San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUG 0 6 2014

Mr. Benjamin Gray
Avenal Regional Landfill
P.O. Box 189
Avenal, CA 93204

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-3839
Project # C-1132849

Dear Mr. Gray:

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 landfill gas collection and control system served by a 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
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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Install Landfill Gas Collection and Control System Served By A Flare

Facility Name:	Avenal Regional Landfill	Date:	July 23, 2014
Mailing Address:	201 Hydril Rd	Engineer:	Stanley Tom
	Avenal, CA 93204	Lead Engineer:	Joven Refuerzo
Contact Person:	Benjamin Gray		
Telephone:	(559) 386-5844		
Application #(s):	C-3839-1-5		
Project #:	C-1132849		
Deemed Complete:	March 6, 2014		

I. Proposal

Avenal Regional Landfill (Avenal) is proposing to install a landfill gas (LFG) gas collection and control system (GCCS) served by a flare.

Current PTO C-3839-1-4 (Attachment A) requires annual site-wide VOC emissions monitoring and quarterly reporting. If the projected site-wide VOC emissions exceed the offset threshold, the facility is required to submit an ATC application to install a GCCS to reduce the VOC emissions to below the offset threshold. The annual VOC emissions report has not yet been submitted, but preliminary indications are that the site may exceed the offset threshold in the third quarter of 2014.

A Tier 2 Sampling, Analysis, and Non-methane Organic Compounds (NMOC) Emission Estimate Report was prepared for the landfill on July 15, 2013 and submitted to the District October 2013. The NMOC emission rate was estimated to be 59.4 megagram (Mg) per year, which is greater than the 50 Mg/year threshold, thus triggering the New Source Performance Standard (NSPS) and California Assembly Bill 32 (AB32) Landfill Methane Control Measure (ATCM) requirement to install a GCCS.

Avenal Regional Landfill has received their Title V Permit. This modification can be classified as a Title V significant 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. Avenal Regional 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 201 Hydril Rd in Avenal, 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

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

The landfill is currently permitted and operations as a Class III MSW landfill. As a Class III landfill, only non-hazardous wastes, residential, commercial, demolition, industrial, and agricultural wastes are accepted. In addition, autoclaved infectious wastes and dead animals collected from roadways are permitted at Avenal. Inert wastes (i.e. asphalt or concrete) that do not contain hazardous waste or soluble pollutant at concentrations in excess of applicable water quality objectives, and do not contain significant quantities of decomposable wastes are also accepted.

V. Equipment Listing

Pre-Project Equipment Description

Permit Number	Pre-Project Equipment Description
C-3839-1-4	MUNICIPAL SOLID WASTE LANDFILL, 28.8 MILLION CUBIC YARD CAPACITY (123 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY TWO (2) BAKER FILTRATION MODEL KLEEN AIR 55 200 LB CANISTERS CONNECTED IN SERIES

ATC Equipment Description

Permit Number	ATC Equipment Description
C-3839-1-5	MODIFICATION OF MUNICIPAL SOLID WASTE LANDFILL, 28.8 MILLION CUBIC YARD CAPACITY (123 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY TWO (2) BAKER FILTRATION MODEL KLEEN AIR 55 200 LB CANISTERS CONNECTED IN SERIES: INSTALLATION OF A 1,000 GALLON CONDENSATE STORAGE TANK AND GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 45.5 MMBTU/HR FLARE FOR 40 CFR 60 SUBPART WWW RULE COMPLIANCE

Post-Project Equipment Description

Permit Number	Post-Project Equipment Description
C-3839-1-5	MUNICIPAL SOLID WASTE LANDFILL, 28.8 MILLION CUBIC YARD CAPACITY (123 ACRES) WITH A 1,000 GALLON CONDENSATE STORAGE TANK AND GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 45.5 MMBTU/HR FLARE

VI. Emission Control Technology Evaluation

The GCCS is being designed in compliance with 40 CFR 60 Subpart WWW.

The first phase of the proposed GCCS across Phase 1/Phase 2 of the landfill will be constructed within the existing waste footprint of Phase 1 and will consist of approximately 15 to 25 vertical landfill gas (LFG) wells installed within the waste mass connected to a network of LFG collection piping. All wells will be interior wells and will have a spacing of approximately 100 to 300 feet. Well depth will be no closer than 20 feet to the bottom of the waste mass or top of liner system. Additional wells may be added to decrease spacing between wells as necessary to control emissions. The existing vadose zone carbon

adsorption unit (CAS) listed in permit C-3839-3 will be decommissioned following installation of the GCCS. The existing wells connected to the CAS may be connected if necessary to the new GCCS as exterior wells.

Header and lateral collection piping will be installed above ground and below ground, and will be constructed of high-density polyethylene (HDPE) pipe. LFG will be conveyed through the piping network to an enclosed flare.

Condensate that forms in the GCCS piping will be routed to perimeter sumps that will pump the condensate to leachate risers where it will be managed as part of the leachate collection system or directly to leachate holding tanks.

One condensate sump will be located at the flare station. Additional condensate sumps will be added as need dictates and at low points in GCCS piping. Other means of disposing of condensate, such as reintroduction to the landfill, on-site treatment, or transport to an off-site wastewater treatment plant, may be proposed in the future if necessary.

VII. General Calculations

A. Assumptions

- Facility operates 24 hours per day (worst-case)
- USEPA Landfill Gas Emissions Model (LandGEM) will be used to calculate PE1 and PE2
- Methane generation potential "L_o" = 100 cubic meters per megagram
- 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
- Pre-project landfill gas VOC concentration = 232 ppmv as hexane (per applicant)
- Post-project landfill gas VOC concentration = 349 ppmv as hexane (site specific data 2013 VOC Emissions Report dated 9/30/13)
- 1 Mg = 2204.623 lb
- VOC collection efficiency = 85% (as proposed by applicant per AP-42 (11/98) Section 2.4.4.2)
- Carbon adsorption VOC control efficiency = 98% (applicant proposed) minimum BACT requirement
- Flare VOC control efficiency = 98% (applicant proposed) minimum Subpart WWW requirement
- Maximum flare gas flowrate = 1,500 scf/min (per applicant)
- Maximum landfill gas H2S concentration = 250 ppmv (per applicant)
- Landfill gas heating value = 506 Btu/scf (per applicant)
- Maximum waste acceptance = 6,013 tons per day and 2,194,602 ton/year (current PTO)

- Condensate injection rate = 5 gallons per minute (per applicant)
- New enclosed flare may destroy up to one gallon of condensate for every 16,833 Btu of heat release)

B. Emission Factors

Pre-Project VOC Landfill Emissions

As shown in project C-1071160, maximum uncontrolled VOC emission rate is 47.1 Mg/year (51.92 ton/year) based on a worst-case waste acceptance rate of 1,990,909 Mg/year (2,194,602 ton/year). This value is based upon an uncontrolled landfill and a worst case VOC concentration of 232 ppmv as hexane.

Post-Project VOC Landfill Emissions

Maximum uncontrolled VOC emission rate is 91.09 Mg/year (100.41 ton/year, see Attachment B for year 2025) based on a worst-case waste acceptance rate of 1,990,909 Mg/year (2,194,602 ton/year). This value is based upon an uncontrolled landfill and a worst case VOC concentration of 349 ppmv as hexane.

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

The flare will only be fired on landfill gas at all times.

Flare Emission Factors Landfill Gas Fuel		
Pollutant	lb/MMBtu	Source
NO_X	0.05	Applicant Proposed
SO_X	0.084	Mass balance equation below based on 250 ppmv H_2S in the landfill gas
PM_{10}	0.008	Applicant Proposed
CO	0.2	Applicant Proposed

$$SOx = \frac{\left(1{,}500\frac{ft^3-fuel}{\min}\right)\left(\frac{250\,ft^3-H_2S}{10^6\,ft^3-fuel}\right)\left(34\frac{lb-H_2S}{lb-mol}\right)}{\left(379.5\frac{ft^3-H_2S}{lb-mol}\right)\left(\frac{34lb-H_2S}{32lb-S}\right)\left(\frac{32lb-S}{64lb-SO_2}\right)}$$

SOx = 0.063 lb/min

SOx = 0.063 lb/min ÷ (1500 scf/min x 500 Btu/scf) x 1E6/MM
= 0.084 lb/MMBtu

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Landfill VOC emissions

As shown in project C-1071160, the worst case annual VOC emissions (occurs at year 2015),

Annual VOC emissions = 47.1 Mg/year x 2204.623 lb/Mg = 103,838 lb/year
Daily VOC emissions = 103,838 lb/year ÷ 365 day/year = 284.5 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 carbon adsorption unit has a VOC control efficiency requirement of 98%. Therefore, the VOC emissions are as follows:

Daily VOC emissions = 284.5 lb/day x (1-0.85) + 284.5 lb/day x 0.85 x (1-0.98)
= 47.5 lb-VOC/day

Annual VOC emissions = 103,838 lb/year x (1-0.85) + 103,838 lb/year x 0.85 x (1-0.98)
= 17,341 lb-VOC/year

Pre-Project Potential to Emit (PE1)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
VOC	47.5	17,341

Landfill PM_{10} emissions

The following values were taken from project C-1071160:

Footprint = 123 acres
Final Cover Thickness = 4 feet
Final Cover Quantity = 641,000 yards
Soil density = 120 lb/cu ft

Soil moved = 123 acres x 43,560 sq ft/acre x 4 ft x 120 lb/cu ft x ton/2000 lb
= 1,285,891.2 tons

Annual PM_{10} = 1,285,891.2 tons x 0.0023 lb-PM_{10}/ton = 2,958 lb-PM_{10}/year

Assuming 365 days per year operation,

Daily PM_{10} = 2,958 lb-PM_{10}/year ÷ 365 days/year = 8.1 lb-PM_{10}/day

Pre-Project Potential to Emit (PE1)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
PM_{10}	8.1	2,958

2. Post Project Potential to Emit (PE2)

Landfill VOC emissions

The LandGEM model (Attachment B) shows the worst case annual VOC emissions (occurs at year 2025),

Annual VOC emissions = 91.09 Mg/year x 2204.623 lb/Mg = 200,819 lb/year
Daily VOC emissions = 200,819 lb/year ÷ 365 day/year = 550.2 lb-VOC/day

When specific conditions are met, the collectors (wells) are opened and the landfill gas will be sent to the flare. 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 has a VOC control efficiency requirement of 98%. Therefore, the VOC emissions are as follows:

Daily VOC emissions = 550.2 lb/day x (1-0.85) + 550.2 lb/day x 0.85 x (1-0.98)
= 91.9 lb-VOC/day

Annual VOC emissions = 200,819 lb/year x (1-0.85) + 200,819 lb/year x 0.85 x (1-0.98)
= 33,537 lb-VOC/year

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 (22,290 ft^3/min) x (1,440 min/day)

Daily VOC emissions = 145.8 lb/day

Annual VOC emissions = Daily VOC emissions x 365 days/year
= 145.8 lb/day x 365 days/year
= 53,217 lb/year

Therefore, the 20 ppmv 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	145.8	53,217

Landfill PM_{10} emissions

There are no proposed changes to the landfill PM_{10} emissions in this project.

Footprint = 123 acres
Final Cover Thickness = 4 feet
Final Cover Quantity = 641,000 yards
Soil density = 120 lb/cu ft

Soil moved = 123 acres x 43,560 sq ft/acre x 4 ft x 120 lb/cu ft x ton/2000 lb
= 1,285,891.2 tons

Annual PM_{10} = 1,285,891.2 tons x 0.0023 lb-PM_{10}/ton = 2,958 lb-PM_{10}/year

Assuming 365 days per year operation,

Daily PM_{10} = 2,958 lb-PM_{10}/year ÷ 365 days/year = 8.1 lb-PM_{10}/day

Post-Project Potential to Emit (PE2)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
PM_{10}	8.1	2,958

Flare emissions

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

- PE2 = EF (lb/MMBtu) × Heat Input (MMBtu/day or MMBtu/year) × Heating Value (Btu/scf)

Daily Post-Project Potential to Emit (PE2) – Flare											
Pollutant	Emission Factors			Heat input						PE2 Total	
NO_X	0.05	(lb/MMBtu)	x	2,160,000	(scf/day)	x	506	(Btu/scf)	=	54.6	(lb/day)
SO_X	0.084	(lb/MMBtu)	x	2,160,000	(scf/day)	x	506	(Btu/scf)	=	91.8	(lb/day)
PM_{10}	0.008	(lb/MMBtu)	x	2,160,000	(scf/day)	x	506	(Btu/scf)	=	8.7	(lb/day)
CO	0.2	(lb/MMBtu)	x	2,160,000	(scf/day)	x	506	(Btu/scf)	=	218.6	(lb/day)

Annual Post-Project Potential to Emit – Flare											
Pollutant	Emission Factors			Heat input						PE2 Total	
NO_X	0.05	(lb/MMBtu)	x	788,400,000	(scf/year)	x	506	(Btu/scf)	=	19,947	(lb/year)
SO_X	0.084	(lb/MMBtu)	x	788,400,000	(scf/year)	x	506	(Btu/scf)	=	33,510	(lb/year)
PM_{10}	0.008	(lb/MMBtu)	x	788,400,000	(scf/year)	x	506	(Btu/scf)	=	3,191	(lb/year)
CO	0.2	(lb/MMBtu)	x	788,400,000	(scf/year)	x	506	(Btu/scf)	=	79,786	(lb/year)

Total

Post-Project Potential to Emit (PE2)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NOx	54.6	19,947
SOx	91.8	33,510
PM_{10}	8.7 + 8.1 = 16.8	3,191 + 2,958 = 6,149
CO	218.6	79,786
VOC	145.8	53,217

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.

The engine listed in permit C-3839-2-0 has been removed from the site and the permit will be canceled. Therefore, permit C-3839-2-0 will not be included in the SSPE calculations.

Pre Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-3839-1-4	0	0	2,958	0	17,341
C-3839-3-0	0	0	0	0	511
Pre Project SSPE (SSPE1)	0	0	2,958	0	17,852

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-3839-1-5	19,947	33,510	6,149	79,786	53,217
C-3839-3-0	0	0	0	0	511
Post Project SSPE (SSPE2)	19,947	33,510	6,149	79,786	53,728

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)	0	0	2,958	0	17,852
Post Project SSPE (SSPE2)	19,947	33,510	6,149	79,786	53,728
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	Yes

As seen in the table above, the facility is not an existing Major Source but is becoming a Major Source for VOC emissions 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)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	0	8.9	0	0	1.5	1.5
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

Clean Emissions Unit, Located at a Major Source
Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

The landfill is currently controlled by a gas collection and control system served by a carbon adsorption unit achieving a minimum VOC control efficiency of 98%. Therefore, the landfill is a clean emissions unit and BE = PE1.

Baseline Emissions (BE)	
Pollutant	Annual Emissions (lb/year)
PM_{10}	2,092
VOC	17,341

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."

As discussed in Section VII.C.5 above, the facility is not a Major Source for NOx, SOx, and PM_{10} emissions; therefore, the project does not constitute a SB 288 Major Modification for NOx, SOx, or PM_{10} emissions.

Since this facility is a major source for VOC, the PE2 for the emission units within this project is compared to the SB 288 Major Modification Thresholds in order to determine if the SB 288 Major Modification calculation is required.

In this project, the landfill is the emissions unit and the flare is the control device. The landfill emits only fugitive emissions which are not included in the SB 288 Major Modification determination.

Landfill VOC Emissions

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the SB 288 Major Modification determination.

Flare VOC Emissions

The VOC emissions from the flare are calculated using the collected and controlled landfill gas combusted by the flare.

Annual VOC emissions = 200,819 lb/year x 0.85 x (1-0.98)
= 3,414 lb-VOC/year

SB 288 Major Modification Threshold (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
VOC	3,414	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

As discussed in Section VII.C.5 above, the facility is not a Major Source for NOx, SOx or PM_{10} emissions; therefore, the project does not constitute a Federal Major Modification for NOx, SOx or PM_{10} emissions. However, a determination of Federal Major Modification must be made for VOC emissions.

District Rule 2201, states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase" exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0

The Net Emissions Increases (NEI) for purposes of determination of a "Less-Than-Significant Emissions Increase" exclusion will be calculated below to determine if this project qualifies for such an exclusion.

Net Emission Increase for New Units (NEI_N)

Per 40 CFR 51.165 (a)(2)(ii)(D) for new emissions units in this project,

$NEI_N = PE2_N - BAE$

In this project, the landfill is the emissions unit and the flare is the control device. The landfill emits only fugitive emissions which are not included in the Federal Major Modification determination. The flare is new and therefore, BAE is equal to zero. Therefore, for this project,

$NEI_N = PE2_N$

where $PE2_N$ is the Post Project Potential to Emit for the control device.

Landfill VOC Emissions

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

Flare VOC Emissions

The VOC emissions from the flare are calculated using the collected and controlled landfill gas combusted by the flare.

Annual VOC emissions = 200,819 lb/year x 0.85 x (1-0.98)
= 3,414 lb-VOC/year

Flare Potential to Emit	
Pollutant	Annual Emissions (lb/year)
VOC	3,414

NEI_N (VOC) = $PE2_N$ (VOC) = 3,414 lb-VOC/year

The NEI for this project is thus calculated as follows:

$NEI = NEI_N$

NEI (VOC) = 3,414 lb-VOC/year

The NEI for this project will be greater than the federal Major Modification threshold of 0 lb/year for VOC. Therefore, this project does not qualify for a "Less-Than-Significant Emissions Increase" exclusion and is thus determined to be a Federal Major Modification for VOC.

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}
- Greenhouse gases (GHG): CO2, N2O, CH4, HFCs, PFCs, and SF6

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}	CO2e
Total PE from New and Modified Units	10.0	1.7	16.8	39.9	3.1	3.1	23,012
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	N	N	N	N	N	N	N

Landfill VOC Emissions

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the PSD determination.

Flare VOC Emissions

The VOC emissions from the flare are calculated using the collected and controlled landfill gas combusted by the flare.

Annual VOC emissions = 200,819 lb/year x 0.85 x (1-0.98)
= 3,414 lb-VOC/year
= 1.7 ton-VOC/year

GHG Calculations

Basis and Assumptions

- Emission factors and global warming potentials (GWP) are taken from EPA 40 CFR Part 98, Subpart A, Tables C-1 and C-2:

  Biogas
  CO2 52.07 kg/MMBtu (114.79 lb/MMBtu)
  CH4 3.2×10^{-3} kg/MMBtu (0.00705 lb/MMBtu)
  N2O 6.3×10^{-4} kg/MMBtu (0.00139 lb/MMBtu)

  GWP for CH4 = 21 lb-CO2(eq) per lb-CH4
  GWP for N2O = 310 lb-CO2(eq) per lb-N2O

Calculations

CO2 Emissions = 788,400,000 scf/year x 506 Btu/scf x 114.79 lb/MMBtu
= 45,793,220.62 lb-CO2(eq)/year
CH4 Emissions = 788,400,000 scf/year x 506 Btu/scf x 0.00705 lb/MMBtu x 21 lb-CO2(eq) per lb-CH4
= 59,061.65 lb-CO2(eq)/year

N2O Emissions = 788,400,000 scf/year x 506 Btu/scf x 0.00139 lb/MMBtu x 310 lb-CO2(eq) per lb-N2O
= 171,899.11 lb-CO2(eq)/year

Total = (45,793,220.62 + 59,061.65 + 171,899.11) lb-CO2(eq)/year
= 46,024,181.37 lb-CO2(eq)/year
Total = 46,024,181.37 lb-CO2(eq)/year ÷ 2,000 lb/ton
= **23,012 short tons-CO2(eq)/year**

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 - BE, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
BE = Baseline Emissions (per Rule 2201) 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 BE can be calculated as follows:

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NOx	4,987	0	4,987
SOx	8,378	0	8,378
PM10	1,537	523	1,014
CO	19,947	0	19,947
VOC	13,304	4,335	8,969

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.

Installation of the new flare will be solely to comply with the requirements of 40 CFR Part 60 Subpart WWW. There is no proposed change in the waste acceptance rate of the landfill. 40 CFR Part 60 Subpart WWW requires control of landfill gas in waste that has been in place for 5 years or longer. The waste has been in place for 5 years or longer and therefore, the installation of the flare in this project qualifies as a modification solely for compliance of District, State, or Federal air pollution control laws, regulations, or orders.

BACT shall not be required for the following:

4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM10, or 50 tons per year of CO.

Each of the above-listed criteria are met, and BACT is not triggered for any pollutant.

B. Offsets

1. Offset Applicability

Installation of the new flare will be solely to control the landfill gas produced from Fill Area III. There is no proposed change in the waste acceptance rate of the landfill. 40 CFR Part 60 Subpart WWW requires control of landfill gas in waste that has been in place for 5 years or longer. The waste has been in place for 5 years or longer and therefore, the installation of the flare in this project qualifies as a modification solely for compliance of District, State, or Federal air pollution control laws, regulations, or orders.

As stated above, the proposed modifications are solely for compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, and are exempt from offsets if the following criteria are satisfied. Rule 2201, Section 4.6.8 provides the following exemption from offsets.

Emission offsets shall not be required for the following:

4.6.8 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:

4.6.8.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.6.8.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.6.8.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.6.8.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM-10, or 50 tons per year of CO.

Since the above-listed criteria are met, offsets are not triggered for any pollutant.

2. Quantity of Offsets Required

As seen above, the project meets the exemption requirements of section 4.6.8 of District Rule 2201; therefore offset calculations are not necessary and offsets are not 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.

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 constitute a Federal Major Modification for VOC emissions; therefore, public noticing for Federal Major Modification purposes is 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	54.6	100 lb/day	No
SO_X	91.8	100 lb/day	No
PM_{10}	16.8	100 lb/day	No
CO	218.6	100 lb/day	Yes
VOC	145.8	100 lb/day	Yes

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	0	19,947	20,000 lb/year	No
SO_X	0	33,510	54,750 lb/year	No
PM_{10}	2,958	6,149	29,200 lb/year	No
CO	0	79,786	200,000 lb/year	No
VOC	17,852	53,728	20,000 lb/year	Yes

As detailed above, offset thresholds were surpassed for VOC with this project; therefore public noticing is 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	19,947	0	19,947	20,000 lb/year	No
SO_x	33,510	0	33,510	20,000 lb/year	Yes
PM_{10}	6,149	2,958	3,191	20,000 lb/year	No
CO	79,786	0	79,786	20,000 lb/year	Yes
VOC	53,728	17,852	35,876	20,000 lb/year	Yes

As demonstrated above, the SSIPE for SOx, CO, and VOC emissions are 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 Federal Major Modification for VOC emissions, CO and VOC emissions in excess of 100 lb/day, the offset threshold being exceeded for VOC emissions, and SSIPE greater than 20,000 lb/year for SOx, CO, and VOC emissions. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), US Environmental Protection Agency (EPA), 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 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 shall not exceed any of the following: 6,013 tons per day or 2,194,602 ton/year. [District Rule 2201]
- VOC emissions (as hexane) from the landfill and flare shall not exceed any of the following: 145.8 lb/day or 53,217 lb/year. [District Rule 2201]
- Emission rate from the enclosed flare shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-SOx/MMBtu (250 ppmv H2S in fuel); 0.2 lb-CO/MMBtu; or 0.008 lb-PM10/MMBtu. [District Rule 2201]
- The heat input of collected landfill gas into the flare shall not exceed any of the following: 45.5 MMBtu/hr or 398,580 MMBtu/year. Heat input shall be calculated daily using monthly methane measurements (%), landfill gas flow into the flare (cubic feet per minute), and the annually tested landfill gas heat content (Btu/cubic foot). [District Rule 2201]
- Total soil cover usage rate shall not exceed 3,523 tons per day. [District Rule 2201]
- Total PM10 emissions from handling of soil cover shall not exceed 0.0023 lb-PM10 per ton of material handled. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Source testing upon initial startup is required.

The folllowing conditions will be listed on the permit to ensure compliance:

- 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 less than 20 ppmv dry basis as hexane NMOC outlet concentration at 3 percent oxygen as required by this permit shall be conducted within 180 days of startup. [District Rule 2201 and 40 CFR 60.752(b)(2)(iii)(B)]
- Source testing to demonstrate compliance with the flare VOC, NOx, and CO emission limits and VOC control efficiency requirements shall be conducted at least once every 12 months. [District Rule 2201]
- Source testing for NOx shall be conducted using EPA Test Method 7E or CARB Method 100. [District Rule 1081]
- Source testing for CO shall be conducted using EPA Test Method 10 or 10B, CARB Methods 1-5 with 10 or CARB Test Method 100. [District Rule 1081]
- Gas combusted in the flares 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 1081]
- VOC emissions shall be measured by USEPA Test Method 18, 25, 25A, or 25C. [District Rule 1081 and 40 CFR 60.754(d)]

2. Monitoring

Surface Emissions Monitoring

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

Surface monitoring 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 will be 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 facility will initiate correction action within 5 days and conduct remonitoring within 10 days from the initial exceedance. If this reading shows compliance has been achieved, then an additional remonitoring event is conducted within one month of the initial exceedance for confirmation. If the 10-day event still shows and exceedance, the facility will initiate correction action within 5 days and conduct remonitoring within 10 days from the second exceedance. If this reading shows compliance has been achieved, then an additional remonitoring event is conducted within one month of the initial exceedance for confirmation. If the second 10-day event also shows and exceedance, then the facility would be required to permit and install additional LFG wells to correct the problem within 120 days of the initial exceedance.

The monitoring will be conducted quarterly. The current permit requires if there are any exceedances during a quarterly event, monitoring will revert to monthly until there are three consecutive months without exceedances, which would allow a return to quarterly monitoring. This requirement was placed on the permit to justify the 85% collection efficiency assumption as referenced in AP-42 Section 2.4. As the facility is now subject to the applicable surface emission monitoring requirements of 40 CFR Part 60 Subpart WWW, the District considers the assumed collection efficiency to be justified by the facility performing the surface emission monitoring requirements of 40 CFR Part 60 Subpart WWW.

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, will be 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 along with proposed BACT requirements are as follows:

- Permittee shall operate the flare at all times when the collected gas is routed to it. [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]
- Surface monitoring for the landfill area shall be performed quarterly. [District Rule 2201]

- 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 or alternative compliance actions as detailed in the Avenal Regional Landfill NSPS/AB32 GCCS Design Plan, Appendices B and F (December 2013). [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]
- 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.

- Permittee shall maintain records of the daily weight of materials received (cubic yards converted to tons) including Class II waste material and soil cover, landfill gas H2S measurements, and quantity of landfill gas condensate injected into the flare (in gallons). [District Rule 1070]
- All records shall be retained for a minimum of five 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 E 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 $PM_{2.5}$.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this facility is a major source and this project does constitute a Title I modification, therefore this requirement is applicable. Included in Attachment C is the facility's compliance certification.

H. Alternative Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a new enclosed ground flare as a control device for its existing landfill gas collection and control system.

Since the project is for an emissions control device used to control landfill gas resulting from waste already disposed of at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

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. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC) (see Attachment D); 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 shall not implement the changes requested until the final permit is issued.

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 section is applicable.

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

The operating permit will be maintained to show compliance with this subpart. Further, the requirements of Subpart Cc reference those in Subpart WWW, therefore compliance with Subpart WWW will be deemed compliance with Subpart Cc (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 have added to the permit. The following conditions will be listed on the permit to ensure compliance:

- This operating permit may be cancelled with APCO approval when the landfill is closed, pursuant to the requirements of this permit, if the landfill is not otherwise

subject to the requirements of either 40 CFR part 70 or part 71 and if either 1) it was never subject to the requirement for a control system under 40 CFR 60.752(b)(2); or 2) the owner or operator meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v). [40 CFR 60.752(d)]

- If the landfill is permanently closed, a closure notification shall be submitted to the APCO within 30 days of waste disposal cessation. A permanent closure must take place in accordance with 40 CFR 258.60. If a closure report has been submitted, no additional waste may be placed in the landfill without filing a notification of modification to the APCO, pursuant to 40 CFR 60.7(a)(4). [40 CFR 60.752(b)(1)(ii)(B), 60.757(d)]
- 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 and 60.759]
- Permittee shall calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed as provided in 40 CFR 60.752(b)(2)(v) by using the equation found in 40 CFR 60.754(b). [40 CFR 60.754(b) and 60.34c]
- An active collection system shall be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment, collect has from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade, collect gas at a sufficient extraction rate as defined in Section 60.751, and be designed to minimize off-site migration of subsurface gas. [40 CFR 60.752(b)(ii)(A)]
- Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O_2 as methane. [District NSR Rule and 40 CFR 60.752(b)(2)(iii)(B)]

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

(1) A fire or increased well temperature;
(2) Use of a geomembrane or synthetic cover;
(3) 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.

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

- 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 and 60.759]
- In the event that the collection or control system becomes inoperable, the gas mover equipment (as defined in 40 CFR 60.751) shall be shut down and all valves in the collection and control system contributing to venting of the landfill gas to the atmosphere shall be closed within one hour. [40 CFR 60.753(e)]
- Permittee shall operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. [District Rule 2201, 40 CFR 60.753(d), and 40 CFR 60.755(c)]
- Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(e)]
- Permittee shall operate the landfill gas collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for: (1) five years or more if active; or (2) two years or more if closed or at final grade. [40 CFR 60.753(a) and 60.34c]
- Permittee shall operate the landfill gas collection system with negative pressure at each wellhead except under the following conditions: (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 60.757(f)(1); (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan; (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the APCO. [40 CFR 60.753(b)]
- If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of section 60.753 are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3 - 5) or (c). If corrective actions are taken as

specified in 60.755, the monitored exceedance is not a violation of the operational requirements in this section. [40 CFR 60.753(g)]

- When monitoring interior wellheads for operation for a nitrogen level less than 20 percent, the nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart. [40 CFR 60.753(c)(1)]
- For each interior wellhead, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that: (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span; (ii) A data recorder is not required; (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span; (iv) A calibration error check is not required; (v) The allowable sample bias, zero drift, and calibration drift are ñ10 percent. [40 CFR 60.753(c)(2)]
- Surface testing to measure the methane concentration at the surface of the landfill shall be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals 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. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [District Rule 2201 and 40 CFR 60.753(d)]

60.754: This section primarily lists procedures for calculating the landfill gas emission rate to show that it is below 50 megagrams per year.

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

- Permittee shall calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed as provided in 40 CFR 60.752(b)(2)(v) by using the equation found in 40 CFR 60.754(b). [40 CFR 60.754(b)]

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.

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

- 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 and 60.759]
- For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the equations in Section 60.755(a)(1)(i) or (ii) or (iii) shall be used. [40 CFR 60.755(a)(1)]
- For the purposes of determining sufficient density of gas collectors for compliance with 60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards. [40 CFR 60.755(a)(2)]
- For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval. [40 CFR 60.755(a)(3)]
- Owners or operators are not required to expand the system as required in paragraph 60.755(a)(3) during the first 180 days after gas collection system startup. [40 CFR 60.755(a)(4)]
- For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 60.753(c). If a well exceeds one of these

operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedance of other operational or performance standards. An alternative timeline for corrected in the exceedance may be submitted to the Administrator for approval. [40 CFR 60.755(a)(5)]

- The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)]
- Permittee shall operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. [District Rule 2201, 40 CFR 60.753(d), and 40 CFR 60.755(c)]
- The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)]
- Surface emission monitoring shall be performed in accordance with Method 21, section 4.3.1 (except that the probe inlet shall be placed within 5 to 10 centimeters of the ground). Monitoring shall be performed during typical meteorological conditions. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i-v) shall be taken. [40 CFR 60.755(c)(3), (4)]
- Surface testing to measure the methane concentration at the surface of the landfill shall be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals 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. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [District Rule 2201 and 40 CFR 60.753(d) and 60.755(c)(1)]
- Surface testing shall be performed on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [40 CFR 60.755(c)(1) and 60.34c]
- Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5) and 60.34c]
- 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)). [40 CFR 60.755(d), (e)]

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.

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

- 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 and 60.759]
- The owner/operator shall install, calibrate, maintain, and operate a meter that measures and records the landfill gas flow rate into the flare at least once every 15 minutes. This meter shall also be capable of measuring the landfill gas flow rate that might bypass the flare in the event of equipment malfunction or maintenance. [40 CFR 60.756(c)(2)]
- The flare shall be operated with a flame present at all times while gas is being vented to it. The presence of a flame shall be continuously monitored using a thermocouple, ultraviolet sensor, or any other equivalent device located at the pilot light or the flame itself. The flame's presence shall be recorded at least once every 15 minutes. [40 CFR 60.18(c)(2) and 40 CFR 60.756(c)(1)]

- Each wellhead shall have a sampling port and a thermometer, other temperature-measuring device, or an access port for temperature measurements. [40 CFR 60.756(a)]
- The enclosed flare shall be equipped with an accurate temperature indicator/recorder that continuously measures and records the operating temperature. [District NSR Rule; 40 CFR 60.756(b)(1)]
- The enclosed flare shall be equipped with either a device that records flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration of the control device. [40 CFR 60.756(b)(2)]
- Operator shall measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3); and monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5). [40 CFR 60.756(a)]
- Any closed landfill that has demonstrated compliance in three consecutive quarterly monitoring periods may perform annual monitoring. Quarterly monitoring shall resume if any methane readings of 500 ppm or more above background are detected during annual monitoring. [40 CFR 60.756(f)]

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

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

- 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. [40 CFR 60.758(a) and District Rule 2201]
- 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 and 60.759]
- 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)(iii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)]

- 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)]
- 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. [40 CFR 60.758(c) and 60.34c]
- 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 nondegradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)]
- 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)]

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.

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

- 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. [40 CFR 60.758(a), 62.14355(a)]

60.759: This section lists the specifications for active collection systems. The following conditions will be listed on the ATC to ensure compliance:

- 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 and 60.759]
- Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in 60.752(b)(2)(i)(C) and (D). [40 CFR 60.759(a)]
- The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end sue, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat. [40 CFR 60.759(a)(1)]
- The placement of gas collection devices determined in paragraph 60.759(a)(1) shall control all gas producing areas, except as provided by paragraphs 60.759(a)(3)(i) and (a)(3)(ii). [40 CFR 60.759(a)(3)]
- The sufficient density of gas collection devices determined in paragraph 60.759(a)(1) shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior. [40 CFR 60.759(a)(2)]
- Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request. [40 CFR 60.759(a)(3)(i)]
- Any nonproductive area of the landfill may be excluded from control provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation in Section 60.759(a)(3)(ii). [40 CFR 60.759(a)(3)(ii)]

- The values for k and CNMOC in equation in Section 60.759(a)(3)(ii) determined in field testing shall be used in field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, Lo, and CNMOC provided in 60.754(a)(1) or the alternative values from 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph 60.759(a)(3)(i). [40 CFR 60.759(a)(3)(iii)]
- Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures: (1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration; (2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations; (3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness. [40 CFR 60.759(b)]
- Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures: (1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph 60.759(c)(2) shall be used; (2) For new collection systems, the maximum flow rate shall be in accordance with 60.755(a)(1). [40 CFR 60.759(c)]

40 CFR 60 Subparts Cc or WWW-based monitoring conditions to address a collection and control system (specifically equipped with an enclosed flare) are as follows:

- If the landfill is permanently closed, a closure notification shall be submitted to the APCO within 30 days of waste disposal cessation. A permanent closure must take place in accordance with 40 CFR 258.60. If a closure report has been submitted, no additional waste may be placed in the landfill without filing a notification of modification to the APCO, pursuant to 40 CFR 60.7(a)(4). [40 CFR 60.752(b)(1)(ii)(B), 60.757(d) and 62.14352(f)]
- Permittee shall calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed as provided in 40 CFR 60.752(b)(2)(v) by using the equation found in 40 CFR 60.754(b). [40 CFR 60.754(b)]
- Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [District Rule 2201 and 40 CFR 60.753(e)]
- Permittee shall operate the landfill gas collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for: (1) five years or more if active; or (2) two years or more if closed or at final grade. [40 CFR 60.753(a)]
- Permittee shall operate the landfill gas collection system with negative pressure at each wellhead except under the following conditions: (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 60.757(f)(1); (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan; (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the APCO. [40 CFR 60.753(b)]
- If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of section 60.753 are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3 - 5) or (c). If corrective actions are taken as specified in 60.755, the monitored exceedance is not a violation of the operational requirements in this section. [40 CFR 60.753(g)]
- Each wellhead shall have a sampling port and a thermometer, other temperature-measuring device, or an access port for temperature measurements. [40 CFR 60.756(a)]
- The enclosed flare shall be equipped with an accurate temperature indicator/recorder that continuously measures and records the operating temperature. [District Rule 2201; 40 CFR 60.756(b)(1)]
- The enclosed flare shall be equipped with either a device that records flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration of the control device. [40 CFR 60.756(b)(2)]
- When monitoring interior wellheads for operation for a nitrogen level less than 20 percent, the nitrogen level shall be determined using Method 3C, unless an

alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart. [40 CFR 60.753(c)(1)]

- For each interior wellhead, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that: (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span; (ii) A data recorder is not required; (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span; (iv) A calibration error check is not required; (v) The allowable sample bias, zero drift, and calibration drift are ñ10 percent. [40 CFR 60.753(c)(2)]
- The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)]
- Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i-v) shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 60.753(d). [40 CFR 60.755(c)(3), (4)]
- For the performance test required in 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A must be used to determine compliance with the 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the APCO as provided by 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency: (NMOCin - NMOCout)/NMOCin. 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; 40 CFR 60.754(d)]
- Surface testing to measure the methane concentration at the surface of the landfill shall be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals 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. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep

slopes or other dangerous areas may be excluded from the surface testing. [District Rule 2201 and 40 CFR 60.753(d)]

- Surface testing shall be performed on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [40 CFR 60.755(c)(1)]
- Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5)]
- 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)). [40 CFR 60.755(d), (e)]
- Operator shall measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3); and monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5). [40 CFR 60.756(a)]
- Any closed landfill that has demonstrated compliance in three consecutive quarterly monitoring periods may perform annual monitoring. Quarterly monitoring shall resume if any methane readings of 500 ppm or more above background are detected during annual monitoring. [40 CFR 60.756(f)]
- 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)]
- 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)]
- 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)(iii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)]

- 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)]
- 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. [40 CFR 60.758(c) and 60.34c]
- 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 nondegradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)]
- 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 E), 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-3839-1-5	0.00835 per million	No

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 not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, 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 E of this report, the emissions increases for this project was determined to be less than significant.

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

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- The flare minimum stack height must be at least 40 feet high. [District Rule 4102]
- The flare maximum stack diameter may be no greater than 8 feet. [District Rule 4102]

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:	0.008 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust:	100%

$$GL = \left(\frac{0.008\ lb - PM}{MMBtu} \times \frac{7{,}000\ grain}{lb - PM} \right) / \left(\frac{9{,}120\ ft^3}{MMBtu} \right)$$

$$GL = 0.006\ grain/dscf < 0.1\ grain/dscf$$

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-3839-1-5 (lb/hr)	2.28	0.36	3.83
Rule Limit (lb/hr)	140	10	200

The particulate emissions from the flare will not exceed 0.1 gr/dscf at 12% CO2 or 10 lb/hr. Further, the emissions of SOx and NOx will not exceed 200 lb/hr or 140 lb/hr, respectively.

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

Rule 4311 Flares

Rule 4311 limits the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx) from the operation of flares.

Pursuant to Section 2.0, this rule is applicable to flares that are owned and operated by major sources. This facility is a major source for VOC.

Pursuant to Section 4.2 flares that are 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) are exempt from this rule.

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

Rule 4642 Solid Waste Disposal Sites

Pursuant to Section 2.0, this rule is applicable to solid waste disposal sites which has a gas collection system and/or control device in operation, or 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 this rule.

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, the operator excavating contaminated soil shall comply with the following

- 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.

The following condition ensures compliance with the above section:

- 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, the operator handling contaminated soil shall comply with the following:

- 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
- 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.

The following conditions ensure compliance with the above section:

- 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 according to Section 6.3.2. [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, the operator transporting contaminated soil, whether by truck or other means of transportation, shall comply with all of the following prior to leaving the facility:

- 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
- 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
- Chain-of-custody records shall be maintained according to Section 6.3.1 by the operators to document transfer of the transported contaminated soil.

The following condition ensures compliance with the above section:

- 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, the operator decontaminating soil shall comply with the following:

- 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.
- 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.

The following conditions ensure compliance with the above section:

- 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, permittee shall monitor temperature, pressure, and flow rates of VOC control device. [District Rule 4651]
- When decontaminating soil, VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations. [District Rule 4651]
- When decontaminating soil, permittee shall 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. [District Rule 4651]
- 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, 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. [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, renotification 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.

The following condition ensures compliance with the above section:

- 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, renotification 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. [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.

The following condition ensures compliance with the above section:

- Permittee shall include the following information in the written notice when excavating contaminated soil as required by 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. [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.

The following condition ensures compliance with the above section:

- 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 (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. [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.

The following condition ensures compliance with the above section:

- Permittee shall identify each storage pile with the following information: location of storage pile, unique identification of storage pile, date that 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.

The following condition ensured compliance with the above section:

- 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.

The following condition ensures compliance with the above section:

- 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.

The following condition ensures compliance with the above section:

- 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.

The following conditions ensure compliance with the above section:

- 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. [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:

- 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.

The following conditions ensure compliance with the above section:

- 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-1078-93 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 to those listed in Sections 6.5.1 through 6.5.4 for which 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 rule. [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.

The following conditions ensure compliance with the above section:

- 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. [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 described in Section 6.6.3 or other approved methods. [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.

The applicant is compliant with the requirements of this rule with this ATC application.

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

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume (equivalent to 2,000 ppmv) calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

Per the applicant, the flare LFG will contain the following H_2S concentrations:

C-3839-1-5 = 250 ppmv H_2S = 250 ppmv SOx (as SO_2)

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 6.3 MMBtu/hour.

Gas Collection and Control System

The facility currently has a collection and control system permitted with the District (N-1119-1). 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. CCL 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. Pending a successful NSR Public Noticing period, issue ATC permit C-3839-1-5 subject to the permit conditions on the attached draft ATC permit in Attachment F.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-3839-1-5	3020-12-U	123 acres	$2,848

Attachments

A. Current Permit to Operate
B. LandGEM Model Emission Calculations
C. Compliance Certification
D. Certificate of Conformity
E. Health Risk Assessment Analysis
F. Draft Authority to Construct Permit

ATTACHMENT A

Current Permit to Operate

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-3839-1-4 **EXPIRATION DATE:** 06/30/2015

EQUIPMENT DESCRIPTION:
MUNICIPAL SOLID WASTE LANDFILL, 28.8 MILLION CUBIC YARD CAPACITY (123 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY TWO (2) BAKER FILTRATION MODEL KLEEN AIR 55 200 LB CANISTERS CONNECTED IN SERIES

PERMIT UNIT REQUIREMENTS

1. All new off-road equipment at the landfill shall meet USEPA Tier 3 emission standards and be equipped with CARB certified add-on controls for diesel particulate matter with a control efficiency of at least 82% or shall meet USEPA Tier 4 emission standards. On and after the USEPA Tier 4 compliance deadline, all new off-road equipment at the landfill shall meet the appropriate USEPA Tier 4 emission standard in effect at that time. [California Environmental Quality Act]
2. The landfill facility, associated equipment, and surrounding Avenal Regional 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]
3. 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]
4. 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]
5. Refuse delivery trucks shall be unloaded within a reasonable amount of time after entering the property. [District Rule 4102]
6. All refuse trucks shall be maintained in condition to prevent leakage of solid or liquid material. [District Rule 4102]
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 not be leaking liquid or solid 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] Federally Enforceable Through Title V Permit
12. 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. [District Rule 4101] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. A minimum of two carbon canisters which are connected in series shall be utilized. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] Federally Enforceable Through Title V Permit
15. After commissioning of the collection devices, laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] Federally Enforceable Through Title V Permit
16. Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Sampling to demonstrate ongoing compliance with the control efficiency requirements shall be performed at least once per month by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The carbon canisters removed from the system shall be sealed vapor tight. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Total Class III waste material rate shall not exceed 6,013 tons per day or 2,194,602 ton/year. [District Rule 2201] Federally Enforceable Through Title V Permit
20. VOC emissions (as hexane) from the landfill shall not exceed 47.5 lb/day or 17,341 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Permittee shall operate the carbon canisters at all times when the collected gas is routed to it. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Carbon canisters shall reduce the inlet NMOC emissions by at least 98% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
23. NMOC collection efficiency shall be at least 85% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Total soil cover usage rate shall not exceed 3,523 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Total PM10 emissions from handling of soil cover shall not exceed 0.0023 lb-PM10 per ton of material handled. [District Rule 2201] Federally Enforceable Through Title V Permit
26. For initial monitoring of collection devices, 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
27. For commissioning of collection devices, 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
28. For operation of collection devices, 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
29. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

30. 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

31. 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

32. 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

33. 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

34. 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

35. 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

36. 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

37. 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

38. 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)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

39. 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

40. 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

41. 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

42. 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

43. 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

44. 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

45. 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

46. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

47. 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

48. 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

49. 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

50. 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

51. 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. [40 CFR 60.758(a)] Federally Enforceable Through Title V Permit

52. 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

53. 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

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

55. 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

56. 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. Shutdown of the system due to commissioning criteria not being met does not constitute maintenance work. [District Rule 2201] Federally Enforceable Through Title V Permit

57. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit

58. Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 1070] Federally Enforceable Through Title V Permit

59. The operator shall record emission control device source tests for VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit

60. Daily records of the weight of materials received (cubic yards converted to tons) including Class II waste material and soil cover. [District Rule 1070] Federally Enforceable Through Title V Permit

61. 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 Rules 2201 and 4102] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

62. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit

63. Wastes with the potential to release hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere, and combustion of flammable wastes in the landfill shall be prevented. [District Rule 2201] Federally Enforceable Through Title V Permit

64. Vehicle speeds on all on-site roads shall be limited to fifteen miles per hour. [District Rule 2201] Federally Enforceable Through Title V Permit

65. Materials handling operations associated with landfill construction and operation shall be curtailed when wind and moisture conditions make it likely that any resulting visible emissions will exceed 40% opacity at an elevation of 25 feet. [District Rule 2201] Federally Enforceable Through Title V Permit

66. 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

67. 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

68. When handling storage piles of contaminated soil the piles shall be clearly isolated and identifiable from storage piles of uncontaminated soil according to Section 6.3.2. [District Rule 4651] Federally Enforceable Through Title V Permit

69. 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

70. 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

71. 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

72. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

73. 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

74. When decontaminating soil, permittee shall monitor temperature, pressure, and flow rates of VOC control device. [District Rule 4651] Federally Enforceable Through Title V Permit

75. When decontaminating soil, VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations. [District Rule 4651] Federally Enforceable Through Title V Permit

76. When decontaminating soil, permittee shall 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. [District Rule 4651] Federally Enforceable Through Title V Permit

77. 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

78. When decontaminating soil, decontaminated soil that is to be treated as uncontaminated soil shall required 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. [District Rule 4651] Federally Enforceable Through Title V Permit

79. 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, renotification 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. [District Rule 4651] Federally Enforceable Through Title V Permit

80. Permittee shall include the following information in the written notice when excavating contaminated soil as required by 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. [District Rule 4651] Federally Enforceable Through Title V Permit

81. 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 (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. [District Rule 4651] Federally Enforceable Through Title V Permit

82. Permittee shall identify each storage pile with the following information: location of storage pile, unique identification of storage pile, date that soil storage pile was excavated. [District Rule 4651] Federally Enforceable Through Title V Permit

83. 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

84. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

86. 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. [District Rule 4651] Federally Enforceable Through Title V Permit

87. 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

88. 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

89. 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-1078-93 for soil contaminated with known organic chemical. [District Rule 4651] Federally Enforceable Through Title V Permit

90. 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

91. 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

92. 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

93. 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. [District Rule 4651] Federally Enforceable Through Title V Permit

94. 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. [District Rule 4651] Federally Enforceable Through Title V Permit

95. 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. [District Rule 4651] Federally Enforceable Through Title V Permit

96. 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. [District Rule 4651] Federally Enforceable Through Title V Permit

97. 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

98. 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

99. Landfill collection and control system shall be operated such that landfill surface VOC emissions shall not exceed instantaneous surface emission limit of 200 ppmv as methane. [District Rule 4642, 17 CCR 95464, 95468]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

100. Landfill collection and control system may be operated intermittently provided the methane emissions from the landfill do not exceed instantaneous limit requirements. [17 CCR 95468]

101. Instantaneous surface emissions measurements shall be done quarterly. If there are no exceedances after 4 consecutive quarterly measurements, the facility may measure annually. Any exceedances that can not be remediated within 10 days or any exceedances during compliance inspection will result in a return to quarterly monitoring. [District Rule 4642 and 17 CCR 95469]

102. Permittee shall keep records of all instantaneous surface readings of 200 ppmv or greater; including the location of the leak, 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, 95468]

103. Permittee shall keep records of delays encountered during repair of surface emission leaks. Documentation of delays shall be submitted with the annual report. [17 CCR 95468]

104. 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]

105. 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]

106. Permittee shall terminate surface emission testing when the measured average wind speed is over 10 mph or the instantaneous wind speed is over 20 mph. [17 CCR 95468, 17 CCR 95471]

107. 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]

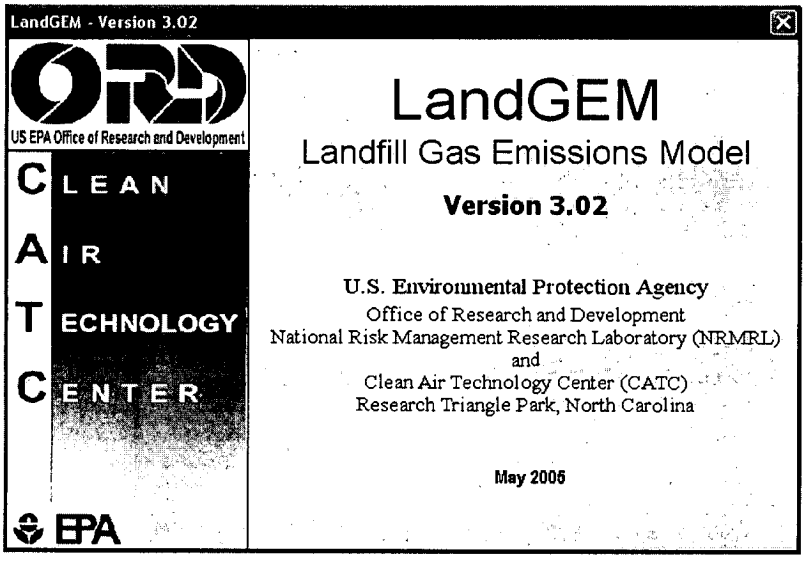
108. Permittee may comply with the CARB regulation for landfill methane control measures by using approved alternative compliance options. The permittee shall obtain written District approval for the use of any alternative compliance options not specifically approved by this permit. Changes to the approved 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]

109. Permittee shall submit the following reports as required in section 95470(b): Landfill gas heat input capacity report, 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]

110. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

ATTACHMENT B

LandGEM Model Emission Calculations



Summary Report

Landfill Name or Identifier: 2014 Generation (6,013 tpd at 349 - VOC)

Date: Wednesday, July 09, 2014

Description/Comments:

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	**1976**	
Landfill Closure Year (with 80-year limit)	**2023**	
Actual Closure Year (without limit)	***2023***	
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity		*short tons*

MODEL PARAMETERS

Methane Generation Rate, k	**0.020**	$year^{-1}$
Potential Methane Generation Capacity, L_o	**100**	m^3/Mg
NMOC Concentration	**896**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Total landfill gas**
Gas / Pollutant #2:	**VOC**
Gas / Pollutant #3:	**Methane**
Gas / Pollutant #4:	**NMOC**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1976	3,255	3,581	0	0
1977	3,255	3,581	3,255	3,581
1978	3,255	3,581	6,510	7,161
1979	3,255	3,581	9,765	10,742
1980	3,255	3,581	13,020	14,322
1981	3,255	3,581	16,275	17,903
1982	3,255	3,581	19,530	21,483
1983	3,255	3,581	22,785	25,064
1984	3,255	3,581	26,040	28,644
1985	6,509	7,160	29,295	32,225
1986	6,509	7,160	35,804	39,384
1987	6,509	7,160	42,313	46,544
1988	6,509	7,160	48,822	53,704
1989	6,509	7,160	55,331	60,864
1990	10,810	11,891	61,840	68,024
1991	10,987	12,086	72,650	79,915
1992	8,305	9,136	83,637	92,001
1993	9,145	10,060	91,942	101,136
1994	9,008	9,909	101,087	111,196
1995	9,256	10,182	110,095	121,105
1996	9,164	10,080	119,351	131,286
1997	8,573	9,430	128,515	141,367
1998	8,960	9,856	137,088	150,797
1999	10,665	11,732	146,048	160,653
2000	9,935	10,929	156,713	172,384
2001	16,159	17,775	166,648	183,313
2002	24,846	27,331	182,807	201,088
2003	58,325	64,158	207,653	228,418
2004	118,919	130,811	265,978	292,576
2005	142,284	156,512	384,897	423,387
2006	201,035	221,139	527,181	579,899
2007	373,136	410,450	728,216	801,038
2008	504,748	555,223	1,101,352	1,211,487
2009	431,502	474,652	1,606,100	1,766,710
2010	437,695	481,465	2,037,602	2,241,362
2011	288,637	317,501	2,475,297	2,722,827
2012	250,756	275,832	2,763,934	3,040,327
2013	298,514	328,365	3,014,690	3,316,159
2014	286,794	315,473	3,313,204	3,644,524
2015	1,991,039	2,190,143	3,599,998	3,959,998

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
2016	1,991,039	2,190,143	5,591,037	6,150,141
2017	1,991,039	2,190,143	7,582,076	8,340,284
2018	1,991,039	2,190,143	9,573,115	10,530,427
2019	1,991,039	2,190,143	11,564,154	12,720,569
2020	1,991,039	2,190,143	13,555,193	14,910,712
2021	1,991,039	2,190,143	15,546,232	17,100,855
2022	1,991,039	2,190,143	17,537,271	19,290,998
2023	1,095,316	1,204,847	19,528,310	21,481,141
2024	0	0	20,623,626	22,685,988
2025	0	0	20,623,626	22,685,988
2026	0	0	20,623,626	22,685,988
2027	0	0	20,623,626	22,685,988
2028	0	0	20,623,626	22,685,988
2029	0	0	20,623,626	22,685,988
2030	0	0	20,623,626	22,685,988
2031	0	0	20,623,626	22,685,988
2032	0	0	20,623,626	22,685,988
2033	0	0	20,623,626	22,685,988
2034	0	0	20,623,626	22,685,988
2035	0	0	20,623,626	22,685,988
2036	0	0	20,623,626	22,685,988
2037	0	0	20,623,626	22,685,988
2038	0	0	20,623,626	22,685,988
2039	0	0	20,623,626	22,685,988
2040	0	0	20,623,626	22,685,988
2041	0	0	20,623,626	22,685,988
2042	0	0	20,623,626	22,685,988
2043	0	0	20,623,626	22,685,988
2044	0	0	20,623,626	22,685,988
2045	0	0	20,623,626	22,685,988
2046	0	0	20,623,626	22,685,988
2047	0	0	20,623,626	22,685,988
2048	0	0	20,623,626	22,685,988
2049	0	0	20,623,626	22,685,988
2050	0	0	20,623,626	22,685,988
2051	0	0	20,623,626	22,685,988
2052	0	0	20,623,626	22,685,988
2053	0	0	20,623,626	22,685,988
2054	0	0	20,623,626	22,685,988
2055	0	0	20,623,626	22,685,988

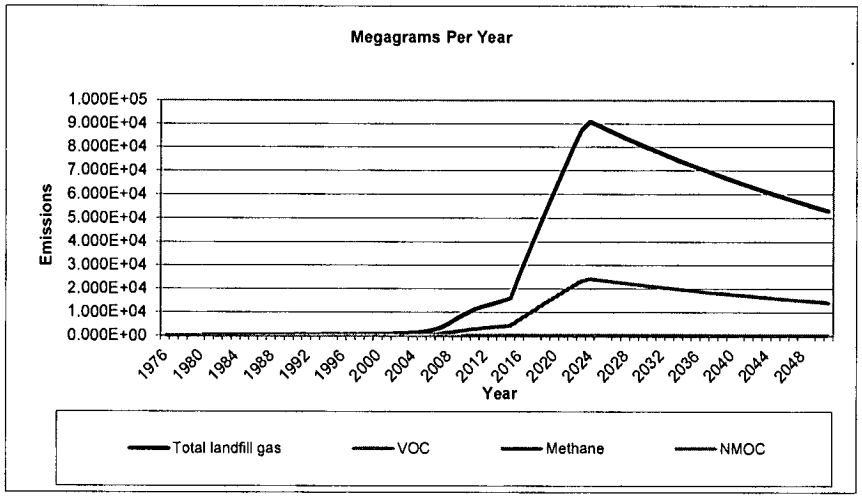
Pollutant Parameters

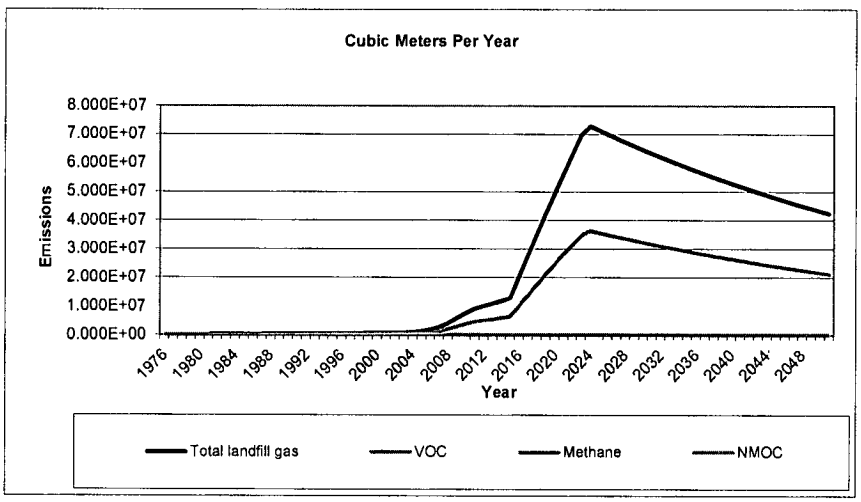
		Gas / Pollutant Default Parameters:		*User-specified Pollutant Parameters:*	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl 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		

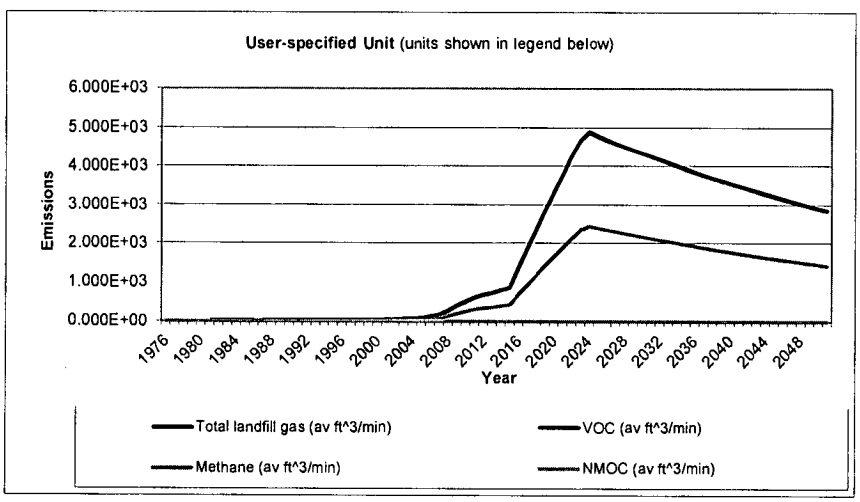
Pollutant Parameters (Continued)

		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			349.00	86.19

Graphs


Megagrams Per Year
Emissions
1.000E+05
9.000E+04
8.000E+04
7.000E+04
6.000E+04
5.000E+04
4.000E+04
3.000E+04
2.000E+04
1.000E+04
0.000E+00
1976 1980 1984 1988 1992 1996 2000 2004 2008 2012 2016 2020 2024 2028 2032 2036 2040 2044 2048
Year
Total landfill gas
VOC
Methane
NMOC


Cubic Meters Per Year
Emissions
8.000E+07
7.000E+07
6.000E+07
5.000E+07
4.000E+07
3.000E+07
2.000E+07
1.000E+07
0.000E+00
1976 1980 1984 1988 1992 1996 2000 2004 2008 2012 2016 2020 2024 2028 2032 2036 2040 2044 2048
Year
Total landfill gas
VOC
Methane
NMOC


User-specified Unit (units shown in legend below)
Emissions
6.000E+03
5.000E+03
4.000E+03
3.000E+03
2.000E+03
1.000E+03
0.000E+00
1976 1980 1984 1988 1992 1996 2000 2004 2008 2012 2016 2020 2024 2028 2032 2036 2040 2044 2048
Year
Total landfill gas (av ft^3/min)
VOC (av ft^3/min)
Methane (av ft^3/min)
NMOC (av ft^3/min)

Results

Year	Total landfill gas			VOC		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
1976	0	0	0	0	0	0
1977	1.611E+01	1.290E+04	8.670E-01	1.614E-02	4.503E+00	3.026E-04
1978	3.191E+01	2.555E+04	1.717E+00	3.197E-02	8.918E+00	5.992E-04
1979	4.739E+01	3.795E+04	2.550E+00	4.748E-02	1.324E+01	8.899E-04
1980	6.257E+01	5.010E+04	3.366E+00	6.268E-02	1.749E+01	1.175E-03
1981	7.744E+01	6.201E+04	4.167E+00	7.759E-02	2.164E+01	1.454E-03
1982	9.202E+01	7.369E+04	4.951E+00	9.219E-02	2.572E+01	1.728E-03
1983	1.063E+02	8.513E+04	5.720E+00	1.065E-01	2.971E+01	1.996E-03
1984	1.203E+02	9.635E+04	6.474E+00	1.205E-01	3.363E+01	2.259E-03
1985	1.341E+02	1.073E+05	7.213E+00	1.343E-01	3.746E+01	2.517E-03
1986	1.636E+02	1.310E+05	8.803E+00	1.639E-01	4.573E+01	3.072E-03
1987	1.926E+02	1.542E+05	1.036E+01	1.930E-01	5.383E+01	3.617E-03
1988	2.210E+02	1.770E+05	1.189E+01	2.214E-01	6.177E+01	4.150E-03
1989	2.489E+02	1.993E+05	1.339E+01	2.493E-01	6.955E+01	4.673E-03
1990	2.762E+02	2.211E+05	1.486E+01	2.767E-01	7.718E+01	5.186E-03
1991	3.242E+02	2.596E+05	1.744E+01	3.248E-01	9.060E+01	6.088E-03
1992	3.722E+02	2.980E+05	2.002E+01	3.729E-01	1.040E+02	6.988E-03
1993	4.059E+02	3.250E+05	2.184E+01	4.067E-01	1.134E+02	7.622E-03
1994	4.432E+02	3.549E+05	2.384E+01	4.440E-01	1.238E+02	8.321E-03
1995	4.790E+02	3.835E+05	2.577E+01	4.799E-01	1.339E+02	8.994E-03
1996	5.153E+02	4.126E+05	2.773E+01	5.163E-01	1.440E+02	9.676E-03
1997	5.505E+02	4.408E+05	2.962E+01	5.515E-01	1.538E+02	1.034E-02
1998	5.820E+02	4.661E+05	3.131E+01	5.831E-01	1.627E+02	1.093E-02
1999	6.149E+02	4.924E+05	3.308E+01	6.160E-01	1.718E+02	1.155E-02
2000	6.555E+02	5.249E+05	3.527E+01	6.567E-01	1.832E+02	1.231E-02
2001	6.917E+02	5.539E+05	3.721E+01	6.930E-01	1.933E+02	1.299E-02
2002	7.580E+02	6.070E+05	4.078E+01	7.594E-01	2.118E+02	1.423E-02
2003	8.660E+02	6.934E+05	4.659E+01	8.676E-01	2.420E+02	1.626E-02
2004	1.138E+03	9.109E+05	6.120E+01	1.140E+00	3.179E+02	2.136E-02
2005	1.704E+03	1.364E+06	9.167E+01	1.707E+00	4.761E+02	3.199E-02
2006	2.374E+03	1.901E+06	1.278E+02	2.379E+00	6.636E+02	4.458E-02
2007	3.323E+03	2.661E+06	1.788E+02	3.329E+00	9.286E+02	6.239E-02
2008	5.104E+03	4.087E+06	2.746E+02	5.114E+00	1.426E+03	9.584E-02
2009	7.502E+03	6.007E+06	4.036E+02	7.516E+00	2.096E+03	1.409E-01
2010	9.490E+03	7.599E+06	5.106E+02	9.507E+00	2.652E+03	1.782E-01
2011	1.147E+04	9.183E+06	6.170E+02	1.149E+01	3.205E+03	2.153E-01
2012	1.267E+04	1.015E+07	6.817E+02	1.269E+01	3.541E+03	2.379E-01
2013	1.366E+04	1.094E+07	7.350E+02	1.369E+01	3.818E+03	2.565E-01
2014	1.487E+04	1.191E+07	7.999E+02	1.490E+01	4.155E+03	2.792E-01
2015	1.599E+04	1.281E+07	8.605E+02	1.602E+01	4.470E+03	3.003E-01
2016	2.553E+04	2.045E+07	1.374E+03	2.558E+01	7.136E+03	4.794E-01
2017	3.489E+04	2.793E+07	1.877E+03	3.495E+01	9.749E+03	6.550E-01
2018	4.405E+04	3.527E+07	2.370E+03	4.413E+01	1.231E+04	8.272E-01
2019	5.304E+04	4.247E+07	2.853E+03	5.313E+01	1.482E+04	9.959E-01
2020	6.184E+04	4.952E+07	3.327E+03	6.196E+01	1.728E+04	1.161E+00
2021	7.047E+04	5.643E+07	3.792E+03	7.060E+01	1.970E+04	1.323E+00
2022	7.894E+04	6.321E+07	4.247E+03	7.908E+01	2.206E+04	1.482E+00
2023	8.723E+04	6.985E+07	4.693E+03	8.739E+01	2.438E+04	1.638E+00
2024	9.093E+04	7.281E+07	4.892E+03	9.109E+01	2.541E+04	1.707E+00
2025	8.912E+04	7.137E+07	4.795E+03	8.929E+01	2.491E+04	1.674E+00

Results (Continued)

Year	Total landfill gas			VOC		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2026	8.736E+04	6.995E+07	4.700E+03	8.752E+01	2.441E+04	1.640E+00
2027	8.563E+04	6.857E+07	4.607E+03	8.579E+01	2.393E+04	1.608E+00
2028	8.393E+04	6.721E+07	4.516E+03	8.409E+01	2.346E+04	1.576E+00
2029	8.227E+04	6.588E+07	4.426E+03	8.242E+01	2.299E+04	1.545E+00
2030	8.064E+04	6.458E+07	4.339E+03	8.079E+01	2.254E+04	1.514E+00
2031	7.905E+04	6.330E+07	4.253E+03	7.919E+01	2.209E+04	1.484E+00
2032	7.748E+04	6.204E+07	4.169E+03	7.762E+01	2.165E+04	1.455E+00
2033	7.595E+04	6.081E+07	4.086E+03	7.609E+01	2.122E+04	1.426E+00
2034	7.444E+04	5.961E+07	4.005E+03	7.458E+01	2.080E+04	1.398E+00
2035	7.297E+04	5.843E+07	3.926E+03	7.310E+01	2.039E+04	1.370E+00
2036	7.152E+04	5.727E+07	3.848E+03	7.166E+01	1.999E+04	1.343E+00
2037	7.011E+04	5.614E+07	3.772E+03	7.024E+01	1.959E+04	1.316E+00
2038	6.872E+04	5.503E+07	3.697E+03	6.885E+01	1.920E+04	1.290E+00
2039	6.736E+04	5.394E+07	3.624E+03	6.748E+01	1.882E+04	1.265E+00
2040	6.603E+04	5.287E+07	3.552E+03	6.615E+01	1.845E+04	1.240E+00
2041	6.472E+04	5.182E+07	3.482E+03	6.484E+01	1.809E+04	1.215E+00
2042	6.344E+04	5.080E+07	3.413E+03	6.355E+01	1.773E+04	1.191E+00
2043	6.218E+04	4.979E+07	3.345E+03	6.229E+01	1.738E+04	1.168E+00
2044	6.095E+04	4.881E+07	3.279E+03	6.106E+01	1.703E+04	1.144E+00
2045	5.974E+04	4.784E+07	3.214E+03	5.985E+01	1.670E+04	1.122E+00
2046	5.856E+04	4.689E+07	3.151E+03	5.867E+01	1.637E+04	1.100E+00
2047	5.740E+04	4.596E+07	3.088E+03	5.751E+01	1.604E+04	1.078E+00
2048	5.626E+04	4.505E+07	3.027E+03	5.637E+01	1.572E+04	1.056E+00
2049	5.515E+04	4.416E+07	2.967E+03	5.525E+01	1.541E+04	1.036E+00
2050	5.406E+04	4.329E+07	2.908E+03	5.416E+01	1.511E+04	1.015E+00
2051	5.299E+04	4.243E+07	2.851E+03	5.308E+01	1.481E+04	9.949E-01
2052	5.194E+04	4.159E+07	2.794E+03	5.203E+01	1.451E+04	9.752E-01
2053	5.091E+04	4.077E+07	2.739E+03	5.100E+01	1.423E+04	9.559E-01
2054	4.990E+04	3.996E+07	2.685E+03	4.999E+01	1.395E+04	9.370E-01
2055	4.891E+04	3.917E+07	2.632E+03	4.900E+01	1.367E+04	9.184E-01
2056	4.794E+04	3.839E+07	2.580E+03	4.803E+01	1.340E+04	9.003E-01
2057	4.699E+04	3.763E+07	2.528E+03	4.708E+01	1.313E+04	8.824E-01
2058	4.606E+04	3.689E+07	2.478E+03	4.615E+01	1.287E+04	8.650E-01
2059	4.515E+04	3.616E+07	2.429E+03	4.524E+01	1.262E+04	8.478E-01
2060	4.426E+04	3.544E+07	2.381E+03	4.434E+01	1.237E+04	8.310E-01
2061	4.338E+04	3.474E+07	2.334E+03	4.346E+01	1.212E+04	8.146E-01
2062	4.252E+04	3.405E+07	2.288E+03	4.260E+01	1.188E+04	7.985E-01
2063	4.168E+04	3.338E+07	2.243E+03	4.176E+01	1.165E+04	7.826E-01
2064	4.086E+04	3.272E+07	2.198E+03	4.093E+01	1.142E+04	7.671E-01
2065	4.005E+04	3.207E+07	2.155E+03	4.012E+01	1.119E+04	7.520E-01
2066	3.925E+04	3.143E+07	2.112E+03	3.933E+01	1.097E+04	7.371E-01
2067	3.848E+04	3.081E+07	2.070E+03	3.855E+01	1.075E+04	7.225E-01
2068	3.771E+04	3.020E+07	2.029E+03	3.778E+01	1.054E+04	7.082E-01
2069	3.697E+04	2.960E+07	1.989E+03	3.704E+01	1.033E+04	6.941E-01
2070	3.624E+04	2.902E+07	1.950E+03	3.630E+01	1.013E+04	6.804E-01
2071	3.552E+04	2.844E+07	1.911E+03	3.558E+01	9.926E+03	6.669E-01
2072	3.481E+04	2.788E+07	1.873E+03	3.488E+01	9.729E+03	6.537E-01
2073	3.413E+04	2.733E+07	1.836E+03	3.419E+01	9.537E+03	6.408E-01
2074	3.345E+04	2.678E+07	1.800E+03	3.351E+01	9.348E+03	6.281E-01
2075	3.279E+04	2.625E+07	1.764E+03	3.285E+01	9.163E+03	6.156E-01
2076	3.214E+04	2.573E+07	1.729E+03	3.220E+01	8.981E+03	6.035E-01

Results (Continued)

Year	Total landfill gas			VOC		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2077	3.150E+04	2.522E+07	1.695E+03	3.156E+01	8.804E+03	5.915E-01
2078	3.088E+04	2.473E+07	1.661E+03	3.093E+01	8.629E+03	5.798E-01
2079	3.027E+04	2.424E+07	1.628E+03	3.032E+01	8.458E+03	5.683E-01
2080	2.967E+04	2.376E+07	1.596E+03	2.972E+01	8.291E+03	5.571E-01
2081	2.908E+04	2.329E+07	1.565E+03	2.913E+01	8.127E+03	5.460E-01
2082	2.850E+04	2.282E+07	1.534E+03	2.856E+01	7.966E+03	5.352E-01
2083	2.794E+04	2.237E+07	1.503E+03	2.799E+01	7.808E+03	5.246E-01
2084	2.739E+04	2.193E+07	1.473E+03	2.744E+01	7.653E+03	5.142E-01
2085	2.684E+04	2.150E+07	1.444E+03	2.689E+01	7.502E+03	5.040E-01
2086	2.631E+04	2.107E+07	1.416E+03	2.636E+01	7.353E+03	4.941E-01
2087	2.579E+04	2.065E+07	1.388E+03	2.584E+01	7.208E+03	4.843E-01
2088	2.528E+04	2.024E+07	1.360E+03	2.533E+01	7.065E+03	4.747E-01
2089	2.478E+04	1.984E+07	1.333E+03	2.483E+01	6.925E+03	4.653E-01
2090	2.429E+04	1.945E+07	1.307E+03	2.433E+01	6.788E+03	4.561E-01
2091	2.381E+04	1.906E+07	1.281E+03	2.385E+01	6.654E+03	4.471E-01
2092	2.334E+04	1.869E+07	1.256E+03	2.338E+01	6.522E+03	4.382E-01
2093	2.287E+04	1.832E+07	1.231E+03	2.292E+01	6.393E+03	4.295E-01
2094	2.242E+04	1.795E+07	1.206E+03	2.246E+01	6.266E+03	4.210E-01
2095	2.198E+04	1.760E+07	1.182E+03	2.202E+01	6.142E+03	4.127E-01
2096	2.154E+04	1.725E+07	1.159E+03	2.158E+01	6.020E+03	4.045E-01
2097	2.112E+04	1.691E+07	1.136E+03	2.116E+01	5.901E+03	3.965E-01
2098	2.070E+04	1.657E+07	1.114E+03	2.074E+01	5.784E+03	3.886E-01
2099	2.029E+04	1.625E+07	1.092E+03	2.033E+01	5.670E+03	3.810E-01
2100	1.989E+04	1.592E+07	1.070E+03	1.992E+01	5.558E+03	3.734E-01
2101	1.949E+04	1.561E+07	1.049E+03	1.953E+01	5.447E+03	3.660E-01
2102	1.911E+04	1.530E+07	1.028E+03	1.914E+01	5.340E+03	3.588E-01
2103	1.873E+04	1.500E+07	1.008E+03	1.876E+01	5.234E+03	3.517E-01
2104	1.836E+04	1.470E+07	9.877E+02	1.839E+01	5.130E+03	3.447E-01
2105	1.799E+04	1.441E+07	9.681E+02	1.803E+01	5.029E+03	3.379E-01
2106	1.764E+04	1.412E+07	9.490E+02	1.767E+01	4.929E+03	3.312E-01
2107	1.729E+04	1.384E+07	9.302E+02	1.732E+01	4.831E+03	3.246E-01
2108	1.695E+04	1.357E+07	9.117E+02	1.698E+01	4.736E+03	3.182E-01
2109	1.661E+04	1.330E+07	8.937E+02	1.664E+01	4.642E+03	3.119E-01
2110	1.628E+04	1.304E+07	8.760E+02	1.631E+01	4.550E+03	3.057E-01
2111	1.596E+04	1.278E+07	8.586E+02	1.599E+01	4.460E+03	2.997E-01
2112	1.564E+04	1.253E+07	8.416E+02	1.567E+01	4.372E+03	2.937E-01
2113	1.533E+04	1.228E+07	8.250E+02	1.536E+01	4.285E+03	2.879E-01
2114	1.503E+04	1.204E+07	8.086E+02	1.506E+01	4.200E+03	2.822E-01
2115	1.473E+04	1.180E+07	7.926E+02	1.476E+01	4.117E+03	2.766E-01
2116	1.444E+04	1.156E+07	7.769E+02	1.447E+01	4.036E+03	2.712E-01

Results (Continued)

Year	Methane			NMOC		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
1976	0	0	0	0	0	0
1977	4.304E+00	6.452E+03	4.335E-01	4.144E-02	1.156E+01	7.768E-04
1978	8.523E+00	1.278E+04	8.584E-01	8.206E-02	2.289E+01	1.538E-03
1979	1.266E+01	1.897E+04	1.275E+00	1.219E-01	3.400E+01	2.285E-03
1980	1.671E+01	2.505E+04	1.683E+00	1.609E-01	4.489E+01	3.016E-03
1981	2.069E+01	3.101E+04	2.083E+00	1.992E-01	5.556E+01	3.733E-03
1982	2.458E+01	3.684E+04	2.476E+00	2.367E-01	6.602E+01	4.436E-03
1983	2.840E+01	4.257E+04	2.860E+00	2.734E-01	7.628E+01	5.125E-03
1984	3.214E+01	4.818E+04	3.237E+00	3.094E-01	8.633E+01	5.801E-03
1985	3.581E+01	5.367E+04	3.606E+00	3.448E-01	9.618E+01	6.462E-03
1986	4.371E+01	6.551E+04	4.402E+00	4.208E-01	1.174E+02	7.888E-03
1987	5.145E+01	7.712E+04	5.181E+00	4.953E-01	1.382E+02	9.285E-03
1988	5.904E+01	8.849E+04	5.946E+00	5.684E-01	1.586E+02	1.065E-02
1989	6.647E+01	9.964E+04	6.695E+00	6.400E-01	1.786E+02	1.200E-02
1990	7.377E+01	1.106E+05	7.429E+00	7.102E-01	1.981E+02	1.331E-02
1991	8.660E+01	1.298E+05	8.722E+00	8.338E-01	2.326E+02	1.563E-02
1992	9.941E+01	1.490E+05	1.001E+01	9.572E-01	2.670E+02	1.794E-02
1993	1.084E+02	1.625E+05	1.092E+01	1.044E+00	2.912E+02	1.957E-02
1994	1.184E+02	1.774E+05	1.192E+01	1.140E+00	3.180E+02	2.136E-02
1995	1.279E+02	1.918E+05	1.289E+01	1.232E+00	3.437E+02	2.309E-02
1996	1.376E+02	2.063E+05	1.386E+01	1.325E+00	3.697E+02	2.484E-02
1997	1.470E+02	2.204E+05	1.481E+01	1.416E+00	3.950E+02	2.654E-02
1998	1.555E+02	2.330E+05	1.566E+01	1.497E+00	4.176E+02	2.806E-02
1999	1.642E+02	2.462E+05	1.654E+01	1.581E+00	4.411E+02	2.964E-02
2000	1.751E+02	2.624E+05	1.763E+01	1.686E+00	4.703E+02	3.160E-02
2001	1.848E+02	2.769E+05	1.861E+01	1.779E+00	4.963E+02	3.334E-02
2002	2.025E+02	3.035E+05	2.039E+01	1.949E+00	5.438E+02	3.654E-02
2003	2.313E+02	3.467E+05	2.330E+01	2.227E+00	6.213E+02	4.175E-02
2004	3.039E+02	4.555E+05	3.060E+01	2.926E+00	8.162E+02	5.484E-02
2005	4.551E+02	6.822E+05	4.583E+01	4.382E+00	1.222E+03	8.213E-02
2006	6.342E+02	9.507E+05	6.388E+01	6.106E+00	1.704E+03	1.145E-01
2007	8.875E+02	1.330E+06	8.938E+01	8.545E+00	2.384E+03	1.602E-01
2008	1.363E+03	2.044E+06	1.373E+02	1.313E+01	3.662E+03	2.461E-01
2009	2.004E+03	3.004E+06	2.018E+02	1.929E+01	5.382E+03	3.616E-01
2010	2.535E+03	3.799E+06	2.553E+02	2.440E+01	6.809E+03	4.575E-01
2011	3.063E+03	4.592E+06	3.085E+02	2.949E+01	8.228E+03	5.529E-01
2012	3.384E+03	5.073E+06	3.408E+02	3.259E+01	9.091E+03	6.108E-01
2013	3.649E+03	5.469E+06	3.675E+02	3.513E+01	9.801E+03	6.585E-01
2014	3.971E+03	5.953E+06	4.000E+02	3.824E+01	1.067E+04	7.168E-01
2015	4.272E+03	6.403E+06	4.302E+02	4.113E+01	1.147E+04	7.710E-01
2016	6.820E+03	1.022E+07	6.869E+02	6.567E+01	1.832E+04	1.231E+00
2017	9.318E+03	1.397E+07	9.385E+02	8.972E+01	2.503E+04	1.682E+00
2018	1.177E+04	1.764E+07	1.185E+03	1.133E+02	3.161E+04	2.124E+00
2019	1.417E+04	2.123E+07	1.427E+03	1.364E+02	3.805E+04	2.557E+00
2020	1.652E+04	2.476E+07	1.664E+03	1.590E+02	4.437E+04	2.981E+00
2021	1.882E+04	2.822E+07	1.896E+03	1.812E+02	5.056E+04	3.397E+00
2022	2.108E+04	3.160E+07	2.123E+03	2.030E+02	5.663E+04	3.805E+00
2023	2.330E+04	3.492E+07	2.347E+03	2.243E+02	6.259E+04	4.205E+00
2024	2.429E+04	3.640E+07	2.446E+03	2.338E+02	6.524E+04	4.383E+00
2025	2.381E+04	3.568E+07	2.398E+03	2.292E+02	6.394E+04	4.296E+00

Results (Continued)

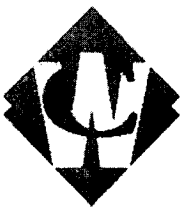
Year	Methane			NMOC		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2026	2.333E+04	3.498E+07	2.350E+03	2.247E+02	6.268E+04	4.211E+00
2027	2.287E+04	3.428E+07	2.304E+03	2.202E+02	6.144E+04	4.128E+00
2028	2.242E+04	3.361E+07	2.258E+03	2.159E+02	6.022E+04	4.046E+00
2029	2.198E+04	3.294E+07	2.213E+03	2.116E+02	5.903E+04	3.966E+00
2030	2.154E+04	3.229E+07	2.169E+03	2.074E+02	5.786E+04	3.888E+00
2031	2.111E+04	3.165E+07	2.126E+03	2.033E+02	5.671E+04	3.811E+00
2032	2.070E+04	3.102E+07	2.084E+03	1.993E+02	5.559E+04	3.735E+00
2033	2.029E+04	3.041E+07	2.043E+03	1.953E+02	5.449E+04	3.661E+00
2034	1.988E+04	2.981E+07	2.003E+03	1.915E+02	5.341E+04	3.589E+00
2035	1.949E+04	2.922E+07	1.963E+03	1.877E+02	5.235E+04	3.518E+00
2036	1.910E+04	2.864E+07	1.924E+03	1.839E+02	5.132E+04	3.448E+00
2037	1.873E+04	2.807E+07	1.886E+03	1.803E+02	5.030E+04	3.380E+00
2038	1.836E+04	2.751E+07	1.849E+03	1.767E+02	4.930E+04	3.313E+00
2039	1.799E+04	2.697E+07	1.812E+03	1.732E+02	4.833E+04	3.247E+00
2040	1.764E+04	2.643E+07	1.776E+03	1.698E+02	4.737E+04	3.183E+00
2041	1.729E+04	2.591E+07	1.741E+03	1.664E+02	4.643E+04	3.120E+00
2042	1.694E+04	2.540E+07	1.707E+03	1.631E+02	4.551E+04	3.058E+00
2043	1.661E+04	2.490E+07	1.673E+03	1.599E+02	4.461E+04	2.998E+00
2044	1.628E+04	2.440E+07	1.640E+03	1.567E+02	4.373E+04	2.938E+00
2045	1.596E+04	2.392E+07	1.607E+03	1.536E+02	4.286E+04	2.880E+00
2046	1.564E+04	2.345E+07	1.575E+03	1.506E+02	4.201E+04	2.823E+00
2047	1.533E+04	2.298E+07	1.544E+03	1.476E+02	4.118E+04	2.767E+00
2048	1.503E+04	2.253E+07	1.514E+03	1.447E+02	4.037E+04	2.712E+00
2049	1.473E+04	2.208E+07	1.484E+03	1.418E+02	3.957E+04	2.659E+00
2050	1.444E+04	2.164E+07	1.454E+03	1.390E+02	3.878E+04	2.606E+00
2051	1.415E+04	2.121E+07	1.425E+03	1.363E+02	3.802E+04	2.554E+00
2052	1.387E+04	2.079E+07	1.397E+03	1.336E+02	3.726E+04	2.504E+00
2053	1.360E+04	2.038E+07	1.370E+03	1.309E+02	3.653E+04	2.454E+00
2054	1.333E+04	1.998E+07	1.342E+03	1.283E+02	3.580E+04	2.406E+00
2055	1.307E+04	1.958E+07	1.316E+03	1.258E+02	3.509E+04	2.358E+00
2056	1.281E+04	1.920E+07	1.290E+03	1.233E+02	3.440E+04	2.311E+00
2057	1.255E+04	1.882E+07	1.264E+03	1.209E+02	3.372E+04	2.265E+00
2058	1.230E+04	1.844E+07	1.239E+03	1.185E+02	3.305E+04	2.221E+00
2059	1.206E+04	1.808E+07	1.215E+03	1.161E+02	3.240E+04	2.177E+00
2060	1.182E+04	1.772E+07	1.191E+03	1.138E+02	3.175E+04	2.134E+00
2061	1.159E+04	1.737E+07	1.167E+03	1.116E+02	3.113E+04	2.091E+00
2062	1.136E+04	1.703E+07	1.144E+03	1.094E+02	3.051E+04	2.050E+00
2063	1.113E+04	1.669E+07	1.121E+03	1.072E+02	2.990E+04	2.009E+00
2064	1.091E+04	1.636E+07	1.099E+03	1.051E+02	2.931E+04	1.970E+00
2065	1.070E+04	1.603E+07	1.077E+03	1.030E+02	2.873E+04	1.931E+00
2066	1.048E+04	1.572E+07	1.056E+03	1.010E+02	2.816E+04	1.892E+00
2067	1.028E+04	1.540E+07	1.035E+03	9.895E+01	2.761E+04	1.855E+00
2068	1.007E+04	1.510E+07	1.015E+03	9.699E+01	2.706E+04	1.818E+00
2069	9.874E+03	1.480E+07	9.945E+02	9.507E+01	2.652E+04	1.782E+00
2070	9.679E+03	1.451E+07	9.748E+02	9.319E+01	2.600E+04	1.747E+00
2071	9.487E+03	1.422E+07	9.555E+02	9.134E+01	2.548E+04	1.712E+00
2072	9.299E+03	1.394E+07	9.366E+02	8.954E+01	2.498E+04	1.678E+00
2073	9.115E+03	1.366E+07	9.180E+02	8.776E+01	2.448E+04	1.645E+00
2074	8.935E+03	1.339E+07	8.998E+02	8.602E+01	2.400E+04	1.613E+00
2075	8.758E+03	1.313E+07	8.820E+02	8.432E+01	2.352E+04	1.581E+00
2076	8.584E+03	1.287E+07	8.646E+02	8.265E+01	2.306E+04	1.549E+00

Results (Continued)

Year	Methane			NMOC		
	(Mg/year)	(m^3/year)	(av ft^3/min)	(Mg/year)	(m^3/year)	(av ft^3/min)
2077	8.414E+03	1.261E+07	8.474E+02	8.101E+01	2.260E+04	1.519E+00
2078	8.248E+03	1.236E+07	8.307E+02	7.941E+01	2.215E+04	1.489E+00
2079	8.084E+03	1.212E+07	8.142E+02	7.784E+01	2.172E+04	1.459E+00
2080	7.924E+03	1.188E+07	7.981E+02	7.630E+01	2.129E+04	1.430E+00
2081	7.767E+03	1.164E+07	7.823E+02	7.479E+01	2.086E+04	1.402E+00
2082	7.614E+03	1.141E+07	7.668E+02	7.331E+01	2.045E+04	1.374E+00
2083	7.463E+03	1.119E+07	7.516E+02	7.185E+01	2.005E+04	1.347E+00
2084	7.315E+03	1.096E+07	7.367E+02	7.043E+01	1.965E+04	1.320E+00
2085	7.170E+03	1.075E+07	7.221E+02	6.904E+01	1.926E+04	1.294E+00
2086	7.028E+03	1.053E+07	7.078E+02	6.767E+01	1.888E+04	1.268E+00
2087	6.889E+03	1.033E+07	6.938E+02	6.633E+01	1.850E+04	1.243E+00
2088	6.753E+03	1.012E+07	6.801E+02	6.502E+01	1.814E+04	1.219E+00
2089	6.619E+03	9.921E+06	6.666E+02	6.373E+01	1.778E+04	1.195E+00
2090	6.488E+03	9.725E+06	6.534E+02	6.247E+01	1.743E+04	1.171E+00
2091	6.359E+03	9.532E+06	6.405E+02	6.123E+01	1.708E+04	1.148E+00
2092	6.234E+03	9.344E+06	6.278E+02	6.002E+01	1.674E+04	1.125E+00
2093	6.110E+03	9.159E+06	6.154E+02	5.883E+01	1.641E+04	1.103E+00
2094	5.989E+03	8.977E+06	6.032E+02	5.766E+01	1.609E+04	1.081E+00
2095	5.871E+03	8.799E+06	5.912E+02	5.652E+01	1.577E+04	1.059E+00
2096	5.754E+03	8.625E+06	5.795E+02	5.540E+01	1.546E+04	1.039E+00
2097	5.640E+03	8.454E+06	5.681E+02	5.431E+01	1.515E+04	1.018E+00
2098	5.529E+03	8.287E+06	5.568E+02	5.323E+01	1.485E+04	9.978E-01
2099	5.419E+03	8.123E+06	5.458E+02	5.218E+01	1.456E+04	9.780E-01
2100	5.312E+03	7.962E+06	5.350E+02	5.114E+01	1.427E+04	9.587E-01
2101	5.207E+03	7.804E+06	5.244E+02	5.013E+01	1.399E+04	9.397E-01
2102	5.104E+03	7.650E+06	5.140E+02	4.914E+01	1.371E+04	9.211E-01
2103	5.003E+03	7.498E+06	5.038E+02	4.816E+01	1.344E+04	9.028E-01
2104	4.903E+03	7.350E+06	4.938E+02	4.721E+01	1.317E+04	8.850E-01
2105	4.806E+03	7.204E+06	4.841E+02	4.628E+01	1.291E+04	8.674E-01
2106	4.711E+03	7.062E+06	4.745E+02	4.536E+01	1.265E+04	8.503E-01
2107	4.618E+03	6.922E+06	4.651E+02	4.446E+01	1.240E+04	8.334E-01
2108	4.526E+03	6.785E+06	4.559E+02	4.358E+01	1.216E+04	8.169E-01
2109	4.437E+03	6.650E+06	4.468E+02	4.272E+01	1.192E+04	8.007E-01
2110	4.349E+03	6.519E+06	4.380E+02	4.187E+01	1.168E+04	7.849E-01
2111	4.263E+03	6.390E+06	4.293E+02	4.104E+01	1.145E+04	7.693E-01
2112	4.178E+03	6.263E+06	4.208E+02	4.023E+01	1.122E+04	7.541E-01
2113	4.096E+03	6.139E+06	4.125E+02	3.943E+01	1.100E+04	7.392E-01
2114	4.015E+03	6.018E+06	4.043E+02	3.865E+01	1.078E+04	7.245E-01
2115	3.935E+03	5.898E+06	3.963E+02	3.789E+01	1.057E+04	7.102E-01
2116	3.857E+03	5.782E+06	3.885E+02	3.714E+01	1.036E+04	6.961E-01

ATTACHMENT C

Compliance Certification



WASTE CONNECTIONS, INC.
Avenal Regional Landfill
Connect with the Future

July 11, 2014

Mr. David Warner
Director of Permit Services
San Joaquin Valley Unified Air Pollution Control District
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244

Subject: **New Major Source Compliance Assertion**
Avenal Regional Landfill, Avenal, CA

Dear Mr. Warner:

Pursuant to San Joaquin Valley Unified Air Pollution Control District Rule 2201 Section 4.15.2, Compliance by Other Owned, Operated or Controlled Source, Avenal Regional Landfill, Inc., a Waste Connections, Inc. (WCI) Company, respectfully submits this Letter of Certification as it pertains to WCI's California "Major Source" facilities. WCI owns, controls, and/or operates four (4) Major Source facilities in California.

I hereby certify that the all California WCI facilities are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. This certification shall speak as to the date of its execution.

201 Hydril Road * Avenal, CA 93204 * 559.386.5844 * Fax 559.386.5834

Should you have any questions in this regard, please call me at (559) 386-5844.

Sincerely,

WASTE CONNECTIONS, INC.

Benjamin Gray
District Manager
Avenal and Cold Canyon Landfills

ATTACHMENT D

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)

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

COMPANY NAME: Avenal Regional Landfill, Waste Connections, Inc.	FACILITY ID: C— 3839
1. Type of Organization:[X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: Avenal Regional Landfill, a Waste Connections, Inc. Company	
3. Agent to the Owner: Tom Reilly	

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

RRL ○ 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).

BLL ○ 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.

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

BLL ○ 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

7/15/14
Date

Benjamin Gray
Name of Responsible Official (please print)

District Manager
Title of Responsible Official (please print)

ATTACHMENT E

Health Risk Assessment and Ambient Air Quality Analysis

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Stanley Tom – Permit Services
From:	Kyle Melching – Technical Services
Date:	June 24, 2014
Facility Name:	Avenal Regional Landfill
Location:	201 Hydril Rd., Avenal
Application #(s):	C-3839-1-5
Project #:	C-1132849

A. RMR SUMMARY

RMR Summary			
Categories	**Landfill Gas Flare (Unit 1-5)**	**Project Totals**	**Facility Totals**
Prioritization Score	**1.2**	1.2	>1.0
Acute Hazard Index	0.00	0.00	0.00
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk (10^{-6})	8.35E-09	8.35E-09	**8.35E-09***
T-BACT Required?	**No**		
Special Permit Conditions?	**Yes**		

*Facility totals do not include the risk from Project (C-1122945) since the transportable DICE has been removed from the site, per Stanley Tom.

Proposed Permit Conditions

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

Unit # 1-5

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
2. The flare's minimum stack height must be at least 40 feet high.
3. The flare's maximum stack diameter may be no greater than 8 feet.

B. RMR REPORT

I. Project Description

Technical Services received a request on June 12, 2014, to perform an Ambient Air Quality Analysis and a Risk Management Review for the installation of a landfill gas collection and control system with a 45 MMBtu/hr flare.

"In August 2008, the District issued a Notice of Determination for expansion of the landfill from 2.7 million cubic yards to approximately 28.8 million cubic yards. The findings were that human health risks at nearby receptors would be significant and unavoidable. Total cancer risk associated with the project would be mitigated to below the District's significance threshold of 10 in a million. Mitigation measures adopted at that time include requiring all new off-road equipment to be equipped with Tier 3 certified engines and ARB certified add-on control with a control efficiency of at least 82 percent or Tier 4 engines when available.

No specific limitation was placed on an increase in risk from permitted sources. Nevertheless, it is obvious that the risk from permitted sources must be limited. Therefore, any additional significant risk from stationary sources (i.e., a cancer risk from sources permitted after September 17, 2008 greater than 1 in a million) must be considered with regard to the risk of emissions from non-permitted off-road equipment."

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. Stack parameters were provided by the applicant and processing engineer. Emissions calculated using emission factors for Landfill Gas Flare were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2004-2008 from Turk 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 1-5			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	12.2	**Closest Receptor (m)**	76.2
Stack Diameter. (m)	2.44	**Type of Receptor**	Business
Stack Exit Velocity (m/s)	9.08	**Max Hours per Year**	8760
Stack Exit Temp. (°K)	1033	**Fuel Type**	Landfill gas

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 9 lb/hr and 78,840 lb/yr CO, 2.25 lb/hr and 19,710 lb/yr NOx, 0 lb/hr and 0 lb/yr SOx, and 0.36 lb/hr and 3,154 lb/yr PM_{10}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

	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	Pass[2]	Pass[2]

*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).

III. Conclusion

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

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **8.35E-09**; which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

A health risk assessment (HRA) for expansion of the landfill (C-1071160) performed to comply with the California Environmental Quality Act (CEQA) showed that the risk from diesel-powered off-road equipment could exceed District significance levels. The company agreed to mitigate emissions from off-road equipment. This project will not invalidate the findings for that project because the risk from this project is minimal. Facility totals do not include the risk from Project (C-1122945) since the transportable DICE has been removed from the site, per Stanley Tom.

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 permit 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.

IV. Attachments

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Stack Parameter Worksheet
D. Prioritization score w/ Toxic emissions summary
E. HARP Risk Report
F. Facility Summary
G. AAQA Summary
H. AERMOD Non-Regulatory Option Checklist

ATTACHMENT F

Draft Authority to Construct Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-3839-1-5

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: AVENAL REGIONAL LANDFILL
MAILING ADDRESS: PO BOX 189
AVENAL, CA 93204

LOCATION: 201 HYDRIL RD
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF MUNICIPAL SOLID WASTE LANDFILL, 28.8 MILLION CUBIC YARD CAPACITY (123 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY TWO (2) BAKER FILTRATION MODEL KLEEN AIR 55 200 LB CANISTERS CONNECTED IN SERIES: INSTALLATION OF A 1,000 GALLON CONDENSATE STORAGE TANK AND GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 45.5 MMBTU/HR FLARE FOR 40 CFR 60 SUBPART WWW RULE COMPLIANCE

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. All new off-road equipment at the landfill shall meet USEPA Tier 3 emission standards and be equipped with CARB certified add-on controls for diesel particulate matter with a control efficiency of at least 82% or shall meet USEPA Tier 4 emission standards. On and after the USEPA Tier 4 compliance deadline, all new off-road equipment at the landfill shall meet the appropriate USEPA Tier 4 emission standard in effect at that time. [California Environmental Quality Act]
4. The landfill facility, associated equipment, and surrounding Avenal Regional 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]

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
C-3839-1-5 : Aug 1 2014 3:02PM – TOMS : Joint Inspection NOT Required

5. 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]
6. 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]
7. Refuse delivery trucks shall be unloaded within a reasonable amount of time after entering the property. [District Rule 4102]
8. All refuse trucks shall be maintained in condition to prevent leakage of solid or liquid material. [District Rule 4102]
9. 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]
10. All trucks delivering refuse shall not be leaking liquid or solid material prior to exiting the landfill site. Trucks shall be cleared of any debris to minimize nuisance emissions. [District Rule 4102]
11. 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]
12. 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]
13. 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] Federally Enforceable Through Title V Permit
14. 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. [District Rule 4101] Federally Enforceable Through Title V Permit
15. The exhaust stack of the flare shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
16. The flare minimum stack height must be at least 40 feet high. [District Rule 4102]
17. The flare maximum stack diameter may be no greater than 8 feet. [District Rule 4102]
18. Total Class III waste material rate shall not exceed any of the following: 6,013 tons per day or 2,194,602 ton/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Emission rate from the enclosed flare shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-SOx/MMBtu (250 ppmv H2S in fuel); 0.2 lb-CO/MMBtu; or 0.008 lb-PM10/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
20. VOC emissions (as hexane) from the landfill and flare shall not exceed any of the following: 145.8 lb/day or 53,217 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
21. The heat input of collected landfill gas into the flare shall not exceed any of the following: 45.5 MMBtu/hr or 398,580 MMBtu/year. Heat input shall be calculated daily using monthly methane measurements (%), landfill gas flow into the flare (cubic feet per minute), and the annually tested landfill gas heat content (Btu/cubic foot). [District Rule 2201] Federally Enforceable Through Title V Permit
22. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [District Rule 2201 and 40 CFR 60.753(f)] Federally Enforceable Through Title V Permit
23. The flare shall reduce the inlet NMOC emissions by at least 98% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
24. NMOC collection efficiency shall be at least 85% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

25. Total soil cover usage rate shall not exceed 3,523 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

26. Total PM10 emissions from handling of soil cover shall not exceed 0.0023 lb-PM10 per ton of material handled. [District Rule 2201] Federally Enforceable Through Title V Permit

27. The owner or operator shall maintain a non-resettable, totalizing volumetric flow meter to continuously measure the amount of landfill gas condensate injected in the flare. [District Rule 2201] Federally Enforceable Through Title V Permit

28. The landfill gas condensate injection rate shall not exceed 5 gallons per minute. [District Rule 2201] Federally Enforceable Through Title V Permit

29. 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 less than 20 ppmv dry basis as hexane NMOC outlet concentration at 3 percent oxygen as required by this permit shall be conducted within 180 days of startup. [District Rule 2201 and 40 CFR 60.752(b)(2)(iii)(B)] Federally Enforceable Through Title V Permit

30. Source testing to demonstrate compliance with the flare VOC, NOx, and CO emission limits and VOC control efficiency requirements shall be conducted at least once every 12 months. [District Rule 2201] Federally Enforceable Through Title V Permit

31. Source testing for NOx shall be conducted using EPA Test Method 7E or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit

32. Source testing for CO shall be conducted using EPA Test Method 10 or 10B, CARB Methods 1-5 with 10 or CARB Test Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit

33. Gas combusted in the flares 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 2201] Federally Enforceable Through Title V Permit

34. 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

35. VOC emissions shall be measured by USEPA Test Method 18, 25, 25A, or 25C. [District Rule 1081 and 40 CFR 60.754(d)] Federally Enforceable Through Title V Permit

36. 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

37. 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

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. [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 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 or alternative compliance actions as detailed in the Avenal Regional Landfill NSPS/AB32 GCCS Design Plan, Appendices B and F (December 2013). [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. 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

46. 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

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

48. 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

49. The permittee shall notify the APCO by telephone at least 24 hours before performing any scheduled 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. Shutdown of the system due to commissioning criteria not being met does not constitute maintenance work. [District Rule 2201] Federally Enforceable Through Title V Permit

50. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit

51. Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 1070] Federally Enforceable Through Title V Permit

52. The operator shall record emission control device source tests for VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

53. Permittee shall maintain records of the daily weight of materials received (cubic yards converted to tons) including Class II waste material and soil cover, landfill gas H2S measurements, and quantity of landfill gas condensate injected into the flare (in gallons). [District Rule 1070] Federally Enforceable Through Title V Permit

54. 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 Rules 2201 and 4102] Federally Enforceable Through Title V Permit

55. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit

56. Wastes with the potential to release hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere, and combustion of flammable wastes in the landfill shall be prevented. [District Rule 2201] Federally Enforceable Through Title V Permit

57. Vehicle speeds on all on-site roads shall be limited to fifteen miles per hour. [District Rule 2201] Federally Enforceable Through Title V Permit

58. Materials handling operations associated with landfill construction and operation shall be curtailed when wind and moisture conditions make it likely that any resulting visible emissions will exceed 40% opacity at an elevation of 25 feet. [District Rule 2201] Federally Enforceable Through Title V Permit

59. The permittee shall comply with the following when excavating on-site contaminated soil: 1) Submit a written notice according to Section 6.1 prior to commencement of excavation on-site 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) on-site excavated soil that has been detected as contaminated shall be placed in storage piles or handled as required by Section 5.2 and; 4) on-site 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

60. When handling on-site 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

61. When handling storage piles of on-site excavated contaminated soil the piles shall be clearly isolated and identifiable from storage piles of uncontaminated soil according to Section 6.3.2. [District Rule 4651] Federally Enforceable Through Title V Permit

62. When handling storage piles of on-site excavated 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

63. When handling on-site excavated 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

64. When handling on-site excavated 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

CONDITIONS CONTINUE ON NEXT PAGE

65. The permittee shall comply with the following when transporting on-site excavated contaminated soil: 1) Any truck or trailer transporting on-site excavated contaminated soil shall be filled such that contaminated soil does not extend above the sides or rear of the truck; 2) on-site excavated 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

66. When decontaminating on-site excavated contaminated 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

67. When decontaminating on-site excavated contaminated soil, permittee shall monitor temperature, pressure, and flow rates of VOC control device. [District Rule 4651] Federally Enforceable Through Title V Permit

68. When decontaminating on-site excavated contaminated soil, VOC control device shall be operated and maintained in accordance with the manufacturer's recommendations. [District Rule 4651] Federally Enforceable Through Title V Permit

69. When decontaminating on-site excavated contaminated soil, permittee shall 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. [District Rule 4651] Federally Enforceable Through Title V Permit

70. Permittee shall comply with one of the following regarding on-site excavated 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

71. When decontaminating on-site excavated contaminated soil, 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. [District Rule 4651] Federally Enforceable Through Title V Permit

72. Permittee shall include the following information in the notice of on-site contaminated soil 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, renotification 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. [District Rule 4651] Federally Enforceable Through Title V Permit

73. Permittee shall include the following information in the written notice when on-site excavating contaminated soil as required by 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 on-site excavated contaminated soil. [District Rule 4651] Federally Enforceable Through Title V Permit

74. Permittee shall maintain the following records of on-site excavated contaminated soil at the time custody is transferred off-site: 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 on-site 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

75. Permittee shall identify each storage pile of on-site excavated contaminated soil with the following information: location of storage pile, unique identification of storage pile, date that soil storage pile was excavated. [District Rule 4651] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

76. 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 of on-site excavated contaminated soil and name, date, and signature of operator inspecting the storage piles. [District Rule 4651] Federally Enforceable Through Title V Permit

77. Permittee shall maintain the following records for VOC concentration readings of on-site excavated contaminated soil: 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

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

79. The operator of a VOC control device used to decontaminate on-site excavated contaminated soil shall demonstrated compliance with the requirements of Section 5.4.1 before operation of such system. [District Rule 4651] Federally Enforceable Through Title V Permit

80. The initial boiling point of a liquid from samples of on-site excavated contaminated soil shall be measured in accordance with ASTM D86 for soil contaminated with petroleum liquid or ASTM D-1078-93 for soil contaminated with known organic chemical. [District Rule 4651] Federally Enforceable Through Title V Permit

81. The VOC concentration of on-site excavated contaminated 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

82. The VOC content of the on-site excavated 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

83. The VOC content of on-site excavated 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

84. 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. [District Rule 4651] Federally Enforceable Through Title V Permit

85. When more than one test method or set of test methods is specified for any testing of on-site excavated contaminated soil, 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. [District Rule 4651] Federally Enforceable Through Title V Permit

86. One composite sample shall be collected and analyzed for VOC for every 50 cubic yards of on-site 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 of on-site excavated contaminated soil within 12 hours of soil decontamination. [District Rule 4651] Federally Enforceable Through Title V Permit

87. A composite sample shall consist of one sample taken from the center of each of four (4) equal sectors from each storage pile of on-site excavated contaminated soil using the procedures described in Section 6.6.3 or other approved methods. [District Rule 4651] Federally Enforceable Through Title V Permit

88. Samples shall be taken from at least twelve (12) inches below the surface of the storage pile of on-site excavated contaminated soil 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

89. Chain-of-custody records shall be kept by the operators for all samples from storage piles of on-site excavated contaminated soil 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

CONDITIONS CONTINUE ON NEXT PAGE

90. 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. [40 CFR 60.758(a)] Federally Enforceable Through Title V Permit

91. This operating permit may be cancelled with APCO approval when the landfill is closed, pursuant to the requirements of this permit, if the landfill is not otherwise subject to the requirements of either 40 CFR part 70 or part 71 and if either 1) it was never subject to the requirement for a control system under 40 CFR 60.752(b)(2); or 2) the owner or operator meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v). [40 CFR 60.752(d)] Federally Enforceable Through Title V Permit

92. If the landfill is permanently closed, a closure notification shall be submitted to the APCO within 30 days of waste disposal cessation. A permanent closure must take place in accordance with 40 CFR 258.60. If a closure report has been submitted, no additional waste may be placed in the landfill without filing a notification of modification to the APCO, pursuant to 40 CFR 60.7(a)(4). [40 CFR 60.752(b)(1)(ii)(B), 60.757(d)] Federally Enforceable Through Title V Permit

93. An active collection system shall be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment, collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade, collect gas at a sufficient extraction rate, and be designed to minimize off-site migration of subsurface gas. [40 CFR 60.752(b)(2)(ii)(A)] Federally Enforceable Through Title V Permit

94. Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the procedures in 60.759(a)(1), (2), and (3) unless alternative procedures have been approved by the APCO as provided in 60.752(b)(2)(i)(C) and (D). [40 CFR 60.759(a)] Federally Enforceable Through Title V Permit

95. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the equations in Section 60.755(a)(1)(i) or (ii) or (iii) shall be used. [40 CFR 60.755(a)(1)] Federally Enforceable Through Title V Permit

96. For the purposes of determining sufficient density of gas collectors for compliance with 60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the APCO, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards. [40 CFR 60.755(a)(2)] Federally Enforceable Through Title V Permit

97. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the APCO for approval. Alternative compliance actions as prepared by the permittee are detailed in the Avenal Regional Landfill NSPS/AB32 GCCS Design Plan, Appendix B (December 2013). [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit

98. Owners or operators are not required to expand the system as required in paragraph 60.755(a)(3) during the first 180 days after gas collection system startup. [40 CFR 60.755(a)(4)] Federally Enforceable Through Title V Permit

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99. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedance of other operational or performance standards. The permittee may utilize an alternative corrective action and timeline with prior approval from the APCO or alternative compliance actions as detailed in the Avenal Regional Landfill NSPS/AB32 GCCS Design Plan, Appendix B (December 2013). [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

100. The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)] Federally Enforceable Through Title V Permit

101. Surface testing to measure the methane concentration at the surface of the landfill shall be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals 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. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [District Rule 2201, 40 CFR 60.753(d), and 40 CFR 60.755(c)(1)] Federally Enforceable Through Title V Permit

102. Surface testing to measure the methane concentration at the surface of the landfill shall be conducted on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [40 CFR 60.755(c)(1)] Federally Enforceable Through Title V Permit

103. The collection system shall be operated such that the methane concentration is less than 500 parts per million above background at the surface of the landfill. Compliance with this surface methane operational standard shall be demonstrated using the procedures outlined in 40 CFR 60.755(c) within 180 days of installation and startup of the collection and control system and quarterly thereafter. [District Rule 2201, 40 CFR 60.753(d), 40 CFR 60.755(c), and 40 CFR 60.8] Federally Enforceable Through Title V Permit

104. Permittee shall calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed as provided in 40 CFR 60.752(b)(2)(v) by using the equation found in 40 CFR 60.754(b). [40 CFR 60.754(b)] Federally Enforceable Through Title V Permit

105. Permittee shall operate the landfill gas collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for: (1) five years or more if active; or (2) two years or more if closed or at final grade. [40 CFR 60.753(a)] Federally Enforceable Through Title V Permit

106. Permittee shall operate the landfill gas collection system with negative pressure at each wellhead except under the following conditions: (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 60.757(f)(1); (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan; (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the APCO. Alternative compliance actions prepared by the permittee are detailed in the Avenal Regional Landfill NSPS/AB32 GCCS Design Plan, Appendix B (December 2013). [40 CFR 60.753(b)] Federally Enforceable Through Title V Permit

107. Permittee shall operate each interior 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 an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decompositions by killing methanogens. [40 CFR 60.753(c)] Federally Enforceable Through Title V Permit

108. If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of section 60.753 are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3 - 5) or (c). If corrective actions are taken as specified in 60.755, the monitored exceedance is not a violation of the operational requirements in this section. [40 CFR 60.753(g)] Federally Enforceable Through Title V Permit

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109. Each wellhead shall have a sampling port and a thermometer, other temperature-measuring device, or an access port for temperature measurements. [40 CFR 60.756(a)] Federally Enforceable Through Title V Permit

110. When monitoring interior wellheads for operation for a nitrogen level, the nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart. [40 CFR 60.753(c)(1)] Federally Enforceable Through Title V Permit

111. For each interior wellhead, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that: (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span; (ii) A data recorder is not required; (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span; (iv) A calibration error check is not required; (v) The allowable sample bias, zero drift, and calibration drift are +-10 percent. Oxygen monitoring at wellheads will be done with a portable meter such as a GEM-2000 or equivalent which have been approved by the EPA. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit

112. The background concentration of methane shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)] Federally Enforceable Through Title V Permit

113. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i-v) shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 60.753(d). [40 CFR 60.755(c)(3), (4)] Federally Enforceable Through Title V Permit

114. For the performance test required in 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A must be used to determine compliance with the 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the APCO as provided by 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency: (NMOCin - NMOCout)/NMOCin. 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; 40 CFR 60.754(d)] Federally Enforceable Through Title V Permit

115. Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5)] Federally Enforceable Through Title V Permit

116. 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)). [40 CFR 60.755(d), (e)] Federally Enforceable Through Title V Permit

117. The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collections systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)] Federally Enforceable Through Title V Permit

118. Operator shall measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3); and monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5). [40 CFR 60.756(a)] Federally Enforceable Through Title V Permit

119. 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

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120. 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

121. The following constitute exceedances that also 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 øC 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

122. 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

123. 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)(iii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)] Federally Enforceable Through Title V Permit

124. 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 nondegradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)] Federally Enforceable Through Title V Permit

125. 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

126. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat. [40 CFR 60.759(a)(1)] Federally Enforceable Through Title V Permit

127. The placement of gas collection devices determined in paragraph 60.759(a)(1) shall control all gas producing areas, except as provided by paragraphs 60.759(a)(3)(i) and (a)(3)(ii). [40 CFR 60.759(a)(3)] Federally Enforceable Through Title V Permit

128. The sufficient density of gas collection devices determined in paragraph 60.759(a)(1) shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior. [40 CFR 60.759(a)(2)] Federally Enforceable Through Title V Permit

129. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request. [40 CFR 60.759(a)(3)(i)] Federally Enforceable Through Title V Permit

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130. Any nonproductive area of the landfill may be excluded from control provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation in Section 60.759(a)(3)(ii). [40 CFR 60.759(a)(3)(ii)] Federally Enforceable Through Title V Permit

131. The values for k and CNMOC in equation in Section 60.759(a)(3)(ii) determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, Lo, and CNMOC provided in 60.754(a)(1) or the alternative values from 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph 60.759(a)(3)(i). [40 CFR 60.759(a)(3)(iii)] Federally Enforceable Through Title V Permit

132. Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures: (1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration; (2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations; (3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness. [40 CFR 60.759(b)] Federally Enforceable Through Title V Permit

133. Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures: (1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph 60.759(c)(2) shall be used; (2) For new collection systems, the maximum flow rate shall be in accordance with 60.755(a)(1). [40 CFR 60.759(c)] Federally Enforceable Through Title V Permit

134. 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 and 60.759] Federally Enforceable Through Title V Permit

135. In the event that the collection or control system becomes inoperable, the gas mover equipment (as defined in 40 CFR 60.751) shall be shut down and all valves in the collection and control system contributing to venting of the landfill gas to the atmosphere shall be closed within one hour. [40 CFR 60.753(e)] Federally Enforceable Through Title V Permit

136. The owner/operator shall install, calibrate, maintain, and operate a meter that measures and records the landfill gas flow rate into the flare at least once every 15 minutes. This meter shall also be capable of measuring the landfill gas flow rate that might bypass the flare in the event of equipment malfunction or maintenance. [40 CFR 60.756(c)(2)] Federally Enforceable Through Title V Permit

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137. The flare shall be operated with a flame present at all times while gas is being vented to it. The presence of a flame shall be continuously monitored using a thermocouple, ultraviolet sensor, or any other equivalent device located at the pilot light or the flame itself. [40 CFR 60.18(c)(2) and 40 CFR 60.756(c)(1)] Federally Enforceable Through Title V Permit

138. The enclosed flare shall be equipped with an accurate temperature indicator/recorder that continuously measures and records the operating temperature. [District Rule 2201; 40 CFR 60.756(b)(1)] Federally Enforceable Through Title V Permit

139. The enclosed flare shall be equipped with either a device that records flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration of the control device. [40 CFR 60.756(b)(2] Federally Enforceable Through Title V Permit

140. Any closed landfill that has demonstrated compliance in three consecutive quarterly monitoring periods may perform annual monitoring. Quarterly monitoring shall resume if any methane readings of 500 ppm or more above background are detected during annual monitoring. [40 CFR 60.756(f)] Federally Enforceable Through Title V Permit

141. 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. [40 CFR 60.758(c) and 60.34c] Federally Enforceable Through Title V Permit

142. Landfill collection and control system must be operated such that methane emission from the landfill do not exceed instantaneous or integrated limit requirements. [17 CCR 95464]

143. 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]

144. Landfill gas collection system components downstream of blower have a leak limit of 500 ppmv as methane. Components must be checked quarterly. [17 CCR 95464]

145. The flare must have automatic dampers, an automatic shutdown device, a flame arrester, and temperature sensors which record at least every 15 minutes. [17 CCR 95464]

146. The flare must operate within the parameter ranges established during the initial or most recent source test. [District Rule 2201 and 17 CCR 95464]

147. 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]

148. The owner or operator must conduct an annual source test for methane for any gas control device(s) subject to the requirements of sections 95464(b)(2)(A) or 95464(b)(3)(A) using the test methods identified in 95471(f). An initial source test must be conducted within 180 days of initial start up of the gas collection and control system. Each succeeding complete annual source test must be conducted no later than 45 days after the anniversary date of the initial source test. If a gas control device remains in compliance after three consecutive source tests the owner or operator may conduct the source test every three years. If a subsequent source test shows the gas collection and control system is out of compliance the source testing frequency will return to annual. [17 CCR 95464(b)(4)(A)]

149. 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]

150. 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]

151. 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]

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

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153. 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]

154. 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]

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

156. 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]

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

158. 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]

159. 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]

160. 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]

161. 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]

162. 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 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]

163. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit