



APR 18 2012

Paul Turek  
Chemical Waste Management, Inc  
P.O. Box 471  
Kettleman City, CA 93239

**Re: Revised Proposed Authorities to Construct / Certificate of Conformity  
(Minor Mod)  
District Facility # C-283  
Project # C-1110693**

Dear Mr. Turek:

Enclosed for your review is the District's analysis of your application for Authorities to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant is proposing to increase the NO<sub>x</sub> emission factor from 0.05 lb/MMBtu to 0.06 lb/MMBtu for the existing 2,500 scfm enclosed flare serving Class II/III municipal solid waste landfills B-17 (permit C-283-25 and B-19 (permit C-2383-22), increase the H<sub>2</sub>S concentration of the landfill gas from 46.9 ppmv to 150 ppmv, and limit the annual heat input to the flare to 398,333 MMBtu/year. All comments received since the original preliminary decision performed on October 5, 2011 have been addressed by the District.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authorities 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,

David Warner  
Director of Permit Services

Enclosures  
cc: Stanley Tom, Permit Services

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
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APR 18 2012

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St  
San Francisco, CA 94105

**Re: Revised Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)  
District Facility # C-283  
Project # C-1110693**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Chemical Waste Management, Inc, located at 35251 Old Skyline Road in Kettleman City, CA, which has been issued a Title V permit. Chemical Waste Management, Inc is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The applicant is proposing to increase the NOx emission factor from 0.05 lb/MMBtu to 0.06 lb/MMBtu for the existing 2,500 scfm enclosed flare serving Class II/III municipal solid waste landfills B-17 (permit C-283-25 and B-19 (permit C-2383-22), increase the H2S concentration of the landfill gas from 46.9 ppmv to 150 ppmv, and limit the annual heat input to the flare to 398,333 MMBtu/year. All comments received since the original preliminary decision performed on October 5, 2011 have been addressed by the District.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authorities to Construct # C-283-22-16 and '25-2 with Certificate of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. 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,

David Warner  
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The facility proposes to increase the H<sub>2</sub>S content of the LFG from 46.9 ppmv to 150 ppmv on a daily average and 109 ppmv on an annual average.

The facility requests to clarify how the heat input to the flare will be calculated. Condition will be revised as follows:

*Existing condition:*

The combined flowrate of collected B-17 and B-19 landfill gas into the flare shall not exceed 2,500 scfm. [District NSR Rule]

*New condition:*

- The combined heat input of collected B-17 and B-19 landfill gas into the flare shall not exceed any of the following: 83.6 MMBtu/hr or 398,333 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 NSR Rule]

Prior to implementation of these ATCs, per the applicant, ATC C-283-22-15 and '25-0 will be implemented. Therefore, the following condition will be placed on each corresponding permit:

- Authority to Construct (ATC) C-283-22-15 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]
- Authority to Construct (ATC) C-283-25-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]

Waste Management has received their Title V Permit. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, 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 permits. Waste Management will apply to administratively amend their Title V Operating Permit to include the requirements of the ATCs issued with this project.

## **II. Applicable Rules**

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emission Standards for Hazardous Air Pollutants (5/20/04)
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 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

### **III. Project Location**

The project is located at 35251 Old Skyline Road in Kettleman City, CA. The District has verified that 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**

#### C-283-22-16: Landfill B-19

The B-19 landfill is an active Class II/III landfill with an estimated 4.2 million cubic yard capacity.

The Class II/III waste that this site is designed to receive is comprised of domestic waste, municipal sludge, municipal waste combustion ash, industrial non-hazardous waste, agricultural waste, and construction & demolition wastes. The site is essentially a cell/trench type landfill, in which the waste is spread out in excavated soil trenches. Excavated square trenches are usually up to 1000 feet in width and length, and 30 feet deep. In order to prevent subsurface gas migration and leachate (i.e. water that has passed through the landfill) leakage, the trenches are lined with a combination of clay and an impermeable synthetic (i.e. high density polyethylene) liner. Collected waste that has been spread out in the cell trenches is compacted using heavy machinery (including bulldozers and planers) and covered with at least six inches of soil, on a daily basis. Currently the facility is receiving 1,400 tons of solid waste per day (includes biosolids from municipal wastewater treatment plants, digested sludge and compost for use as daily cover and other purposes). The solid waste is transported to the landfill using dump trucks, each with a maximum capacity of 16 cubic yards. The storage capacity of the facility is expected to be exhausted in 25 years from start of operation. At time of closure, the site will be fully sealed off by a relatively impermeable clay and topsoil layer.

Waste Management has converted landfill B-19 into a bioreactor. A landfill bioreactor can be defined as a landfill where liquid is added in a controlled fashion into the waste mass in order to accelerate and enhance anaerobic biostabilization of the waste.

The bioreactor cell operates in the permitted Class II/III disposal area. The area that current has in-place hazardous waste is physically separated from the Class II/III waste disposal operations by a separation liner. The majority of the Class II/III waste that exists or will be placed over the existing hazardous waste will not be operated as a bioreactor. This area will continue to be operated according to typical "dry tomb" methods and act as a control unit to compare the waste degradation and settlement properties from traditional landfilling practices (i.e. no outside moisture introduction) to the degradation properties in the adjacent bioreactor cell. The remainder of the Class II/III disposal area will be operated as a bioreactor.

In order to operate a bioreactor, additional moisture must be introduced into the waste to accelerate the biodegradation. At Waste Management, the sources of additional moisture from off-site would be delivered by trucks containing materials such as biosolids, oil field brine, wastewater, and food processing liquids primarily from Kern, Kings, Fresno, and Tulare Counties. All leachate that is collected in the bioreactor and control unit of the Class II/III area will be reintroduced into the waste in the bioreactor unit. No leachate from any of the Class I disposal area will be used within the bioreactor area. A landfill gas collection and control system from the B-19 Class II/III area will result in the generation of landfill gas condensate. Similar to the leachate, the condensate will be reintroduced into the waste in the bioreactor unit.

The bioreactor cell in landfill B-19 will be used as a means to test Anaerobic Landfill Bioreactor Technology. Waste Management will add various offsite liquids and high liquid content waste to raise the moisture content of the bioreactor unit in order to increase the degradation rate of the dry entombed material. While it is desired to achieve 80 percent of the water holding capacity, (40 percent to 45 percent moisture, wet basis) this would require moisture addition at a rate of 50 to 75 gallons per cubic yard of material in-place. Based on the industry and nature of the surrounding area, this project may fall short of this goal. If this goal cannot be reached, Waste Management's intent is to maximize the moisture content of the waste in order to increase the fermentation to a level minimally equivalent of a Midwestern landfill which is typically 25 percent to 35 percent moisture. Present incoming wastes to landfill B-19 vary between 8 percent and 20 percent moisture, depending on the source and the time of year.

Liquids and high liquid content waste from offsite are added on the top deck area either at the working face or into surface galleries or horizontal trenches. Liquids also are injected into vertical wells and possibly into horizontal injection wells. Sludges and liquid waste streams high in solids are targeted for the working face trenches and top deck galleries so as to avoid plugging of the infiltration trenches and wells.

Waste Management has a waste acceptance program where the waste is reviewed, analytical data gathered, and a decision made as to the proper handling. Liquid wastes for the bioreactor would go through the same process. Only non-hazardous liquids, semisolids, sludges, etc. are acceptable for the bioreactor in the non-hazardous B-19 landfill.

### C-283-25-2: Landfill B-17

The B-17 Landfill has a waste footprint of 62 acres, and a capacity of approximately 18.4 million cubic yards. Disposal operations at the B-17 Landfill will be the same as occurring at the existing B-19 Landfill but without the bioreactor. Prior to B-19 reaching its maximum capacity, waste designated for B-19 will be diverted to B-17 to allow for the efficient use of B-19 as a bioreactor by conserving space at B-19.

Due to rapid waste settlement, consolidation, and decomposition in B-19 operating as a bioreactor, the landfill may settle below its permitted final elevation, thereby providing additional waste capacity after B-17 begins operations. At that time, rather than going to B-17 for disposal, wastes will be diverted to B-19 to utilize the additional air space. The process of additional waste capacity being available at B-19 could occur several times during the operational life of B-17.

## **V. Equipment Listing**

### Pre-project

C-283-22-15: MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-25

C-283-25-0: MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22

### Modification

C-283-22-16: MODIFICATION OF MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-25: INCREASE FLARE NOX EMISSION FACTOR FROM 0.05 LB/MMBTU TO 0.06 LB/MMBTU, INCREASE SOX EMISSION FACTOR FROM 46.9 PPMV TO 150 PPMV (DAILY AVERAGE) AND 109 PPMV (ANNUAL AVERAGE), AND LIMIT FLARE HEAT INPUT TO 398,333 MMBTU/YEAR

C-283-25-2: MODIFICATION OF MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22: INCREASE FLARE NOX EMISSION FACTOR FROM 0.05 LB/MMBTU TO 0.06 LB/MMBTU, INCREASE SOX EMISSION FACTOR FROM 46.9 PPMV TO 150 PPMV (DAILY AVERAGE) AND 109 PPMV (ANNUAL AVERAGE), AND LIMIT FLARE HEAT INPUT TO 398,333 MMBTU/YEAR

#### Post-project

C-283-22-16: MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-25

C-283-25-2: MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22

## **VI. Emission Control Technology Evaluation**

### C-283-22-16: Landfill B-19

Per project #C-1062730, B-19 will include a GCCS with a 2,500 scfm enclosed ground level natural draft flare with a proposed destruction efficiency of 98% by weight. This control device has already been evaluated and approved in project #C-1062730. Therefore, the existing flare will not be re-evaluated in this project.

### C-283-25-2: Landfill B-17

Landfill B-17 will include a GCCS sharing the flare from permit C-283-22. Since the control device has already been evaluated in project #C-1062730, the existing flare will not be re-evaluated in this project.

## VII. General Calculations

### A. Assumptions

- Facility operates 24 hours per day (worst-case)
- Maximum firing rate of flare is 2,500 scfm x 60 min/hr = 150,000 scfh (per manufacturer)
- Landfill gas (LFG) heating value = 557 Btu/scf (per applicant)
- Maximum Heat Input Rating = 150,000 scf/hr x 557 Btu/scf x MM/1E6 = 83.6 MMBtu/hr
- LPG is used to fuel pilot light of flare (per applicant)
- LPG heating value = 3,200 Btu/ft<sup>3</sup> (<http://www.connel.com/freeware/fuels2.shtml>)
- Maximum pilot LPG flow rate is 22.2 ft<sup>3</sup>/hr (per applicant)
- Molecular weight of hexane = 86.18 lb/lb-mole
- Molecular weight of methane = 16.043 lb/lb-mole
- Standard molar volume of gas = 379.5 ft<sup>3</sup>/lb-mole
- Pre-project H<sub>2</sub>S concentration = 46.9 ppmv (default AP-42 value Section 2.4 Equation 8 11/98)
- Post-project H<sub>2</sub>S concentration = 150 ppmv (daily average) and 109 ppmv (annual average) (per applicant)
- VOC destruction efficiency of the flare is 98% (per Subpart WWW)
- Only the flare is being modified in this project. Therefore, the landfills will not be addressed in this project.

### B. Emission Factors

#### Current Pre-project

C-283-22-15 and '25-0 Flare Emission Factors		Source
NO <sub>x</sub>	0.05 lb/MMBtu	Flare Manufacturer
SO <sub>x</sub>	1.19 lb/hr	Mass Balance
PM <sub>10</sub>	17 lb/10 <sup>6</sup> dscf CH <sub>4</sub> or 0.0010 lb/hr/scf CH <sub>4</sub>	AP-42 Table 2.4-5 (11/98)
CO	0.22 lb/MMBtu	Flare Manufacturer

$$SO_x = \frac{\left(2500 \frac{ft^3 - fuel}{min}\right) \left(60 \frac{min}{hr}\right) \left(\frac{46.9 ft^3 - H_2S}{10^6 ft^3 - fuel}\right) \left(\frac{34 lb - H_2S}{lb - mol}\right)}{\left(379.5 \frac{ft^3 - H_2S}{lb - mol}\right) \left(\frac{34 lb - H_2S}{32 lb - S}\right) \left(\frac{32 lb - S}{64 lb - SO_2}\right)}$$

$$SO_x = 1.19 \text{ lb/hr}$$

NOx

$$Tpy\ emitted = \left( \text{Methane Generation } \frac{ft^3}{yr} \right) \left( \frac{\eta_{col}}{100} \right) (\text{Methane Heating Value}) \left( \frac{\text{Emission Factor (lb / MMBtu)}}{(10^6 \text{ MMBtu / Btu})} \right) \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right)$$

where:

$\eta_{col}$  = Collection efficiency of the landfill gas collection system, 85%

Methane Heating Value = 1,012 Btu/scf CH<sub>4</sub>

$$\left( \frac{15,741,132 \text{ m}^3}{yr} \right) \left( \frac{35.31 \text{ ft}^3 \text{ CH}_4}{\text{m}^3 \text{ CH}_4} \right) \left( \frac{85}{100} \right) \left( \frac{1012 \text{ Btu}}{\text{ft}^3 \text{ CH}_4} \right) \left( \frac{1 \text{ MMBtu}}{10^6 \text{ Btu}} \right) \left( \frac{0.05 \text{ (lb / MMBtu)}}{(10^6 \text{ MMBtu / Btu})} \right) \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right)$$

=11.95 tpy NOx

Revised Pre-project

Currently, NOx emissions are calculated based on the methane generation rate as determined by the LandGEM model and the maximum waste acceptance rate. In this project, the applicant proposes to revise the emission factors for the flare to calculate emissions based on maximum landfill gas flow rate (or heat input) to the flare.

Per District Policy APR 1110, revision of the emission factor will have no NSR implications.

Revised C-283-22-15 and '25-0 Flare Emission Factors		Source
NO <sub>x</sub>	0.05 lb/MMBtu	Flare Manufacturer
SO <sub>x</sub>	0.77 lb/hr	Mass Balance
PM <sub>10</sub>	0.008 lb/MMBtu	District FYI-83
CO	0.22 lb/MMBtu	Flare Manufacturer
VOC	0.063 lb/MMBtu	District FYI-83

11.95 tpy x 2000 lb/ton x year/8760 hours = 2.73 lb-NOx/hr

2.73 lb-NOx/hr x MMBtu/0.05 lb = 54.57 MMBtu/hr

54.57 MMBtu/hr x scf/557 Btu x 10<sup>6</sup>/MM = 97,964 scf/hr

The previously approved SOx emission limit was based upon a landfill gas flow rate of 2500 scfm. As shown above, the landfill gas flow rate approved for NOx was 97,964 scfh (1632.7 scfm). Therefore, the pre-project SOx emission limit will be revised to be consistent with the landfill gas flow rate approved for NOx.

$$SO_x = \frac{\left( 97,964 \frac{ft^3 - fuel}{hr} \right) \left( \frac{46.9 ft^3 - H_2S}{10^6 ft^3 - fuel} \right) \left( 34 \frac{lb - H_2S}{lb - mol} \right)}{\left( 379.5 \frac{ft^3 - H_2S}{lb - mol} \right) \left( \frac{34 lb - H_2S}{32 lb - S} \right) \left( \frac{32 lb - S}{64 lb - SO_2} \right)}$$

SOx = 0.77 lb/hr

Flare LPG-Fired Pilot

C-283-22 and '25 Pilot Emission Factors		Source
NO <sub>x</sub>	0.15 lb/MMBtu	AP-42 Table 1.5-1 (7/98)
SO <sub>x</sub>	0.0164 <sup>1</sup> lb/MMBtu	Applicant Proposal
PM <sub>10</sub>	0.0044 lb/MMBtu	AP-42 Table 1.5-1 (7/98)
CO	0.021 lb/MMBtu	AP-42 Table 1.5-1 (7/98)
VOC	0.0055 lb/MMBtu	AP-42 Table 1.5-1 (7/98)

Post-project

C-283-22-16 and '25-2 Flare Emission Factors		Source
NO <sub>x</sub>	0.06 lb/MMBtu	Applicant Proposed
Daily SO <sub>x</sub>	91.1 lb/day	Mass Balance
Annual SO <sub>x</sub>	13,146 lb/year	
PM <sub>10</sub>	0.008 lb/MMBtu	District FYI-83
CO	0.22 lb/MMBtu	Flare Manufacturer
VOC	0.063 lb/MMBtu	District FYI-83

The maximum firing rate of flare is 2,500 scfm x 60 min/hr = 150,000 scfh (per manufacturer)

The applicant proposes to increase the daily fuel use limit to the maximum firing rate of the flare and increase the H2S concentration to 150 ppmv on a daily average and 109 ppmv on an annual average. The sulfur content in landfill gas can fluctuate over

<sup>1</sup> SO<sub>x</sub> = 0.1(S), where S = sulfur content in gr/100 scf = 0.1 (15) = 1.5 lb/1000 gal => (1.5 lb/1000 gal ÷ 0.0915 MMBtu/gal) = 0.0164 lb/MMBtu where, maximum sulfur content of LPG is 15 gr/100 scf (CRC Handbook of Tables for Applied Engineering Science, 2<sup>nd</sup> Edition, page 390).

time at municipal solid waste landfills and the facility may accept waste with a higher sulfur content in the future. The South Coast Air Quality Management District Rule 431.1 (Sulfur Content of Gaseous Fuels) allows up to a sulfur limit of 150 ppmv (daily average) for landfill gas.

$$\text{Daily SO}_x = \frac{\left(150,000 \frac{\text{ft}^3 - \text{fuel}}{\text{hr}}\right) \left(\frac{150 \text{ ft}^3 - \text{H}_2\text{S}}{10^6 \text{ ft}^3 - \text{fuel}}\right) \left(\frac{34 \text{ lb} - \text{H}_2\text{S}}{\text{lb} - \text{mol}}\right)}{\left(379.5 \frac{\text{ft}^3 - \text{H}_2\text{S}}{\text{lb} - \text{mol}}\right) \left(\frac{34 \text{ lb} - \text{H}_2\text{S}}{32 \text{ lb} - \text{S}}\right) \left(\frac{32 \text{ lb} - \text{S}}{64 \text{ lb} - \text{SO}_2}\right)} \times 24 \text{ hr/day}$$

$$\text{Daily SO}_x = 91.1 \text{ lb/day}$$

The applicant proposes a post-project annual fuel use limit to ensure there is no increase in annual NO<sub>x</sub> emissions in this project.

$$11.95 \text{ tpy} \times 2000 \text{ lb/ton} \times \text{MMBtu}/0.06 \text{ lb} = 398,333 \text{ MMBtu/year}$$

$$398,333 \text{ MMBtu/year} \times \text{year}/8760 \text{ hours} \times \text{scf}/557 \text{ Btu} = 81,637 \text{ scf/hr}$$

$$\text{Annual SO}_x = \frac{\left(81,637 \frac{\text{ft}^3 - \text{fuel}}{\text{hr}}\right) \left(\frac{109 \text{ ft}^3 - \text{H}_2\text{S}}{10^6 \text{ ft}^3 - \text{fuel}}\right) \left(\frac{34 \text{ lb} - \text{H}_2\text{S}}{\text{lb} - \text{mol}}\right)}{\left(379.5 \frac{\text{ft}^3 - \text{H}_2\text{S}}{\text{lb} - \text{mol}}\right) \left(\frac{34 \text{ lb} - \text{H}_2\text{S}}{32 \text{ lb} - \text{S}}\right) \left(\frac{32 \text{ lb} - \text{S}}{64 \text{ lb} - \text{SO}_2}\right)} \times 8760 \text{ hr/year}$$

$$\text{Annual SO}_x = 13,146 \text{ lb/year}$$

#### Flare LPG-Fired Pilot

C-283-22 and '25 Pilot Emission Factors		Source
NO <sub>x</sub>	0.15 lb/MMBtu	AP-42 Table 1.5-1 (7/98)
SO <sub>x</sub>	0.0164 <sup>2</sup> lb/MMBtu	Applicant Proposal
PM <sub>10</sub>	0.0044 lb/MMBtu	AP-42 Table 1.5-1 (7/98)
CO	0.021 lb/MMBtu	AP-42 Table 1.5-1 (7/98)
VOC	0.0055 lb/MMBtu	AP-42 Table 1.5-1 (7/98)

<sup>2</sup> SO<sub>x</sub> = 0.1(S), where S = sulfur content in gr/100 scf = 0.1 (15) = 1.5 lb/1000 gal => (1.5 lb/1000 gal ÷ 0.0915 MMBtu/gal) = 0.0164 lb/MMBtu where, maximum sulfur content of LPG is 15 gr/100 scf (CRC Handbook of Tables for Applied Engineering Science, 2<sup>nd</sup> Edition, page 390).

## C. Calculations

### 1. Pre-Project Potential to Emit (PE1)

$11.95 \text{ tpy} \times 2000 \text{ lb/ton} \times \text{year}/8760 \text{ hours} = 2.73 \text{ lb-NO}_x/\text{hr}$

$2.73 \text{ lb-NO}_x/\text{hr} \times \text{MMBtu}/0.05 \text{ lb} = 54.57 \text{ MMBtu/hr}$

Daily Emissions (C-283-22-15 and '25-0 Flare)								
NO <sub>x</sub>	54.57	(MMBtu/hr) x	0.05	(lb/MMBtu) x	24	hr/day =	65.5	(lb/day)
SO <sub>x</sub>	0.77	(lb/hr) x			24	hr/day =	18.6	(lb/day)
PM <sub>10</sub>	54.57	(MMBtu/hr) x	0.008	(lb/MMBtu) x	24	hr/day =	10.5	(lb/day)
CO	54.57	(MMBtu/hr) x	0.22	(lb/MMBtu) x	24	hr/day =	288.1	(lb/day)
VOC	54.57	(MMBtu/hr) x	0.063	(lb/MMBtu) x	24	hr/day =	82.5	(lb/day)

Daily Emissions (C-283-22-15 and '25-0 Flare Pilot)										
NO <sub>x</sub>	0.15	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.3	(lb/day)
SO <sub>x</sub>	0.0164	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)
PM <sub>10</sub>	0.0044	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)
CO	0.021	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)
VOC	0.0055	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)

Daily Emissions (C-283-22-15 and '25-0 Flare Total)					
NO <sub>x</sub>	65.5	(lb/day) +	0.3	(lb/day) =	65.8 (lb/day)
SO <sub>x</sub>	18.6	(lb/day) +	0.0	(lb/day) =	18.6 (lb/day)
PM <sub>10</sub>	10.5	(lb/day) +	0.0	(lb/day) =	10.5 (lb/day)
CO	288.1	(lb/day) +	0.0	(lb/day) =	288.1 (lb/day)
VOC	82.5	(lb/day) +	0.0	(lb/day) =	82.5 (lb/day)

Annual Emissions (C-283-22-15 and '25-0 Flare Total)					
NO <sub>x</sub>	65.8	(lb/day) x	365	(day/year) =	24,017 (lb/year)
SO <sub>x</sub>	18.6	(lb/day) x	365	(day/year) =	6,789 (lb/year)
PM <sub>10</sub>	10.5	(lb/day) x	365	(day/year) =	3,833 (lb/year)
CO	288.1	(lb/day) x	365	(day/year) =	105,157 (lb/year)
VOC	82.5	(lb/day) x	365	(day/year) =	30,113 (lb/year)

Flare VOC emissions are accounted for in the landfill emission calculations as shown in project C-1072627.

Daily Emissions (C-283-22-15 Landfill + Flare Total)					
VOC	339.5	(lb/day) +	0.0	(lb/day) =	339.5 (lb/day)

Annual Emissions (C-283-22-15 Landfill + Flare Total)						
VOC	339.5	(lb/day) x	365	(days/year) =	123,904	(lb/year)

Daily Emissions (C-283-25-0 Landfill + Flare Total)						
VOC	240.7	(lb/day) +	0.0	(lb/day) =	240.7	(lb/day)

Annual Emissions (C-283-25-0 Landfill + Flare Total)						
VOC	240.7	(lb/day) x	365	(days/year) =	87,857	(lb/year)

The worst case VOC emissions will be taken to be the potential to emit since landfills C-283-22 and '25 share a common waste acceptance limit.

Daily Emissions (Worst Case C-283-22-15 and '25-0 Landfill + Flare Total)						
VOC	339.5	(lb/day) +	0.0	(lb/day) =	339.5	(lb/day)

Annual Emissions (Worst Case C-283-22-15 and '25-0 Landfill + Flare Total)						
VOC	339.5	(lb/day) x	365	(days/year) =	123,904	(lb/year)

## 2. Post Project Potential to Emit (PE2)

### C-283-22-16

The applicant proposes to increase the daily fuel use limit to the maximum firing rate of the flare of 83.6 MMBtu/hr.

Daily Emissions (C-283-22-15 and '25-0 Flare)								
NO <sub>x</sub>	83.6	(MMBtu/hr) x	0.06	(lb/MMBtu) x	24	hr/day =	120.4	(lb/day)
SO <sub>x</sub>							91.1	(lb/day)
PM <sub>10</sub>	83.6	(MMBtu/hr) x	0.008	(lb/MMBtu) x	24	hr/day =	16.1	(lb/day)
CO	83.6	(MMBtu/hr) x	0.22	(lb/MMBtu) x	24	hr/day =	441.4	(lb/day)
VOC	83.6	(MMBtu/hr) x	0.063	(lb/MMBtu) x	24	hr/day =	126.4	(lb/day)

Daily Emissions (C-283-22-15 and '25-0 Flare Pilot)										
NO <sub>x</sub>	0.15	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.3	(lb/day)
SO <sub>x</sub>	0.0164	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)
PM <sub>10</sub>	0.0044	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)
CO	0.021	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)
VOC	0.0055	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	24	(hr/day) =	0.0	(lb/day)

Daily Emissions (C-283-22-15 and '25-0 Flare Total)						
NO <sub>x</sub>	120.4	(lb/day) +	0.3	(lb/day) =	120.7	(lb/day)
SO <sub>x</sub>	91.1	(lb/day) +	0.0	(lb/day) =	91.1	(lb/day)
PM <sub>10</sub>	16.1	(lb/day) +	0.0	(lb/day) =	16.1	(lb/day)
CO	441.4	(lb/day) +	0.0	(lb/day) =	441.4	(lb/day)
VOC	126.4	(lb/day) +	0.0	(lb/day) =	126.4	(lb/day)

The applicant proposes to limit the annual fuel use to ensure there is no increase in annual NO<sub>x</sub> emissions.

$$11.95 \text{ tpy} \times 2000 \text{ lb/ton} \times \text{MMBtu}/0.06 \text{ lb} = 398,333 \text{ MMBtu/year}$$

Annual Emissions (C-283-22-16 and '25-2 Flare)						
NO <sub>x</sub>	398,333	(MMBtu/year) x	0.06	(lb/MMBtu) x	23,900	(lb/year)
SO <sub>x</sub>					13,146	(lb/year)
PM <sub>10</sub>	398,333	(MMBtu/year) x	0.008	(lb/MMBtu) x	3,187	(lb/year)
CO	398,333	(MMBtu/year) x	0.22	(lb/MMBtu) x	87,633	(lb/year)
VOC	398,333	(MMBtu/year) x	0.063	(lb/MMBtu) x	25,095	(lb/year)

Annual Emissions (C-283-22-16 and '25-2 Flare Pilot)										
NO <sub>x</sub>	0.15	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	8760	(hr/year) =	93	(lb/year)
SO <sub>x</sub>	0.0164	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	8760	(hr/year) =	10	(lb/year)
PM <sub>10</sub>	0.0044	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	8760	(hr/year) =	3	(lb/year)
CO	0.021	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	8760	(hr/year) =	13	(lb/year)
VOC	0.0055	(lb/MMBtu) x	22.2	(scf/hr) x	3200E-6	MMBtu/scf x	8760	(hr/year) =	3	(lb/year)

Annual Emissions (C-283-22-16 and '25-2 Flare Total)						
NO <sub>x</sub>	23,900	(lb/year) +	93	(lb/year) =	23,993	(lb/year)
SO <sub>x</sub>	13,146	(lb/year) +	10	(lb/year) =	13,156	(lb/year)
PM <sub>10</sub>	3,187	(lb/year) +	3	(lb/year) =	3,190	(lb/year)
CO	87,633	(lb/year) +	13	(lb/year) =	87,646	(lb/year)
VOC	25,095	(lb/year) +	3	(lb/year) =	25,098	(lb/year)

Flare VOC emissions are accounted for in the landfill emission calculations as shown in project C-1072627.

Daily Emissions (C-283-22-16 Landfill + Flare Total)						
VOC	339.5	(lb/day) +	0.0	(lb/day) =	339.5	(lb/day)

Annual Emissions (C-283-22-16 Landfill + Flare Total)						
VOC	339.5	(lb/day) x	365	(days/year) =	123,904	(lb/year)

Daily Emissions (C-283-25-2 Landfill + Flare Total)					
VOC	240.7	(lb/day) +	0.0	(lb/day) =	240.7 (lb/day)

Annual Emissions (C-283-25-2 Landfill + Flare Total)					
VOC	240.7	(lb/day) x	365	(days/year) =	87,857 (lb/year)

The worst case VOC emissions will be taken to be the potential to emit since landfills C-283-22 and '25 share a common waste acceptance limit.

Daily Emissions (Worst Case C-283-22-16 and '25-2 Landfill + Flare Total)					
VOC	339.5	(lb/day) +	0.0	(lb/day) =	339.5 (lb/day)

Annual Emissions (Worst Case C-283-22-16 and '25-2 Landfill + Flare Total)					
VOC	339.5	(lb/day) x	365	(days/year) =	123,904 (lb/year)

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
C-283-8-5	140	0	13	41	15
C-283-11-2	0	0	380	0	31,500
C-283-14-2	0	0	0	0	3,723
C-283-15-2	0	0	0	0	2,336
C-283-17-2	0	0	0	0	4,052
C-283-19-1	0	0	8,614	0	5,950
C-283-20-7	0	0	0	0	569
C-283-22-15	24,017	6,789	3,833	105,157	123,904
C-283-25-0					
C-283-24-1	0	0	256	0	0
Pre-Project SSPE (SSPE1)	24,157	6,789	13,096	105,198	172,049

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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.

<b>Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
C-283-8-5	140	0	13	41	15
C-283-11-2	0	0	380	0	31,500
C-283-14-2	0	0	0	0	3,723
C-283-15-2	0	0	0	0	2,336
C-283-17-2	0	0	0	0	4,052
C-283-19-1	0	0	8,614	0	5,950
C-283-20-7	0	0	0	0	569
C-283-22-15	23,993	13,155	3,190	87,646	123,904
C-283-25-0					
C-283-24-1	0	0	256	0	0
Post-Project SSPE (SSPE2)	24,133	13,155	12,453	87,687	172,049

#### 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include 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."

<b>Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	24,157	6,789	13,096	105,198	172,049
Post Project SSPE (SSPE2)	24,133	13,155	12,453	87,687	172,049
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	Yes

This source is an existing Major Source for NO<sub>x</sub> and VOC emissions and will remain a Major Source for NO<sub>x</sub> and VOC.

## 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.

Pursuant to Section 3.7 of District Rule 2201, 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 = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

C-283-22-16 and '25-2 are operating under an SLC for all pollutants, based on shared throughput limitations, and therefore the following BE are based on the shared emissions.

### a. BE NO<sub>x</sub>

#### Clean Emissions Unit

Pursuant to Rule 2201, Section 3.12, 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 flare meets BACT Guideline 1.4.3. Therefore, Baseline Emissions (BE) are equal to the Pre-project Potential to Emit (PE1).

BE = PE1 = 24,017 lb NO<sub>x</sub>/year

### b. BE SO<sub>x</sub>

#### Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is not a major source for SO<sub>x</sub> emissions.

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

$$BE = PE1 = 6,789 \text{ lb SO}_x/\text{year}$$

**c. BE PM<sub>10</sub>**

Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is not a major source for PM<sub>10</sub> emissions.

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

$$BE = PE1 = 3,833 \text{ lb PM}_{10}/\text{year}$$

**d. BE CO**

Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is not a major source for CO emissions.

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

$$BE = PE1 = 105,157 \text{ lb CO}/\text{year}$$

**e. BE VOC**

Clean Emissions Unit

Pursuant to Rule 2201, Section 3.12, 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 flare meets BACT Guideline 1.4.3. Therefore, Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

$$BE = PE1 = 30,113 \text{ tons-VOC}/\text{year}$$

## 7. SB288 Major Modification

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

Since this facility is a major source for NO<sub>x</sub> and VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO <sub>x</sub>	23,993	50,000	No
VOC	25,098	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute a SB288 Major Modification.

## 8. Federal Major Modification

District Rule 2201, Section 3.17 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.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

This facility is only a major source of NO<sub>x</sub> and VOC emissions. Therefore, the below discussion only applies to NO<sub>x</sub> and VOC.

### Step 1

For existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions  
UBC = Unused baseline capacity

If there is no increase in design capacity or annual potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

UBC: Since this project does not result in an increase in design capacity or annual potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC} = 0$$

As demonstrated above, this project does not constitute a Federal Major Modification.

## **9. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix C.

## **VIII. Compliance**

### **Rule 2201 New and Modified Stationary Source Review Rule**

#### **A. Best Available Control Technology (BACT)**

##### **1. BACT Applicability**

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

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

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

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

As discussed in Section I above, there are no new emissions units associated with this project; therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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

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

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

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = The emissions unit's Potential to Emit prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (\text{EF2} / \text{EF1}))$$

Since there are no change in emission factors for the emission units in this project, EF2 = EF1.

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (1))$$

$$\text{AIPE} = \text{PE2} - \text{PE1}$$

Pollutant	Daily PE2	Daily PE1	AIPE	BACT Triggered?
NO <sub>x</sub>	120.4 lb/day	65.8 lb/day	54.6 lb/day	Yes
SO <sub>x</sub>	91.1 lb/day	18.6 lb/day	72.5 lb/day	Yes
PM <sub>10</sub>	16.1 lb/day	10.5 lb/day	5.6 lb/day	Yes
CO	441.4 lb/day	288.1 lb/day	153.3 lb/day	No*
VOC	126.4 lb/day	82.5 lb/day	43.9 lb/day	Yes

\* CO emissions with a SSPE2 of less than 200,000 pounds per year.

As demonstrated above, the AIPE is greater than 2.0 lb/day for all pollutants; therefore BACT is triggered.

#### **d. SB 288/Federal Major Modification**

As discussed in Section VII.C.7 above, this project does not constitute a SB 288 and/or Federal Major Modification; therefore BACT is not triggered for any pollutant.

## **2. BACT Guideline**

BACT Guideline 1.4.3 applies to the flare. [Landfill Gas Vapor Collection System] (See Appendix B)

## **3. Top-Down BACT Analysis**

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Appendix B), BACT has been satisfied with the following:

- NO<sub>x</sub>: 0.06 lb/MMBtu is selected as BACT.
- SO<sub>x</sub>: No control technology is selected as BACT.
- PM<sub>10</sub>: No control technology is selected as BACT.
- VOC: Flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O<sub>2</sub> is selected as BACT.

When this flare was initially permitted the applicant proposed a NO<sub>x</sub> emission factor of 0.05 lb/MMBtu which is the technologically feasible option of BACT Guideline 1.4.3. Since the applicant now proposes a NO<sub>x</sub> emission factor of 0.06 lb/MMBtu which is the achieved in practice option of BACT Guideline 1.4.3, a Top Down BACT Analysis was performed in Appendix B to determine if the technologically feasible NO<sub>x</sub> option is cost effective.

## B. Offsets

### 1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Post Project SSPE (SSPE2)	24,133	13,155	12,453	87,687	172,049
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	No	No	Yes

### 2. Quantity of Offsets Required

#### NO<sub>x</sub>:

As seen above, the SSPE2 is greater than the offset thresholds for NO<sub>x</sub>; therefore offset calculations will be required.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for NO<sub>x</sub> is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\sum[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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 = Historic Actual Emissions (HAE)

As determined in Section VII.C.6 above, the VOC Baseline Emissions (BE) from the flare is equal to the Pre-Project Potential to Emit (PE1) since the flare is a Clean Emissions Unit.

Offsets Required (lb/year) =  $([PE2 - BE] + ICCE) \times DOR$

PE2 (NO<sub>x</sub>) = 23,993 lb/year  
BE (NO<sub>x</sub>) = 24,017 lb/year  
ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1, the amount of NO<sub>x</sub> ERCs that need to be withdrawn is:

Offsets Required (lb/year) =  $([23,993 - 24,017] + 0) \times 1.5$   
= -24 → 0 lb NO<sub>x</sub>/year

VOC:

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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 = Historic Actual Emissions (HAE)

As determined in Section VII.C.6 above, the VOC Baseline Emissions (BE) from the flare is equal to the Pre-Project Potential to Emit (PE1) since the flare is a Clean Emissions Unit.

Offsets Required (lb/year) =  $([PE2 - BE] + ICCE) \times DOR$

PE2 (VOC) = 25,098 lb/year

BE (VOC) = 30,113 lb/year

ICCE = 0 lb/year

Offsets Required (lb/year) =  $([25,098 - 30,113] + 0) \times DOR$   
= -5,015 → 0 lb-VOC/year

As demonstrated in the calculation above, the amount of offsets is zero; therefore, offsets will not be required for this project.

## C. Public Notification

### 1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB288 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 SB288 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 VII.C.7, this project does not constitute a SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

**b. PE > 100 lb/day**

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

**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 Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	24,157	24,133	20,000 lb/year	No
SO <sub>x</sub>	6,789	13,155	54,750 lb/year	No
PM <sub>10</sub>	13,096	12,453	29,200 lb/year	No
CO	105,198	87,687	200,000 lb/year	No
VOC	172,049	172,049	20,000 lb/year	No

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

**e. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	24,133	24,157	-24 → 0	20,000 lb/year	No
SO <sub>x</sub>	13,155	6,789	6,366	20,000 lb/year	No
PM <sub>10</sub>	12,453	13,096	-643 → 0	20,000 lb/year	No
CO	87,687	105,198	-17,511 → 0	20,000 lb/year	No
VOC	172,049	172,049	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

## 2. Public Notice Action

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

## D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, 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.

### C-283-22-16:

- VOC emissions from the flare and landfill shall not exceed 339.5 lb-VOC/day. [District NSR Rule]

### C-283-25-2:

- VOC emissions from the flare and landfill shall not exceed 240.7 lb-VOC/day. [District NSR Rule]

### C-283-22-16 and '25-2:

These conditions will be included on both permits.

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

- 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 NSR Rule]
- Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NO<sub>x</sub>/MMBtu, 91.1 lb-SO<sub>x</sub>/day, 13,146 lb-SO<sub>x</sub>/year, 0.008 lb-PM<sub>10</sub>/MMBtu, 0.22 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District NSR Rule]
- The combined heat input of collected B-17 and B-19 landfill gas into the flare shall not exceed any of the following: 83.6 MMBtu/hr or 398,333 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 NSR Rule]
- Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O<sub>2</sub> as methane. [District NSR Rule and 40 CFR 60.752(b)(2)(iii)(B)]
- Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NO<sub>x</sub>/MMBtu, 0.0164 lb-SO<sub>x</sub>/MMBtu, 0.0044 lb-PM<sub>10</sub>/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule]
- Total PM<sub>10</sub> emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District NSR Rule]
- Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District NSR Rule]
- Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District NSR Rule]
- Total combined clean (<50 ppm by weight) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District NSR Rule]

## **E. Compliance Assurance**

### **1. Source Testing**

Per District Policy APR-1705 Section II, source testing will be required for VOC emissions. Additionally, annual source testing will be required since the production rate of LFG gas will vary significantly for a landfill operation over time.

Both landfills use an existing flare that has already undergone initial source testing. Therefore, VOC source testing upon initial startup is not required.

- Source testing on the flare shall be performed to demonstrate compliance with the flare NO<sub>x</sub> and CO limits, and the NMOC destruction efficiency of 98%, or 20 ppmvd @ 3% O<sub>2</sub> as methane, as required by this permit shall be conducted annually. [District NSR Rule]
- Flare VOC emissions shall be conducted using USEPA Test Method 18 or 25. [District Rule 1081]
- Source testing for flare NO<sub>x</sub> emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081]

- Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081]
- Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District NSR Rule]

## **2. Monitoring**

The following conditions ensure the gas collection system and flare are in good operating condition.

- Permittee shall operate the flare at all times when the collected gas is routed to it. [District Rule 2201]
- Gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system. [District Rule 2201]
- During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District Rules 2020, 7.3 and 2201]
- Maintenance is defined as work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction. [District Rule 2201]
- A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District NSR Rule]
- A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District NSR Rule]
- Testing to demonstrate compliance with the daily and annual SO<sub>x</sub> emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SO<sub>x</sub> emissions, may be reduced to semi-annually. If a semi-annual test shows violation of the SO<sub>x</sub> emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to semi-annually. [District NSR Rule]
- SO<sub>x</sub> emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SO<sub>x</sub> emission rate based on the correlation between landfill gas sulfur concentration and associated SO<sub>x</sub> emission rate demonstrated during startup. [District Rule 1081]
- Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081]

### *Surface Emissions Monitoring*

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

Surface monitoring for landfill B-17 would be initiated once an area reaches final waste grade and has intermediate cover placed, or within 90 days after collection is initiated in landfill B-17 (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. However, 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.

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.

The following are surface emission monitoring requirements to ensure proper collection efficiency:

- 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]

- The landfill surface shall be monitored 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]
- 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. [District Rule 2201]
- 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 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)]
- 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)]

### 3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition will appear on the permit to operate:

- 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)]
- A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily average fuel consumption, and daily average heat input shall be maintained. [District Rule 2201]
- Permittee shall maintain records of system inspections including date, time and inspection results. [District Rule 1070, 4.0]
- Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 1070, 4.0]
- Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070]
- Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 1070]
- The operator shall record emission control device source tests (emissions of CO, NO<sub>x</sub>, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081]
- A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District NSR Rule]
- Records of daily landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily SO<sub>x</sub> emissions shall be maintained. [District NSR Rule]
- 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]
- Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 2201]

- Daily records of quantity (cubic yards) and organic content of the soils accepted for stockpiling and use in the landfill shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 2201]
- Permittee shall maintain records for a period of five years from the date of each entry and shall make such records readily available for District inspection upon request. [District Rule 1070, 4.0]

#### **4. Reporting**

- 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 4102 and NSR]
- The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District NSR Rule]
- The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

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

#### **Rule 2520 Federally Mandated Operating Permits**

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule:

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:

- a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
  6. Do not seek to consolidate overlapping applicable requirements.

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

#### **Rule 4001 New Source Performance Standards**

40 CFR 60 Subpart Cc and WWW provides requirements for "Municipal Solid Waste Landfills", which is defined (as supplied by each subpart) as an entire facility. Therefore, permit units C-283-22 and '25 share the same requirements.

This facility 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, as determined in project C-1062730. Therefore, this landfill must control its emissions.

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

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

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

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

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

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

For permit unit C-283-22, the applicant has installed a landfill gas collection system vented to a control system (enclosed flare), designed and operated to reduce non-methane organic compound emissions by 98 weight percent or to less than 20 ppmvd @ 3%O<sub>2</sub> (as methane). For permit unit C-283-25, the applicant is proposing to install a gas collection system meeting the same requirements.

Since the facility is already a Title V source, the federal 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 as discussed below.

### **Subpart WWW**

- 60.750(a): The requirements of this subpart apply to each existing municipal solid waste landfill for which construction, reconstruction, or modification was commenced on or after May 30, 1991.
- 60.752: The applicable requirements of this section have been added to the ATCs. The following conditions will be listed on the ATCs 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 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 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<sub>2</sub> 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 system at all times when the collected gas is routed to the system.

The following conditions will be listed on the ATCs 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)]
- For each interior wellhead, 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  $\pm 10$  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. Since the applicant has proposed to install an active collection and control system, none of these calculations are necessary.

The following condition will be listed on the ATCs 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 ATCs 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 beam 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 ATCs 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.

- 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 ATCs 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)]

60.759: This section lists the specifications for active collection systems. The following conditions will be listed on the ATCs 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,  $L_0$ , 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. [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)]
- For each interior wellhead, 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  $\pm 10$  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)]
- Control system VOC emissions shall be determined by Method 25, 25C, or Method 18. 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)]

## **Rule 4002 National Emission Standards for Hazardous Air Pollutants**

This landfill is currently subject to the requirements of 40 CFR 63 Subpart AAAA for Municipal Solid Waste Landfills.

### § 63.1930 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste (MSW) landfills. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR part 60, subpart Cc or WWW and requires timely control of bioreactors.

This subpart also requires such landfills to meet the startup, shutdown, and malfunction (SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges.

It also includes additional reporting requirements.

§ 63.1935 Am I subject to this subpart?

This municipal solid waste landfill facility has operated since November 8, 1987 and is a Major Source. Therefore this facility is subject to the requirements of Subpart AAAAA.

§ 63.1940 What is the affected source of this subpart?

Per this section, the entire facility is considered the affected source.

§ 63.1945 When do I have to comply with this subpart?

Since this facility is an existing affected source, it must comply with this subpart starting January 16, 2004.

§ 63.1947 When do I have to comply with this subpart if I own or operate a bioreactor?

This section requires the bioreactor landfill to comply with this subpart by the dates specified in Sections 63.1945(a) or (b). Waste Management must install and operate a collection and control system that meets the criteria in 40 CFR 60.752(b)(2)(v) which has already been proposed in the previous project.

Since this landfill is an existing affected source, and they are initiating liquids after January 16, 2006, Waste Management must:

- (1) Install the gas collection and control system for the bioreactor before initiating liquids addition.
- (2) Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If Waste Management chooses to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content, use the procedures in 63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.

Waste Management has already installed an operational gas collection and control system and therefore this requirement has been satisfied.

§ 63.1950 When am I no longer required to comply with this subpart?

This section states Waste Management no longer is required to comply with this subpart when the facility is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW, or the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to the landfill.

The following conditions will be listed on the ATC's to ensure compliance:

C-283-22-16:

- The non-bioreactor portion of the landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950]

C-283-25-2:

- The landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950]

§ 63.1952 When am I no longer required to comply with the requirements of this subpart if I own or operate a bioreactor?

This section states Waste Management no longer is required to comply with this subpart when:

- (a) The affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii).

or

- (b) The bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, have permanently ceased adding liquids to the bioreactor, and have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the APCO as provided in 40 CFR 60.757(d).

The following condition will be listed on the ATC C-283-22-15 to ensure compliance:

- The permittee is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA for the bioreactor provided the conditions in paragraphs (a) or (b) are met: (a) the affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii) of part 60, subpart WWW; (b) the bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, subpart WWW and has permanently ceased adding liquids to the bioreactor, and have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the APCO as provided in 40 CFR 60.757(d) of subpart WWW. [40 CFR 63.1952(a) and (b)]

### § 63.1955 What requirements must I meet?

This section states that the non-bioreactor landfill must comply with the following:

1. 40 CFR 60 Subpart WWW,
2. 40 CFR 63.1960 through 63.1985 if the facility is required to install a collection and control system

Since the facility is already subject to Subpart WWW and will comply with sections 63.1960 through 63.1985 below, compliance is assured for the non-bioreactor portions.

This section also states that bioreactors with a design capacity equal to or greater than 2.5 million Mg and 2.5 million cubic meter, that have not permanently closed, must comply with the following:

1. 40 CFR 60 Subpart WWW
2. the requirements of 63.1960 through 63.1985 and with the general provisions of this part specified in table 1 of this subpart
3. the general provisions specified in Table 1 of this subpart and 63.190 through 63.1985 starting on the date required to install the gas collection and control system and must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area.

The following condition will be listed on ATC C-283-22-16 to ensure compliance:

- For the bioreactor portions, the permittee shall comply with the general provisions specified in Table 1 of 40 CFR Part 63 Subpart AAAA and 63.1960 through 63.1985 starting on the date required to install the gas collection and control system and must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area. [40 CFR 63.1955(b) and (d)(2)]

### Sections 63.1960

This section states compliance is determined in the same manner as 40 CFR Part 60 Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence.

Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, Waste Management has failed to meet the control device operation conditions described in this subpart and have deviated from the requirements of this subpart. Finally, Waste Management must develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

The following condition will be listed on the ATCs to ensure compliance:

- Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960]

### Section 63.1980

This section states records and reports must be kept:

- (a) as specified in 40 CFR Part 60, Subpart WWW. However, the annual report described in Section 60.757(f) must be submitted every 6 months.
- (b) As specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.
- (d) For bioreactors at existing affected sources, Waste Management must submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart.
- (f) If a semiannual compliance report for the bioreactor is required as well as a semiannual compliance report for the conventional portion of the same landfill, submittal may be delayed of a subsequent semiannual compliance report for the bioreactor according to paragraphs (f)(1) through (3) of this section so that the reports may be submitted on the same schedule.
  - (1) After submittal of the initial semiannual compliance report and performance test results for the bioreactor, Waste Management may delay of the submittal of the subsequent semiannual compliance report for the bioreactor until the date of the initial or subsequent semiannual compliance report is due for the conventional portion of the landfill.
  - (2) Waste Management may delay submittal of the subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months.
  - (3) After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due.
- (f) If any liquids other than leachate are added in a controlled fashion to the waste mass and do not comply with the bioreactor requirements in 63.1947, 63.1955(c) and 63.1980(c) through (f) of this subpart, Waste Management must keep a

record of calculations showing that the percent moisture by weight expected in the waste mass to which liquid is added is less than 40 percent. The calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation, and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances calculations can be used. Waste Management must document the calculations and the basis of any assumptions. Keep the record of the calculations until liquids addition is ceased.

- (g) If Waste Management calculates moisture content to establish the date the bioreactor is required to begin operating the collection and control system under 63.1947(a)(2) or (c)(2), keep a record of the calculations including the information specified in paragraph (g) of this section for 5 years. Within 90 days after the bioreactor achieves 40 percent moisture content, report the results of the calculation, the date the bioreactor achieved 40 percent moisture content by weight, and the date planned to begin collection and control system operation.

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

- The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)]
- The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(e)]
- If a semiannual compliance report for the bioreactor is required as well as a semiannual compliance report for the conventional portion of the same landfill, submittal may be delayed of a subsequent semiannual compliance report for the bioreactor according to the following so that the reports may be submitted on the same schedule: (1) After submittal of the initial semiannual compliance report and performance test results for the bioreactor, the permittee may delay of the submittal of the subsequent semiannual compliance report for the bioreactor until the date of the initial or subsequent semiannual compliance report is due for the conventional portion of the landfill; (2) The permittee may delay submittal of the subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months; (3) After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due. [40 CFR 63.1980(f)]

### **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.

The enclosed system on the flare will minimize visible emissions. Since the flare triggers BACT for PM10, permit conditions have been included requiring that the flare operate in a smokeless manner ensuring a maximum visible emission rate of ¼ Ringelmann or 5% opacity. Air contaminants released into the atmosphere, which are greater than these visible emission limits, are not expected.

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.

Air contaminants released into the atmosphere, which cause a public nuisance, are not expected.

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.

This project does not result in an increase of fuel to the flare or an increase in the amount of waste accepted at the landfill. Therefore a health risk assessment is not necessary and no further risk analysis is required.

### **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<sub>10</sub> Emission Factor: 0.008 lb-PM<sub>10</sub>/MMBtu  
 Percentage of PM as PM<sub>10</sub> in Exhaust: 100%

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

$$GL = 0.006 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Rule 4201			
Permit	Pollutant	Emission Factor	PM Concentration
C-283-22-16 and C-283-25-2	PM <sub>10</sub>	0.008 lb-PM <sub>10</sub> /MMBtu	0.006 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<sub>2</sub>)
- 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO<sub>2</sub>)
- Ten pounds per hour of combustion contaminants as defined in Rule 1020 and derived from the fuel.

<b>District Rule 4301 Limits</b>			
Pollutant	NO <sub>2</sub>	Total PM	SO <sub>2</sub>
C-283-22-16 and C-283-25-2 (lb/hr)	5.03	0.67	3.80
Rule Limit (lb/hr)	140	10	200

The particulate emissions from the flare will not exceed 0.1 gr/dscf at 12% CO<sub>2</sub> or 10 lb/hr. Further, the emissions of SO<sub>x</sub> and NO<sub>x</sub> will not exceed 200 lb/hr or 140 lb/hr, respectively.

Therefore, continued 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 (NO<sub>x</sub>) 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 Soil Decontamination Operations**

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

According to the applicant, the facility measures every load of Class II soil entering the facility, as prescribed in Section 3.4 of this rule. The soil will only be used as alternative daily cover if the reading is below 50 ppm by weight. Otherwise, the soil is disposed as waste.

Therefore, other than the requirement below, both landfills C-283-22 and '25 are not subject to the requirements of this rule. The following conditions will ensure compliance:

- Total combined clean (< 50 ppm by weight VOC) soil cover usage rate of C-283-22 and '25 shall not exceed 6000 tons per day. [District NSR Rule] Y
- Soil with VOC content of 50 ppm by weight or greater shall not be used as daily cover. [District Rule 4651] Y
- Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil VOC content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 4651] Y

### **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<sub>2</sub>, on a dry basis averaged over 15 consecutive minutes.

Per the applicant, the flare LFG will contain the following H<sub>2</sub>S concentrations:

C-283-22-16 & '25-2 = 150 ppmv H<sub>2</sub>S = 150 ppmv SO<sub>x</sub> (as SO<sub>2</sub>)

Therefore, compliance with District Rule 4801 requirements is expected.

### **Rule 8011 General Requirements**

This rule contains general requirements pertaining to all Regulation XIII prohibitions. Applicable sections of Rule 8011 are referenced from the specific prohibitory rules. Therefore, compliance with Rules 8031, 8041, and 8071, as evaluated below, will meet the requirements of Rule 8011.

## **Rule 8031 Bulk Materials**

This rule limits Visible Dust Emissions (VDE) from bulk material handling operations to a maximum 20% opacity. Section 5, Table 8031-1, prescribes the required control measures.

Per Section 4.2 of this rule, the "spreading of landfill cover" is exempt from the requirements of this rule. Therefore, with the exception of spreading landfill cover, the following are applicable:

### **Handling of Bulk Materials:**

Table 8031-1, Section A, prescribes the following control measures for handling of bulk materials:

- a. *Apply water or chemical/organic stabilizers/suppressants sufficient to limit Visible Dust Emissions to 20% opacity or;*
- b. *Construct and maintain wind barriers sufficient to limit Visible Dust Emissions to 20% opacity and with less than 50% porosity. If utilizing wind fences or barriers, control measure (a) shall also be implemented.*

The following condition will be placed on the permits to ensure compliance:

- Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031]

### **Storage of Bulk Materials:**

Table 8031-1, Section B, prescribes the following control measures for storage of bulk materials:

- a) *When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or*
- b) *Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or*
- c) *Construct and maintain wind barriers sufficient to limit Visible Dust Emissions to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit Visible Dust Emissions to 20% opacity; or*
- d) *Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.*

The following condition will be placed in the permits ensure compliance:

- When storing bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, all bulk material piles shall also be either maintained with a stabilized surface as defined in Section 3.58 of District Rule 8011, or shall be protected with suitable covers or barriers as prescribed in Table 8031-1, Section B, of District Rule 8031. [District Rules 8011 and 8031]

**On-Site Transporting of Bulk Materials:**

Table 8031-1, Section C, prescribes the following control measures for on-site transporting of bulk materials:

- a) Limit vehicular speed while traveling on the work site sufficient to limit Visible Dust Emissions to 20% opacity; or*
- b) Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road sufficient to limit Visible Dust Emissions to 20% opacity, or*
- c) Apply water to the top of the load sufficient to limit Visible Dust Emissions to 20% opacity, or*
- d) Cover haul trucks with a tarp or other suitable cover.*

The following condition will be placed on the permits to ensure compliance:

- Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031]

**Off-Site Transporting of Bulk Materials:**

Table 8031-1 Section D, prescribes the following control measures for off-site transporting of bulk materials:

- a) Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and*
- b) Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and*
- c) Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit Visible Dust Emissions to 20% opacity; or cover haul trucks with a tarp or other suitable cover.*

No off-site transporting of bulk materials is expected for this landfill operation. Therefore, this section is not applicable.

**Outdoor Transport of Bulk Materials with a Chute or Conveyor:**

Table 8031-1, Section E, prescribes the following control measures for outdoor transport of bulk materials with a chute or conveyor:

- a. *Fully enclose the chute or conveyor; or*
- b. *Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or*
- c. *Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.*

Per the applicant, there are no outdoor chutes or conveyors at this facility; therefore, this requirement is not applicable.

**Rule 8041 Carryout and Trackout**

This rule applies to all sites that are subject to any of the following rules where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas).

This rule requires an owner/operator to sufficiently prevent or cleanup carryout and trackout as specified in sections 5.1 through 5.9. In addition to the specific requirements of this rule, the facility shall comply with all other applicable requirements of Regulation VIII.

The following condition will be placed on the permits to ensure compliance:

- An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Rule 8041 or Rule 8011. [District Rules 8041 and 8011]

**Rule 8071 Unpaved Vehicle/Equipment Traffic Areas**

The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas. Section 5.1 of this rule requires implementation of at least one specific control measure for Visible Dust Emissions whenever the Average Annual Daily Trips (AADT) will exceed 50, Vehicle Daily Trips (VDT) will exceed 150, VDT with 3 or more axles will exceed 25, or when 1000 or more vehicles will park or travel in the area in a given day. Specified control measures are:

- *Implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements);*
- *Watering;*
- *Uniform layer of washed gravel;*
- *Chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications;*
- *Vegetative materials;*
- *Paving;*
- *Roadmix;*
- *Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.*

Section 5.2 requires that one or more specific control measures be implemented on each day that 50 or more VDT, or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area. The following conditions will be placed on the permits to ensure compliance:

- One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011]
- On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071]

Section 5.3 requires an owner/operator to restrict access and periodically stabilize a disturbed surface area whenever a site becomes inactive to comply with the conditions for a stabilized surface as defined in Rule 8011. The following condition will be placed on the permits to ensure compliance:

- Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011]

Section 6.0 of this rule requires the owner/operator to comply with the recordkeeping requirements specified in Rule 8011. The following condition, previously mentioned, will be placed on the permits to ensure compliance:

- Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011]

### **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 California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

### **Greenhouse Gas (GHG) Significance Determination**

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions as there will not be an increase in annual fuel use in this project. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

**District CEQA Findings**

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

**IX. Recommendation**

Issue Authority to Construct (ATC) permits C-283-22-16 and '25-2 subject to the permit conditions listed in Appendix E.

**X. Billing Information**

There is no increase in total facility acreage as described in the Conditional Use Permit. Therefore, the fee will remain the same for the entire facility.

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-283-22-16	3020-12-U	499 total facility acres per CUP	\$8,736
C-283-25-2	999-99	499 total facility acres per CUP	\$0

**Appendices**

- A ATCs C-283-22-15 and '25-0
- B BACT Guideline 1.4.3 and Top Down BACT Analysis
- C QNEC Calculations
- D Certificate of Conformity
- E Draft ATCs

**APPENDIX A**

**ATCs C-283-22-15 and '25-0**



## AUTHORITY TO CONSTRUCT

PERMIT NO: C-283-22-15

ISSUANCE DATE: 05/15/2008

LEGAL OWNER OR OPERATOR: CHEMICAL WASTE MANAGEMENT, INC  
MAILING ADDRESS: PO BOX 471  
KETTLEMAN CITY, CA 93239-0471

LOCATION: 35251 OLD SKYLINE ROAD  
KETTLEMAN CITY, CA 93239

**EQUIPMENT DESCRIPTION:**

MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE: SHARE WASTE AND SOIL THROUGHPUT LIMITATIONS WITH C-283-25

### CONDITIONS

1. 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 NSR Rule] Federally Enforceable Through Title V Permit
2. 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. Authority to Construct (ATC) C-283-22-13 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. 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 1/4 or 5% opacity. [District NSR Rule and Rule 4101] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit

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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

  
 DAVID WARNER, Director of Permit Services  
 C-283-22-15 Iss. 15 2008 11 44AM - 11:40C . Joint Inspection NOT Required

6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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. [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit
14. 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
15. 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 APCO for approval. [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

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16. 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
17. 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
18. 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
19. 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
20. 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
21. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(f)] Federally Enforceable Through Title V Permit
22. 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
23. 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)] Federally Enforceable Through Title V Permit
24. 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
25. 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
26. 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
27. For each interior wellhead, 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

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28. 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  $\pm 10$  percent. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit
29. 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)] Federally Enforceable Through Title V Permit
30. 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
31. 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:  $(\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}})/\text{NMOC}_{\text{in}}$ . 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
32. 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
33. 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), (c)] Federally Enforceable Through Title V Permit
34. 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
35. 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
36. 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
37. Permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

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38. 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
39. 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 oC 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
40. 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
41. 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
42. 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
43. 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
44. VOC emissions from the flare and landfill shall not exceed 339.5 lb-VOC/day. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Emissions from the flare shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu, 36.3 lb-SOx/day, 0.0010 lb-PM10/hr/scf CH<sub>4</sub>, or 0.22 lb-CO/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
46. The combined flowrate of collected B-17 and B-19 landfill gas into the flare shall not exceed 2,500 scfm. [District NSR Rule] Federally Enforceable Through Title V Permit
47. Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O<sub>2</sub> as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NOx/MMBtu, 0.0164 lb-SOx/MMBtu, 0.0044 lb-PM10/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
49. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
50. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit
51. SOx emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SOx emission rate based on the correlation between landfill gas sulfur concentration and associated SOx emission rate demonstrated during startup. [District Rule 1081] Federally Enforceable Through Title V Permit

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52. Testing to demonstrate compliance with the daily SO<sub>x</sub> emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SO<sub>x</sub> emissions, may be reduced to semi-annually. If a semi-annual test shows violation of the SO<sub>x</sub> emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to semi-annually. [District NSR Rule] Federally Enforceable Through Title V Permit
53. 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 H<sub>2</sub>S and mercaptans, or an equivalent method approved by the District. [District Rule 1081] Federally Enforceable Through Title V Permit
54. Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
55. Total combined Class II/III waste material acceptance rate of C-283-22 and '-25 shall not exceed 620,000 tons per year. [District NSR Rule] Federally Enforceable Through Title V Permit
56. Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
57. Total combined clean (<50 ppm by weight VOC) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
58. Total PM<sub>10</sub> emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District NSR Rule] Federally Enforceable Through Title V Permit
59. Soil with VOC content of 50 ppm by weight or greater shall not be used as daily cover. [District Rule 4651] Federally Enforceable Through Title V Permit
60. Source testing on the flare shall be performed to demonstrate compliance with the flare NO<sub>x</sub> and CO limits, and the NMOC destruction efficiency of 98%, or no more than 20 ppmvd @ 3% O<sub>2</sub> as methane, as required by this permit shall be conducted annually. [District NSR Rule] Federally Enforceable Through Title V Permit
61. Flare NMOC emissions shall be conducted using USEPA Test Method 18 or 25. [District Rule 1081] Federally Enforceable Through Title V Permit
62. Source testing for flare NO<sub>x</sub> emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081] Federally Enforceable Through Title V Permit
63. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit
64. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District NSR Rule] Federally Enforceable Through Title V Permit
65. The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
66. 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 NSR Rule] Federally Enforceable Through Title V Permit
67. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
68. 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 NSR Rule] Federally Enforceable Through Title V Permit
69. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District NSR Rule] Federally Enforceable Through Title V Permit

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70. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit
71. 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
72. The operator shall record emission control device source tests (emissions of CO, NO<sub>x</sub>, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit
73. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 4651] Federally Enforceable Through Title V Permit
74. 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 4102 and NSR] Federally Enforceable Through Title V Permit
75. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District NSR Rule] Federally Enforceable Through Title V Permit
76. 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 NSR Rule] Federally Enforceable Through Title V Permit
77. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
78. Records of daily landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily SO<sub>x</sub> emissions shall be maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
79. 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 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
80. 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
81. 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
82. 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
83. 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

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84. 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  $k$ ,  $L_0$ , 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
85. 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
86. 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
87. The permittee is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA for the bioreactor provided the conditions in paragraphs (a) or (b) are met: (a) the affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii) of part 60, subpart WWW; (b) the bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, subpart WWW and has permanently ceased adding liquids to the bioreactor, and have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the APCO as provided in 40 CFR 60.757(d) of subpart WWW. [40 CFR 63.1952(a) and (b)] Federally Enforceable Through Title V Permit
88. For the bioreactor portions, the permittee shall comply with the general provisions specified in Table 1 of 40 CFR Part 63 Subpart AAAA and 63.1960 through 63.1985 starting on the date required to install the gas collection and control system and must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area. [40 CFR 63.1955(b) and (d)(2)] Federally Enforceable Through Title V Permit
89. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960] Federally Enforceable Through Title V Permit

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90. The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)] Federally Enforceable Through Title V Permit
91. The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(c)] Federally Enforceable Through Title V Permit
92. If a semiannual compliance report for the bioreactor is required as well as a semiannual compliance report for the conventional portion of the same landfill, submittal may be delayed of a subsequent semiannual compliance report for the bioreactor according to the following so that the reports may be submitted on the same schedule: (1) After submittal of the initial semiannual compliance report and performance test results for the bioreactor, the permittee may delay of the submittal of the subsequent semiannual compliance report for the bioreactor until the date of the initial or subsequent semiannual compliance report is due for the conventional portion of the landfill; (2) The permittee may delay submittal of the subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months; (3) After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due. [40 CFR 63.1980(f)] Federally Enforceable Through Title V Permit
93. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
94. The landfill surface shall be monitored 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
95. 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. [District Rule 2201] Federally Enforceable Through Title V Permit
96. 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
97. 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
98. 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
99. 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)] Federally Enforceable Through Title V Permit
100. 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)] Federally Enforceable Through Title V Permit

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101. 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
102. 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
103. 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
104. The non-bioreactor portion of the landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WW. [40 CFR 63.1950] Federally Enforceable Through Title V Permit
105. Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit
106. Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit
107. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011] Federally Enforceable Through Title V Permit
108. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Rule 8041 or Rule 8011. [District Rules 8041 and 8011] Federally Enforceable Through Title V Permit
109. One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011] Federally Enforceable Through Title V Permit
110. On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071] Federally Enforceable Through Title V Permit
111. Whenever any portion of the site becomes inactive, permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011] Federally Enforceable Through Title V Permit
112. The flare and gas collection system may be shut down when there is an insufficient amount of landfill gas to operate on. During the shutdown period, all gas collection system vents shall be closed and no emissions shall occur through the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

113. During the shutdown of the gas collection system, surface testing to measure the methane concentration at the surface of the landfill shall be conducted at least once every week using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). After demonstrating compliance on four consecutive tests, the testing frequency shall be at least once every month. [District Rule 2201] Federally Enforceable Through Title V Permit
114. During the shutdown of the gas collection system, if the methane concentration measured during weekly or monthly surface testing exceeds 500 parts per million above background at the surface of the landfill, the testing frequency shall be at least once every other day. After demonstrating compliance on four consecutive tests, the testing frequency shall revert to at least once every week. [District Rule 2201] Federally Enforceable Through Title V Permit



## AUTHORITY TO CONSTRUCT

PERMIT NO: C-283-25-0

ISSUANCE DATE: 05/15/2008

LEGAL OWNER OR OPERATOR: CHEMICAL WASTE MANAGEMENT, INC

MAILING ADDRESS: PO BOX 471  
KETTLEMAN CITY, CA 93239-0471

LOCATION: 35251 OLD SKYLINE ROAD  
KETTLEMAN CITY, CA 93239

**EQUIPMENT DESCRIPTION:**

MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22

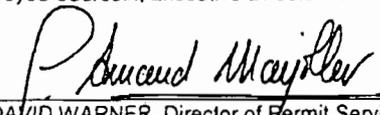
### CONDITIONS

1. 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 NSR Rule] Federally Enforceable Through Title V Permit
2. 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. Authority to Construct (ATC) C-283-22-13 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. 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 1/4 or 5% opacity. [District NSR Rule and Rule 4101] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit

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**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

  
 DAVID WARNER, Director of Permit Services  
C-283-25-0 May 15 2008 1142412 - 1142412 Job Inspection NOT Required

6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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. [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit
14. 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
15. 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 APCO for approval. [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

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16. 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(c)] Federally Enforceable Through Title V Permit
17. 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
18. 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
19. 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
20. 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
21. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(f)] Federally Enforceable Through Title V Permit
22. 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
23. 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)] Federally Enforceable Through Title V Permit
24. 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
25. 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
26. 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
27. For each interior wellhead, 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

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28. 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  $\pm 10$  percent. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit
29. 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)] Federally Enforceable Through Title V Permit
30. 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
31. 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:  $(\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / \text{NMOC}_{\text{in}}$ . 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
32. 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
33. 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
34. 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
35. 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
36. 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
37. Permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

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38. 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
39. 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 °C 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
40. 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
41. 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
42. 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
43. 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
44. VOC emissions from the flare and landfill shall not exceed 240.7 lb-VOC/day. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Emissions from the flare shall not exceed any of the following limits: 0.05 lb-NO<sub>x</sub>/MMBtu, 36.3 lb-SO<sub>x</sub>/day, 0.0010 lb-PM<sub>10</sub>/hr/scf CH<sub>4</sub>, or 0.22 lb-CO/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
46. The combined flowrate of collected B-17 and B-19 landfill gas into the flare shall not exceed 2,500 scfm. [District NSR Rule] Federally Enforceable Through Title V Permit
47. Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O<sub>2</sub> as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NO<sub>x</sub>/MMBtu, 0.0164 lb-SO<sub>x</sub>/MMBtu, 0.0044 lb-PM<sub>10</sub>/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
49. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
50. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit
51. SO<sub>x</sub> emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SO<sub>x</sub> emission rate based on the correlation between landfill gas sulfur concentration and associated SO<sub>x</sub> emission rate demonstrated during startup. [District Rule 1081] Federally Enforceable Through Title V Permit

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52. Testing to demonstrate compliance with the daily SO<sub>x</sub> emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SO<sub>x</sub> emissions, may be reduced to semi-annually. If a semi-annual test shows violation of the SO<sub>x</sub> emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to semi-annually. [District NSR Rule] Federally Enforceable Through Title V Permit
53. 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 H<sub>2</sub>S and mercaptans, or an equivalent method approved by the District. [District Rule 1081] Federally Enforceable Through Title V Permit
54. Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
55. Total combined Class II/III waste material acceptance rate of C-283-22 and '-25 shall not exceed 620,000 tons per year. [District NSR Rule] Federally Enforceable Through Title V Permit
56. Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
57. Total combined clean (<50 ppm by weight VOC) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
58. Total PM<sub>10</sub> emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District NSR Rule] Federally Enforceable Through Title V Permit
59. Soil with VOC content of 50 ppm by weight or greater shall not be used as daily cover. [District Rule 4651] Federally Enforceable Through Title V Permit
60. Source testing on the flare shall be performed to demonstrate compliance with the flare NO<sub>x</sub> and CO limits, and the NMOC destruction efficiency of 98%, or no more than 20 ppmvd @ 3% O<sub>2</sub> as methane, as required by this permit shall be conducted within 60 days of startup and annually thereafter. [District NSR Rule] Federally Enforceable Through Title V Permit
61. Flare NMOC emissions shall be conducted using USEPA Test Method 18 or 25. [District Rule 1081] Federally Enforceable Through Title V Permit
62. Source testing for flare NO<sub>x</sub> emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081] Federally Enforceable Through Title V Permit
63. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit
64. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District NSR Rule] Federally Enforceable Through Title V Permit
65. The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
66. 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 NSR Rule] Federally Enforceable Through Title V Permit
67. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
68. 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 NSR Rule] Federally Enforceable Through Title V Permit
69. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District NSR Rule] Federally Enforceable Through Title V Permit

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70. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit
71. 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
72. The operator shall record emission control device source tests (emissions of CO, NO<sub>x</sub>, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit
73. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 4651] Federally Enforceable Through Title V Permit
74. 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 4102 and NSR] Federally Enforceable Through Title V Permit
75. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District NSR Rule] Federally Enforceable Through Title V Permit
76. 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 NSR Rule] Federally Enforceable Through Title V Permit
77. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
78. Records of daily landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily SO<sub>x</sub> emissions shall be maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
79. 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 and 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
80. 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
81. 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
82. 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
83. 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

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84. 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  $k$ ,  $L_0$ , 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
85. 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
86. 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
87. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(c)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960] Federally Enforceable Through Title V Permit
88. The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table I of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)] Federally Enforceable Through Title V Permit
89. The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(c)] Federally Enforceable Through Title V Permit
90. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
91. The landfill surface shall be monitored 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

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92. 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. [District Rule 2201] Federally Enforceable Through Title V Permit
93. 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
94. 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
95. 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
96. 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)] Federally Enforceable Through Title V Permit
97. 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)] Federally Enforceable Through Title V Permit
98. 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
99. 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(l)] Federally Enforceable Through Title V Permit
100. 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
101. The landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950] Federally Enforceable Through Title V Permit
102. Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit
103. Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

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104. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011] Federally Enforceable Through Title V Permit
105. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Rule 8041 or Rule 8011. [District Rules 8041 and 8011] Federally Enforceable Through Title V Permit
106. One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011] Federally Enforceable Through Title V Permit
107. On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071] Federally Enforceable Through Title V Permit
108. Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011] Federally Enforceable Through Title V Permit
109. The flare and gas collection system may be shut down when there is an insufficient amount of landfill gas to operate on. During the shutdown period, all gas collection system vents shall be closed and no emissions shall occur through the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit
110. During the shutdown of the gas collection system, surface testing to measure the methane concentration at the surface of the landfill shall be conducted at least once every week using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). After demonstrating compliance on four consecutive tests, the testing frequency shall be at least once every month. [District Rule 2201] Federally Enforceable Through Title V Permit
111. During the shutdown of the gas collection system, if the methane concentration measured during weekly or monthly surface testing exceeds 500 parts per million above background at the surface of the landfill, the testing frequency shall be at least once every other day. After demonstrating compliance on four consecutive tests, the testing frequency shall revert to at least once every week. [District Rule 2201] Federally Enforceable Through Title V Permit

**APPENDIX B**

**BACT Guideline 1.4.3 and Top Down BACT Analysis**

**Per » B A C T » Bact Guideline.asp?category Level1=1&category Level2=4&category Level3=3&last Update=1 » 8 :**

INSTRUCTIONS: click on "Details" for Permit Specific BACT Determinations.

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**Best Available Control Technology (BACT ) Guideline 1.4.3  
Last Update: 1/8/2001**

**Landfill Gas Vapor Collection System**

<b>Pollutant</b>	<b>Achieved in Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	0.06 lb-NOx/MMBtu	0.05 lb/MMBtu	
PM10	Air assist fan	Steam injection	
SOx		Wet Scrubber with 98% control efficiency	
VOC	Flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O2		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

**This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Details Page.**

**TOP DOWN BACT ANALYSIS**

**I. BACT Analysis for C-283-22-16 and '25-2:**

BACT is required for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions.

**a. Step 1 - Identify All Possible Control Technologies**

BACT guideline 1.4.3 identifies the following control technologies:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NO <sub>x</sub>	0.06 lb/MMBtu	0.05 lb/MMBtu	
PM <sub>10</sub>	Air assist fan	Steam injection	
SO <sub>x</sub>		Wet Scrubber with 98% control efficiency	
VOC	Flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O <sub>2</sub>		

**b. Step 2 - Eliminate technologically infeasible options**

There are no technologically infeasible options for NO<sub>x</sub>, SO<sub>x</sub>, or VOC.

According to the flare manufacturer, Parnel Biogas, air assist is not needed for this flare as it will run at a high temperature sufficient to achieve the required destruction efficiency. The flare shall run smokelessly and be subject to a 5% opacity limit to ensure proper operation.

**c. Step 3 - Rank remaining options by control effectiveness**

NOx

Rank	Control Technology	Achieved in Practice
1	0.05 lb/MMBtu	N
2	0.06 lb/MMBtu	Y

SOx

Rank	Control Technology	Achieved in Practice
1	Wet Scrubber with 98% control efficiency	N

PM10

Rank	Control Technology	Achieved in Practice
1	Steam injection	N
2	Air Assist fan	Y

VOC

Rank	Control Technology	Achieved in Practice
1	Flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O2	Y

There are no remaining control technologies for NOx, SOx, PM10 or VOC.

#### **d. Step 4 - Cost Effectiveness Analysis**

##### NO<sub>x</sub>

See the pages following the Top Down BACT Analysis for a breakdown of the values shown below.

##### Current Flare (0.06 lb-NO<sub>x</sub>/MMBtu)

Total annualized capital cost = \$94,172/year

Total annual operating cost = \$23,495/year

Total annual costs = \$117,666/year

Flare uncontrolled emissions = 11.95 ton-NO<sub>x</sub>/year

##### Zule Flare (0.05 lb-NO<sub>x</sub>/MMBtu)

Total annualized capital cost = \$198,183/year

Total annual operating cost = \$199,187/year

Total annual costs = \$397,370/year

Flare uncontrolled emissions = 4.98 ton-NO<sub>x</sub>/year

##### Cost Effectiveness

$$\text{Cost Effectiveness} = \frac{(\text{COST}_{0.05 \text{ lb-NO}_x/\text{MMBtu flare}} - \text{COST}_{0.06 \text{ lb-NO}_x/\text{MMBtu flare}}) \div}{(\text{EMISSION}_{0.06 \text{ lb-NO}_x/\text{MMBtu flare}} - \text{EMISSION}_{0.05 \text{ lb-NO}_x/\text{MMBtu flare}})}$$

$$\text{Cost Effectiveness} = (\$397,370 - \$117,666) \div (11.95 - 4.98)$$

$$\text{Cost Effectiveness} = \$40,121/\text{ton-NO}_x$$

The analysis demonstrates that the 0.05 lb-NO<sub>x</sub>/MMBtu flare results in a cost effectiveness which exceeds the District's Guideline of \$24,500/ton-NO<sub>x</sub>.

## SOx

See the pages following the Top Down BACT Analysis for a breakdown of the values shown below.

### SulfaTreat System

Total annualized capital cost = \$98,729/year

Total annual operating cost = \$166,934/year

Total annual costs = \$265,663/year

Emission reductions = 13,155 lb/year x 0.98 x ton/2000 lb = 6.45 tons/year

Cost/ton SOx = \$265,663/year ÷ 6.45 ton/year = \$41,188/ton SOx

Since the cost per ton of SOx is greater than the cost effectiveness threshold of \$18,300/ton SOx, a SulfaTreat system is not cost effective.

### LO-CAT System

Total annualized capital cost = \$397,750/year

Total annual operating cost = \$210,073/year

Total annual costs = \$607,822/year

Emission reductions = 13,155 lb/year x 0.98 x ton/2000 lb = 6.45 tons/year

Cost/ton SOx = \$607,822/year ÷ 6.45 ton/year = \$94,236/ton SOx

Since the cost per ton of SOx is greater than the cost effectiveness threshold of \$18,300/ton SOx, a LO-CAT system is not cost effective.

Iron Sponge System

Total annualized capital cost = \$105,900/year

Total annual operating cost = \$229,627/year

Total annual costs = \$335,527/year

Emission reductions = 13,155 lb/year x 0.98 x ton/2000 lb = 6.45 tons/year

Cost/ton SO<sub>x</sub> = \$335,527/year ÷ 6.45 ton/year = \$52,020/ton SO<sub>x</sub>

Since the cost per ton of SO<sub>x</sub> is greater than the cost effectiveness threshold of \$18,300/ton SO<sub>x</sub>, an iron sponge system is not cost effective.

## PM10

Steam injection into a blanket-lined, enclosed landfill flare is not a feasible option. This is due to moisture damage that may be caused to the flare insulating material. Ceramic fiber and moisture will cause premature failure of the blanket. In order for steam injection to be a feasible option, a refractory liner must be installed. According to Parnel Biogas, the additional cost of placing a refractory liner (i.e. Gunite, fire brick) in a typical 10' by 40' flare would be approximately \$125,000.

### Direct costs

Total Capital Investment (TCI) = \$125,000  
Sales tax = 3% of TCI = \$125,000 x 0.03 = \$3,750  
Freight = 5% of TCI = \$125,000 x 0.05 = \$6,250  
Sum = \$125,000 + \$3,750 + \$6,250 = \$135,000

$$\text{Total direct annual cost} = \$135,000 \times \left[ \frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = \$21,971/\text{year}$$

### Indirect annual costs

Administrative charges = 2% of TCI = \$125,000 x 0.02 = \$2,500  
Property tax = 1% of TCI = \$125,000 x 0.01 = \$1,250  
Insurance = 1% of TCI = \$125,000 x 0.01 = \$1,250  
Sum = \$2,500 + \$1,250 + \$1,250 = \$5,000

Assuming 100% emission reduction,

Emission reductions = 3,190 lb/year = 1.595 tons/year

Cost/ton PM10 = (\$21,971/year + \$5,000/year) ÷ 1.595 ton/year = \$16,910/ton PM10

Since the cost per ton of PM10 is greater than the cost effectiveness threshold of \$11,400/ton PM10, steam injection is not cost effective.

## VOC

The applicant is proposing the most effective control technology for VOC; therefore, a cost effectiveness analysis is not required.

### **e. Step 5 - Select BACT**

NO<sub>x</sub>: 0.06 lb/MMBtu is selected as BACT.

SO<sub>x</sub>: No control technology is selected as BACT.

PM<sub>10</sub>: No control technology is selected as BACT.

VOC: Flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O<sub>2</sub> is selected as BACT.

The flare manufacturer has guaranteed the flare will operate smokelessly even without air assist. The proposed flare will be a smokeless flare with a 5% opacity limit.

## **NO<sub>x</sub> COST EFFECTIVENESS ANALYSIS**

BACT Analysis Data for Kettleman

**SECTION B: ALTERNATE BASIC EQUIPMENT OR PROCESS<sup>1</sup>:**

Total Annual Cost of Current Flare (COST <sub>basic</sub> )	\$ 117,666.33	Sum of Current Flare's Equivalent Annual Control Equipment Cost (A) and Annual Operating Cost. (See pg. 2 and 4)
Total Annual Cost of Zule Flare (COST <sub>alt</sub> )	\$ 397,370.08	Sum of Zule Flare's Equivalent Annual Control Equipment Cost (A) and Annual Operating Cost. (See pg. 3 and 5)
Difference (COST <sub>alt</sub> -COST <sub>basic</sub> )	\$ 279,703.75	Difference of Total Alternate (Zule) flare and Current flare

<b>Emissions</b>	<b>NOx</b>	<b>(lb/day)</b>	<b>Single Flare (ton/yr)</b>	<b>Comments</b>
Proposed Emissions, Existing Flare Guaranteed Uncontrolled (lb/MMBTU), (EMISSION <sub>basic</sub> )	0.06	65.48	11.95	The emissions from the proposed basic equipment, without BACT.
Zule Flare Guaranteed Uncontrolled (lb/MMBTU), (EMISSION <sub>alt</sub> )	0.025	27.28	4.98	The emissions from the alternate basic equipment.
Difference (EMISSION <sub>basic</sub> -EMISSION <sub>alt</sub> )			6.97	

<b>Alternate Basic Equipment or Process:</b>			
Cost effectiveness (CE <sub>alt</sub> ) (\$/ton)	= (COST <sub>alt</sub> -COST <sub>basic</sub> ) / (EMISSION <sub>basic</sub> -EMISSION <sub>alt</sub> )		
Cost Effectiveness (CE <sub>alt</sub> ) (\$/ton)	\$ 279,703.75 /year	6.97 ton/year	\$40,121.03 /ton
SJVAPCD NOx Cost Effectiveness	\$24,500/ton Not Cost Effective		

<sup>1</sup>SJVAPCD BACT POLICY, GUIDANCE, November 9, 1999

**SECTION A: TECHNOLOGICALLY FEASIBLE ALTERNATIVES**

<b>Capital Cost (for Current Flare)</b>	<b>Amount</b>	<b>Unit Price</b>	<b>Total</b>	<b>Source</b>
Engineering (CQA, Drawings, Specs, asbuilts, etc)	1 each (ea)	\$50,000	\$50,000	SCS Engineers Estimate, see Sheet 2.
Permitting	1 lot	\$25,000	\$25,000	SCS Permitting Estimate, see Sheet 2.
<b>Installation Cost</b>				
Mobilize/Demobilize crew for flare	1 Lump Sum (LS)	\$20,000	\$20,000	SCS Construction Estimator, see Sheet 2.
Double containment electric sump at flare	1 ea	\$27,000	\$27,000	SCS Construction Estimator, see Sheet 2.
Install 2" HDPE FM and 2" airlines	200 Linear Feet (LF)	\$15	\$1,290	SCS Construction Estimator, see Sheet 2. Below grade in dedicated trench from sump at flare station to nearby leachate system.
Flare Station Survey for layout/ as builts	1 ea	\$3,000	\$3,000	SCS Construction Estimator, see Sheet 2.
Grade and 6" of rock flare area (area inside fence)	2,500 Square Feet (SF)	\$4	\$10,000	SCS Construction Estimator, see Sheet 2.
Concrete Work by Subcontractor	30 Cubic Yard (CY)	\$800	\$24,000	SCS Construction Estimator, see Sheet 2.
Install flare and blower skid, including flare station piping	1 ea	\$80,000	\$80,000	SCS Construction Estimator, see Sheet 2.
Flare station electrical	1 LUMP	\$25,000	\$25,000	SCS Construction Estimator, see Sheet 2.
Chain link fence, LF around flare station	250 LF	\$40	\$10,000	SCS Construction Estimator, see Sheet 2.
Start up	1 LUMP	\$15,000	\$15,000	SCS Construction Estimator, see Sheet 2.
Source Test	1 LUMP	\$35,000	\$35,000	SCS Construction Estimator, see Sheet 2.
Enclosed Flare System: Blower Systems, Dialout System, Blower to Skid, Blower Swap, Thermocouples, Shipping			\$232,970	Parnell Biogas, Inc. Order Form with Change Order.
Sales Tax	8.75%		\$20,385	California Sales tax of flare. Installation costs incorporate tax.
Total			\$578,645	Present value of the control equipment, including installation costs (P).
Equivalent Annual Control Equipment Capital Cost*			\$ 94,171.75	Equivalent Annual Control Equipment Capital Cost (A).
*SJVAPCD BACT Policy Section X(A)(1)				$A=P * (i(1+i)^n)/((1+i)^n-1)$ ; interest rate (i) = 0.10, equipment life (n) = 10 years

Capital Cost (for John Zink Ultra-low Emissions, ZULE Flare)	Amount	Unit Price	Total	Source
Engineering (CQA, Drawings, Specs, asbuilts, etc)	1 ea	\$75,000	\$75,000	SCS Engineers Estimate, see Sheet 5.
Permitting	1 lot	\$50,000	\$50,000	SCS Permitting Estimate, see Sheet 5.
<b>Installation Cost</b>				
Mobilize/Demobilize crew for flare	1 LS	\$20,000	\$20,000	SCS Construction Estimator, see Sheet 5.
Double containment electric sump at flare	1 ea	\$27,000	\$27,000	SCS Construction Estimator, see Sheet 5.
Install 2" HDPE FM and 2" airlines	250 LF	\$15	\$3,750	SCS Construction Estimator, see Sheet 5. Below grade in dedicated trench from sump at flare station to nearby leachate system.
Flare Station Survey for layout/ as builts	1 LS	\$3,000	\$3,000	SCS Construction Estimator, see Sheet 5.
Grade and 6" of rock flare area (area inside fence)	3,000 SF	\$4	\$12,000	SCS Construction Estimator, see Sheet 5.
Concrete Work by Subcontractor	50 CY	\$800	\$40,000	SCS Construction Estimator, see Sheet 5.
Install flare and blower skid, including flare station piping	1 ea	\$125,000	\$125,000	SCS Construction Estimator, see Sheet 5.
Flare station electrical	1 LUMP	\$35,000	\$35,000	SCS Construction Estimator, see Sheet 5.
Chain link fence, LF around flare station	300 LF	\$40	\$12,000	SCS Construction Estimator, see Sheet 5.
Start up	1 LUMP	\$25,000	\$25,000	SCS Construction Estimator, see Sheet 5.
Source Test	1 LUMP	\$40,000	\$40,000	SCS Construction Estimator, see Sheet 5.
Enclosed ZULE Blower Skid/Flare, shipping, and contractor mark-up	1 ea	\$689,655	\$689,655	John Zink Estimate, see Sheet 5.
Sales Tax	8.75%		\$60,345	California Sales tax of flare. Installation costs incorporate tax.
Total			\$1,217,750	Present value of the control equipment, including installation costs (P).
Equivalent Annual Control Equipment Capital Cost*			\$ 198,183.20	Equivalent Annual Control Equipment Capital Cost (A).
*SJVAPCD BACT Policy Section X(A)(1)				$A=P * (i(1+i)^n)/((1+i)^n-1)$ ; interest rate (i) = 0.10, equipment life (n) = 10 years

**SECTION A: TECHNOLOGICALLY FEASIBLE ALTERNATIVES**

Annual Operating Cost (for Current Flare)	Amount			Total/yr	Source
	Actual Charges	KiloWatts	Cost per KW/hr		
Electricity Costs					Actual cost from KHF Personnel. See Sheet 1.
Normal Months	812.5	4960	0.16		Actual cost from KHF Personnel. See Sheet 1.
May-Sep	970.9	4880	0.20		Actual cost from KHF Personnel. See Sheet 1.
Average			0.18		Actual cost from KHF Personnel. See Sheet 1.
Blower	HP	KiloWatts	Cost per KW/hr		
Turndown Gas Blower	10	7.46	\$0.18	\$ 11,763	Actual cost from KHF Personnel. See Sheet 1. Using aftermarket 10 HP blower.
Factory Gas Blower (not in use)	60	44.76	\$0.18	--	Actual cost from KHF Personnel. See Sheet 1. Site has been using smaller blower for turndown.
Miscellaneous Parts				\$ 1,000	Actual cost from KHF Personnel. See Sheet 1.
Engineering Test				\$ 2,000	Actual cost from KHF Personnel. See Sheet 1.
Source Test				\$ 6,000	Actual cost from KHF Personnel. See Sheet 1.
Subtotal				\$ 9,000	Actual cost from KHF Personnel. See Sheet 1.
Maintenance Costs					
Task	Man Hours	Frequency per Year	Cost/ Man Hr*	Operating Cost per year	Actual cost from KHF Personnel. See Sheet 1. *Average Tech Salary plus 30% for benefits.
Clean Burner Tips and Flame Arrestor	9	2	\$ 28.60	\$ 514.80	Actual cost from KHF Personnel. See Sheet 1. 3 guys for 3 hours includes confined space entry.
Lubricate Blowers	0.25	26	\$ 28.60	\$ 185.90	Actual cost from KHF Personnel. See Sheet 1.
Weekly flare inspection	0.5	52	\$ 28.60	\$ 743.60	Actual cost from KHF Personnel. See Sheet 1.
Non Routine Callouts	4	6	\$ 28.60	\$ 686.40	Actual cost from KHF Personnel. See Sheet 1.
Subtotal				\$ 2,130.70	Actual cost from KHF Personnel. See Sheet 1.
Sales Tax	8.75%		6,868	\$ 601	Assumed Sales Tax (assumes 30% of O&M is taxable)
Annual Operating Cost for Current Flare				\$ 23,494.59	Actual cost from KHF Personnel. See Sheet 1.

Annual Operating Cost (for ZULE Flare)	Amount			Total/yr	Source
	HP	KiloWatts	Cost per KW/hr		
Gas Blower	75	55.93	\$0.18	\$ 88,186	Operating Costs from WM. See Sheet 4. Assumes 200 hp blower is running at reduced load with VFD.
Combustion Air Blower	75	55.93	\$0.18	\$ 88,186	Operating Costs from WM. See Sheet 4. Assumes 100 hp blower is running at reduced load with VFD
Subtotal				\$ 176,373	Operating Costs from WM. See Sheet 4.
Miscellaneous Parts				\$ 5,000	Operating Costs from WM. See Sheet 4.
Source Test				\$ 8,000	Operating Costs from WM. See Sheet 4.
Subtotal				\$ 13,000	Operating Costs from WM. See Sheet 4.
Maintenance Costs	Man Hours	Frequency per year	Cost/Man hr*		Operating Costs from WM. See Sheet 4. 3 guys for 3 hours includes confined space entry. Average Tech Salary plus 30% for benefits*
	9	6	\$28.60	\$ 1,544	Operating Costs from WM. See Sheet 4.
	1	6	\$28.60	\$ 172	Operating Costs from WM. See Sheet 4.
	2	2	\$28.60	\$ 114	Operating Costs from WM. See Sheet 4.
	1	52	\$28.60	\$ 744	Operating Costs from WM. See Sheet 4.
	9	3	\$28.60	\$ 772	Operating Costs from WM. See Sheet 4.
	4		\$28.60	\$ 1,373	Operating Costs from WM. See Sheet 4.
Subtotal				\$ 4,719	Operating Costs from WM. See Sheet 4.
Sales Tax	8.75%		58,228	\$ 5,095	Assumed Sales Tax(assumes 30% of O&M is taxable)
Annual Operating Cost for Zule Flare				\$ 199,186.88	Operating Costs from WM. See Sheet 4.

**Sheet 1, KHF Parnel Flare  
Actual Operating Costs from KHF Personnel**

Electricity Costs					
Month	Site KWh usage	Actual Charges	Cost/Kwh		
Nov-10	4960	\$ 812.50	\$ 0.16	Normal months	
Sep-10	4880	\$ 970.90	\$ 0.20	May-Sept	
			\$ 0.18	Average	
Blower	HP	KiloWatts	Cost per KW/hr	Operating Cost per Year	Comments
Turndown Gas Blower	10	7.46	\$ 0.18	\$ 11,762.93	Using aftermarket 10 HP blower.
Factory Gas Blower (not in use)	60	44.76	\$ 0.18	\$ -	Site has been using smaller blower for turndown
			Subtotal	\$ 11,762.93	

Maintenance Costs					
Task	Man Hours	Frequency per Year	Cost/ Man Hr*	Operating Cost per year	* Average Tech Salary plus 30% for benefits
Clean Burner Tips and Flame Arrestor	9	2	\$ 28.60	\$ 514.80	3 guys for 3 hours includes confined space entry
Lubricate Blowers	0.25	26	\$ 28.60	\$ 185.90	
Weekly flare inspection	0.5	52	\$ 28.60	\$ 743.60	
Non Routine Callouts	4	6	\$ 28.60	\$ 686.40	
			Subtotal	\$ 2,130.70	

Parts Costs					
Miscellaneous Parts				\$ 1,000.00	
Engineering Test				\$ 2,000.00	
Source Test				\$ 6,000.00	
			Subtotal	\$ 9,000.00	
			Total	\$ 22,893.63	

## SHEET 2, CURRENT PARNEL BIOGAS ENCLOSED FLARE BUDGET ESTIMATE, 2,500 SCFM

ITEM	UNIT	QUANT.	ESTIMATED UNIT PRICE	ESTIMATED ITEM PRICE
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**MOBILIZATION\*:**

Mobilize/ Demobilize crew for flare station	LS	1	\$20,000.00	\$20,000.00
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**CONDENSATE TRAPS, SUMPS, TANKS & AIR COMPRESSORS\*:**

Double containment electric sump at flare	EA	1	\$27,000.00	\$27,000.00
Install 2" HDPE FM and 2" air lines, below grade in dedicated trench from sump at flare station to nearby leachate system	LF	250	\$15.00	\$3,750.00

**SURVEY\*:**

Flare Station Survey for layout/ as built	LS	1	\$3,000.00	\$3,000.00
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**FLARE STATION INSTALLATION:**

Grade and 6" of rock flare area (area inside fence)*	SF	2500	\$4.00	\$10,000.00
Concrete Work by Subcontractor*	CY	30	\$800.00	\$24,000.00
Install flare and blower skid, including flare station piping.*	EA	1	\$80,000.00	\$80,000.00
Flare station electrical*	LUMP	1	\$25,000.00	\$25,000.00
Chain link fence, LF around flare stn*	LF	250	\$40.00	\$10,000.00
Start up*	LUMP	1	\$15,000.00	\$15,000.00
Source test*	LUMP	1	\$35,000.00	\$35,000.00
Enclosed 2,500 SCFM Zule Blower Skid/Flare, including CA sales tax, shipping, and contractor mark-up**	EA	1	\$232,970.00	\$232,970.00

**PERMITTING AND ENGINEERING FEES\*\*\*:**

Permitting	LS	1	\$25,000.00	\$25,000.00
Engineers Fees	LS	1	\$50,000.00	\$50,000.00

**ESTIMATED TOTAL SYSTEM PRICE**

**\$560,720.00**

# Sheet 3.

## CHANGE ORDER #1

To: Parnel Biogas, Inc.

From: Chemical Waste Management, Inc.

Date: 12 February 2007

Re: Purchase Order between Chemical Waste Management, Inc. and Parnel Biogas, Inc., dated 1/12/06, for Purchase of Flare and Blower Facility, Kettleman Hills Landfill.

### PART I NATURE OF CHANGES

#### 1.01 Brief description of changes in the Work:

1. Replace the current Automatic Dialout Alarm System (ADAS), which uses a hard-line connection with one that uses a cellular connection. Based on the cost for the cellular ADAS (\$3,600.00) and the credit for the contracted hard-line ADAS (\$2,522.00), this change order is for an additional \$1,078.00.
2. Modify flare equipment warranty to guarantee a maximum of 0.05 lbs/MMBTU HHV of NOx emissions at 1,600 degrees Fahrenheit. As part of this modification, CWMI agrees to compensate Parnel for one person to attend the initial performance source test to be conducted on the flare facility so they can confirm the setup of the equipment. Such compensation not to exceed \$4,000.

#### 1.02 Reason for changes:

1. Hard line telephone connection not readily available at flare facility location.
2. Required by San Joaquin Valley Air Pollution Control District to meet current best available control technology (BACT) standards

#### 1.03 Changes are described in detail in the following attachments, which are hereby made a part of this Change Order:

N/A

**PART 2 ADJUSTMENTS TO CONTRACT**

2.01 Change to Contract Price

	<u>Dollar Amounts, Contract Price</u>	<u>Percentage of Original Contract Price</u>
A. Original Contract Price	\$231,891.77	100.00%
B. Previous Change Orders	\$0.00	0.00%
C. This Change Order	\$1,078.00	0.46%
D. New Total Contract Price	\$232,969.77	100.46%

2.02 Change to Contract Time

	<u>Date or Days</u>	<u>Percentage of Original Contract Price</u>
A. Contract Commencement Date	N/A	
B. Original Contract Time	N/A	
C. Previous Change Order Extensions	N/A	
D. This Change Order Extension	N/A	
E. New Total Contract Time	N/A	
F. New Substantial Completion Date	N/A	

**PART 3: CONTRACTOR'S ACCEPTANCE**

The undersigned Contractor agrees to perform the changes stipulated in this Change Order and any attachments for the dollar amount indicated and within the contract time indicated.

Parnel Biogas, Inc.

By: Jeff Parker  
(Signature)

Jeff Parker  
Vice President

2/13/2007  
(Date)

**PART 4: OWNER APPROVAL**

By: Rodney W. Walter II  
(Signature)

Rodney W. Walter II  
Group Engineer

2/12/07  
(Date)

END OF DOCUMENT

**Sheet 4, ZULE Ultra Low NOx John Zink Flare  
Operating Costs from Waste Management**

<b>Electricity Costs</b>					
Blower	HP	KiloWatts	Cost per KW/hr	Operating Cost per Year	Comments
Gas Blower	75	55.9275	\$ 0.18	\$ 88,186.48	Assumes 200 hp blower is running at reduced load with VFD
Combustion Air Blower	75	55.9275	\$ 0.18	\$ 88,186.48	Assumes 100 hp blower is running at reduced load with VFD
			Subtotal	\$ 176,372.96	

<b>Maintenance Costs</b>					
Task	Man Hours	Frequency per Year	Cost/ Man Hr*	Operating Cost per year	*Average Tech Salary plus 30% for benefits
Clean Burner Tips	9	6	\$ 28.60	\$ 1,544.40	3 guys for 3 hours includes confined space entry
Replace Combustion Air Filter	1	6	\$ 28.60	\$ 171.60	
Oil Change in Blowers	2	2	\$ 28.60	\$ 114.40	
Weekly flare inspection	0.5	52	\$ 28.60	\$ 743.60	
Non Routine Flare Entry	9	3	\$ 28.60	\$ 772.20	
Non Routine Callouts	4	12	\$ 28.60	\$ 1,372.80	
			Subtotal	\$ 4,719.00	

<b>Parts Costs</b>					
Miscellaneous Parts				\$ 5,000.00	
Source Test				\$ 8,000.00	
			Subtotal	\$ 13,000.00	
			<b>Total</b>	<b>\$ 194,091.96</b>	

# SHEET 5, JOHN ZINK, ZULE FLARE BUDGET ESTIMATE

ITEM	UNIT	QUANT.	ESTIMATED UNIT PRICE	ESTIMATED ITEM PRICE
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**MOBILIZATION\*:**

Mobilize/ Demobilize crew for flare station	LS	1	\$20,000.00	\$20,000.00
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**CONDENSATE TRAPS, SUMPS, TANKS & AIR COMPRESSORS\*:**

Double containment electric sump at flare	EA	1	\$27,000.00	\$27,000.00
Install 2" HDPE FM and 2" air lines, below grade in dedicated trench from sump at flare station to nearby leachate system	LF	250	\$15.00	\$3,750.00

**SURVEY\*:**

Flare Station Survey for layout/ as builts	LS	1	\$3,000.00	\$3,000.00
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**FLARE STATION INSTALLATION:**

Grade and 6" of rock flare area (area inside fence)*	SF	3000	\$4.00	\$12,000.00
Concrete Work by Subcontractor*	CY	50	\$800.00	\$40,000.00
Install flare and blower skid, including flare station piping.*	EA	1	\$125,000.00	\$125,000.00
Flare station electrical*	LUMP	1	\$35,000.00	\$35,000.00
Chain link fence, LF around flare stn*	LF	300	\$40.00	\$12,000.00
Start up*	LUMP	1	\$25,000.00	\$25,000.00
Source test*	LUMP	1	\$40,000.00	\$40,000.00
Enclosed 2,500 SCFM Zule Blower Skid/Flare, including CA sales tax, shipping, and contractor mark-up**	EA	1	\$750,000.00	\$750,000.00

**PERMITTING AND ENGINEERING FEES\*\*\*:**

Permitting	LS	1	\$50,000.00	\$50,000.00
Engineers Fees	LS	1	\$75,000.00	\$75,000.00

**ESTIMATED TOTAL SYSTEM PRICE**

**\$1,217,750.00**

## **SO<sub>x</sub> COST EFFECTIVENESS ANALYSIS**

**BACT Analysis Data for Kettleman Hills Facility**

**Control Device Name:** SulfaTreat System

**Control Device Description:** SulfaTreat for reduction of TRS as H<sub>2</sub>S to 10 PPMV from 61 PPM

<b>Flare Emissions</b>	<b>SOx</b>	<b>SOx tpy</b>
Guaranteed Uncontrolled (ppmv @15% O2)	61	6.62
Est. Controlled (ppmv @15% O2)	10	1.09
Percent reduction	84%	5.53

<b>Capital Cost (for SulfaTreat System)</b>		<b>Capital Cost</b>	<b>Percent for SOx Reduction</b>	<b>Cost for SOx Reduction</b>	<b>Comments</b>
<b>Description</b>					
SulfaTreat Material (First Fill of Media)	\$	70,120	100%	\$ 70,120	Venture Engineering <sup>1</sup>
SulfaTreat System	\$	260,000	100%	\$ 260,000	Mi SWACO Estimate <sup>2</sup>
Transportation	\$	15,800	100%	\$ 15,800	Mi SWACO Estimate <sup>2</sup>
Sulfa Treat Installation	\$	100,000	100%	\$ 100,000	Venture Engineering <sup>1</sup>
Permitting and Design	\$	100,000	100%	\$ 100,000	Venture Engineering <sup>3</sup>
Sales Taxes@ 8.75%	\$	6,136		\$ 6,136	For Purchase of Major Equipment <sup>4</sup>
Contingency @10%	\$	54,592		\$ 54,592	Based on 10% contingency <sup>5</sup>
<b>Total Capital Cost</b>				\$ 606,648	
<b>Equivalent Annual Control Equipment Capital Cost*</b>				\$ 98,729.09	
*SJVAPCD BACT Policy Section X(A)(1)					

<b>Annual Operating Cost (for SulfaTreat System) and Estimated Overhaul/Medial Replacement Cost</b>		<b>Annual Cost</b>	<b>Percent for SOx Reduction</b>	<b>Cost for SOx Reduction</b>	<b>Comments</b>
<b>Description</b>					
Media Purchase Cost	\$	70,120	100%	\$ 70,120	Venture Engineering <sup>6</sup>
Disposal Cost	\$	21,036	100%	\$ 21,036	Mi SWACO Estimate <sup>7</sup>
Transportation	\$	10,800	100%	\$ 10,800	WM Estimate <sup>8</sup>
Maintenance	\$	15,000	100%	\$ 15,000	WM Estimate <sup>9</sup>
Vessel Repair Replacement Costs	\$	15,600	100%	\$ 15,600	Mi SWACO Estimate <sup>10</sup>
Operating Costs	\$	18,000	100%	\$ 18,000	WM Estimate <sup>11</sup>
Miscellaneous	\$	4,683	100%	\$ 4,683	SCS Estimate <sup>12</sup>
Contingency @10%	\$	11,696		\$ 11,696	Based on 10% contingency <sup>5</sup>
<b>Total Annual Operating and Replacement Cost</b>				\$ 166,934	
<b>Total Annual Cost</b>				\$ 265,663.32	

<b>Cost Effectiveness of SulfraTreat System:</b>			
Flare Cost Effectiveness	\$	265,663.32 /year	5.53 ton/year
			<b>\$48,040.38 /ton</b>
SJVAPCD CO Cost Effectiveness			<b>\$18,300/ton Not Cost Effective</b>

## Notes

- <sup>1</sup> Estimates for capital costs for initial SulfaTreat purchase and installation are based on actual reports from Venture Engineering for Simi Valley Landfill and WM's rate (\$0.50/lb) from their experience with the SulfaTreat technology.
- <sup>2</sup> Estimate based on estimates obtained from Mi SWACO from their experience with the SulfaTreat technology.
- <sup>3</sup> The design, permitting, and startup costs for the catalyst systems were estimates made by Venture Engineering report for Simi Valley Landfill.
- <sup>4</sup> Sales tax (8.25%) only applied to Sulfatreat media not design or construction. Tax and shipping for system already included in cost.
- <sup>5</sup> A 10% contingency was applied and considered reasonable for the uncertainties with this project.
- <sup>6</sup> Assumes 1 changeout per year for vessels based on flow and concentration adjustments from Simi Valley per Venture Engineering report. WM's rate is (\$0.50 / lb) and additional 8.25% sales tax.
- <sup>7</sup> Mi SWACO disposal estimate of \$0.15/lb and media amount from Venture Engineering.
- <sup>8</sup> Venture Engineering quote for Simi Valley Landfill.
- <sup>9</sup> WM estimate based on engineering and GOM estimate from experience.
- <sup>10</sup> Mi SWACO estimate using 50% vessel repair/replacement (\$245,000 per vessel) every 10 years plus 20% installation costs.
- <sup>11</sup> Power cost for boost blower.
- <sup>12</sup> SCS estimates 0.5% of capital costs, less media plus \$500 equipment rental, 1 time per year

**BACT Analysis Data for Kettleman Hills Facility**

**Control Device Name:** LO-CAT System

**Control Device Description:** LO-CAT for reduction of TRS as H<sub>2</sub>S to 10 PPMV from 61 PPM

Flare Emissions	SOx	SOx lb/day	SOx tpy
Guaranteed Uncontrolled (ppmv @15% O2)	61	36.27	6.62
Est. Controlled (ppmv @15% O2)	10	5.97	1.09
Percent reduction	84%	30.30	5.53

Capital Cost (for LO-CAT System)		Capital Cost	Percent for SOx Reduction	Cost for SOx Reduction	Comments
Description					
LO-CAT System	\$ 1,120,000	100%	\$ 1,120,000	SCS Estimate <sup>1</sup>	
Support Equipment	\$ 448,000	100%	\$ 448,000	SCS Estimate <sup>1</sup>	
LO-CAT Installation	\$ 448,000	100%	\$ 448,000	SCS Estimate <sup>2</sup>	
Permitting and Design	\$ 50,000	100%	\$ 50,000	SCS Estimate <sup>2</sup>	
Sales Taxes@ 8.75%	\$ 176,400		\$ 176,400	For Purchase of Major Equipment <sup>3</sup>	
Contingency @10%	\$ 201,600		\$ 201,600	Based on 10% contingency <sup>4</sup>	
<b>Total Capital Cost</b>			\$ 2,444,000		
Equivalent Annual Control Equipment Capital Cost*			\$ 397,749.75		
*SJVAPCD BACT Policy Section X(A)(1)					

Annual Operating Cost (for LO-CAT System) and Estimated Overhaul/Medial Replacement Cost	Annual Cost	Percent for SOx Reduction	Cost for SOx Reduction	Comments
Chemical Cost	\$ 7,770	100%	\$ 7,770	SCS Estimate <sup>1</sup>
Disposal Cost	\$ 3,169	100%	\$ 3,169	SCS Estimate <sup>5</sup>
Transportation	\$ 553	100%	\$ 553	SCS Estimate <sup>1</sup>
Labor	\$ 33,500	100%	\$ 33,500	SCS Estimate <sup>6</sup>
Maintenance	\$ 122,200	100%	\$ 122,200	SCS Estimate <sup>7</sup>
Power	\$ 26,162	100%	\$ 26,162	SCS Estimate <sup>1</sup>
Contingency @10%	\$ 16,719		\$ 16,719	Based on 10% contingency <sup>4</sup>
<b>Total Annual Operating and Replacement Cost</b>			\$ 210,073	
Total Annual Cost			\$ 607,822.34	

Cost Effectiveness of LO-CAT System:			
Flare Cost Effectiveness	\$ 607,822.34 /year	5.53 ton/year	\$109,913.62 /ton
SJVAPCD CO Cost Effectiveness			\$18,300/ton Not Cost Effective

## Notes

- <sup>1</sup> Estimates for capital costs for initial LO-CAT system purchase and installation are based on estimates obtained from SCS Engineers from previous estimates from Merichem
- <sup>2</sup> The design, permitting, and startup costs for the catalyst systems were estimates made by SCS Engineers from recent experience
- <sup>3</sup> Applied at 8.75% rate for major equipment purchases
- <sup>4</sup> A 10% contingency was applied and considered reasonable for the uncertainties with this project
- <sup>5</sup> SCS estimate assuming \$0.15/lb cleanout plus disposal costs due to water content
- <sup>6</sup> SCS estimate assumes 4 hours of operating labor per day per 5 day work week
- <sup>7</sup> SCS estimate 5% of capital costs
- <sup>8</sup> SCS estimates 18.1 kW required at \$0.11 kW-hr for a full year (8,760 hours), 50% contingency also included

**BACT Analysis Data for Kettleman Hills Facility**

**Control Device Name:** Iron Sponge System

**Control Device Description:** Iron Sponge for reduction of H<sub>2</sub>S to 10 PPMV from 61 PPM

Flare Emissions	SOx	SOx tpy
Guaranteed Uncontrolled (ppmv @15% O <sub>2</sub> )	61	6.62
Est. Controlled (ppmv @15% O <sub>2</sub> )	10	1.09
Percent reduction	84%	5.53

<b>Capital Cost (for Iron Sponge System)</b>		<b>Capital Cost</b>	<b>Percent for SOx Reduction</b>	<b>Cost for SOx Reduction</b>	<b>Comments</b>
	<b>Description</b>				
	Iron Sponge Material (First Fill of Media)	\$ 30,862	100%	\$ 30,862	MVLLC Company Estimate <sup>1</sup>
	Iron Sponge System	\$ 250,000	100%	\$ 250,000	MVLLC Company Estimate <sup>1</sup>
	Iron Sponge Support Equipment	\$ 100,000	100%	\$ 100,000	MVLLC Company Estimate <sup>1</sup>
	Iron Sponge Installation	\$ 125,000	100%	\$ 125,000	SCS Estimate <sup>2</sup>
	Permitting and Design	\$ 50,000	100%	\$ 50,000	SCS Estimate <sup>2</sup>
	Sales Taxes@ 8.75%	\$ 44,263		\$ 44,263	For Purchase of Major Equipment <sup>3</sup>
	Contingency @10%	\$ 50,586		\$ 50,586	Based on 10% contingency <sup>4</sup>
	<b>Total Capital Cost</b>			\$ 650,711	
	Equivalent Annual Control Equipment Capital Cost*			\$ 105,900.24	
	*SJVAPCD BACT Policy Section X(A)(1)				

<b>Annual Operating Cost (for Iron Sponge System) and Estimated Overhaul/Medial Replacement Cost</b>		<b>Annual Cost</b>	<b>Percent for SOx Reduction</b>	<b>Cost for SOx Reduction</b>	<b>Comments</b>
	Media Purchase Cost	\$ 61,724	100%	\$ 61,724	MVLLC Company Estimate <sup>1</sup>
	Disposal Cost	\$ 69,202	100%	\$ 69,202	MVLLC Company/SCS Estimate <sup>5</sup>
	Transportation	\$ 25,100	100%	\$ 25,100	SCS Estimate <sup>6</sup>
	Labor	\$ 18,000	100%	\$ 18,000	SCS Estimate <sup>5</sup>
	Maintenance	\$ 32,536	100%	\$ 32,536	SCS Estimate <sup>7</sup>
	Power	\$ 2,409	100%	\$ 2,409	SCS Estimate <sup>8</sup>
	Contingency @10%	\$ 20,656		\$ 20,656	Based on 10% contingency <sup>4</sup>
	<b>Total Annual Operating and Replacement Cost</b>			\$ 229,627	
	<b>Total Annual Cost</b>			\$ 335,527.06	

<b>Cost Effectiveness of Iron Sponge System:</b>			
Flare Cost Effectiveness	\$ 335,527.06 /year	5.53 ton/year	\$60,673.97 /ton
SJVAPCD CO Cost Effectiveness			\$18,300/ton Not Cost Effective

## Notes

<sup>1</sup> Estimates for capital costs for initial Iron Sponge system purchase and installation are based on estimates obtained from MVLLC Company from their experience with the Iron Sponge technology.

<sup>2</sup> The design, permitting, and startup costs for the catalyst systems were estimates made by SCS Engineers from recent experience.

<sup>3</sup> Applied at 8.75% rate for major equipment purchases

<sup>4</sup> A 10% contingency was applied and considered reasonable for the uncertainties with this project

<sup>5</sup> MVLLC estimate assuming \$0.15/lb cleanout and SCS estimates \$350/ton or \$0.2/lb disposal cost as hazardous waste.

<sup>6</sup> SCS estimate based on \$25,100 per changeout. Cost includes 3 trucks at \$7,500/load, 2 men at \$50/hr for 8 hours each, and a crane rental for \$1,800/day including increased transportation costs to hazardous waste site

<sup>7</sup> SCS estimate 5% of capital costs

<sup>8</sup> SCS estimates 2.5 kW required at \$0.11 kW-hr for a full year (8,760 hours)

**Appendix C**  
**QNEC Calculations**

### Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 – PE1, where:

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

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

#### C-283-22-16 & -25-2:

$$\begin{aligned} PE2_{\text{quarterly}} &= PE2_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 23,993 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 5,998 \text{ lb NO}_x/\text{qtr} \end{aligned}$$

$$\begin{aligned} PE1_{\text{quarterly}} &= PE1_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 24,017 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 6,004 \text{ lb NO}_x/\text{qtr} \end{aligned}$$

<b>Quarterly NEC [QNEC] – C-283-22-16</b>			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	5,998	6,004	-6
SO <sub>x</sub>	3,289	1,697	1,592
PM <sub>10</sub>	798	958	-160
CO	21,912	26,289	-4,377
VOC	30,976	30,976	0

<b>Quarterly NEC [QNEC] – C-283-25-2</b>			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	0*	0*	0
SO <sub>x</sub>	0*	0*	0
PM <sub>10</sub>	0*	0*	0
CO	0*	0*	0
VOC	0*	0*	0

\* Shared emissions accounted for in permit C-283-22.

**Appendix D**  
**Certificate of Conformity**

**San Joaquin Valley  
Unified Air Pollution Control District**

**TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM**

**I. TYPE OF PERMIT ACTION (Check appropriate box)**

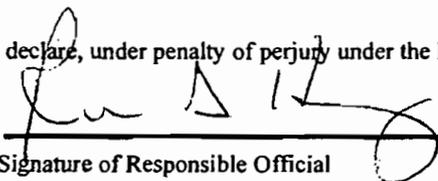
- SIGNIFICANT PERMIT MODIFICATION                       ADMINISTRATIVE  
 MINOR PERMIT MODIFICATION                                      AMENDMENT

COMPANY NAME: Chemical Waste Management, Inc.	FACILITY ID: C-283
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Chemical Waste Management, Inc.	
3. Agent to the Owner:	

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

- 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).
- 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.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

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

  
 \_\_\_\_\_  
 Signature of Responsible Official

4/4/11  
 \_\_\_\_\_  
 Date

Robert G. Henry  
 \_\_\_\_\_  
 Name of Responsible Official (please print)  
 Senior District Manager  
 \_\_\_\_\_  
 Title of Responsible Official (please print)

**Appendix E**  
**Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

DRAFT

PERMIT NO: C-283-22-16

LEGAL OWNER OR OPERATOR: CHEMICAL WASTE MANAGEMENT, INC

MAILING ADDRESS: PO BOX 471  
KETTLEMAN CITY, CA 93239-0471

LOCATION: 35251 OLD SKYLINE ROAD  
KETTLEMAN CITY, CA 93239

### EQUIPMENT DESCRIPTION:

MODIFICATION OF MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-25: INCREASE FLARE NOX EMISSION FACTOR FROM 0.05 LB/MMBTU TO 0.06 LB/MMBTU, INCREASE SOX EMISSION FACTOR FROM 46.9 PPMV TO 150 PPMV (DAILY AVERAGE) AND 109 PPMV (ANNUAL AVERAGE), AND LIMIT FLARE HEAT INPUT TO 398,333 MMBTU/YEAR

## 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. Authority to Construct (ATC) C-283-22-15 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. 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 1/4 or 5% opacity. [District NSR Rule and Rule 4101] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit

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

DAVID WARNER, Director of Permit Services

C-283-22-16 - Mar 30 2012 5:50PM - TOMS : Joint Inspection NOT Required

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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. [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit
14. 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
15. 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 APCO for approval. [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

16. 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
17. 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
18. 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
19. 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
20. 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
21. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(f)] Federally Enforceable Through Title V Permit
22. 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
23. 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)] Federally Enforceable Through Title V Permit
24. 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
25. 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
26. 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
27. For each interior wellhead, 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

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28. 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  $\pm 10$  percent. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit
29. 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)] Federally Enforceable Through Title V Permit
30. 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
31. 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:  $(\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / \text{NMOC}_{\text{in}}$ . 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
32. 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
33. 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
34. 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
35. 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
36. 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
37. Permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

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38. 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
39. 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 °C 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
40. 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
41. 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
42. 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
43. 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
44. VOC emissions from the flare and landfill shall not exceed 339.5 lb-VOC/day. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NO<sub>x</sub>/MMBtu, 91.1 lb-SO<sub>x</sub>/day, 13,146 lb-SO<sub>x</sub>/year, 0.008 lb-PM<sub>10</sub>/MMBtu, 0.22 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
46. The combined heat input of collected B-17 and B-19 landfill gas into the flare shall not exceed any of the following: 83.6 MMBtu/hr or 398,333 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 NSR Rule] Federally Enforceable Through Title V Permit
47. Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O<sub>2</sub> as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NO<sub>x</sub>/MMBtu, 0.0164 lb-SO<sub>x</sub>/MMBtu, 0.0044 lb-PM<sub>10</sub>/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
49. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
50. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit

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51. SOx emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SOx emission rate based on the correlation between landfill gas sulfur concentration and associated SOx emission rate demonstrated during startup. [District Rule 1081] Federally Enforceable Through Title V Permit
52. Testing to demonstrate compliance with the daily and annual SOx emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SOx emissions, may be reduced to monthly. If a monthly test shows violation of the SOx emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to monthly. [District NSR Rule] Federally Enforceable Through Title V Permit
53. 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] Federally Enforceable Through Title V Permit
54. Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
55. Total combined Class II/III waste material acceptance rate of C-283-22 and '-25 shall not exceed 620,000 tons per year. [District NSR Rule] Federally Enforceable Through Title V Permit
56. Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
57. Total combined clean (<50 ppm by weight VOC) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
58. Total PM10 emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District NSR Rule] Federally Enforceable Through Title V Permit
59. Soil with VOC content of 50 ppm by weight or greater shall not be used as daily cover. [District Rule 4651] Federally Enforceable Through Title V Permit
60. 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 no more than 20 ppmvd @ 3% O2 as methane, as required by this permit shall be conducted annually. [District NSR Rule] Federally Enforceable Through Title V Permit
61. Flare NMOC emissions shall be conducted using USEPA Test Method 18 or 25. [District Rule 1081] Federally Enforceable Through Title V Permit
62. Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081] Federally Enforceable Through Title V Permit
63. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit
64. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District NSR Rule] Federally Enforceable Through Title V Permit
65. The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
66. 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 NSR Rule] Federally Enforceable Through Title V Permit
67. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
68. 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 NSR Rule] Federally Enforceable Through Title V Permit

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69. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District NSR Rule] Federally Enforceable Through Title V Permit
70. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit
71. 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
72. The operator shall record emission control device source tests (emissions of CO, NOx, and VOC) in pounds per MMBtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit
73. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 4651] Federally Enforceable Through Title V Permit
74. 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 4102 and NSR] Federally Enforceable Through Title V Permit
75. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District NSR Rule] Federally Enforceable Through Title V Permit
76. 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 NSR Rule] Federally Enforceable Through Title V Permit
77. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
78. Records of daily and annual landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily and annual SOx emissions shall be maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
79. 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
80. 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
81. 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
82. 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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83. 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
84. 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  $k$ ,  $L_0$ , 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
85. 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
86. 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
87. The permittee is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA for the bioreactor provided the conditions in paragraphs (a) or (b) are met: (a) the affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii) of part 60, subpart WWW; (b) the bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, subpart WWW and has permanently ceased adding liquids to the bioreactor, and have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the APCO as provided in 40 CFR 60.757(d) of subpart WWW. [40 CFR 63.1952(a) and (b)] Federally Enforceable Through Title V Permit
88. For the bioreactor portions, the permittee shall comply with the general provisions specified in Table 1 of 40 CFR Part 63 Subpart AAAA and 63.1960 through 63.1985 starting on the date required to install the gas collection and control system and must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area. [40 CFR 63.1955(b) and (d)(2)] Federally Enforceable Through Title V Permit

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89. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960] Federally Enforceable Through Title V Permit
90. The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)] Federally Enforceable Through Title V Permit
91. The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(e)] Federally Enforceable Through Title V Permit
92. If a semiannual compliance report for the bioreactor is required as well as a semiannual compliance report for the conventional portion of the same landfill, submittal may be delayed of a subsequent semiannual compliance report for the bioreactor according to the following so that the reports may be submitted on the same schedule: (1) After submittal of the initial semiannual compliance report and performance test results for the bioreactor, the permittee may delay of the submittal of the subsequent semiannual compliance report for the bioreactor until the date of the initial or subsequent semiannual compliance report is due for the conventional portion of the landfill; (2) The permittee may delay submittal of the subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months; (3) After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due. [40 CFR 63.1980(f)] Federally Enforceable Through Title V Permit
93. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
94. The landfill surface shall be monitored 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
95. 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. [District Rule 2201] Federally Enforceable Through Title V Permit
96. 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
97. 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
98. 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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99. 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)] Federally Enforceable Through Title V Permit
100. 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)] Federally Enforceable Through Title V Permit
101. 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
102. 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
103. 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
104. The non-bioreactor portion of the landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950] Federally Enforceable Through Title V Permit
105. Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit
106. Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit
107. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011] Federally Enforceable Through Title V Permit
108. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Rule 8041 or Rule 8011. [District Rules 8041 and 8011] Federally Enforceable Through Title V Permit
109. One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011] Federally Enforceable Through Title V Permit
110. On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071] Federally Enforceable Through Title V Permit

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111. Whenever any portion of the site becomes inactive, permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011] Federally Enforceable Through Title V Permit
112. The flare and gas collection system may be shut down when there is an insufficient amount of landfill gas to operate on. During the shutdown period, all gas collection system vents shall be closed and no emissions shall occur through the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit
113. During the shutdown of the gas collection system, surface testing to measure the methane concentration at the surface of the landfill shall be conducted at least once every week using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). After demonstrating compliance on four consecutive tests, the testing frequency shall be at least once every month. [District Rule 2201] Federally Enforceable Through Title V Permit
114. During the shutdown of the gas collection system, if the methane concentration measured during weekly or monthly surface testing exceeds 500 parts per million above background at the surface of the landfill, the testing frequency shall be at least once every other day. After demonstrating compliance on four consecutive tests, the testing frequency shall revert to at least once every week. [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**

**PERMIT NO:** C-283-25-2

**LEGAL OWNER OR OPERATOR:** CHEMICAL WASTE MANAGEMENT, INC  
**MAILING ADDRESS:** PO BOX 471  
KETTLEMAN CITY, CA 93239-0471

**LOCATION:** 35251 OLD SKYLINE ROAD  
KETTLEMAN CITY, CA 93239

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22: INCREASE FLARE NOX EMISSION FACTOR FROM 0.05 LB/MMBTU TO 0.06 LB/MMBTU, INCREASE SOX EMISSION FACTOR FROM 46.9 PPMV TO 150 PPMV (DAILY AVERAGE) AND 109 PPMV (ANNUAL AVERAGE), AND LIMIT FLARE HEAT INPUT TO 398,333 MMBTU/YEAR

**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. Authority to Construct (ATC) C-283-25-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. 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 1/4 or 5% opacity. [District NSR Rule and Rule 4101] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit

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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

DAVID WARNER, Director of Permit Services

C-283-25-2 - Mar 30 2012 5:50PM - TOMS : Joint Inspection NOT Required

6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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. [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit
14. 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
15. 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 APCO for approval. [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

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16. 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
17. 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
18. 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
19. 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
20. 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
21. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(f)] Federally Enforceable Through Title V Permit
22. 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
23. 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)] Federally Enforceable Through Title V Permit
24. 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
25. 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
26. 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
27. For each interior wellhead, 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

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28. 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  $\pm$ 10 percent. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit
29. 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)] Federally Enforceable Through Title V Permit
30. 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
31. 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:  $(\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / \text{NMOC}_{\text{in}}$ . 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
32. 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
33. 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
34. 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
35. 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
36. 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
37. Permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

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38. 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
39. 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 °C 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
40. 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
41. 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
42. 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
43. 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
44. VOC emissions from the flare and landfill shall not exceed 240.7 lb-VOC/day. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NO<sub>x</sub>/MMBtu, 91.1 lb-SO<sub>x</sub>/day, 13,146 lb-SO<sub>x</sub>/year, 0.008 lb-PM<sub>10</sub>/MMBtu, 0.22 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
46. The combined heat input of collected B-17 and B-19 landfill gas into the flare shall not exceed any of the following: 83.6 MMBtu/hr or 398,333 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 NSR Rule] Federally Enforceable Through Title V Permit
47. Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O<sub>2</sub> as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NO<sub>x</sub>/MMBtu, 0.0164 lb-SO<sub>x</sub>/MMBtu, 0.0044 lb-PM<sub>10</sub>/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
49. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
50. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit

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51. SOx emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SOx emission rate based on the correlation between landfill gas sulfur concentration and associated SOx emission rate demonstrated during startup. [District Rule 1081] Federally Enforceable Through Title V Permit
52. Testing to demonstrate compliance with the daily and annual SOx emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SOx emissions, may be reduced to monthly. If a monthly test shows violation of the SOx emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to monthly. [District NSR Rule] Federally Enforceable Through Title V Permit
53. 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] Federally Enforceable Through Title V Permit
54. Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
55. Total combined Class II/III waste material acceptance rate of C-283-22 and '-25 shall not exceed 620,000 tons per year. [District NSR Rule] Federally Enforceable Through Title V Permit
56. Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
57. Total combined clean (<50 ppm by weight VOC) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
58. Total PM10 emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District NSR Rule] Federally Enforceable Through Title V Permit
59. Soil with VOC content of 50 ppm by weight or greater shall not be used as daily cover. [District Rule 4651] Federally Enforceable Through Title V Permit
60. 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 no more than 20 ppmvd @ 3% O2 as methane, as required by this permit shall be conducted within 60 days of startup and annually thereafter. [District NSR Rule] Federally Enforceable Through Title V Permit
61. Flare NMOC emissions shall be conducted using USEPA Test Method 18 or 25. [District Rule 1081] Federally Enforceable Through Title V Permit
62. Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081] Federally Enforceable Through Title V Permit
63. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit
64. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District NSR Rule] Federally Enforceable Through Title V Permit
65. The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
66. 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 NSR Rule] Federally Enforceable Through Title V Permit
67. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
68. 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 NSR Rule] Federally Enforceable Through Title V Permit

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69. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District NSR Rule] Federally Enforceable Through Title V Permit
70. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit
71. 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
72. The operator shall record emission control device source tests (emissions of CO, NO<sub>x</sub>, and VOC) in pounds per MMbtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit
73. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 4651] Federally Enforceable Through Title V Permit
74. 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 4102 and NSR] Federally Enforceable Through Title V Permit
75. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District NSR Rule] Federally Enforceable Through Title V Permit
76. 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 NSR Rule] Federally Enforceable Through Title V Permit
77. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
78. Records of daily and annual landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily and annual SO<sub>x</sub> emissions shall be maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
79. 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
80. 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
81. 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
82. 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

83. 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
84. 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  $k$ ,  $L_0$ , 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
85. 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
86. 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
87. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960] Federally Enforceable Through Title V Permit
88. The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)] Federally Enforceable Through Title V Permit
89. The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to begin operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(e)] Federally Enforceable Through Title V Permit

90. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
91. The landfill surface shall be monitored 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
92. 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. [District Rule 2201] Federally Enforceable Through Title V Permit
93. 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
94. 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
95. 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
96. 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)] Federally Enforceable Through Title V Permit
97. 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)] Federally Enforceable Through Title V Permit
98. 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
99. 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
100. 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
101. The landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950] Federally Enforceable Through Title V Permit
102. Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

103. Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit
104. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011] Federally Enforceable Through Title V Permit
105. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Rule 8041 or Rule 8011. [District Rules 8041 and 8011] Federally Enforceable Through Title V Permit
106. One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011] Federally Enforceable Through Title V Permit
107. On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071] Federally Enforceable Through Title V Permit
108. Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011] Federally Enforceable Through Title V Permit
109. The flare and gas collection system may be shut down when there is an insufficient amount of landfill gas to operate on. During the shutdown period, all gas collection system vents shall be closed and no emissions shall occur through the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit
110. During the shutdown of the gas collection system, surface testing to measure the methane concentration at the surface of the landfill shall be conducted at least once every week using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). After demonstrating compliance on four consecutive tests, the testing frequency shall be at least once every month. [District Rule 2201] Federally Enforceable Through Title V Permit
111. During the shutdown of the gas collection system, if the methane concentration measured during weekly or monthly surface testing exceeds 500 parts per million above background at the surface of the landfill, the testing frequency shall be at least once every other day. After demonstrating compliance on four consecutive tests, the testing frequency shall revert to at least once every week. [District Rule 2201] Federally Enforceable Through Title V Permit

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