+03	2.351E+06	1.579E+02
2111	5.755E+03	4.608E+06	3.096E+02	1.537E+03	2.304E+06	1.548E+02

Results (Continued)

Year	Carbon dioxide			VOC as Hexane		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
1971	0	0	0	0	0	0
1972	3.364E+02	1.838E+05	1.235E+01	3.058E-01	8.530E+01	5.731E-03
1973	6.662E+02	3.640E+05	2.445E+01	6.055E-01	1.689E+02	1.135E-02
1974	9.895E+02	5.405E+05	3.632E+01	8.992E-01	2.509E+02	1.686E-02
1975	1.306E+03	7.136E+05	4.795E+01	1.187E+00	3.312E+02	2.225E-02
1976	1.617E+03	8.833E+05	5.935E+01	1.469E+00	4.099E+02	2.754E-02
1977	1.692E+03	9.244E+05	6.211E+01	1.538E+00	4.290E+02	2.882E-02
1978	1.858E+03	1.015E+06	6.819E+01	1.688E+00	4.710E+02	3.165E-02
1979	2.065E+03	1.128E+06	7.581E+01	1.877E+00	5.237E+02	3.518E-02
1980	2.278E+03	1.244E+06	8.361E+01	2.070E+00	5.775E+02	3.880E-02
1981	2.431E+03	1.328E+06	8.924E+01	2.209E+00	6.164E+02	4.142E-02
1982	2.587E+03	1.413E+06	9.495E+01	2.351E+00	6.559E+02	4.407E-02
1983	2.820E+03	1.541E+06	1.035E+02	2.563E+00	7.150E+02	4.804E-02
1984	3.069E+03	1.677E+06	1.126E+02	2.789E+00	7.781E+02	5.228E-02
1985	3.318E+03	1.813E+06	1.218E+02	3.016E+00	8.413E+02	5.653E-02
1986	3.605E+03	1.970E+06	1.323E+02	3.277E+00	9.141E+02	6.142E-02
1987	3.905E+03	2.133E+06	1.433E+02	3.549E+00	9.900E+02	6.652E-02
1988	4.161E+03	2.273E+06	1.527E+02	3.782E+00	1.055E+03	7.089E-02
1989	4.388E+03	2.397E+06	1.611E+02	3.988E+00	1.113E+03	7.475E-02
1990	4.768E+03	2.605E+06	1.750E+02	4.333E+00	1.209E+03	8.122E-02
1991	5.116E+03	2.795E+06	1.878E+02	4.650E+00	1.297E+03	8.716E-02
1992	5.447E+03	2.976E+06	1.999E+02	4.950E+00	1.381E+03	9.279E-02
1993	5.805E+03	3.171E+06	2.131E+02	5.276E+00	1.472E+03	9.889E-02
1994	6.162E+03	3.366E+06	2.262E+02	5.600E+00	1.562E+03	1.050E-01
1995	6.539E+03	3.572E+06	2.400E+02	5.942E+00	1.658E+03	1.114E-01
1996	6.861E+03	3.748E+06	2.518E+02	6.235E+00	1.739E+03	1.169E-01
1997	7.125E+03	3.892E+06	2.615E+02	6.475E+00	1.806E+03	1.214E-01
1998	7.451E+03	4.070E+06	2.735E+02	6.771E+00	1.889E+03	1.269E-01
1999	7.784E+03	4.253E+06	2.857E+02	7.074E+00	1.974E+03	1.326E-01
2000	8.133E+03	4.443E+06	2.985E+02	7.391E+00	2.062E+03	1.385E-01
2001	8.515E+03	4.652E+06	3.125E+02	7.738E+00	2.159E+03	1.450E-01
2002	8.913E+03	4.869E+06	3.272E+02	8.100E+00	2.260E+03	1.518E-01
2003	9.326E+03	5.095E+06	3.423E+02	8.476E+00	2.365E+03	1.589E-01
2004	9.778E+03	5.342E+06	3.589E+02	8.886E+00	2.479E+03	1.666E-01
2005	1.026E+04	5.607E+06	3.767E+02	9.327E+00	2.602E+03	1.748E-01
2006	1.086E+04	5.931E+06	3.985E+02	9.866E+00	2.752E+03	1.849E-01
2007	1.149E+04	6.276E+06	4.217E+02	1.044E+01	2.913E+03	1.957E-01
2008	1.212E+04	6.620E+06	4.448E+02	1.101E+01	3.072E+03	2.064E-01
2009	1.274E+04	6.962E+06	4.678E+02	1.158E+01	3.231E+03	2.171E-01
2010	1.336E+04	7.301E+06	4.906E+02	1.215E+01	3.389E+03	2.277E-01
2011	1.398E+04	7.639E+06	5.133E+02	1.271E+01	3.545E+03	2.382E-01
2012	1.429E+04	7.807E+06	5.246E+02	1.299E+01	3.623E+03	2.435E-01
2013	1.463E+04	7.991E+06	5.369E+02	1.329E+01	3.708E+03	2.492E-01
2014	1.542E+04	8.425E+06	5.661E+02	1.402E+01	3.910E+03	2.627E-01
2015	1.597E+04	8.723E+06	5.861E+02	1.451E+01	4.049E+03	2.720E-01
2016	1.790E+04	9.781E+06	6.572E+02	1.627E+01	4.539E+03	3.050E-01
2017	1.980E+04	1.082E+07	7.268E+02	1.799E+01	5.020E+03	3.373E-01
2018	2.166E+04	1.183E+07	7.950E+02	1.968E+01	5.492E+03	3.690E-01
2019	2.348E+04	1.283E+07	8.619E+02	2.134E+01	5.954E+03	4.000E-01
2020	2.527E+04	1.380E+07	9.275E+02	2.296E+01	6.406E+03	4.305E-01

Results (Continued)

Year	Carbon dioxide			VOC as Hexane		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2021	2.551E+04	1.394E+07	9.365E+02	2.319E+01	6.469E+03	4.346E-01
2022	2.501E+04	1.366E+07	9.180E+02	2.273E+01	6.341E+03	4.260E-01
2023	2.451E+04	1.339E+07	8.998E+02	2.228E+01	6.215E+03	4.176E-01
2024	2.403E+04	1.313E+07	8.820E+02	2.184E+01	6.092E+03	4.093E-01
2025	2.355E+04	1.287E+07	8.645E+02	2.140E+01	5.971E+03	4.012E-01
2026	2.309E+04	1.261E+07	8.474E+02	2.098E+01	5.853E+03	3.933E-01
2027	2.263E+04	1.236E+07	8.306E+02	2.056E+01	5.737E+03	3.855E-01
2028	2.218E+04	1.212E+07	8.142E+02	2.016E+01	5.624E+03	3.779E-01
2029	2.174E+04	1.188E+07	7.980E+02	1.976E+01	5.512E+03	3.704E-01
2030	2.131E+04	1.164E+07	7.822E+02	1.937E+01	5.403E+03	3.630E-01
2031	2.089E+04	1.141E+07	7.667E+02	1.898E+01	5.296E+03	3.558E-01
2032	2.048E+04	1.119E+07	7.516E+02	1.861E+01	5.191E+03	3.488E-01
2033	2.007E+04	1.096E+07	7.367E+02	1.824E+01	5.088E+03	3.419E-01
2034	1.967E+04	1.075E+07	7.221E+02	1.788E+01	4.988E+03	3.351E-01
2035	1.928E+04	1.053E+07	7.078E+02	1.752E+01	4.889E+03	3.285E-01
2036	1.890E+04	1.033E+07	6.938E+02	1.718E+01	4.792E+03	3.220E-01
2037	1.853E+04	1.012E+07	6.800E+02	1.684E+01	4.697E+03	3.156E-01
2038	1.816E+04	9.921E+06	6.666E+02	1.650E+01	4.604E+03	3.094E-01
2039	1.780E+04	9.724E+06	6.534E+02	1.618E+01	4.513E+03	3.032E-01
2040	1.745E+04	9.532E+06	6.404E+02	1.586E+01	4.424E+03	2.972E-01
2041	1.710E+04	9.343E+06	6.278E+02	1.554E+01	4.336E+03	2.913E-01
2042	1.676E+04	9.158E+06	6.153E+02	1.523E+01	4.250E+03	2.856E-01
2043	1.643E+04	8.977E+06	6.031E+02	1.493E+01	4.166E+03	2.799E-01
2044	1.611E+04	8.799E+06	5.912E+02	1.464E+01	4.084E+03	2.744E-01
2045	1.579E+04	8.625E+06	5.795E+02	1.435E+01	4.003E+03	2.689E-01
2046	1.547E+04	8.454E+06	5.680E+02	1.406E+01	3.923E+03	2.636E-01
2047	1.517E+04	8.287E+06	5.568E+02	1.379E+01	3.846E+03	2.584E-01
2048	1.487E+04	8.122E+06	5.457E+02	1.351E+01	3.770E+03	2.533E-01
2049	1.457E+04	7.962E+06	5.349E+02	1.324E+01	3.695E+03	2.483E-01
2050	1.429E+04	7.804E+06	5.243E+02	1.298E+01	3.622E+03	2.434E-01
2051	1.400E+04	7.649E+06	5.140E+02	1.273E+01	3.550E+03	2.385E-01
2052	1.373E+04	7.498E+06	5.038E+02	1.247E+01	3.480E+03	2.338E-01
2053	1.345E+04	7.350E+06	4.938E+02	1.223E+01	3.411E+03	2.292E-01
2054	1.319E+04	7.204E+06	4.840E+02	1.198E+01	3.343E+03	2.246E-01
2055	1.293E+04	7.061E+06	4.744E+02	1.175E+01	3.277E+03	2.202E-01
2056	1.267E+04	6.922E+06	4.651E+02	1.151E+01	3.212E+03	2.158E-01
2057	1.242E+04	6.784E+06	4.558E+02	1.129E+01	3.149E+03	2.116E-01
2058	1.217E+04	6.650E+06	4.468E+02	1.106E+01	3.086E+03	2.074E-01
2059	1.193E+04	6.518E+06	4.380E+02	1.084E+01	3.025E+03	2.033E-01
2060	1.170E+04	6.389E+06	4.293E+02	1.063E+01	2.965E+03	1.992E-01
2061	1.146E+04	6.263E+06	4.208E+02	1.042E+01	2.907E+03	1.953E-01
2062	1.124E+04	6.139E+06	4.125E+02	1.021E+01	2.849E+03	1.914E-01
2063	1.101E+04	6.017E+06	4.043E+02	1.001E+01	2.793E+03	1.876E-01
2064	1.080E+04	5.898E+06	3.963E+02	9.812E+00	2.737E+03	1.839E-01
2065	1.058E+04	5.781E+06	3.884E+02	9.618E+00	2.683E+03	1.803E-01
2066	1.037E+04	5.667E+06	3.808E+02	9.427E+00	2.630E+03	1.767E-01
2067	1.017E+04	5.555E+06	3.732E+02	9.240E+00	2.578E+03	1.732E-01
2068	9.966E+03	5.445E+06	3.658E+02	9.057E+00	2.527E+03	1.698E-01
2069	9.769E+03	5.337E+06	3.586E+02	8.878E+00	2.477E+03	1.664E-01
2070	9.576E+03	5.231E+06	3.515E+02	8.702E+00	2.428E+03	1.631E-01
2071	9.386E+03	5.128E+06	3.445E+02	8.530E+00	2.380E+03	1.599E-01

Results (Continued)

Year	Carbon dioxide			VOC as Hexane		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2072	9.200E+03	5.026E+06	3.377E+02	8.361E+00	2.333E+03	1.567E-01
2073	9.018E+03	4.927E+06	3.310E+02	8.196E+00	2.286E+03	1.536E-01
2074	8.839E+03	4.829E+06	3.245E+02	8.033E+00	2.241E+03	1.506E-01
2075	8.664E+03	4.733E+06	3.180E+02	7.874E+00	2.197E+03	1.476E-01
2076	8.493E+03	4.640E+06	3.117E+02	7.718E+00	2.153E+03	1.447E-01
2077	8.325E+03	4.548E+06	3.056E+02	7.565E+00	2.111E+03	1.418E-01
2078	8.160E+03	4.458E+06	2.995E+02	7.416E+00	2.069E+03	1.390E-01
2079	7.998E+03	4.369E+06	2.936E+02	7.269E+00	2.028E+03	1.363E-01
2080	7.840E+03	4.283E+06	2.878E+02	7.125E+00	1.988E+03	1.336E-01
2081	7.685E+03	4.198E+06	2.821E+02	6.984E+00	1.948E+03	1.309E-01
2082	7.532E+03	4.115E+06	2.765E+02	6.845E+00	1.910E+03	1.283E-01
2083	7.383E+03	4.033E+06	2.710E+02	6.710E+00	1.872E+03	1.258E-01
2084	7.237E+03	3.954E+06	2.656E+02	6.577E+00	1.835E+03	1.233E-01
2085	7.094E+03	3.875E+06	2.604E+02	6.447E+00	1.799E+03	1.208E-01
2086	6.953E+03	3.799E+06	2.552E+02	6.319E+00	1.763E+03	1.185E-01
2087	6.816E+03	3.723E+06	2.502E+02	6.194E+00	1.728E+03	1.161E-01
2088	6.681E+03	3.650E+06	2.452E+02	6.071E+00	1.694E+03	1.138E-01
2089	6.548E+03	3.577E+06	2.404E+02	5.951E+00	1.660E+03	1.116E-01
2090	6.419E+03	3.507E+06	2.356E+02	5.833E+00	1.627E+03	1.093E-01
2091	6.292E+03	3.437E+06	2.309E+02	5.718E+00	1.595E+03	1.072E-01
2092	6.167E+03	3.369E+06	2.264E+02	5.605E+00	1.564E+03	1.051E-01
2093	6.045E+03	3.302E+06	2.219E+02	5.494E+00	1.533E+03	1.030E-01
2094	5.925E+03	3.237E+06	2.175E+02	5.385E+00	1.502E+03	1.009E-01
2095	5.808E+03	3.173E+06	2.132E+02	5.278E+00	1.473E+03	9.894E-02
2096	5.693E+03	3.110E+06	2.090E+02	5.174E+00	1.443E+03	9.698E-02
2097	5.580E+03	3.048E+06	2.048E+02	5.071E+00	1.415E+03	9.506E-02
2098	5.470E+03	2.988E+06	2.008E+02	4.971E+00	1.387E+03	9.318E-02
2099	5.361E+03	2.929E+06	1.968E+02	4.872E+00	1.359E+03	9.133E-02
2100	5.255E+03	2.871E+06	1.929E+02	4.776E+00	1.332E+03	8.952E-02
2101	5.151E+03	2.814E+06	1.891E+02	4.681E+00	1.306E+03	8.775E-02
2102	5.049E+03	2.758E+06	1.853E+02	4.589E+00	1.280E+03	8.601E-02
2103	4.949E+03	2.704E+06	1.817E+02	4.498E+00	1.255E+03	8.431E-02
2104	4.851E+03	2.650E+06	1.781E+02	4.409E+00	1.230E+03	8.264E-02
2105	4.755E+03	2.598E+06	1.745E+02	4.321E+00	1.206E+03	8.100E-02
2106	4.661E+03	2.546E+06	1.711E+02	4.236E+00	1.182E+03	7.940E-02
2107	4.569E+03	2.496E+06	1.677E+02	4.152E+00	1.158E+03	7.783E-02
2108	4.478E+03	2.446E+06	1.644E+02	4.070E+00	1.135E+03	7.629E-02
2109	4.390E+03	2.398E+06	1.611E+02	3.989E+00	1.113E+03	7.478E-02
2110	4.303E+03	2.351E+06	1.579E+02	3.910E+00	1.091E+03	7.330E-02
2111	4.217E+03	2.304E+06	1.548E+02	3.833E+00	1.069E+03	7.184E-02

ATTACHMENT C

Certificate of Conformity

San Joaquin Valley
Unified Air Pollution Control District

HEALTHY AIR LIVING

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[ ] SIGNIFICANT PERMIT MODIFICATION
[X] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: FAIRMEAD LANDFILL - MADERA COUNTY PUBLIC WORKS - MUNICIPAL SERVICES DIVISION	FACILITY ID: C – 2913
1. Type of Organization: [ ] Corporation [ ] Sole Ownership [X] Government [ ] Partnership [ ] Utility	
2. Owner's Name: FAIRMEAD LANDFILL	
3. Agent to the Owner: AHMAD M. ALKHAYYAT, P.E.	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

(X) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

(X) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

(X) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(X) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official

4/7/2015
Date

AHMAD M. ALKHAYYAT, P.E.
Name of Responsible Official (please print)

DEPUTY PUBLIC WORKS DIRECTOR
Title of Responsible Official (please print)

ATTACHMENT D

Health Risk Assessment and Ambient Air Quality Analysis

San Joaquin Valley Air Pollution Control District
REVISED Risk Management Review

To:	Stanley Tom – Permit Services
From:	Leland Villalvazo/Yu Vu – Technical Services
Date:	June 11, 2015
Facility Name:	County of Madera - Fairmead Landfill
Location:	21739 ROAD 19, Chowchilla, CA
Application #(s):	C-2913-1-6
Project #:	C-1151227

A. RMR SUMMARY

RMR Summary			
Categories	**Landfill Gas Flare (Unit 1-6)**	**Project Totals**	**Facility Totals**
Prioritization Score	1.98	1.45	>1.0
Acute Hazard Index	0.008	0.008	0.008
Chronic Hazard Index	0.002	0.002	0.62
Maximum Individual Cancer Risk (10^{-6})	2.39	2.39	6.93
T-BACT Required?	**Yes**		
Special Permit Conditions?	**No**		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 1-6

No special conditions.

T-BACT is required for this unit because of emissions of benzene/ formaldehyde which are VOCs. In accordance with District policy, BACT for this unit will be considered to be T-BACT.

B. RMR REPORT

I. Project Description

Technical Services received a request on May 5, 2015, to perform an Ambient Air Quality Analysis and a Risk Management Review for the installation of a new 45 MMBTU/hr landfill gas enclosed flare.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using district approved landfill gas emissions factors were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2009-2013 from Madera to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 1-6			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	10.668	**Closest Receptor (m)**	759
Stack Diameter. (m)	1.4224	**Type of Receptor**	Sensitive Receptor
Stack Exit Velocity (m/s)	6.41	**Max Hours per Year**	8760
Stack Exit Temp. (°K)	1199.817	**Fuel Type**	Landfill Gas
Burner Rating (MMBtu/hr)	45		

Technical Services performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}; as well as a RMR. The emission rates used for criteria pollutant modeling were 216.0 lb/day CO, 54.0 lb/day NOx, 35.6 lb/day SOx, and 21.6 lb/day PM_{10}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[1]	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	X	X	X	NA[3]	NA[3]

*Results were taken from the attached PSD spreadsheet.
[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).
[3] Until which time EPA finalizes a AAQS & SI for PM 2.5 PM10 will be used as a surrogate.

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk associated with the project is greater than 1.0 in a million, but less than 10 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

IV. Attachments

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Toxic emissions summary
D. Prioritization score
E. Facility Summary

AAQA for Fairmead Landfill (C-2913-1151227)
All Values are in Micrograms per Cubic Meter

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
1_6	2.7E+01	9.8E-01	1.1E+02	6.2E+01	1.8E+01	1.3E+01	6.1E+00	6.5E-01	3.68E+00	3.92E-01
Background	9.0E+01	1.5E+01	0.0E+00	0.0E+00	2.4E+01	2.4E+01	5.3E+00	2.4E+01	8.10E+01	4.00E+01
Facility Totals	116.8	16.3	107.7	61.8	41.7	37.1	11.4	24.6	84.7	40.4
AAQS	188.7	56.0	23,000.0	10,000.0	195.0	1,300.0	105.0	80.0	50.0	30.0
	Pass	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Fail**	**Fail**

EPA's Significance Level (ug/m^3)

NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
0.0	**1.0**	**2000.0**	**500.0**	**0.0**	**25.0**	**5.0**	**1.0**	**5.0**	**1.0**

AAQA Emission (g/sec)

Device	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
1_6	2.83E-01	2.83E-01	1.13E+00	1.13E+00	1.87E-01	1.87E-01	1.87E-01	1.87E-01	1.13E-01	1.13E-01

ATTACHMENT E

Draft Authority to Construct Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-2913-1-6

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: COUNTY OF MADERA - FAIRMEAD LANDFILL
MAILING ADDRESS: DEPT OF ENGINEERING-SOLID WASTE DIVISION
2037 W CLEVELAND AVE
MADERA, CA 93637

LOCATION: 21739 ROAD 19
CHOWCHILLA, CA 93610

EQUIPMENT DESCRIPTION:
MODIFICATION OF 13.1 MILLION CUBIC YARD (40.4 ACRES) MUNICIPAL SOLID WASTE LANDFILL WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A CALLIDUS TECHNOLOGIES 33.33 MMBTU/HR ENCLOSED FLARE: INSTALL PERENNIAL ENERGY 45 MMBTU/HR ENCLOSED FLARE AS PRIMARY FLARE, RETAIN CALLIDUS TECHNOLOGIES 33.33 MMBTU/HR FLARE AS BACKUP, AND INSTALL ADDITIONAL GAS EXTRACTION WELLS

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The landfill facility, associated equipment, and surrounding Fairmead Landfill property shall be operated and maintained in such a manner as to prevent the generation of odors which may constitute a nuisance. [District Rule 4102]
4. Air pollution control equipment shall be maintained in good operating condition and shall be operated in accordance with the manufacturer's instructions. [District Rule 4102]
5. Equipment shall be operated in such a manner as to not constitute a nuisance or annoyance to a considerable number of people. [District Rule 4102]
6. Refuse delivery trucks shall be unloaded within two hours after entering the property. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

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7. Refuse shall not be stockpiled anywhere outside of the designated refuse disposal areas. Trucks waiting their turn to unload within the 2 hour unload time limitation are not considered stockpiled outside the designated refuse disposal areas. [District Rule 4102]
8. All trucks delivering refuse shall be maintained in condition to prevent leakage of solid or liquid material and shall not be leaking solid or liquid material prior to exiting the landfill site. Trucks shall be cleared of any debris to minimize nuisance emissions. [District Rule 4102]
9. The designated refuse disposal areas shall be covered at the end of each operating day and maintained as necessary to prevent the emission of nuisance odors. [District Rule 4102]
10. Permittee shall maintain an updated odor control plan detailing all methods of nuisance odor control as it applies to the facility. The odor control plan shall be made available to all employees and shall be used as a training aid for new employees. The odor control plan shall be made available for District inspection upon request. [District Rule 4102]
11. The District shall have authority to investigate possible odors alleged to originate from the facility and to make a determination of whether or not a nuisance exists, either in response to a complaint or on its own initiative. [District Rules 1070 and 4102]
12. Composting shall not be performed as part of this expansion of the landfill. If composting is proposed in the future, a new application for an Authority to Construct must be submitted. The CEQA health risk assessment for this expansion must be revised to include the impacts of additional off-road equipment that will operate at the proposed composting site and associated truck traffic if composting or any other operation that would increase off-road equipment emissions or truck traffic on-site is proposed in the future. [California Environmental Quality Act]
13. All new diesel-fueled off-road equipment greater than 25 hp that will be added in the future beyond what is currently in use shall meet an emission limit of 0.15 g-PM10/bhp-hr. [California Environmental Quality Act]
14. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
15. No air contaminant shall be discharged from the flare into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1/4 or 5% opacity. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
16. The District shall be notified in writing ten days prior to the acceptance of new types of waste streams, or waste streams with significant malodorous qualities. [District Rule 4102]
17. Total Class III waste material rate received at the facility shall not exceed either 1,100 tons/day or 401,500 tons/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
18. VOC emissions from the landfill and the flare shall not exceed 23.4 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Emissions from the flare shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu, 0.033 lb-SOx/MMBtu, 0.02 lb-PM10/MMBtu, 0.2 lb-CO/MMBtu, or 0.0084 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Total PM10 emissions from the handling of soil cover shall not exceed 0.0023 lb-PM10/ton of material handled. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Total soil cover usage rate shall not exceed 3,478 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
22. The heat input of the landfill gas being combusted in the flare shall not exceed 45 MMBtu/hr for the Perennial Energy flare and shall not exceed 33.33 MMBtu/hr for the Callidus Technology flare. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
23. Source testing on the Perennial Energy flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98% or less than 20 ppmv dry basis as hexane NMOC outlet concentration at 3 percent oxygen as required by this permit shall be conducted within 60 days of startup. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

24. Source testing on the Perennial Energy flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98%, or 20 ppmvd @ 3% O2 as hexane, as required by this permit shall be conducted annually. [District Rule 2201] Federally Enforceable Through Title V Permit

25. The Perennial Energy flare shall be tested for compliance with the NOx, CO, and VOC/NMOC emissions limit at least once every 12 months. Source testing for the backup Callidus Technology flare shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform source testing. Source testing for compliance with the NOx, CO, and VOC/NMOC emissions limit for the backup Callidus Technology flare shall be performed within 12 months of operating the unit. [District Rule 2201] Federally Enforceable Through Title V Permit

26. Methane destruction efficiency of the flare shall be at least 99% by weight. [17 CCR 95464]

27. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

28. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

29. The following test methods shall be used for VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit

30. Sulfur content of the landfill gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or double GC for H2S and mercaptans, or draeger tubes for H2S, or an equivalent method approved by the District. [District Rule 2201] Federally Enforceable Through Title V Permit

31. Flare NMOC emissions shall be conducted using USEPA Test Method 18, 25, 25A, or 25C. [District Rule 2201] Federally Enforceable Through Title V Permit

32. Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 2201] Federally Enforceable Through Title V Permit

33. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit

34. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201] Federally Enforceable Through Title V Permit

35. For initial monitoring of collection devices in the expansion area, prior to initial operation, the permittee shall monitor the collectors at least once per quarter for static pressure, percent methane, percent oxygen, and temperature utilizing a District-approved portable landfill gas analyzer. [District Rule 2201] Federally Enforceable Through Title V Permit

36. For commissioning of collection devices in the expansion area, collectors shall be commissioned and continually operated if all of the following parameters are met: (1) methane percent 45% or greater; (2) oxygen percent 5% or less; (3) temperature less than 131 degrees F; and (4) static pressure 5.0 in H2O or greater. [District Rule 2201] Federally Enforceable Through Title V Permit

37. For operation of collection devices in the expansion area, once the collectors are commissioned, the permittee shall monitor the collectors weekly for the first six months of operation and may switch to monthly monitoring thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit

38. For surface emissions monitoring, once an area has reached final grade or within 90 days when the LFG system in the area is commissioned, whichever comes first, surface emissions shall not exceed a methane concentration of 500 parts per million above background at the surface of the landfill. [District Rule 2201] Federally Enforceable Through Title V Permit

39. For surface emissions monitoring, surface monitoring for the landfill area shall be performed quarterly. If there are any exceedances during a quarterly event, monitoring will be required monthly until three consecutive months without exceedances, which would allow a return to quarterly monitoring. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

40. For surface emissions monitoring, after an exceedance, the permittee shall initiate corrective action within five days and conduct remonitoring within ten days from the initial exceedance. If compliance is shown, an additional remonitoring event is required within one month of the initial exceedance. If the ten day event shows an exceedance, the permittee shall initiate corrective action within five days and conduct remonitoring within ten days from the second exceedance. If compliance is shown, an additional remonitoring is required within one month of the initial exceedance. If the second ten day event shows an exceedance, the permittee shall permit and install additional landfill gas wells to correct the problem within 120 days of the initial exceedance. The permittee may utilize an alternative corrective action with prior approval from the APCO. [District Rule 2201] Federally Enforceable Through Title V Permit

41. For surface emissions monitoring, permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30-meter intervals (or a site-specific established spacing) and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. [District Rule 2201] Federally Enforceable Through Title V Permit

42. For surface emissions monitoring, surface testing shall be performed using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [District Rule 2201] Federally Enforceable Through Title V Permit

43. For surface emissions monitoring, the portable analyzer shall meet the instrument specifications of Method 21, section 3 (except that "methane" shall replace all references to VOC). The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. To meet the performance evaluation requirements of Method 21, section 3.1.3, the instrument evaluation procedures of Method 21, section 4.4. The calibration procedures provided in Method 21, section 4.2 shall be followed immediately before commencing a surface monitoring survey. [District Rule 2201] Federally Enforceable Through Title V Permit

44. The provisions of this permit apply at all times, except during periods of start-up, shutdown, or malfunction (as defined in 40 CFR 60.755(e)). [District Rule 2201] Federally Enforceable Through Title V Permit

45. For site-wide VOC emissions monitoring, permittee shall perform site-wide VOC emissions monitoring on an annual basis. Samples shall be collected from the existing landfill and expansion areas per the LFG collection pipes, permanent LFG sampling wells, or Tier 2 procedures as described in this permit. Collected samples shall be analyzed using EPA Methods 25C and 3C. The results shall be submitted to the District quarterly for projected site-wide VOC emissions for the following year. If the projected site-wide VOC emissions exceeds the VOC offset threshold, the applicant shall submit an Authority to Construct application to install a GCCS one year prior to the site-wide VOC emissions projected to exceed the offset threshold for the following year. [District Rule 2201] Federally Enforceable Through Title V Permit

46. Permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [District Rule 2201] Federally Enforceable Through Title V Permit

47. The NMOC emission rate shall be calculated using the equation in 40CFR60.754(a)(1)(i), if the actual year-to-year solid waste acceptance rate is known or the equation in 40CFR60.754(a)(1)(ii), if the actual year-to-year solid waste acceptance rate is unknown. The values for k, Lo, and CNMOC for both equations shall be taken from 40CFR60.754(a)(1), as appropriate. Both equations may be used if the actual year-to-year acceptance rate is known for a part of the landfill life, but unknown for another part of the landfill life. The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating R, if documentation of the nature and amount of such wastes is maintained. (Tier 1 specifications) [40 CFR 60.754(a)(1) and 60.34c] Federally Enforceable Through Title V Permit

48. If the calculated NMOC emission rate is equal to or greater than 50 megagrams/year, then the landfill owner or operator shall either comply with the requirements of this permit to submit a collection and control design plan and install the system, or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using Tier 2 specifications. [40 CFR 60.754(a)(2)(ii)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

49. Tier 2 specifications to determine the site-specific NMOC concentration shall include the following: 1) For sampling, at least 2 sample probes shall be installed per hectare of landfill surface that has retained waste for at least 2 years, up to a maximum of 50 required probes. Probes should be located in known areas of degradable solid waste. One sample of landfill gas shall be collected from each probe to determine the NMOC concentration, using EPA Method 25, 25C, another method approved by the EPA, or 18, in accordance with 40 CFR 60.754(a)(3). If EPA Method 18 is used, the minimum list of compounds to be tested shall be those published in the most recent Compilation of AP-42. If composite sampling is used, equal sample volumes are required. All samples taken shall be used in the analysis. The NMOC concentration from Method 25 or 25C shall be divided by 6 to convert from C-NMOC, as carbon to as hexane. 2) For landfills equipped with active collection systems, samples may be collected from the common header pipe before gas moving or condensate removal equipment; a minimum of 3 samples must be collected . [40 CFR 60.754(a)(3), (a)(5)] Federally Enforceable Through Title V Permit

50. Tier 2 specifications to determine the site-specific NMOC concentration shall include the following: 1)The NMOC mass emission rate shall be recalculated using the average site-specific concentration, instead of the default value, 2) If the resulting calculated mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall either comply with 60.752(b)(2), or determine a site-specific methane generation rate constant and recalculate the NMOC emission rate using Tier 3 specifications. [40 CFR 60.754(a)(3)(i)&(ii)] Federally Enforceable Through Title V Permit

51. If the calculated NMOC mass emission rate, using the site-specific NMOC concentration, is less than 50 megagrams/year, then a periodic estimate of the emission rate report, pursuant to 60.757(b)(1) shall be submitted to the Administrator. The site-specific NMOC concentration shall be retested every 5 years, using Tier 2 specifications. [40 CFR 60.754(a)(3)(iii)] Federally Enforceable Through Title V Permit

52. Tier 3 specifications to determine the site-specific methane generation rate constant shall include the following: 1) EPA Method 2E or another method approved by the EPA shall be used, 2) The NMOC mass emission rate shall be recalculated using the average site-specific NMOC concentration and the site-specific methane generation rate constant k, instead of the default values in 40 CFR 60(a)(1), and 3) If the resulting calculated NMOC mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall comply with 60.752(b)(2). [40 CFR 60.754(a)(4), (a)(5) and (i)] Federally Enforceable Through Title V Permit

53. If Tier 3 specifications are used to determine the site-specific methane generation rate and the calculated NMOC mass emission rate is less than 50 megagrams/year, then a periodic emission rate report shall be submitted to the Administrator, pursuant to 60.757(b)(1) and the NMOC concentration shall be recalculated annually, pursuant to 60.757(b)(1), using the site-specific methane generation rate constant and the NMOC concentration obtained using Tier 2 specifications. Determination of the site-specific methane generation rate constant is performed once and used in all subsequent annual NMOC emission rate calculations. [40 CFR 60.754(a)(4)(ii)] Federally Enforceable Through Title V Permit

54. The NMOC emission rate shall be recalculated and reported to the APCO annually, except as otherwise provided in this permit, until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams/year and a collection and control system is installed or until the landfill is closed. [40 CFR 60.752(b)(1), 60.754(a), 60.757(b)] Federally Enforceable Through Title V Permit

55. If the NMOC emission rate, as reported in the annual report is less than 50 megagrams/year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual reports for those 5 years. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years. All data and calculations upon which this estimate is based shall be provided to the APCO. This estimate shall be revised at least once every 5 years. [40 CFR 60.757(b)(1)(ii)] Federally Enforceable Through Title V Permit

56. If the actual waste acceptance rate exceeds the estimated rate used in any year reported in a 5-year estimate of the NMOC emission rate, then a revised 5-year estimate shall be submitted to the APCO. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated acceptance rate. [40 CFR 60.757(b)(1)(ii)] Federally Enforceable Through Title V Permit

57. The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions. [40 CFR 60.757(b)(2)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

58. If the owner or operator elects to recalculate the NMOC emission rate using Tier 2 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 2 specifications, shall be submitted within 180 days of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(1)] Federally Enforceable Through Title V Permit

59. If the owner or operator elects to recalculate the NMOC emission rate using Tier 3 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 3 specifications, shall be submitted within 1 year of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(2)] Federally Enforceable Through Title V Permit

60. If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756] Federally Enforceable Through Title V Permit

61. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit

62. Permittee shall operate the flare at all times when the collected gas is routed to it. [District Rule 2201] Federally Enforceable Through Title V Permit

63. Gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

64. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District Rules 2020, 7.3 and 2201] Federally Enforceable Through Title V Permit

65. Maintenance is defined as work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction. [District Rule 2201] Federally Enforceable Through Title V Permit

66. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District Rule 2201] Federally Enforceable Through Title V Permit

67. Landfill gas line from collection header shall be equipped with a gas flow rate measurement device. [District Rule 2201] Federally Enforceable Through Title V Permit

68. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter, or other APCO approved alternative, to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

69. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit

70. If the facility accepts contaminated soil for disposal, source sampling to determine the compliance status of an emissions source shall be witnessed or authorized by District personnel. [District Rule 4651] Federally Enforceable Through Title V Permit

71. If the facility accepts contaminated soil for disposal, the operator of the facility shall maintain a copy of the source test protocol. A copy of the source test results must be maintained for at least five years and be readily available to the APCO upon written or oral request. [District Rule 4651] Federally Enforceable Through Title V Permit

72. If the facility accepts contaminated soil for disposal, one composite sample shall be collected and analyzed for VOC for every 50 cubic yards of excavated soil that has been determined to be uncontaminated by the test method(s) specified in this permit. At least one (1) composite sample shall be collected from each storage pile within 12 hours of soil decontamination. [District Rule 4651] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

73. If the facility accepts contaminated soil for disposal, a composite sample shall consist of one sample taken from the center of each of four (4) equal sectors using the procedures specified in this permit. [District Rule 4651] Federally Enforceable Through Title V Permit

74. If the facility accepts contaminated soil for disposal, samples shall be taken from at least twelve (12) inches below the surface of the pile using a driven-tube type sampler, capped and sealed with inert materials, and extruded in the lab in order to reduce the loss of volatile materials; or by using a clean brass or stainless steel tube (at least twelve (12) inches long) driven into the soil with a suitable instrument. The ends of the brass tube shall then be covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape. The samples shall then be immediately placed on ice, or dry ice, for transport to a laboratory. [District Rule 4651] Federally Enforceable Through Title V Permit

75. If the facility accepts contaminated soil for disposal, the initial boiling point of a liquid from samples of contaminated soil shall be measured in accordance with ASTM D86 for soil contaminated with petroleum liquid or ASTM D-1078 for soil contaminated with known organic chemical. [District Rule 4651] Federally Enforceable Through Title V Permit

76. If the facility accepts contaminated soil for disposal, the VOC concentration of soils shall be measured as hexane using an organic vapor analyzer, complying with EPA Reference Method 21. [District Rule 4651] Federally Enforceable Through Title V Permit

77. If the facility accepts contaminated soil for disposal, the VOC content of the soil that can be reasonably demonstrated to be contaminated only with petroleum shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. [District Rule 4651] Federally Enforceable Through Title V Permit

78. If the facility accepts contaminated soil for disposal, the VOC content of soil that is contaminated by unknown VOC-containing liquids, or that cannot be reasonably demonstrated to be contaminated only with petroleum, shall be determined by using EPA Reference Method 8015 or EPA Test Method 25D. In addition to one of the aforementioned methods, the operator shall use EPA Reference Method 8260B or the gas chromatographic method in the Leaking Underground Fuel Tank (LUFT) Manual (October 1989). [District Rule 4651] Federally Enforceable Through Title V Permit

79. If the facility accepts contaminated soil for disposal, an operator may use an equivalent alternative test method other than those listed if APCO and EPA approval has been obtained. [District Rule 4651] Federally Enforceable Through Title V Permit

80. If the facility accepts contaminated soil for disposal, when more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this permit. [District Rule 4651] Federally Enforceable Through Title V Permit

81. If the facility accepts contaminated soil for disposal, the permittee shall comply with the following when excavating contaminated soil: 1) Submit a written notice according to Section 6.1 prior to commencement of excavation of known contaminated soil; 2) Monitor operation for VOC contamination at least once every 15 minutes unless the excavated soil is treated according to Section 5.2.1; 3) Excavated soil that has been detected as contaminated shall be placed in storage piles or handled as required by Section 5.2 and; 4) Excavated contaminated soil shall be decontaminated, recycled, disposed of in an approved facility, returned to excavation and permanently covered with at least six (6) inches of uncontaminated soil, or transported to a location outside of the SJVAB within thirty (30) calendar days from the time of excavation or as directed by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized state or local government officer having jurisdiction. [District Rule 4651] Federally Enforceable Through Title V Permit

82. If the facility accepts contaminated soil for disposal, when handling excavated contaminated soil with VOC concentration measuring at 1,000 ppm or greater, the contaminated soil shall be sprayed with water or vapor suppressant and contaminated soil placed in sealed containers as soon as possible, but no more than 30 minutes after excavation, and handle pursuant to Section 5.1.4, or the contaminated soil loaded into trucks as soon as possible but no more than 30 minutes after excavation, moisten with additional water, cover as required in Section 5.3, and transport immediately to an approved facility, or implement other approved alternative storage methods and handle pursuant to Section 5.1.4. [District Rule 4651] Federally Enforceable Through Title V Permit

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83. If the facility accepts contaminated soil for disposal, when handling storage piles of contaminated soil the piles shall be clearly isolated and identifiable from storage piles of uncontaminated soil. The following is required for identification: 1) Location of the storage pile. 2) Unique identification of the storage pile. 3). The date that the storage pile was excavated. 4). Any other information deemed necessary for identification. [District Rule 4651] Federally Enforceable Through Title V Permit

84. If the facility accepts contaminated soil for disposal, when handling storage piles of contaminated soil that have been inactive for more than 60 consecutive minutes, the piles shall be treated with water or a vapor suppressant and cover with heavy-duty plastic sheeting to reduce VOC emissions and the covering shall have at least a six-feet overlap of adjacent sheets, be securely anchored, and have minimal headspace where vapors may accumulate, or covered with a layer of uncontaminated soil no less than six (6) inches deep. [District Rule 4651] Federally Enforceable Through Title V Permit

85. If the facility accepts contaminated soil for disposal, when handling contaminated soil, a visual inspection of all storage piles of contaminated soil shall be conducted at least once every 24 hours, except when operators do not report to the facility for a given 24-hour period, to ensure the integrity of the covered surfaces and compliance with Section 5.2.5. [District Rule 4651] Federally Enforceable Through Title V Permit

86. If the facility accepts contaminated soil for disposal, when handling contaminated soil, aeration of contaminated soil shall not be allowed except that which occurs during removal or addition of contaminated soil to a storage pile and this includes the use of contaminated soil in daily, intermediate, or final cover operations at disposal sites. [District Rule 4651] Federally Enforceable Through Title V Permit

87. If the facility accepts contaminated soil for disposal, the permittee shall comply with the following when transporting contaminated soil: 1) Any truck or trailer transporting contaminated soil shall be filled such that contaminated soil does not extend above the sides or rear of the truck; 2) Contaminated soil shall be treated with water or vapor suppressant and covered with an continuous heavy duty plastic sheeting or other covering to prevent spillage of contaminated soil during transport, and; 3) Chain-of-custody records shall be maintained according to Section 6.3.1 by the operators to document transfer of the transported contaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

88. If the facility accepts contaminated soil for disposal, when decontaminating soil, VOC emissions from the decontamination of contaminated soil shall be controlled by installation and operation of a VOC collection and control device with a VOC destruction or removal efficiency of at least 95%, or any other approved VOC control device demonstrated to be equivalent. [District Rule 4651] Federally Enforceable Through Title V Permit

89. If the facility accepts contaminated soil for disposal, when decontaminating soil, the permittee shall monitor the temperature, pressure, and flow rates of the VOC control device. [District Rule 4651] Federally Enforceable Through Title V Permit

90. If the facility accepts contaminated soil for disposal, when decontaminating soil, the VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations. [District Rule 4651] Federally Enforceable Through Title V Permit

91. If the facility accepts contaminated soil for disposal, the permittee shall comply with one of the following regarding contaminated soil: 1) Return the contaminated soil to the excavation and permanently cover with six (6) inches or more of uncontaminated soil, or; 2) Decontaminate the contaminated soil to the extent that the soil is no longer considered contaminated as defined in Section 3.17, or; 3) Transport the contaminated soil to an approved disposal facility, or; 4) Transport the contaminated soil to a location outside of the SJVAB. [District Rule 4651] Federally Enforceable Through Title V Permit

92. If the facility accepts contaminated soil for disposal, when decontaminating soil, the samples from decontaminated soil (that is to be treated as uncontaminated soil) shall be obtained by using the soil sampling methods specified in this permit and shall be tested using the applicable soil sample test methods specified in the permit. [District Rule 4651] Federally Enforceable Through Title V Permit

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93. If the facility accepts contaminated soil for disposal, the permittee shall include the following information in the notice of excavation activities: Names and addresses of operator(s) performing and responsible for excavation, location of site where excavation will occur, scheduled starting date of excavation (if the excavation does not commence on the start date, re-notification is required), estimated volume of soil to be excavated, estimated volume (in gallons) of VOC liquid spilled in the soil, if known. [District Rule 4651] Federally Enforceable Through Title V Permit

94. If the facility accepts contaminated soil for disposal, where emergency excavation is conducted at the direction of an authorized officer, the permittee shall include the following information: Name, title and contact information of the authorized officer, and a copy of the signed emergency declaration from the authorized officer. [District Rule 4651] Federally Enforceable Through Title V Permit

95. If the facility accepts contaminated soil for disposal, the permittee shall include the following information in the written notice when excavating contaminated soil: Names and addresses of operator(s) performing and responsible for excavation, address of site where excavation occurred, date(s) of excavation, estimated volume of contaminated soil excavated, estimated average VOC content of the contaminated soil or estimated volume of VOC contaminant, and final disposition of the contaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

96. If the facility accepts contaminated soil for disposal, the permittee shall identify each storage pile with the following information: Location of the storage pile, unique identification of the storage pile, and the date that the soil storage pile was excavated. [District Rule 4651] Federally Enforceable Through Title V Permit

97. If the facility accepts contaminated soil for disposal, the operator of a VOC control device used to decontaminate excavated soil shall demonstrated compliance with a VOC destruction or removal efficiency of at least 95%, or any other approved VOC control device demonstrated to be equivalent, before operation of such system. [District Rule 4651] Federally Enforceable Through Title V Permit

98. Control system VOC emissions shall be determined by Method 25, 25C, or Method 18. [40 CFR 60.754(d)] Federally Enforceable Through Title V Permit

99. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall submit an equipment removal report to the District 30 days prior to removal or cessation of operation of the control equipment. The report shall conform to the requirements of 40 CFR 60.757(e)(1). [40 CFR 60.757(e)] Federally Enforceable Through Title V Permit

100. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

101. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, the initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. The initial report shall include information specified in 40 CFR 60.757(g)(1-6). [40 CFR 60.757(f), (g)] Federally Enforceable Through Title V Permit

102. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) shall include information specified in 40 CFR 60.757(g)(1-6) with the initial performance test report required under 40 CFR Part 60.8. [40 CFR 60.757(g)] Federally Enforceable Through Title V Permit

103. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, each owner or operator shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. [District Rule 2520, 9.4.2 and 40 CFR 60.758(a)] Federally Enforceable Through Title V Permit

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104. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, the following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f): All 3-hour periods of operation during which the average combustion temperature was more than 28 ŶC below the average combustion temperature during the most recent performance test (flare source test). [40 CFR 60.758(c)] Federally Enforceable Through Title V Permit

105. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs 60.758(b)(1) through (b)(4) as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal. [40 CFR 60.758(b)] Federally Enforceable Through Title V Permit

106. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall keep the following records: (1)(i) the maximum expected gas generation flow rate as calculated in 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the APCO; (ii) the density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 60.759(a)(1); (2)(i) the average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test; (ii) the percent reduction of NMOC determined as specified in 60.752(b)(2)(ii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)] Federally Enforceable Through Title V Permit

107. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the enclosed flare, or the indication of bypass flow, or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, if applicable. [40 CFR 60.758(c) and 60.34c] Federally Enforceable Through Title V Permit

108. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), permittee shall keep, for the life of the collection system, an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector. Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or non-degradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)] Federally Enforceable Through Title V Permit

109. Once the facility has exceeded 50 Mg/year of NMOCs and triggered the full requirements of 40 CFR Part 60, Subpart WWW, except as provided in 60.752(b)(2)(i)(B), permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [40 CFR 60.758(e)] Federally Enforceable Through Title V Permit

110. The gas collection and control system shall comply with the operational standards of 40 CFR 60.753, the compliance provisions of 40 CFR 60.755, the monitoring provisions of 40 CFR 60.756, the reporting and record keeping requirements of 40 CFR 60.757 and 60.758, and the requirements of 40 CFR 60.759 (for active collection systems). [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756, 60.757, 60.758, 60.759, 62.14353]

111. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 2201] Federally Enforceable Through Title V Permit

112. Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit

113. The operator shall record emission control device source tests (emissions of CO, NOx, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit

114. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

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115. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and hourly heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District Rule 2201 and 40 CFR 64] Federally Enforceable Through Title V Permit

116. Records of daily landfill gas flow rate and annual test results of higher heating value of landfill gas shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

117. The facility shall maintain records of annual throughput, material usage, and other information necessary to demonstrate that facility-wide emissions are less than ten tons per year for both NOx and VOC. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit

118. The permittee shall maintain the following records at the time custody is transferred: the identities and business addresses of the relevant parties such as the generator, transporter, and storage/treatment facilities, the volume of contaminated soil generated or received, all analytical data associated with the contaminated soil (except during an emergency evacuation of soil), the date and location of excavation of the contaminated soil, and the date and signatures of the operators at the time custody is transferred. [District Rule 4651] Federally Enforceable Through Title V Permit

119. The permittee shall maintain visual inspection records at least once every 24 hours except when operators do not report to the facility for that given 24 hours and the records shall include location and unique identification of each specific pile and name, date, and signature of operator inspecting the storage piles. [District Rule 4651] Federally Enforceable Through Title V Permit

120. The permittee shall maintain the following records for VOC concentration readings: the identities and business addresses of the relevant parties such as the generator or storage/treatment facilities, the volume of contaminated or decontaminated soil, date of contaminated or decontaminated soil, VOC concentration reading, and the origin of the contaminated or decontaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

121. The permittee shall maintain records of calibrations for all approved monitoring instruments. [District Rule 4651] Federally Enforceable Through Title V Permit

122. Chain-of-custody records shall be kept by the operators to document possession of a sample from the time it is taken in the field until it is analyzed. [District Rule 4651] Federally Enforceable Through Title V Permit

123. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

124. Each owner or operator, required by 40 CFR 60.752(b)(2) of subpart WWW to install a collection and control system, shall comply with the requirements in 40 CFR 63.1960 through 63.1985 and with the general provisions specified in Table 1 of 40 CFR 63 Subpart AAAA. [40 CFR 63.1955(b)] Federally Enforceable Through Title V Permit

125. For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, owner or operator must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR Part 60 Subpart WWW, these alternatives can be used to comply with 40 CFR 63 Subpart AAAA, except that all affected sources must comply with the startup, shutdown, and malfunction (SSM) requirements in Subpart A of 40 CFR 63 as specified in Table 1 of 40 CFR 63 Subpart AAAA and all affected sources must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average. [40 CFR 63.1955(c)] Federally Enforceable Through Title V Permit

126. During operation of the enclosed flare, the permittee shall continuously monitor and record combustion chamber temperature. The temperature readings shall not be less than 28 degree C (50 degree F) below the average combustion temperature determined during the most recent flare source test, averaged over a 3-hour period. Upon detecting any temperature excursion lower than 28 degree C (50 degree F) below the source test average combustion temperature, averaged over a 3-hour period, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR 64 and 40 CFR 60.758(c)(1)(i)] Federally Enforceable Through Title V Permit

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127. The enclosed flare burner and its associated components and the vapor collection system shall be inspected on an annual basis. The records of inspection shall at least contain date and time of inspection, identification of the person performing an inspection, parts replacement and repairs, and all maintenance actions taken. The records shall be kept and maintained for compliance inspection upon request. [40 CFR 64] Federally Enforceable Through Title V Permit

128. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR 64] Federally Enforceable Through Title V Permit

129. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR 64] Federally Enforceable Through Title V Permit

130. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64] Federally Enforceable Through Title V Permit

131. Permittee may use actual landfill gas generation values in future expansion designs of the gas collection and control system(GCCS). All records and recovery data shall be submitted with GCCS plans. [17 CCR 95468]

132. Landfill gas collection system wellheads must be operated under vacuum. Monthly monitoring of wellheads is required. Landfill gas collection system wellheads may be operated under neutral or positive pressure when there is a fire or during other times as allowed in sections 95464(c), 95464(d), and 95464(e). [17 CCR 95464]

133. Landfill gas collection system components downstream of blower have a leak limit of 500 ppmv as methane. Components must be checked quarterly. If compliance with the methane limit has been demonstrated for 4 consecutive quarters, then the component checking frequency shall be annually. If an annual test fails to show compliance, quarterly testing shall resume. [17 CCR 95464]

134. The flare must operate within the parameter ranges established during the initial or most recent source test. [17 CCR 95464]

135. Landfill collection and control system must be operated such that landfill surface methane emissions shall not exceed instantaneous surface emission limit of 500 ppmv as methane or integrated surface emission limit of 25 ppmv as methane. [17 CCR 95464, 17 CCR 95465]

136. Instantaneous and integrated landfill surface emissions measurements shall be done quarterly. The landfill may monitor annually provided they comply with requirements of 17 CCR 95469 (a)(1). [17 CCR 95469]

137. Permittee shall keep records of all gas collection system downtime exceeding five days, including individual well shutdown and disconnection times and the reason for downtime. [17 CCR 95470]

138. Permittee shall keep records of all gas control system downtime in excess of one hour, the reason for the downtime and the length of time the gas control system was shutdown. [17 CCR 95470]

139. Permittee shall keep records of the expected gas generation flow rate calculated pursuant to section 95471(e). [17 CCR 95470]

140. Permittee shall keep records of all instantaneous surface readings of 200 ppmv or greater; all exceedances of the limits in sections 95464(b)(1)(B) or 95465, including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during surface sampling; and the installation date and location of each well installed as part of a gas collection system expansion. [17 CCR 95470]

141. Permittee shall keep records of any positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken. [17 CCR 95470]

142. Permittee shall conduct surface emission monitoring using either the procedures specified in section 95471 or the Los Angeles County Sanitation District monitoring procedure. Permittee shall keep records of which procedure was used. [17 CCR 95468]

143. Permittee shall keep records of delays encountered during repair of leaks or repair of positive wellhead readings. Documentation of delays shall be submitted with the annual report. [17 CCR 95468]

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144. Permittee shall keep records of alternate landfill gas collection system modifications being implemented to correct an exceedance in the landfill gas surface emissions or wellhead pressure. Any alternative to installing a new well shall be documented and submitted with the annual report. [17 CCR 95468]

145. Permittee shall identify areas which are dangerous and unable to be inspected. Areas shall be clearly identified on a map of the facility. A copy of the map shall be kept onsite as well as submitted with the annual report. [17 CCR 95468]

146. Permittee shall conduct monitoring of the landfill surface within 3 inches of the surface. The facility may monitor surface emissions with the probe tip at the height of the vegetation if there is vegetation and it is impractical to monitor at 3 inches from the landfill surface. [17 CCR 95468]

147. Permittee shall terminate surface emission testing when the measured average wind speed is over 10 mph or the instantaneous wind speed is over 15 mph. [17 CCR 95468, 17 CCR 95471]

148. Permittee shall only conduct surface emission testing when precipitation has met the following requirements. It has been 24 hours since measured precipitation of 0.01 to 0.15 inches. It has been 48 hours since measured precipitation of 0.16 to 0.24 inches. It has been 72 hours since measured precipitation of 0.25 or more inches. [17 CCR 95468]

149. Permittee shall keep records of the annual solid waste acceptance rate and the current amount of waste-in-place. [17 CCR 95470]

150. Permittee shall keep records of the nature, location, amount , and date of deposition of non-degradable waste for any landfill areas excluded from the collection system. [17 CCR 95470]

151. Permittee shall keep records of any source tests conducted pursuant to section 95464(b)(4). [17 CCR 95470]

152. Permittee shall keep records describing the mitigation measures taken to prevent the release of methane or other emissions into the atmosphere during the following activities: 1. When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; 2. During repairs or the temporary shutdown of gas collection system components; or, 3. When solid waste was excavated and moved. [17 CCR 95470]

153. Permittee shall keep records of any construction activities pursuant to section 95466. The records must contain the following information: 1. A description of the actions being taken, the areas of the MSW landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions. 2. Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components. 3. A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts. [17 CCR 95470]

154. Permittee shall keep records of the equipment operating parameters specified to be monitored under section 95469(b)(1) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded. The records must include the following information: 1. For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 degrees Celsius (or 50 degrees Fahrenheit) below the average combustion temperature during the most recent source test at which compliance with sections 95464(b)(2) was determined and a gas flow rate device which must record the flow to the control device at least every 15 minutes. [17 CCR 95470]

155. Permittee shall submit the following reports as required in section 95470(b): Closure notification, Equipment removal report and Annual report. All reports must be accompanied by a certification of truth, accuracy, and completeness signed by a responsible official. [17 CCR 95470]

156. Permittee may comply with the CARB regulation for landfill methane control measures by using approved alternative compliance options. The permittee shall obtain written District approval for the use of any alternative compliance options not specifically approved by this permit. Changes to the approved alternate compliance options must be made and approved in writing. Documentation of approved alternative compliance options shall be available for inspection upon request. [17 CCR 95468]