

NOTICE OF RENEWAL AND MODIFICATION OF THE TITLE V PERMIT ISSUANCE TO THE SANTA CRUZ  
COUNTY PUBLIC WORKS DEPARTMENT

Pursuant to the Monterey Bay Air Resources District (MBARD) Rule 218, MBARD solicits written comments to the preliminary decision to approve the issuance of the Title V Permit renewal and major modification to the Santa Cruz County Public Works Department (Santa Cruz County) for the existing Buena Vista Landfill located at 150 Rountree Lane in Watsonville.

Pursuant to the requirements of 40 CFR Part 60, Subpart Cf Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, the landfill, which has a design capacity of greater than 2.5 million megagrams and 2.5 million cubic meters, is subject to Title V regulations.

The facility has added a second new enclosed ground flare to the Buena Vista Landfill. Located at the landfill is a landfill gas collection, treatment, and destruction system. The collected landfill gas is treated and combusted in three (3) third-party owned and operated internal combustion engines which drive generators to produce electricity or in two (2) enclosed ground flares owned and operated by Santa Cruz County. The electricity generated is sold to the local utility company. The three internal combustion engine-generator sets are owned and operated by Ameresco Santa Cruz Energy (Ameresco).

The proposed permit will be forwarded to the US EPA for a 45-day review period. MBARD will not issue a permit to which EPA objects. The public may petition the US EPA, Region 9, Operating Permits Section, within 60 days after the US EPA 45-day review period to object the issuance of the final permit. This petition shall be based only on objections that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise the issue during that time period.

Santa Cruz County's application and MBARD Evaluation Report of the renewal and major modification of the Title V permit are available for public inspection at MBARD office at 24580 Silver Cloud Court, Monterey, CA. A copy of the evaluation report is found on MBARD website at [www.mbard.org](http://www.mbard.org).

The public has an opportunity to review and comment on the proposed Project. Under special circumstances, MBARD may hold a public hearing. Written comments must be submitted to the address below and be postmarked by Thursday, July 21, 2022.

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Air Resources District  
24580 Silver Cloud Court  
Monterey, CA 93940  
(831) 647-9411  
[ajimenez@mbard.org](mailto:ajimenez@mbard.org)  
Attention: Armando Jimenez

**MONTEREY AIR RESOURCES DISTRICT  
TITLE V OPERATING PERMIT RENEWAL  
STATEMENT OF BASIS**

24580 Silver Cloud Court  
Monterey, CA 93940  
Telephone: (831) 647-9411

Dated: March 2022

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**APPLICATION RECEIVED FROM:**

Santa Cruz County – Department of Public Works  
701 Ocean Street, Room 410  
Santa Cruz, CA 95060

**PLANT SITE LOCATION:**

150 Rountree Lane  
Watsonville, California

**APPLICATION PROCESSED BY:**

Armando Jimenez, Air Quality Engineer

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Nature of Business: Municipal Solid Waste Landfill

SIC Code: 4953 - Refuse Systems

**RESPONSIBLE OFFICIAL:**

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**ALTERNATE RESPONSIBLE OFFICIAL:**

Name: Mr. Kasey Kolassa  
Title: Recycling & Solid Waste Services Manager  
Phone: (831) 454-2377

**FACILITY CONTACT PERSON:**

Name: Ms. Sarah McBee  
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TABLE OF CONTENTS

FACILITY DESCRIPTION .....	3
EQUIPMENT DESCRIPTION.....	3
APPLICABLE FEDERAL REQUIREMENTS.....	9
COMPLIANCE DETERMINATION FOR APPLICABLE FEDERAL REQUIREMENTS.....	10
THE FOLLOWING CONDITIONS WILL BE INCLUDED ON THE TITLE V PERMIT: .....	43
FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS .....	43
TESTING REQUIREMENTS AND PROCEDURES.....	44
RECORD KEEPING REQUIREMENTS .....	46
REPORTING REQUIREMENTS .....	46
GENERAL CONDITIONS .....	46

## **FACILITY DESCRIPTION**

Pursuant to Rule 218 of the Monterey Bay Air Resources District (MBARD) Rules and Regulations, MBARD intends to issue a Title V Operating Permit Renewal and Major Modification to Santa Cruz County – Department of Public Works (facility) for the Buena Vista Landfill located in Watsonville, California. The Buena Vista Landfill is a Municipal Solid Waste (MSW) Landfill permitted by CalRecycle to receive a maximum of 838 tons per day of MSW in 2005 with a 2% increase in allowed tonnage in each following year. This landfill site has been accepting waste since the site opened in 1981.

Pursuant to the requirements of 40 CFR Part 60, Subpart Cf Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, the landfill, which has a design capacity of greater than 2.5 million megagrams and 2.5 million cubic meters, is subject to Title V regulations.

Landfills subject to the NSPS 40 CFR Part 60, Subpart WWW or to the Emission Guidelines under Subpart Cc that are not new, reconstructed or modified after July 18, 2014, are now subject to the approved State Plan and/or 2021 Federal Plan for Subpart Cf in 40 CFR Part 62, Subpart OOO. Landfills that are new or reconstructed or modified after July 18, 2014, are subject to the requirements of 40 CFR Part 60, Subpart XXX. The Buena Vista Landfill is not a new or reconstructed Landfill and is subject to the State Plan and parts of the 2021 Federal Plan.

For California, EPA has partially approved and partially disapproved the California state plan because the plan omitted certain required provisions. Thus, existing MSW landfills in California must implement both the approved portion of the state plan (the California Landfill Methane Regulation), and the following federal plan provisions that were omitted by the state plan: 40 CFR §62.16716(c), §62.16720(a)(5), §62.16722(a)(2) and (3), §62.16724(k), and §62.16726(e)(2) and (5).

## **EQUIPMENT DESCRIPTION**

Santa Cruz County – Department of Public Works has installed a new enclosed ground landfill gas (LFG) flare with flow rate capacity range of 60-500 standard cubic feet per minute (scfm) or 15 million British thermal unit per unit (MMBtu/hr), based on an LFG heat content of 500 cubic feet per Btu (Cf/Btu). The new flare was installed to deal with the lower LFG flow rates, between 60 and 500 scfm, that are sent to the flare system.

Located at the landfill is an LFG collection, treatment, and destruction. The collected LFG is treated and combusted in three third-party owned and operated internal combustion engines which drive generators to produce electricity or in two enclosed ground flares owned by Santa Cruz County. The electricity generated is sold to the local utility company. The three internal combustion engine-generator sets are own and operated by Ameresco Santa Cruz Energy (Ameresco).

Ameresco's LFG to energy plant uses LFG collected from the Buena Vista Landfill as fuel for three IC engines rated at 1,400 bhp and 1 megawatt output each. Ameresco has permitted an additional identical LFG internal combustion (IC) engine rated at 1,400 bhp. The additional engine will only operate when one of the other three engines is non-operational.

Ancillary equipment operated at the Landfill include equipment owned operated by the facility and equipment owned and operated by third party entities. Ancillary equipment owned and operated by the facility includes a gasoline storage tank and emergency internal combustion engine. Ancillary equipment owned and operated by third party entities includes portable tub grinder, portable trommell screen and portable aggregate screening and crushing operations.

Below is the equipment description with the new enclosed ground LFG flare:

1. 126 Acre Landfill Site Of Which 61 Acres Are Permitted For Waste Disposal.
2. Landfill Gas Collection Systems, Vertical Wells, Lateral Collector Pipes, Header Pipe, And Gas Movers To Collect And Route Landfill Gas To The Landfill Gas Destruction Systems.
3. Landfill Gas Treatment System, System To Filter, De-water, And Compress Landfill Gas. Treated Gas Routed To Gas Destruction System
4. Treated Gas Destruction Systems:
  - A) Three (3) Third Party Owned and Operated Landfill Gas Engine-Generator Sets, Each Nominally Rated At 1,400 Bhp And 1Mw Output.
  - B) One (1) Third Party Owned and Operated Internal Combustion Landfill Gas Engine Rated At 1,400 Bhp.
  - C) Enclosed Ground Flare, Rated At 54 MMBtu/Hr Maximum.
  - D) Enclosed Ground Flare, With A Landfill Gas Flow Rate Capacity Range Of 60-500 SCFM.
5. Ancillary Equipment
  - Above-Ground Gasoline Storage Tank
  - Emergency Diesel-Powered Engine Generator Set
  - Third Party Owned And Operated Portable Aggregate Crushing Screening
  - Third Party Owned And Operated Portable Tub Grinder
  - Third Party Owned And Operated Portable Trommel Screen

## PROJECT DESCRIPTION

Santa Cruz County – Department of Public Works submitted an application to renew the Title V Permit and to include the new 15 MMBtu/hr enclosed ground LFG flare with flow rate capacity range of 60-500 scfm.

In addition, the facility has proposed the following changes:

- Modify condition #1 to increase the allowed amount of LFG to be combusted in the flare(s) from 1.8 million cubic feet per day (MMcf) to 2.592 MMcf, which is equivalent to the existing flare capacity of 54 MMBtu/hr based on an LFG heat content of 500 Btu/Cf.
- Modify condition #2 to reduce the carbon monoxide (CO) emission limit from 0.59 MMBtu/hr to 0.40 MMBtu/hr. The facility is not proposing to increase the daily emissions limits listed in condition #2.

#### *Possible flare operations*

With the addition of the new 15 MMBtu/hr enclosed ground flare, the facility has described the possible operation of the flares. The Ameresco landfill gas to energy (LFGTE) facility normally operates at ~1,200 scfm with all three engines operating. As designed, there will be control options to automatically divert excess LFG to either the new mini-flare or the existing larger flare and provide automatic flare start-up. The new enclosed flare (mini-flare) will be the first option to receive excess diverted LFG because it will be able to operate at a range of flows from 60 - 500 scfm or up to 15 million Btu per hour (MMBtu/hr). The larger flare will be the second option because it will be set to operate at a starting flow between 450 scfm and 500 scfm.

The following is a brief, general description of how the control system works:

#### Scenario 1: LFG flow of $\leq 1,200$ scfm

- When the flow is at 1,200 scfm or less, the entire flow from the two landfills will be directed to the LFGTE facility:
  - LFG flows varying from 400 – 1,200 scfm are manually controlled by turning on/off two (2) of the three 3 motors to process the LFG.
  - There will be no emissions from the two flares.

#### Scenario 2: LFG flow of $>1,200$ to $1,700$ scfm

- When the flow ranges from  $>1,200$  to  $1,700$  scfm, the mini-flare (15 MMBtu/hr flare) starts up:
  - The mini-flare will auto ignite and treat a varying flow between 60 and 500 scfm to properly combust the flow of LFG from the landfills.
  - The facility emissions will only be from the small 15 MMBtu/hr flare.

#### Scenario 3: LFG flow of $>1,700$ scfm

- When the LFG flow increases above 1,700 scfm, the mini-flare turns off and the larger flare (54 MMBtu/hr flare) turns on to process and combust the additional flow. This is a constant flow to the existing flare:
  - The facility emissions will only be from larger 54 MMBtu/hr flare.
  - The flare will have

#### Scenario 4: One Ameresco LFGTE engine is off-line

- When an engine is taken off-line for maintenance or failure:
  - The mini-flare will turn on to treat the excess LFG flow ranging from 60 – 500 cfm.
  - The facility emissions will only be from the small 15 MMBtu/hr flare.

Scenario 5: All Ameresco LFGTE engines are off-line and both flares are in operation

- In the case where the LFG flow is high enough that the mini-flare is already treating at its maximum capacity, the LFG flow will be treated by the existing larger flare, or a combination of the miniflare and the existing flare. Combined LFG flow to the flares during concurrent operation will remain under the proposed limit of 2.592 MMcf/day, which is equivalent to the existing flare capacity of 54 MMBtu/hr.
  - The facility emissions will be from both the existing 54 MMBtu/hr and the new 15 MMBtu/hr flares. Both flares will operate in conjunction and the maximum LFG combusted in both flares will be 2.592 MMcf/day, which is the new proposed daily limit and is equivalent to the existing flare’s capacity of 54 MMBtu/hr.

*Updated emissions profile from existing 54 MMBtu/hr flare*

As stated above the facility is proposing to increase the daily limit of LFG combusted on the flare to the flare capacity of 54 MMBtu/hr while reducing the CO emission factor from 0.59 lb/MMBtu to 0.40 lb/MMBtu. Table 1 shows the emissions factors for the existing gas flare.

Table 1. Updated emission factors for existing 54 MMBtu/hr flare.

Pollutant	Emission factor (lb/MMBtu)	Emission factor (lb/hr)
Nitrogen Oxides (NO <sub>x</sub> )	0.06	--
Volatile organic compounds (VOC)	0.03	--
Carbon monoxide (CO <sup>1</sup> )	0.40	--
Particulate matter (PM <sup>2</sup> )	0.02	--
Sulfur of oxides (SO <sub>2</sub> <sup>3</sup> )	--	1.68

<sup>1</sup> Facility proposed new CO emission factor. Emission factor reduced from 0.59 lb/MMBtu.

<sup>2</sup> Emission factor from previous engineering evaluation, which cited Santa Barbara County APCD Flare Study, July 1991.

<sup>3</sup> Based on the LFG hydrogen sulfide (H<sub>2</sub>S) content from source test data (highest value from 2016-2019 of 93.7 ppm) and calculation below.

$$\frac{lb\ SO_2}{hr} = \frac{ppm\ \text{as}\ H_2S}{10^6} \times \frac{DSCFM(inlet),\ ft^3}{min} \times \frac{MW_{SO_2},\ lb}{lbmole} \times \frac{60\ min}{hr} \times \frac{lbmole}{385\ ft^3}$$

$$\frac{lb\ SO_2}{hr} = \frac{93.7}{10^6} \times \frac{1,800\ ft^3}{min} \times \frac{64\ lb}{lbmole} \times \frac{60\ min}{hr} \times \frac{lbmole}{385\ ft^3} = \frac{1.68\ lb\ SO_2}{hr}$$

The existing 54 MMBtu/hr flare is expected to comply with the reduced CO emissions limit. Source test data for 2016-2019 period is as follows:

- 0.0082 lb/MMBtu for 2016
- 0.0070 lb/MMBtu for 2017
- 0.0039 lb/MMBtu for 2018
- 0.0037 lb/MMBtu for 2019

Table 2 shows the facility’s LFG characteristics from annual source test data conducted from 2016 to 2019 for the existing 54 MMBtu/hr flare.

Table 2. Buena Vista landfill gas characteristics from source tests.

Landfill gas property:	2019 values	2018 values	2017 values	2016 values	Average
H <sub>2</sub> S content (ppm)	21.57	33.2	93.7	21.1	42.39
Fuel F-factor (dscf/MMBtu)	9,738	9,800	9,534	9,979	9,763
Heating value @68°F (Btu/ft <sup>3</sup> )	398.67	378.43	463.39	387.98	407.12
Inlet LFG VOC content as methane (ppm)	446.2	172.46	2,340	705	915.92

Table 3 shows the updated potential to emit (PTE) emissions profile for the existing 54 MMBtu enclosed ground flare.

Table 3. Updated emissions profile for existing 54 MMBtu/hr flare.

Pollutant	Heat input (MMBtu/Hr)	Emission factor (lb/MMBtu)	Emission factor (lb/hr)	Daily emissions (lb/day)	Yearly emissions (ton/yr)
NO <sub>x</sub>	54	0.06	--	77.76	14.19
VOC	54	0.03	--	38.88	7.1
CO	54	0.40	--	518.40	94.61
PM=PM <sub>10</sub>	54	0.02	--	25.92	4.73
SO <sub>2</sub>	54	--	1.68	40.32	7.36

*Emissions profile for new 15 MMBtu/hr flare*

Table 4 shows the emission factors proposed by the applicant for the new 15 MMBtu/hr enclosed LFG flare. Emissions based on applicant’s submitted manufacturer’s specifications and past annual source test analysis from 2016-2019 conducted for the existing flare. SO<sub>2</sub> emissions are based on the LFG H<sub>2</sub>S content.

Table 4. Emissions factors for the new 15 MMBtu/hr landfill gas flare.

Pollutant	Emission factor (lb/MMBtu)	Emission factor (lb/MMCf)	Emission factor (lb/hr)
NO <sub>x</sub>	0.06	--	--
VOC <sup>1</sup>	--	--	0.76
CO	0.20	--	--
PM <sub>10</sub>	--	6.1	--
SO <sub>x</sub> <sup>2</sup>	--	--	0.47

<sup>1</sup> VOC based on the highest of the two scenarios: 1) 98% VOC control efficiency or 2) exhaust VOC concentration of 20 ppm as hexane.

Scenario 1: Based on flare manufacturer’s guarantee of 98% VOC destruction efficiency and inlet LFG content of 2,340 (maximum value from source test analysis from 2016-2019).

$$\frac{lb\ VOC}{hr} = \frac{Inlet\ LFG\ flow,\ ft^3}{min} \times \frac{60\ min}{hr} \times \frac{MW_{methane},\ lb}{lbmole} \times \frac{lbmole}{385\ ft^3} \times \frac{VOC,\ ppm}{10^6} \times \frac{20.9}{(20.9 - 3)}$$

$$\frac{lb\ VOC}{hr} = \frac{500\ ft^3}{min} \times \frac{60\ min}{hr} \times \frac{lbmole}{385\ ft^3} \times \frac{16\ lb\ VOC}{lbmole} \times \frac{2,340\ ppm}{10^6} \times \frac{20.9}{(20.9 - 3)} \times 0.02 = \frac{0.07\ lb\ VOC}{hr}$$

Scenario 2: VOC based on 20 ppm as hexane at 3% oxygen, as limited by 40 CFR 60, Subpart WWW, Section §60.752(b)(2)(iii)(B):



$$\frac{lb\ VOC}{hr} = \frac{ppm}{10^6} \times \frac{DSCFM, ft^3}{min} \times \frac{60\ min}{hr} \times \frac{MW_{hexane}, lb}{lbmole} \times \frac{lbmole}{385\ ft^3}$$

$$Exhaust\ flow, \frac{dscf}{hr} = \frac{15\ MMBtu}{hr} \times \frac{hr}{60\ min} \times \frac{9,763, dscf}{MMBtu} \times \frac{20.9}{20.9 - 3} = \frac{2,850\ dscf}{MMBtu}$$

$$\frac{lb\ VOC}{hr} = \frac{20\ ppm}{10^6} \times \frac{2,850\ ft^3}{min} \times \frac{60\ min}{hr} \times \frac{86\ lb}{lbmole} \times \frac{lbmole}{385\ ft^3} = \frac{0.76\ lb\ VOC}{hr}$$

<sup>2</sup> Based on the LFG H<sub>2</sub>S (highest value from 2016-2019 of 93.7 ppm) content from source test data and calculation below.

$$\frac{lb\ SO_2}{hr} = \frac{93.7}{10^6} \times \frac{500\ ft^3}{min} \times \frac{64\ lb}{lbmole} \times \frac{60\ min}{hr} \times \frac{lbmole}{385\ ft^3} = \frac{0.47\ lb\ SO_2}{hr}$$

Table 5 shows the PTE emissions profile for the new 15 MMBtu/hr enclosed LFG flare.

Table 5. New 15 MMBtu/hr enclosed landfill gas flare emissions profile.

Pollutant	Heat input rating (MMBtu/Hr)	Emission factor (lb/MMBtu)	Emission factor (lb/MMCf)	Emission factor (lb/hr)	Daily emissions (lb/day)	Yearly emissions (ton/yr)
NO <sub>x</sub>	15	0.06	--	--	21.60	3.94
VOC	15	--	--	0.76	18.24	3.33
CO	15	0.20	--	--	72.00	13.14
PM=PM <sub>10</sub> <sup>1</sup>	15	--	6.1	--	4.39	0.8
SO <sub>2</sub>	15	--	--	0.47	11.28	2.06

<sup>1</sup> PM emissions estimated based on the flare maximum LFG input of 500 scfm, as follows:

$$PM\left(\frac{lb}{day}\right) = \frac{500\ ft^3}{min} \times \frac{60\ hr}{hr} \times \frac{24\ hr}{day} \times \frac{MMCf}{10^6\ ft^3} \times \frac{6.1\ lb\ PM}{MMCf} = \frac{4.39\ lb\ PM}{day}$$

*Emissions profile for the proposed Operational Scenarios*

For Scenario 1, all the LFG is fed to Ameresco’s LFG to energy facility and there will no emissions from the two flares.

For Scenario 2, the 15 MMBtu/hr flare will be used to combust between 60 and 500 scfm. Thus, the emissions profile for this scenario is shown on Table 5.

For Scenario 3, the existing 54 MMBtu/hr flare will be used to combust LFG between 500-1800 scfm. Thus, the maximum PTE emissions will be when the large flare operates at full capacity. Table 3 shows the emissions profile for this scenario.

For Scenario 4, only the 15 MMBtu/hr flare will be used to combust 60 and 500 scfm. Thus, the emissions profile for this scenario is shown on Table 5.

For Scenario 5, the facility emissions will be from both the existing 54 MMBtu/hr and the new 15 MMBtu/hr flares. The maximum LFG combusted in both flares will be 2.592 MMCf/day. For scenario 5, the emissions will be estimated assuming that the new smaller flare will operate at maximum capacity of

500 scfm (15 MMBtu/hr) and the larger existing flare will operate at a capacity of (1,300 scfm). Table 5 shows the emissions profile of the new flare at maximum capacity of 500 scfm. Table 6 shows the emissions profile for the existing flare while operating at 1,300 scfm (or 39 MMBtu/hr, assumes heating value of 500 Btu/scf).

Table 6. Emissions profile for existing larger flare while operating at 1,300 scfm.

Pollutant	Heat input (MMBtu/Hr)	Emission factor (lb/MMBtu)	Emission factor (lb/hr)	Daily emissions (lb/day)	Yearly emissions (ton/yr)
NO <sub>x</sub>	39	0.06	--	56.16	10.25
VOC	39	0.03	--	28.08	5.12
CO	39	0.40	--	374.40	68.33
PM=PM <sub>10</sub>	39	0.02	--	18.72	3.42
SO <sub>2</sub> <sup>1</sup>	39	--	1.21	29.04	5.30

<sup>1</sup> Based on the LFG H<sub>2</sub>S (highest value from 2016-2019 of 93.7 ppm) content from source test data and calculation below.

$$\frac{lb\ SO_2}{hr} = \frac{ppm\ H_2S}{10^6} \times \frac{DSCFM(inlet),\ ft^3}{min} \times \frac{MW_{SO_2},\ lb}{lbmole} \times \frac{60\ min}{hr} \times \frac{lbmole}{385\ ft^3}$$

$$\frac{lb\ SO_2}{hr} = \frac{93.7}{10^6} \times \frac{1,300\ ft^3}{min} \times \frac{64\ lb}{lbmole} \times \frac{60\ min}{hr} \times \frac{lbmole}{385\ ft^3} = \frac{1.21\ lb\ SO_2}{hr}$$

The emission profile for operating scenario 5 is shown on Table 7.

Table 7. Scenario 5 emissions profile.

Pollutant	Daily emissions (lb/day)	Yearly emissions (ton/yr)
NO <sub>x</sub>	77.76	14.19
VOC	46.32	8.45
CO	446.40	81.47
PM=PM <sub>10</sub>	23.11	4.22
SO <sub>2</sub>	40.32	7.36

The highest emissions will occur during Scenario 3, when the existing 54 MMBtu/hr flare is operating at full capacity. The permits will be conditioned to limit the total combined LFG to be combusted on both flares to 2.592 MMcf/day as requested by the facility.

### APPLICABLE FEDERAL REQUIREMENTS

Applicable Requirement	Equipment Affected
Rule 200, Permits Required	Facility Wide
Rule 201, Sources Not Requiring Permits	Facility Wide
Rule 207, Review of New or Modified Sources	Facility Wide
Rule 214, Breakdown Condition	Facility Wide
Rule 218, Title V: Federal Operating Permits	Facility Wide
Rule 308, Title V: Federal Operating Permit Fees	Facility Wide

Rule 400, Visible Emissions	Facility Wide
Rule 403, Particulate Matter	Facility Wide
Rule 404, Sulfur Compounds and Nitrogen Oxides	Enclosed Ground Flare Ancillary Emergency Diesel-Powered Generator
Rule 412, Sulfur Content Fuels	Enclosed Ground Flare Ancillary Emergency Diesel-Powered Generator
Rule 418, Transfer of Gasoline into Stationary Storage Containers	Ancillary Gasoline Storage Tank
Rule 437, Municipal Solid Waste Landfills	Facility Wide
Rule 1002, Transfer of Gasoline into Vehicle Fuel Tanks	Ancillary Gasoline Storage Tank
40 CFR Part 60, Subpart A, New Source Performance Standards (NSPS), General Provisions	Facility Wide
40 CFR Part 60, Subpart WWW, NSPS For Municipal Solid Waste Landfills	Facility Wide
40 CFR Part 62, Subpart OOO, Federal Plan Requirements for Municipal Solid Waste Landfills that Commenced Construction On Or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014	Facility Wide
California Air Resources Board's (CARB) Methane Emissions from Municipal Solid Waste Landfills	Facility Wide
40 CFR Part 60, Subpart IIII, NSPS For Stationary Compression Ignition Internal Combustion Engine	Ancillary Emergency Diesel-Powered Generator
40 CFR Part 63, Subpart ZZZZ, NESHAPS For Stationary Reciprocating Internal Combustion Engines	Ancillary Emergency Diesel-Powered Generator
40 CFR Part 63, Subpart AAAA, NESHAPS For Municipal Solid Waste Landfills	Facility Wide
40 CFR Part 63, Subpart CCCCC - National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities	Above-Ground Storage Tank (AST) Gasoline Dispensing Facility (GDF)
40 CFR Part 64, Compliance Assurance Monitoring	Facility Wide

## COMPLIANCE DETERMINATION FOR APPLICABLE FEDERAL REQUIREMENTS

### Rule 200 - Permits Required

The purpose of this Rule is to identify when MBARD permits are issued. The provisions of this Rule shall apply to any person who builds, erects, alters, or replaces any article, machine, equipment or other contrivance which may cause the issuance of air contaminants or the use of which may eliminate or reduce

or control the issuance of air contaminants.

This facility has historically complied with the requirements of this rule and continued compliance is expected.

Rule 201 - Sources Not Requiring Permits

The purpose of this Rule is to provide a list of source and equipment categories which are exempt from the requirements of MBARD Rule 200 (Permits Required) to obtain an Authority to Construct (ATC) or Permit to Operate (PTO).

This rule identifies which equipment is exempt from MBARD permitting requirements.

Rule 207 - Review of New or Modified Sources

The rule applies to all new stationary sources and all modifications to existing stationary sources. MBARD has established that any landfill (a place used for the disposal of garbage where the rubbish, etc. is buried under a shallow layer of ground) is not subject to local MBARD permitting. This is because a landfill does not trigger local MBARD permitting requirements for any article, machine, equipment or other contrivance. Therefore, this landfill has not been reviewed under MBARD new source review rule and no conditions from this rule will be included on the permit for the landfill proper.

However, other operations or processes related to and located at the landfill site may require local permits. This is the case for the new mini-flare with a flow range of 60-500 scfm or up to 15 MMBtu/hr (when the LFG heat content is 500 Btu/cf).

*Federal BACT analysis*

Pursuant to Section 4.1.1, an applicant shall apply BACT to a new stationary source or modification of an existing source, which has the potential to emit greater than or equal to any one of the affected pollutant levels listed in Table 4.1.1 or a modification of an existing stationary source which has the potential to result in a new emissions increase, as defined in Section 2.37 herein, occurring after October 20, 2010 for PM<sub>2.5</sub> or after August 19, 1983 for PM<sub>10</sub> or after July 15, 1976 for any other affected pollutant.

As discussed in the Emission Calculation Section in the Project Description section, the maximum PTE emissions from the facility will occur when the existing 54 MMBtu/hr flare operates at full capacity. Table 8 shows the facility-wide emissions increases.

Table 8. Facility-wide emissions and BACT thresholds.

Permit no.:	NO <sub>x</sub> (lb/day)	VOC (lb/day)	CO (lb/day)	SO <sub>x</sub> (lb/day)	PM (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
54 MMBtu/hr flare <sup>1,2</sup> (1995)	77.76	38.88	518.40	40.32	25.92	25.92	N/A
15 MMBtu/hr flare <sup>1</sup> (2019)	21.60	18.24	72.00	11.28	4.39	4.39	4.39
Above ground gasoline dispensing facility <sup>3</sup>							
Emergency diesel engine generator set <sup>1</sup>	64.51	3.40	21.78	0.10	1.79	1.72	1.68
Unconditioned facility-wide	163.87	60.52	612.18	51.70	32.10	32.03	6.07

Permit no.:	NO <sub>x</sub> (lb/day)	VOC (lb/day)	CO (lb/day)	SO <sub>x</sub> (lb/day)	PM (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
totals:							
Proposed project facility-wide emissions <sup>4</sup> :	142.27	42.28	540.18	40.42	27.71	27.64	1.68
Table 4.1.1 BACT thresholds:	150	150	550	150	150	82	54.79

<sup>1</sup> PM<sub>10</sub> and PM<sub>2.5</sub> fractions estimated using CARB’s CEIDARS particulate matter size profile database (3/2017). For gaseous material combustion (digester gas flare and engines): PM<sub>10</sub> = 1.0 PM & PM<sub>2.5</sub> = 1.0 PM. For diesel engines: PM<sub>10</sub> = 0.96 PM & PM<sub>2.5</sub> = 0.937 PM.

<sup>2</sup> Pursuant to Section 2.37, for PM<sub>2.5</sub> emissions increases are considered if they occurred after October 20, 2010. Since the existing flare was installed in 1995, it’s PM<sub>2.5</sub> emissions do not count towards the BACT thresholds of Table 4.1.1.

<sup>3</sup> Pursuant to Rule 207, Section 1.3.1, gasoline storage and dispensing equipment subject to Rule 418 Transfer of Gasoline into Stationary Storage Containers and to Rule 1002 Transfer of Gasoline into Vehicle Fuel Tanks are exempt from the requirements of Rule 207. The above ground GDF at the facility is subject to Rule 418 & Rule 1002 and is exempt.

<sup>4</sup> Per the proposed project, the facility’s maximum LFG combusted in both flares will be 2.6 MMcf/day (or 1,800 scfm for 24 hours), which is the equivalent to the existing flare’s capacity of 54 MMBtu/hr. Thus, the highest emissions occur when the existing flare is operating at full capacity and with the operation of the emergency diesel engine-generator set.

As shown in Table 8, the proposed project does not trigger the BACT thresholds of Table 4.1.1 and the project is not subject to BACT. As stated above, the permits will be conditioned to limit the total combined LFG to be combusted on both flares to 2.6 MMcf/day as requested by the application.

*California BACT analysis*

Pursuant Section 5.2, BACT shall be required for any new or modified permit unit with a potential to emit 25 pounds per day or more of VOCs or NO<sub>x</sub>. For the new 15 MMBtu/hr flare, as shown in Table 5 and Table 8 the NO<sub>x</sub> and VOC emissions are below 25 lbs/day and the flare is not subject to the BACT requirements of Section 5.2.

*Federal Offsets analysis*

Pursuant Section 4.2, Offsets are required for any new or modified source, which has net emissions increases equal to exceeding thresholds specified in Rule 207, Table 4.2.2. As discussed in the Emission Calculation Section in the Project Description section, the maximum PTE emissions from the facility will occur when the existing 54 MMBtu/hr flare operates at full capacity. Table 9 shows the facility-wide net emissions and the offset thresholds of Table 4.2.2.

Table 9. Facility-wide net emissions and Offset thresholds.

Permit no.:	NO <sub>x</sub> (lb/day)	VOC (lb/day)	CO (lb/day)	SO <sub>x</sub> (lb/day)	PM (lb/day)	PM <sub>10</sub> (lb/day)
54 MMBtu/hr flare <sup>1</sup> (1995)	77.76	38.88	518.40	40.32	25.92	25.92
15 MMBtu/hr flare <sup>1</sup> (2019)	21.60	18.24	72.00	11.28	4.39	4.39
Above ground gasoline dispensing facility <sup>2</sup>						
Emergency diesel engine generator set <sup>3</sup>						
Unconditioned facility-wide totals:	99.36	57.12	616.32	51.60	30.31	30.31

Permit no.:	NO <sub>x</sub> (lb/day)	VOC (lb/day)	CO (lb/day)	SO <sub>x</sub> (lb/day)	PM (lb/day)	PM <sub>10</sub> (lb/day)
Proposed project facility-wide net emissions <sup>4</sup> :	77.76	38.88	518.40	40.32	25.92	25.92
Table 4.2.2 Offset thresholds:	150	150	550	150	150	82

<sup>1</sup> PM<sub>10</sub> and PM<sub>2.5</sub> fractions estimated using CARB’s CEIDARS particulate matter size profile database (3/2017). For gaseous material combustion (digester gas flare and engines): PM<sub>10</sub> = 1.0 PM & PM<sub>2.5</sub> = 1.0 PM.

<sup>2</sup> Pursuant to Rule 207, Section 1.3.1, gasoline storage and dispensing equipment subject to Rule 418 Transfer of Gasoline into Stationary Storage Containers and to Rule 1002 Transfer of Gasoline into Vehicle Fuel Tanks are exempt from the requirements of Rule 207. The above ground GDF at the facility is subject to Rule 418 & Rule 1002 and is exempt.

<sup>3</sup> Pursuant to Rule 207, Section 1.3.3, the offset requirements of Rule 207 do not apply to any emergency IC engine that is either only used for emergency power when normal power line service fails, or are used only for the emergency pumping of water, and are operated less than 60 hours per year for testing and exercise.

<sup>4</sup> Per the proposed project, the facility’s maximum LFG combusted in both flares will be 2.6 MMcf/day (or 1,800 scfm for 24 hours), which is the equivalent to the existing flare’s capacity of 54 MMBtu/hr. Thus, the highest emissions occur when the existing flare is operating at full capacity.

*California Offsets analysis*

Pursuant to Section 5.3, any new or modified stationary source with a potential to emit 137 pounds per day or more of VOCs or NO<sub>x</sub> shall be required to provide offsets at the ratios specified in Section 4.3. Pursuant to Section 2.38, for the purposes of Part 5 of this Rule, the new source applicability date shall be April 21, 1993.

As shown in Table 9, the proposed facility-wide net emissions do not exceed 137 lbs/day of NO<sub>x</sub> or 137 lbs/day of VOC, the offset thresholds of Section 5.2 and the projects are not subject to the offset requirements of Section 5.2.

Permit conditions are included on the permit to comply with the requirements of Rule 207.

MBARD Rule 207 – Review of New of Modified Sources (as adopted on 2/15/17)

Note that MBARD has not received approval for the 2/15/2017 version of Rule 207 and MBARD is implementing Rule 207 as adopted on 4/20/2011. For informational purposes only, the Rule applicability of Rule 207 as adopted on 2/15/2017 is as follows:

Rule 207 applies to all new stationary sources and all modifications to existing stationary sources, which after construction or modification, emit or have the potential to emit any affected pollutants. This project is subject to the requirements of this Rule.

*Best Available Control Technology (BACT) requirements*

Pursuant to Section 4.1.1, BACT shall be required for any new or modified permit unit with a potential to emit 25 pounds per day or more of VOCs or NO<sub>x</sub>. For the new 15 MMBtu/hr flare, as shown in Table 5 and Table 8 the NO<sub>x</sub> and VOC emissions are below 25 lbs/day and the flare is not subject to the BACT requirements of Section 4.1.1.

Pursuant to Section 4.1.2, BACT shall be required for a new or modified stationary source which has the potential to emit greater than or equal to any one of the affected pollutant levels listed in Table 4.1.1. As

shown in Table 8, the proposed project does not trigger the BACT thresholds of Table 4.1.1 and the project is not subject to BACT.

*Offset requirements*

Pursuant Section 4.2, Offsets are required for any new or modified source, which has the potential to emit greater than or equal to the thresholds of any affected polluted listed in Table 4.2.1.

As discussed in the Emission Calculation Section in the Project Description section, the maximum PTE emissions from the facility will occur when the existing 54 MMBtu/hr flare operates at full capacity. As shown in Table 10, the facility-wide emissions do not exceed the offset thresholds of Section 4.2, Table 4.2.1.

Table 10. Facility-wide potential to emit emissions and Offset thresholds.

Permit no.:	NO <sub>x</sub> (lb/day)	VOC (lb/day)	CO (lb/day)	SO <sub>x</sub> (lb/day)	PM (lb/day)	PM <sub>10</sub> (lb/day)
54 MMBtu/hr flare <sup>1</sup> (1995)	77.76	38.88	518.40	40.32	25.92	25.92
15 MMBtu/hr flare <sup>1</sup> (2019)	21.60	18.24	72.00	11.28	4.39	4.39
Above ground gasoline dispensing facility <sup>2</sup>						
Emergency diesel engine generator set <sup>3</sup>						
Unconditioned facility-wide totals:	99.36	57.12	616.32	51.60	30.31	30.31
Proposed project facility-wide net emissions <sup>4</sup> :	77.76	38.88	518.40	40.32	25.92	25.92
Table 4.2.1 Offset thresholds:	137	137	550	150	150	82

<sup>1</sup> PM<sub>10</sub> and PM<sub>2.5</sub> fractions estimated using CARB’s CEIDARS particulate matter size profile database (3/2017). For gaseous material combustion (digester gas flare and engines): PM<sub>10</sub> = 1.0 PM & PM<sub>2.5</sub> = 1.0 PM.

<sup>2</sup> Pursuant to Rule 207, Section 1.3.1, gasoline storage and dispensing equipment subject to Rule 418 Transfer of Gasoline into Stationary Storage Containers and to Rule 1002 Transfer of Gasoline into Vehicle Fuel Tanks are exempt from the requirements of Rule 207. The above ground GDF at the facility is subject to Rule 418 & Rule 1002 and is exempt.

<sup>3</sup> Pursuant to Rule 207, Section 1.3.3, the offset requirements of Rule 207 do not apply to any emergency IC engine that is either only used for emergency power when normal power line service fails, or are used only for the emergency pumping of water, and are operated less than 60 hours per year for testing and exercise.

<sup>4</sup> Per the proposed project, the facility’s maximum LFG combusted in both flares will be 2.6 MMcf/day (or 1,800 scfm for 24 hours), which is the equivalent to the existing flare’s capacity of 54 MMBtu/hr. Thus, the highest emissions occur when the existing flare is operating at full capacity.

Rule 214 – Breakdown Conditions

This is the implementing regulation in which MBARD has established the criteria for reporting breakdowns. The requirements imposed by the SIP approved version of this rule will be included on this permit. The SIP approved version of this rule is that which was adopted on December 13, 1984.

Permit conditions are included on the permit to comply with the requirements of Rule 214.

Rule 218 – Title V: Federal Operating Permits

The purpose of this Rule is to provide for the issuance of Federal Operating Permits (FOPs) which contain

all federally enforceable requirements for stationary sources as required under the provisions of Title V of the Federal Clean Air Act and amendments (the Act).

The proposed changes to condition #1 (increase of the daily limit of LFG to the flares), condition #2 (reduction of the CO emission limit), and inclusion of the new requirements of NSPS Subpart Cf are considered significant modifications to the Title V permit, per Rule 218, Section 2.27. Pursuant to Section 3.8.3, the procedural requirements of Rule 218, Section 3.5 will be followed. MBARD will issue a public notice requesting comments on the proposed Title V permit and statement of basis and the permit will be submitted to EPA for a 45-day review period.

Pursuant to Section 4.2.10.3, MBARD can incorporate maintenance of any other record keeping deemed necessary to demonstrate compliance with all federally enforceable requirements. Since CARB's LMR does not require the determination of the non-methane organic compound (NMOC) emission report, MBARD is proposing to include new permit conditions requiring the Landfill to calculate and report the NMOC emission rate report until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, which is the applicability emission threshold for 40 CFR 63, Subpart AAAA *NESHAPS for Municipal Solid Waste Landfills*. MBARD will require the facility to calculate the NMOC emission rate using the procedures specified in 40 CFR 63, Subpart AAAA, Section [§63.1959](#).

The facility has been submitting the NMOC emission rate report every five (5) years, as it was allowed under Subpart WWW, Section §60.757(b)(1)(ii). Thus, the facility will allow the facility to calculate the report every 5 years, as allowed in §60.767(b)(1)(ii)..

MBARD is proposing to modify current Condition 27 for the NMOC emission rate reporting:

27. *Every five (5) years, the County of Santa Cruz Public Works shall calculate the NMOC emission rate for the landfill until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed. The NMOC emissions rate shall be calculated using the calculating procedures specified in 40 CFR 63, Section §63.1959. [MBARD Rule 218]Every five years, the County of Santa Cruz shall submit a NMOC emission rate report to the District as specified in §60.757(b)(1)(ii) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed. [District Rule 437 Adopted 10/16/96 and 40 CFR Part 60, Subpart WWW]*

Permit conditions are included on the permit to comply with the requirements of Rule 218.

#### Rule 308 – Title V: Federal Operating Permit Fees

The purpose of this Rule is to provide funding for the issuance and enforcement of Federal Operating Permits, which meet the requirements of Title V of the Federal Clean Air Act and amendments (the Act). The fees required pursuant to this Rule shall be in addition to fees for MBARD permits to operate and other fees required by other MBARD rules.

The provisions of this Rule shall apply to any facility that is required to apply for and maintain a Federal Operating Permit pursuant to Rule 218. Permit conditions are included on the Title V permit to ensure compliance with the fee provisions contained in this rule.



Rule 400 – Visible Emissions

According to MBARD Rule 400 Section 3.1, 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 or darker than Rangeland 1, or equivalent 20% opacity. This requirement will be included as a permit condition.

Pursuant to Section 3.1, 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 or darker than Rangeland 1, or equivalent 20% opacity.

*Landfill gas flares*

According to the Periodic Monitoring Recommendations developed by CAPCOA, CARB, and EPA Region 9, for ground-level flares at wastewater treatment plants, the recommended periodic monitoring is as follows:

- Continuous exhaust temperature limit/monitoring with continuous recorder or emergency alarm if combustion temperature falls out of specified range. Alarm will trigger an immediate visible emissions inspection. If a visible emissions inspection documents opacity, a method 9 evaluation shall be completed within 3 working days.

Both the 15 MMBtu/hr & 54 MMBtu/hr flares are equipped with temperature monitoring and recording equipment. Both flares are conditioned to keep the temperature equal to the average combustion temperature determined during the most recent source test minus 50°F, provided the limit is not less than 1,400°F. The flares meet the recommendations of the Periodic Monitoring Recommendations.

Permit conditions are included on the permit to ensure compliance with this rule.

Rule 403 – Particulate Matter

The purpose of this Rule is to provide particulate matter emission limits for sources operating within MBARD. The provisions of this Rule shall apply to any source discharging particulate matter while operating within the Air District.

Pursuant to Section 3.1, a person shall not discharge from any source whatsoever particulate matter in excess of 0.15 grains/ft<sup>3</sup>. Below is the analysis for each set of fuel fired equipment at the facility.

*Stationary Internal Combustion Engines (emergency diesel engine-generator set)*

Section 1.3.1 exempts stationary internal combustion engines from meeting the requirements of this Rule.

*Landfill gas flares*

Compliance for the 54 MMBtu/hr flare is assured based on the LFG F<sub>d</sub> factor of 9,763 dscf/MMBtu and PM emissions of 1.08 lb/hr (see Table 3). See calculation below:

$$\text{Exhaust flow, } \frac{\text{dscf}}{\text{hr}} = \frac{\text{flare input rating, MMBtu}}{\text{hr}} \times \frac{\text{LFG F}_d, \text{dscf}}{\text{MMBtu}} \times \frac{20.9}{20.9 - 3}$$
$$\text{Exhaust flow, } \frac{\text{dscf}}{\text{hr}} = \frac{54 \text{ MMBtu}}{\text{hr}} \times \frac{9,763, \text{dscf}}{\text{MMBtu}} \times \frac{20.9}{20.9 - 3} = \frac{615,560 \text{ dscf}}{\text{hr}}$$

$$PM \left( \frac{gr}{dscf} \right) = \frac{1.08 \text{ lb PM}}{hr} \times \frac{7,000 \text{ gr}}{\text{lb PM}} \times \frac{hr}{615,560 \text{ dscf}} = \frac{0.012 \text{ gr}}{dscf}$$

Compliance for the 15 MMBtu/hr flare is assured based on the LFG F<sub>d</sub> factor of 9,763 dscf/MMBtu and PM emissions of 0.18 lb/hr (see Table 5). See calculation below:

$$\text{Exhaust flow, } \frac{dscf}{hr} = \frac{15 \text{ MMBtu}}{hr} \times \frac{9,763 \text{ dscf}}{\text{MMBtu}} \times \frac{20.9}{20.9 - 3} = \frac{170,989 \text{ dscf}}{\text{MMBtu}}$$

$$PM \left( \frac{gr}{dscf} \right) = \frac{0.18 \text{ lb PM}}{hr} \times \frac{7,000 \text{ gr}}{\text{lb PM}} \times \frac{hr}{170,989 \text{ dscf}} = \frac{0.007 \text{ gr}}{dscf}$$

In addition, the facility's digester gas H<sub>2</sub>S concentration is limited to 50 grains per 100 cubic feet. Permit conditions are included on the permit to ensure compliance with Rule 403.

Rule 404 – Sulfur Compounds and Nitrogen Oxides

The purpose of this Rule is to provide limits for the emissions of sulfur compounds, nitrogen oxides and nitrogen dioxide from sources within MBARD. The provisions of this Rule shall apply to sources of sulfur compounds, nitrogen oxides, and nitrogen dioxide subject to MBARD Rule 200 *Permits Required*.

Section 3.1 prohibits any single emission unit from exceeding the following concentration or amount at the point of discharge to the atmosphere:

- Sulfur compounds, calculated as sulfur dioxide, 0.2% by volume (2,000 ppmv), and
- Nitrogen oxides, calculated as nitrogen dioxide (NO<sub>2</sub>), 140 pounds per hour.
- Nitrogen oxides, calculated as nitrogen dioxide (NO<sub>2</sub>), flue gas having a 225 ppm NO<sub>x</sub> by volume at 3% O<sub>2</sub> concentration for equipment with heat input rate of 1-1/2 billion Btu per hour (gross).

*54 MMBtu/hr LFG flare*

- Compliance with the 0.2% by volume (2,000 ppmv) limit for SO<sub>2</sub> for the 54 MMBtu/hr is assured based on the LFG F<sub>d</sub> factor of 9,763 dscf/MMBtu (see Table 2) and SO<sub>2</sub> emissions of 1.68 lb/hr (see Table 3). See calculation below:

$$SO_2(ppm) = \frac{lbSO_2}{hr} \div \left( \frac{DSCFM, ft^3}{hr} \times \frac{MV_{SO_2}, lb}{lbmole} \times \frac{lbmole}{385 ft^3} \right) \times 10^6$$

$$SO_2(ppm) = \frac{1.68 \text{ lb}}{hr} \div \left( \frac{615,560 \text{ ft}^3}{hr} \times \frac{64 \text{ lb}}{lbmole} \times \frac{lbmole}{385 \text{ ft}^3} \right) \times 10^6 = 16.42 \text{ ppm}$$

In addition, the facility's digester gas H<sub>2</sub>S concentration is limited to 50 grains per 100 cubic feet.

- The hourly NO<sub>x</sub> emissions rate for the 54 MMBtu/hr is 3.24 lb/hr [(77.76 lb/day) ÷ (24 hr/day) = 3.24 lb/hr], which is well below the 140 lb/hr limit.
- The flare has a heat input rating well below 1-1/2 billion Btu per hour.

*15 MMBtu/hr LFG flare*

- Compliance with the 0.2% by volume (2,000 ppmv) limit for SO<sub>2</sub> for the 15 MMBtu/hr is assured based on the LFG F<sub>d</sub> factor of 9,763 dscf/MMBtu (see Table 2) and SO<sub>2</sub> emissions of 0.47 lb/hr (see Table 3). See calculation below:

$$SO_2(ppm) = \frac{0.47 \text{ lb}}{\text{hr}} \div \left( \frac{170,989 \text{ ft}^3}{\text{hr}} \times \frac{64 \text{ lb}}{\text{lbmole}} \times \frac{\text{lbmole}}{385 \text{ ft}^3} \right) \times 10^6 = 16.54 \text{ ppm}$$

In addition, the facility's digester gas H<sub>2</sub>S concentration is limited to 50 grains per 100 cubic feet.

- The hourly NO<sub>x</sub> emissions rate for the 15 MMBtu/hr is 0.90 lb/hr [(21.60 lb/day) ÷ (24 hr/day) = 0.90 lb/hr], which is well below the 140 lb/hr limit.
- The flare has a heat input rating well below 1-1/2 billion Btu per hour.

#### *Stationary emergency diesel engine*

- Compliance with the sulfur compound limit is assured while combusting CARB diesel fuel, which limits sulfur content to 15 ppm.
- The diesel engine has a NO<sub>x</sub> emission rate below 140 lb/hr. The NO<sub>x</sub> emissions rate from this engine is 2.69 lb/hr [(64.51 lb/day) (day/24 hr) = 2.69 lb NO<sub>x</sub>/hr], which is well below 140 lb/hr.
- The diesel engine has a heat input rating well below 1-1/2 billion Btu per hour.

Permit conditions are included on the permit to ensure compliance with Rule 404.

#### Rule 412 – Sulfur Content of Fuels

The purpose of this Rule is to limit emissions of sulfur oxides from combustion sources within MBARD. The provisions of this Rule shall apply to all combustion sources operated within the Air District unless exempted pursuant to Section 1.3 of this Rule.

Pursuant to Part 3, no person shall burn within MBARD any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions, or any liquid fuel or solid fuel having a sulfur content in excess of 0.5 percent by weight. Note that landfill gas flares are condition to limit hydrogen sulfide content to no more than 50 grains per 100 cubic feet. Also, for the diesel fuel engines compliance with the sulfur content is assured by the use of CARB diesel fuel.

Permit conditions are included on the permit to comply with the requirements of Rule 412.

#### Rule 418 – Transfer of Gasoline into Stationary Storage Containers

The purpose of this Rule is to limit the emissions of vapors of gasoline from the transfer of gasoline from delivery vessels into stationary storage containers. The provisions of this Rule shall apply to any transfer of gasoline into a stationary storage container unless specifically exempted by this Rule.

Pursuant to Section 3.1, a person shall not transfer or permit the transfer of gasoline from any delivery vessel (i.e., tank truck or trailer) into any stationary storage container with a capacity of 250 gallons or more unless such container is equipped with a permanent submerged fill pipe and such transfer is made through

an ARB-Certified Vapor Recovery System. The above-ground storage tank is equipped with a submerged fill pipe and a CARB certified Pre-enhanced Phase I vapor recovery system that meets the requirements of CARB Executive Order G-70-194.

Pursuant to Section 3.2, a person shall not store gasoline in or otherwise use or operate any gasoline delivery vessel unless such vessel is designed and maintained to be vapor tight. The facility does not operate any gasoline delivery vessels.

#### Rule 437 – Municipal Solid Waste Landfills

The purpose of this Rule is to control emissions from existing Municipal Solid Waste Landfills as required under the provisions of the Federal Clean Air Act and regulations promulgated by USEPA at 40 CFR Part 60, Subpart Cc. In addition, Part 3, adopts by reference the requirements of 40 CFR Part 60, Subpart WWW.

As noted in the Facility Description above, EPA has adopted 40 CFR Part 60, Subpart Cf, replacing Subpart Cc. The Landfill is now subject to the requirements of the California Air Resources Board's Landfill Methane Regulation and to the provisions of 40 CFR §62.16716(c), §62.16720(a)(5), §62.16722(a)(2) and (3), §62.16724(k), and §62.16726(e)(2) and (5).

The Landfill is not subject to the requirements of Rule 437.

#### 40 CFR Part 60, Subpart A – New Source Performance Standards, General Provisions

This facility is subject to the requirements of 60.7 (notification and record keeping), 60.8 (performance tests), 60.11 (compliance with standards and maintenance requirements), and 60.13 (monitoring requirements) because they are subject to 40 CFR Part 60, Subpart WWW.

MBARD asserts that compliance with the conditions on the Title V permit shall be considered compliance with the monitoring, record keeping, and reporting requirements contained in 40 CFR Parts 60.7, 60.8, 60.11, and 60.13.

Permit conditions are included on the permit to comply with the requirements of this NSPS.

#### Rule 1002 – Transfer of Gasoline into Vehicle Fuel Tanks

This Rule complies with California Health and Safety Code section 39666(d) by establishing control requirements for the reduction of benzene emissions from gasoline dispensing facilities. The provisions of this Rule shall apply to any new, or modified, or existing gasoline dispensing facility

Pursuant to Section 3.1, a person shall not transfer or permit the transfer of gasoline from a stationary storage container into any motor vehicle fuel tank with a capacity of greater than 5 gallons unless such transfer is made through a fill nozzle which captures the gasoline vapors displaced by the transfer and directs them through the nozzle to a CARB-certified vapor recovery system. At the time of installation there was no CARB-certified Phase II vapor recovery system. A Phase II system recovers vapors during the fueling of motor vehicles from stationary storage containers. The facility installed a pre-enhanced vapor recovery (Pre-EVR) Phase II system meeting the requirements of EO G-70-194. The executive order states

the following “Extension of Effective and Operative Dates Relating to the Finding that Enhanced Vapor Recovery (EVR) Standing Loss Control, Phase I, Phase II Vapor Recovery and In-Station Diagnostics (ISD) Systems for Gasoline Dispensing Facilities (GDF) Using Above-Ground Storage Tanks (AST) Are Not Commercially Available.” In July 2020 CARB approved a Phase II vapor recovery system for ASTs with non-remote dispensing (configuration of M1W’s GDF). Pursuant to Section 4.3.1 of this Rule, an existing facility is required to meet the requirements of this subsection when its annual gasoline throughput is determined to be 120,000 gallons or greater. The annual throughput for the above-ground storage tank is well below 120,000 gallons per year.

Section 3.2 requires that the vapor recovery system is operated in accordance with the manufacturer’s specifications and is maintained to be leak free, vapor tight, and in good working order. In addition, it requires that the equipment be certified by CARB and is operated according to CARB EOs. The equipment is permitted to require physical inspection of the system components. Also, the permit requires that the equipment be operated and maintained in accordance with the most current applicable CARB executive orders.

Section 3.3 requires that the inspection and maintenance requirements of CARB’s EOs. MBARD permit requires that the facility follows the inspection & maintenance requirements as listed in CARB’s EOs.

Section 3.4 requires that equipment be marked as “Out of Order” when MBARD determines that a Phase II component contains a major defect. MBARD follows CARB’s list for defective equipment to implement the requirements of this Section.

Section 3.5 requires MBARD to provide a “Seven-Day Notice to Correct” to the facility when a Phase II component is not in good working order, but does not contain a major defect. This requirement is part of MBARD inspection program for gasoline dispensing facilities.

Section 3.6 requires the posting of operating instruction for Phase II vapor recovery systems including MBARD’s or CARB’s telephone number for complaints. MBARD inspection programs includes the verification of this requirement and can provide stickers to the facilities.

Section 3.7 lists the requirements in the event of “Drive-offs” including the replacement requirements of the equipment and the documentation. The replacement equipment needs to be CARB certified. In addition to the Executive Orders, CARB maintains a list of advisories that requires Pre-EVR equipment be replaced with EVR certified equipment. MBARD inspection program verifies that any replacement equipment meets CARB requirements that components be certified.

Section 3.8 requires that personnel installing the vapor recovery systems to have a current International Code Council (ICC) Vapor Recovery Installation certifications and that test personnel have a current ICC Vapor Recovery Testing certification. MBARD permitting and inspection programs are used to ensure both installer and testing personnel have the required ICC certifications.

Pursuant to Section 4.3.1, existing gasoline dispensing facilities are required to meet the requirements of Section 3.1 when the annual gasoline throughput is determined to be 120,000 gallons or greater. Once the facility is determined to have an annual throughput of 120,000 gallons or greater, it shall secure all permits and other approvals necessary to meet requirements of Section 3.1 no later than 6 months from the first day the facility is determined to be subject to this subsection. The annual throughput for the above-ground

storage tank is well below 120,000 gallons per year.

40 CFR Part 60, Subpart WWW – NSPS for Municipal Solid Waste Landfills

As stated above, Landfills subject to the NSPS 40 CFR Part 60, Subpart WWW or to the Emission Guidelines under Subpart Cc that are not new, reconstructed or modified after July 18, 2014, are now subject to the approved State Plan and/or 2021 Federal Plan for Subpart Cf in 40 CFR Part 62, Subpart OOO

Current conditions referencing Subpart WWW will be removed from the permit.

40 CFR Part 62, Subpart OOO – Federal Plan Requirements for Municipal Solid Waste Landfills that Commenced Construction On Or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014

This Subpart implements the 2016 Emission Guidelines under Subpart Cf and became effective on June 21, 2021. EPA conditionally approved California’s Plan (CARB Landfill Methane Regulation) and also require the implementation of the provisions of 40 CFR §62.16716(c), §62.16720(a)(5), §62.16722(a)(2) and (3), §62.16724(k), and §62.16726(e)(2) and (5).

*§62.16716(c) – Well temperature requirements*

Pursuant to Section §62.16716(c), the Landfill must operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit). The owner or operator may establish a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to the Administrator for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (i.e., neither causing fires nor killing methanogens is acceptable).

MBARD is proposing to add the following conditions to comply with Section §62.16716(c):

- The County of Santa Cruz Department of Public Works must operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit). The County of Santa Cruz Department of Public Works may establish a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to MBARD for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (i.e., neither causing fires nor killing methanogens is acceptable). [40 CFR 62, Subpart OOO, Section §62.16716(c)]

*§62.16720(a)(5) – Active collection system off-site migration of subsurface gas*

Pursuant to Section §62.16720(a)(5), any Landfill seeking to demonstrate compliance with §62.16714(b)(2)(iv) (off-site migration of subsurface gas) through the use of a collection system not conforming to the specifications provided in §62.16728 (specifications for active collection systems) must provide information satisfactory to the Administrator as specified in §62.16724(d)(3).

MBARD is proposing to add the following conditions to comply with Section §62.16720(a)(5):

- The County of Santa Cruz Department of Public Works’ gas collection and control system must

minimize off-site migration of subsurface gas through the use of a gas collection and control system that conforms to the specifications provided in Section §62.16728. The County of Santa Cruz Department of Public Works must provide the system design plan and it must conform to specifications for active collection systems in §62.16728 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 62.16728. [40 CFR 62, Subpart OOO, Section §62.16720(a)(5)]

*§62.16722(a)(2) – Monitor nitrogen or oxygen concentration*

The Landfill must monitor the nitrogen or oxygen concentration in the landfill gas on a monthly basis in accordance with Section §62.16722(a)(2). The use of a portable gas composition analyzer is allowed provided the analyzer is calibrated; and the analyzer meets all quality assurance and quality control requirements for Method 3A or ASTM D6522-11.

MBARD is proposing to add the following conditions to comply with Section §62.16722(a)(2):

- The County of Santa Cruz Department of Public Works must monitor the nitrogen or oxygen concentration in the landfill gas on a monthly basis as follows: [40 CFR 62, Section §62.16722(a)(2)]
  - a. The nitrogen level must be determined using EPA Method 3C of Appendix A-2 of 40 CFR Part 60, unless an alternative test method is established as allowed by §62.16724(d)(2).
  - b. Unless an alternative test method is established as allowed by §62.16724(d)(2), the oxygen level must be determined by an oxygen meter using EPA Method 3A of Appendix A-7 of 40 CFR Part 60, EPA Method 3C of Appendix A-7 of 40 CFR Part 60, or ASTM D6522-11. Determine the oxygen level by an oxygen meter using EPA Method 3A, 3C, or ASTM D6522-11 (if sample location is prior to combustion) except that:
    - A. The span must be set between 10- and 12-percent oxygen;
    - B. A data recorder is not required;
    - C. Only two calibration gases are required, a zero and span;
    - D. A calibration error check is not required;
    - E. The allowable sample bias, zero drift, and calibration drift are ±10 percent.
  - c. A portable gas composition analyzer may be used to monitor the oxygen levels provided:
    - A. The analyzer is calibrated; and
    - B. The analyzer meets all quality assurance and quality control requirements for EPA Method 3A or ASTM D6522-11.

*§62.16722(a)(3) – Monitor temperature of the landfill gas*

The Landfill must monitor the temperature of the landfill gas on a monthly as provided in Section §62.16720(a)(4).

MBARD is proposing to add the following conditions to comply with Section §62.16722(a)(3) and §62.16720(a)(4):

- The County of Santa Cruz Department of Public Works must monitor the temperature of the landfill gas on a monthly basis. The temperature measuring device must be calibrated annually using the procedure in 40 CFR Part 60, Appendix A-1, EPA Method 2, Section 10.3. If a well exceeds the operating parameter for temperature, action must be initiated to correct the exceedance within 5 calendar days. Any attempted corrective measure must not cause exceedances of other operational or performance standards. [40 CFR 62, Section §62.16722(a)(3) and §62.16720(a)(4)]
  - a. If a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 15 calendar days of the first measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit), the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) was first measured. The County of Santa Cruz Department of Public Works must keep records according to Condition 47(n).
  - b. If corrective actions cannot be fully implemented within 60 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit). The County of Santa Cruz Department of Public Works must keep records according to Condition 47(o) and must report the information in the annual report according to Condition 55(k).
  - c. If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to MBARD. The County of Santa Cruz Department of Public Works must keep records according to Condition 47(p) and must report the information in the annual report according to Condition 55(k).

*§62.16724(k) – Corrective action and the corresponding timeline*

The owner or operator must submit information regarding corrective actions according to paragraphs (k)(1) and (2) of this section.

- (1) For corrective action that is required according to [§62.16720\(a\)\(4\)\(iii\)](#) and is expected to take longer than 120 days after the initial exceedance to complete, you must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above. The Administrator must approve the plan for corrective action and the corresponding timeline.
- (2) For corrective action that is required according to [§62.16720\(a\)\(4\)\(iii\)](#) and is not completed within 60 days after the initial exceedance, you must submit a notification to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature



exceedance.

MBARD is proposing to add the following conditions to comply with Section §62.16722(a)(3):

- For corrective actions that are required by Condition 46(c), the County of Santa Cruz Department of Public Works must submit the following information: [40 CFR 62, Subpart OOO, Section §62.16724(k)]
  - a. If the corrective action is expected to take longer than 120 days after the initial exceedance to complete, the County of Santa Cruz Department of Public Works must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above. MBARD must approve the plan for corrective action and the corresponding timeline.
  - b. If the corrective action is not completed within 60 days after the initial exceedance, the County of Santa Cruz Department of Public Works must submit a notification to MBARD as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature exceedance.

*§62.16726(e)(2)& (5) – Recordkeeping*

Pursuant to Section §62.16726(e)(2), landfills subject to the provisions of this subpart must also keep records of each wellhead temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent.

Pursuant to Section §62.16726(e)(5), for any root cause analysis for which corrective actions are required in [§62.16720\(a\)\(3\)](#) or [§62.16720\(a\)\(4\)](#), keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s) taken, and the date(s) the corrective action(s) were completed.

MBARD will incorporate the reporting requirements of Sections §62.1726(e)(2) & (5) with the reporting requirements of CARB’s Landfill Methane Regulation. See Condition 55.

Permit conditions will be added to the permit to comply with these sections.

California Air Resources Board’s (CARB) Methane Emissions from Municipal Solid Waste Landfills, CCR Title 17, Sections §95460-95476

The requirements of CARB’s Landfill Methane Regulation will be added to comply with the Emission Guidelines under Subpart Cf.

The requirements apply to closed or inactive municipal solid waste (MSW) landfill with greater than or equal 450,000 tons of waste-in-place. Per the facility’s CY 2017 AB32 LMR Report, the facility’s waste-in-place as of December 31, 2017 was 3,592,624 tons.

*Design plan and installation: §95464(a)*

Pursuant to Section §95464(a)(1), the owner or operator of a MSW landfill must submit a Design Plan to the Executive Officer within one year after the effective date of this subarticle, or within one year of detecting any leak on the landfill surface exceeding a methane concentration of 200 ppmv pursuant to Section §95463(b)(2)(B). Per CARB's Implementation Guidance Document<sup>1</sup>, a valid Permit to Construct, Permit to Operate, or Compliance Plan issued by a local air district can substitute for the required Design Plan if the implementing agency (MBARD) has determined that these documents satisfy the requirements of the Design Plan. No Design Plan is initially needed if the landfill has an existing gas collection and control system installed. The Buena Vista Landfill had an existing gas collection and control system installed and operated a landfill gas flare.

*Gas collection and control system (GCCS) requirements: §95464(b)*

Pursuant to Section §95464(b), the owner or operator must satisfy the following requirements when operating a gas collection and control system:

- (A) Route the collected gas to a gas control device or devices, and operate the gas collection and control system continuously except as provided in sections §95464(d) and §95464(e).
- (B) Operate the gas collection and control system so that there is no landfill gas leak that exceeds 500 ppmv, measured as methane, at any component under positive pressure.
- (C) The gas collection system must be designed and operated to draw all the gas toward the gas control device or devices.

MBARD is proposing to add the following conditions to comply with Section §95464(b)(1):

- Collected landfill gas shall be routed to the gas control systems except during the following events: [Title 17 CCR, Section §95464(b)(1)(A)]
  - a. Individual wells involved in well raising provided that new waste is being added or compacted in the immediate vicinity around the well and installed gas collection well extensions are sealed or capped until the raised well is reconnected to a vacuum source; or, [Title 17 CCR, Section §95464(d)]
  - b. Temporary shutdown of individual landfill gas collection system components due to repair, catastrophic episodes such as earthquakes or fires, connection of new components to the existing system, or construction activities, provided that any new components are included in the most recent design plan and methane emissions are minimized during the shutdown. [Title 17 CCR, Section §95464(e)]
- The landfill gas collection and control systems shall be operated so that there is no landfill gas leak that exceeds 500 ppmv other than non-repeatable, momentary readings, measured as methane, at any component under positive pressure. [Title 17 CCR, Section §95464(b)(1)(B)]
- The landfill gas collection system shall be operated to draw all the gas toward the control system. [Title 17 CCR, Section §95464(b)(1)(C)]

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<sup>1</sup> California Environmental Protection Agency Air Resources Board. Implementation Guidance Document for the Regulation to Reduce Methane Emissions From Municipal Solid Waste Landfills. June 2016.

The Buena Vista Landfill operates enclosed landfill gas flares as control devices. Pursuant to Section §95464(b)(2), the enclosed flares must meet the following requirements:

1. Achieves a methane destruction efficiency of at least 99 percent by weight.
2. Is equipped with automatic dampers, an automatic shutdown device, a flame arrester, and continuous recording temperature sensors.
3. During restart or startup there must be a sufficient flow of propane or commercial natural gas to the burners to prevent unburned collected methane from being emitted to the atmosphere.
4. The gas control device must be operated within the parameter ranges established during the initial or most recent source test.

MBARD is proposing to add the following conditions to comply with Section §95464(b)(2):

- The minimum total methane destruction efficiency of the flares shall be 99 percent by weight. [Title 17 CCR, Section §95464(b)(2)(A)(1)]
- The flares shall be equipped with automatic dampers, an automatic shutdown device, and a flame arrester. [Title 17 CCR, Section §95464(b)(2)(A)(2)]
- During restart or startup, not to exceed one (1) hour, there must be a sufficient flow of propane or commercial natural gas to the burners to prevent unburned collected methane from being emitted to the atmosphere. [Title 17 CCR, Section §95464(b)(2)(A)(3)]
- The flares shall be operated within the parameters ranges established during the initial or most recent source test. [Title 17 CCR, Section §95464(b)(2)(A)(4)]

Pursuant to Section §95464(b)(4), the Buena Vista Landfill must conduct an annual source tests for the flares. If a gas control device remains in compliance after three consecutive source tests the owner or operator may conduct the source test every three years. If a subsequent source test shows the gas collection and control system is out of compliance the source testing frequency will return to annual.

MBARD is proposing to add the following conditions to comply with Section §95464(b)(4):

- Annual performance testing of each of the enclosed ground flares shall be conducted on or prior to December 31 of each year. The County of Santa Cruz Department of Public Works shall conduct performance tests in accordance with CARB Method 100 for NO<sub>x</sub>, CO and EPA Method 18 or 25 for VOCs, or other EPA-approved alternative test methods approved by MBARD to verify compliance with condition numbers 1, 2, 3, 4, 5, 8, 9 and 13. The County of Santa Cruz Department of Public Works shall furnish MBARD written results of such performance tests within sixty (60) days of the test completion. [MBARD Rule 207, MBARD Rule 412 and 17 CCR, Section §95464(b)(4)]
  - a. Oxides of Nitrogen as NO<sub>2</sub>: lb/MMBTU, lb/MMCF, ppmv dry at 3% O<sub>2</sub>, and lbm/hr.
  - b. Carbon Monoxide: lb/MMBTU, lb/MMCF, ppmv dry at 3% O<sub>2</sub>, and lbm/hr.

- c. Total and Non-Methane Hydrocarbons: lb/MMBTU, lb/MMCF, ppmv, and lbm/hr.
- d. Total hydrocarbon, THC, destruction efficiency, as determined by EPA Test Method 18 or 25.
- e. Landfill gas rate vented to flare: SDCFM.

And the following parameters:

- f. Landfill gas heating value: BTU/SCF.
- g. Landfill gas concentration of Total Sulfur as Hydrogen Sulfide: ppmv dry and Grains per 100 SCF.
- h. Calculated SO<sub>2</sub> exhaust gas concentration at 3% O<sub>2</sub> in ppm, assuming all total sulfur is converted to SO<sub>2</sub>.
- i. Flare exhaust stack gas temperature: degrees Fahrenheit.
- j. Flare exhaust stack gas flow rate: SDCFM.

Pursuant to Section §95464(c), each wellhead must be operated under a vacuum (negative pressure), except as provided in sections 95464(d) and 95464(e), or under any of the following conditions:

- (1) Use of a geomembrane or synthetic cover. The owner or operator must develop acceptable pressure limits for the wellheads and include them in the Design Plan; or
- (2) A decommissioned well.

MBARD is proposing to add the following condition to comply with Section §95464(c):

- Each wellhead shall be operated under negative pressure (vacuum) except during the following [Title 17 CCR, Section §95464(c)]:
  - a. During the following events:
    - A. Individual wells involved in well raising provided that new waste is being added or compacted in the immediate vicinity around the well and installed gas collection well extensions are sealed or capped until the raised well is reconnected to a vacuum source; or, [Title 17 CCR, Section §95464(d)]
    - B. Temporary shutdown of individual landfill gas collection system components due to repair, catastrophic episodes such as earthquakes or fires, connection of new components to the existing system, or construction activities, provided that any new components are included in the most recent design plan and methane emissions are minimized during the shutdown. [Title 17 CCR, Section §95464(e)]
  - b. Use of a geomembrane or synthetic cover for which acceptable pressure limits for the included wellheads have been developed and included in the gas collection and control system (GCCS) design plan; or,
  - c. Well that has been decommissioned.

*Surface methane emission standards: §95465 & Construction activities: §95466*

Pursuant to Section §95464, except as provided in sections §95464(d), §95464(e), and §95466, no location

on the MSW landfill surface may exceed either of the following methane concentration limits:

- (1) 500 ppmv, other than non-repeatable, momentary readings, as determined by instantaneous surface emissions monitoring.
- (2) An average methane concentration limit of 25 ppmv as determined by integrated surface emissions monitoring.

Pursuant to Section §95465, the requirements of section §95465 do not apply to the working face of the landfill or to areas of the landfill surface where the landfill cover material has been removed and refuse has been exposed for the purpose of installing, expanding, replacing, or repairing components of the landfill gas, leachate, or gas condensate collection and removal system, or for law enforcement activities requiring excavation.

MBARD is proposing to add the following condition to comply with Sections §95465 & §95466:

- No location on the landfill surface may exceed either of the following methane concentration limits: [Title 17 CCR, Sections §95465 and §95466]
  - a. 500 ppmv, other than non-repeatable, momentary readings, as determined by instantaneous surface emissions monitoring.
  - b. An average methane concentration limit of 25 ppmv as determined by integrated surface emissions monitoring.

The above concentration limits do not apply to the following:

- A. Individual wells involved in well raising provided that new waste is being added or compacted in the immediate vicinity around the well and installed gas collection well extensions are sealed or capped until the raised well is reconnected to a vacuum source;
- B. Temporary shutdown of individual landfill gas collection system components due to repair, catastrophic episodes such as earthquakes or fires, connection of new components to the existing system, or construction activities, provided that any new components are included in the most recent design plan and methane emissions are minimized during the shutdown.
- C. Working face of the landfill; or
- D. To areas of the landfill surface where the landfill cover material has been removed and refuse has been exposed for the purpose of installing, expanding, replacing, or repairing components of the landfill gas, leachate, or gas condensate collection and removal system, or for law enforcement activities requiring excavation.

*Permanent shutdown and removal of the gas collection and control system: §95467*

Pursuant to Section §95467, the gas collection and control system at a closed MSW landfill can be capped or removed provided the following requirements are met:

- (1) The gas collection and control system was in operation for at least 15 years, unless the owner or operator can demonstrate to the satisfaction of the Executive Officer that due to declining methane rates the MSW landfill will be unable to operate the gas collection and control system for a 15-year period.
- (2) Surface methane concentration measurements do not exceed the limits specified in section §95465.
- (3) The owner or operator submits an Equipment Removal Report to the Executive Officer pursuant to section §95470(b)(2).

MBARD is proposing to add the following condition to comply with Sections §95467:

- The gas collection and control system at the closed landfill can be capped or removed provided the following requirements are met: [Title 17 CCR, Section §95467]
  - a. The gas collection and control system was in operation for at least 15 years, unless the owner or operator can demonstrate to the satisfaction of the Executive Officer that due to declining methane rates the landfill will be unable to operate the gas collection and control system for a 15-year period.
  - b. Surface methane concentration measurements do not exceed the following limits:
    - A. 500 ppmv, other than non-repeatable, momentary readings, as determined by instantaneous surface emissions monitoring.
    - B. An average methane concentration limit of 25 ppmv as determined by integrated surface emissions monitoring.
  - c. The County of Santa Cruz Department of Public Works submits an Equipment Removal Report to the Executive Officer pursuant to Section §95470(b)(2) of the California Code of Regulations (CCR) Title 17.

*Alternative compliance options: §95468*

Pursuant to Section §95468, the owner or operator may request alternatives to the compliance measures, monitoring requirements, test methods and procedures of sections 95464, 95469, and 95471. Any alternatives requested by the owner or operator must be submitted in writing to the Executive Officer. Alternative compliance option requests may include, but are not limited to, the events listed in Sections §95468(a)(1) – (a)(6).

MBARD is proposing to add the following condition to comply with Section §95468:

- The County of Santa Cruz Department of Public Works may request alternatives to the compliance measures, monitoring requirements, test methods and procedures of sections 95464, 95469, and 95471 of Title 17 of the California Code of Regulations. Any alternatives requested must be submitted in writing to the APCO. Alternative compliance option requests may include, but are not limited to, the following: [Title 17 CCR, Section 95468(a)]
  - a. Semi-continuous operation of the gas collection and control system due to insufficient landfill gas flow rates.

- b. Additional time allowance for leak repairs for landfills having consistent issues related to the procurement and delivery of necessary parts to complete the repair, or adverse weather conditions that impede repair work.
- c. Alternative wind speed requirements for landfills consistently having winds in excess of the limits specified in this subarticle.
- d. Alternative walking patterns to address potential safety and other issues, such as: steep or slippery slopes, monitoring instrument obstructions, and physical obstructions.
- e. Exclusion of construction areas and other dangerous areas from landfill surface inspection.
- f. Exclusion of paved roads that do not have any cracks, pot holes, or other penetrations from landfill surface inspection.

On August 18, 2011, SCS Engineers, on behalf of the Santa Cruz County Department of Public Works, submitted a letter for Alternative Compliance Request for the Buena Vista Landfill. Attachment 1 includes a copy of the request letter. As a result of the Memorandum of Understanding (MOU) signed between CARB and MBARD on August 8, 2013, MBARD was required to respond to the alternative compliance option requests. Attachment 2 includes a copy of MBARD's response to the facility's alternative requests. The approved alternative compliance requests will be noted within the proposed permit conditions.

*Monitoring requirements: §95469*

Pursuant to Section §95469(a), any owner or operator of a MSW landfill with a gas collection and control system must conduct instantaneous and integrated surface monitoring of the landfill surface quarterly using the procedures specified in section 95471(c).

Pursuant to §95469(a)(1), any reading exceeding the limit specified in Section §95465(a)(1) must be recorded as an exceedance and the actions of Sections §95465(a)(1)(A) – (a)(1)(D).

Pursuant to §95469(a)(2), any reading exceeding the limit specified in section 95465(a)(2) must be recorded as an exceedance and the following actions of Sections §95465(a)(2)(A) – (a)(2)(D).

MBARD is proposing to add the following conditions to comply with Section §95469(a):

- The County of Santa Cruz Department of Public Works shall conduct the instantaneous and integrated landfill surface emissions monitoring shall be performed on the following frequency: [Title 17 CCR, Section §95469(a)]

Landfill Area  
All

Monitoring Frequency  
Quarterly

- Any landfill surface methane concentration in excess of 500 ppmv, other than non-repeatable, momentary readings as determined by instantaneous surface emissions monitoring, shall be deemed as an exceedance and shall initiate the following actions: [Title 17 CCR, Section §95469(a)(1)(A) & (B)]

- a. The date, location and value of each exceedance along with re-test dates and results shall be recorded, with the grid location of each exceedance clearly marked and identified on the topographic map of the landfill; and,
  - b. Corrective actions and re-monitoring shall be completed within ten (10) calendar days of a measured exceedance.
    - A. If the re-monitoring of the grid location after the initial exceedance shows a second exceedance, additional corrective action shall be taken no later than ten (10) calendar days after the second exceedance.
    - B. If the re-monitoring of the grid location after the second exceedance shows a third exceedance, a new or replacement well shall be installed no later than 120 calendar days after detection of the third exceedance.
- Any average landfill surface methane concentration in excess of 25 ppmv, as determined by integrated surface emissions monitoring, shall be deemed as an exceedance and shall initiate the following actions [Title 17 CCR, Section §95469(a)(2)(A) & (B)]:
    - a. The date, location and value of each exceedance along with re-test dates and results shall be recorded, with the grid location of each exceedance clearly marked and identified on the topographic map of the landfill; and,
    - b. Corrective actions and re-monitoring shall be completed within ten (10) calendar days of a measured exceedance.
      - A. If the re-monitoring of the grid location after the initial exceedance shows a second exceedance, additional corrective action shall be taken no later than ten (10) calendar days after the second exceedance.
      - B. If the re-monitoring of the grid location after the second exceedance shows a third exceedance, a new or replacement well shall be installed no later than 120 calendar days after detection of the third exceedance.

Pursuant to Section §95469(b)(1), for enclosed flares the following equipment must be installed, calibrated, maintained, and operated according to the manufacturer's specifications:

- (A) A temperature monitoring device equipped with a continuous recorder which has an accuracy of plus or minus ( $\pm$ ) 1 percent of the temperature being measured expressed in degrees Celsius or Fahrenheit.
- (B) At least one gas flow rate measuring device which must record the flow to the control device(s) at least every 15 minutes.

Pursuant to Section §95469(b)(3), components containing landfill gas and under positive pressure must be monitored quarterly for leaks. Any component leak must be tagged and repaired within 10 calendar days, or it is a violation of this subarticle.

MBARD is proposing to add the following conditions to comply with Section §95469(b):



- The flares must be equipped with a temperature monitoring device equipped with a continuous recorder which has an accuracy of plus or minus ( $\pm$ ) 1 percent of the temperature being measured expressed in degrees Celsius or Fahrenheit. [MBARD Rule 207 and 17 CCR, Section §95469(b)(1)(A)]
- The flares must be equipped with at least one gas flow rate measuring device which must record the flow to the control device(s) at least every 15 minutes. [MBARD Rule 207 and 17 CCR, Section §95469(b)(1)(B)]
- Components containing landfill gas and under positive pressure must be monitored quarterly for leaks. Any component leak must be tagged and repaired within ten (10) calendar days. [Title 17 CCR, Section §95469(b)(3)]

Pursuant to Section §95469(c), the owner or operator must monitor each individual wellhead monthly to determine the gauge pressure. If there is any positive pressure reading other than as provided in sections 95464(d) and 95464(e), the owner or operator must take the actions of sections §95469(c)(1) – (c)(3).

MBARD is proposing to add the following conditions to comply with Section §95469(c):

- Each wellhead pressure shall be measured on a monthly basis. Corrective actions shall be initiated within five (5) calendar days of any positive pressure reading, further mitigation actions shall be initiated if the pressure cannot be corrected within fifteen (15) calendar days of the date the positive pressure reading was first measured, and final actions shall be completed within 120 calendar days of the date the positive pressure reading was first measured. [Title 17 CCR, Section §95469(c)]

*Recordkeeping and reporting requirements: §95470*

Pursuant to Section §95470(a)(1), an owner or operator must maintain the records specified in Sections §95470(a)(1)(A) – (a)(1)(K), whether in paper, electronic, or other format, for at least five years.

Pursuant to Section §95470(a)(2), the owner or operator must maintain the records specified in Sections §95470(a)(2)(A) – (a)(2)(E), whether in paper, electronic, or other format, for the life of each gas control device, as measured during the initial source test or compliance determination.

MBARD is proposing to add the following conditions to comply with Section §95470(a):

- The County of Santa Cruz Department of Public Works shall retain the following records for at least five (5) years in a readily accessible location, and made available to MBARD staff within five (5) business days upon request: [Title 17 CCR, Section §95470(a) and 40 CFR 62, Subpart OOO]:
  - All gas collection system downtime exceeding five (5) calendar days, including individual well shutdown and disconnection times, and the reason for the downtime.
  - All gas control system downtime exceeding one (1) hour, the reason for the downtime, and the length the gas control system was shutdown.
  - Expected gas generation flow rate.
  - All instantaneous landfill surface readings of 200 ppmv of methane or greater, all leaks

from components under positive pressure greater than 500 ppmv (as methane), all instantaneous surface monitoring readings greater than 500 ppmv, all integrated surface monitoring readings greater than 25 ppmv, the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, date of any required re-monitoring and the re-monitored concentration in ppmv, wind speed during surface sampling, and the installation date and location of each well installed as part of a gas collection system expansion.

- e. The installation date and location of each well installed as part of a gas collection system expansion.
- f. Any positive wellhead gauge pressure measurements, date of the measurements, well identification number, and corrective actions taken.
- g. Annual solid waste acceptance rate and the current amount of waste-in-place.
- h. Nature, location, amount, and date of deposition of non-degradable waste for any landfill areas excluded from the gas collection system.
- i. Source test results.
- j. Mitigation measures taken to prevent the release of methane or other emissions into the atmosphere: when solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; during repairs or temporary shutdown of gas collection system components; or when solid waste was excavated and moved.
- k. Any construction activities including: a description of the actions being taken, the areas of the landfill affected by these actions, the reason the actions are required, and any landfill gas collection system components affected by these actions; construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components; a description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts.
- l. Emission control device operating parameters required to be monitored per Conditions 41 and 42 as well as periods of operation during which the parameter boundaries established during the most recent source test are exceeded including: all three (3) hour periods of operation during which the average flare temperature was more than 50 °F below the average combustion temperature during the most recent source test where compliance with the 99% methane destruction efficiency was demonstrated.
- m. Each wellhead temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent.
- n. For any corrective action analysis, as required by Condition 46(a), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature

reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

- o. For any corrective action analysis, as required by Condition 46(b), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
  - p. For any corrective action analysis, as required by Condition 46(c), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates, and a copy of any comments or final approval on the corrective action analysis or schedule from MBARD.
- The County of Santa Cruz Department of Public Works shall maintain the following records for the life of the emissions control device: [Title 17 CCR, Section §95470(a)(2)]
    - a. The control device vendor specifications.
    - b. The expected methane generation flow rate per Condition 47(c) using data measured during the initial source test.
    - c. The percent reduction of methane achieved by the control device during the initial source test.

Pursuant to Section §95470(b)(1), any owner or operator of a MSW landfill which has ceased accepting waste must submit a Closure Notification to the Executive Officer within 30 days of waste acceptance cessation. The notification must follow the following requirements of Sections §95470(b)(1)(A) & (b)(1)(B).

- A. The last day solid waste was accepted, the anticipated closure date of the MSW landfill, and the estimated waste-in-place.
- B. The Executive Officer may request additional information as necessary to verify that permanent closure has taken place in accordance with the requirements of any applicable federal, State, local, or tribal statutes, regulations, and ordinances in effect at the time of closure.

Pursuant to Section §95470(b)(2), a gas collection and control system Equipment Removal Report must be submitted to the Executive Officer 30 days prior to well capping, removal or cessation of operation of the gas collection, treatment, or control system equipment. The report must contain all of the information specified in Sections §95470(b)(2)(A) – (b)(2)(C).

Pursuant to Section §95470(b)(3), any owner or operator subject to the requirements of this subarticle, except section 95463, must prepare an annual report for the period of January 1 through December 31 of each year. Each annual report must be submitted to the Executive Officer by March 15 of the following year. The annual report must contain the information specified in Sections §95470(b)(3)(A) – (b)(3)(J).

MBARD is proposing to add the following conditions to comply with Section §95470(b):

- When the County of Santa Cruz Department of Public Works ceases to accept waste at the Buena Vista Landfill, the County of Santa Cruz Department of Public Works must submit a Closure Notification to MBARD within 30 days of waste acceptance cessation. [Title 17 CCR, Section §95470(b)(1)]
  - a. The Closure Notification must include the last day solid waste was accepted, the anticipated closure date of the MSW landfill, and the estimated waste-in-place.
  - b. MBARD may request additional information as necessary to verify that permanent closure has taken place in accordance with the requirements of any applicable federal, State, local, or tribal statutes, regulations, and ordinances in effect at the time of closure.
- An Equipment Removal Report shall be submitted to MBARD no later than thirty (30) days prior to well capping, removal, or cessation of operation of the gas collection, treatment, or control system equipment. The report shall contain the following information: [Title 17 CCR, Section §95470(b)(2)]
  - a. A copy of the Closure Notification;
  - b. A copy of the initial source test report or other documentation demonstrating that the gas collection and control system has been installed and operated for a minimum of fifteen years, unless substantiating data can demonstrate that due to declining methane rates the landfill is unable to operate the gas collection and control system for a 15-year period; and,
  - c. Surface emissions monitoring results to verify that the landfill surface methane measurements do not exceed the limits specified in Condition 18.
- An Annual Report shall be submitted to MBARD for the period of January 1 through December 31 of each year. Each annual report must be submitted to MBARD by March 15 of the following year, and shall contain the following information: [Title 17 CCR, Section 95470(b)(3) and 40 CFR 62, Subpart OOO]
  - a. Landfill name, owner and operator, address, and solid waste information (SWIS) identification number;
  - b. Total volume of landfill gas collected, in standard cubic feet;
  - c. Average composition of the landfill gas collected, in percent methane and percent carbon dioxide by volume;
  - d. Gas control device type, rating, and total volume of landfill gas combusted, in standard cubic feet;
  - e. The date that the gas collection and control system was installed and in full operation;
  - f. Percent methane destruction efficiency of the flare;

- g. Type and amount of supplemental fuels burned with the landfill gas in the flare;
- h. Total volume of landfill gas shipped off-site, the composition of the landfill gas collected in percent methane and percent carbon dioxide by volume, and the recipient of the gas;
- i. Most recent topographic map of the site showing the areas with final cover and a geomembrane and the areas with final cover without a geomembrane with corresponding percentages over the landfill surface;
- j. The information required by Sections 95470(a)(1)(A) through 95470(a)(1)(F), 95470(a)(1)(H), and 95470(a)(1)(K), which includes the following:
  - A. All gas collection system downtime exceeding five (5) calendar days, including individual well shutdown and disconnection times, and the reason for the downtime;
  - B. All gas control system downtime exceeding one (1) hour, the reason for the downtime, and the length the gas control system was shutdown;
  - C. Expected gas generation flow rate;
  - D. Records of all landfill surface methane concentrations of 200 ppmv or greater other than non-repeatable, momentary readings as determined by instantaneous surface emissions monitoring;
  - E. Records of all landfill surface methane concentrations in excess of 500 ppmv other than non-repeatable, momentary readings as determined by instantaneous surface emissions monitoring, average landfill surface methane concentrations in excess of 25 ppmv as determined by integrated surface emissions monitoring, and landfill gas leaks in excess of 500 ppmv other than non-repeatable, momentary readings, measured as methane, at any component under positive pressure, along with the location of the leak (or grid), leak concentration in ppmv, date and time of measurement, action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during sampling;
  - F. Any positive wellhead gauge pressure measurements, date of the measurements, well identification number, and corrective actions taken;
  - G. Annual solid waste acceptance rate and the current amount of waste-in-place;
  - H. Most recent source test results; and,
  - I. Temperature data records, a daily log of the amount of landfill gas vented to the flare, as recorded at least every 15 minutes and all 3-hour periods of flare operation during which the average temperature difference was more than 50 degrees

Fahrenheit below the average combustion temperature during the most recent source test at which compliance was determined.

k. For any corrective action analysis for which corrective actions are required in accordance with Condition 46 and that take more than 60 days to correct the exceedance, the root cause analysis conducted, including a description of the recommended corrective action(s), the date for corrective action(s) already completed following the positive pressure or elevated temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

*Test methods and procedures: §95471*

Pursuant to Section §95471(c)(1), the owner or operator must measure the landfill surface concentration of methane using a hydrocarbon detector meeting the requirements of section 95471(a). The landfill surface must be inspected using the following procedures:

- (1) Monitoring Area: The entire landfill surface must be divided into individually identified 50,000 square foot grids. The grids must be used for both instantaneous and integrated surface emissions monitoring. The monitoring must follow the procedures of Sections §95471(c)(1)(A) – (c)(1)(D).
- (2) Instantaneous surface emissions monitoring procedures should follow Sections §95471(c)(2)(A) – (c)(2)(D).
- (3) Integrated surface emissions monitoring procedures should follow Sections §95471(c)(3)(A) – (c)(3)(C).

Pursuant to Section §95471(d), leaks must be measured using a hydrocarbon detector meeting the requirements of 95471(a).

Pursuant to Section §95471(g), gauge pressure must be determined using a hand-held manometer, magnahelic gauge, or other pressure measuring device approved by the Executive Officer. The device must be calibrated and operated in accordance with the manufacture's specifications.

MBARD is proposing to add the following conditions to comply with Section §95471:

- Any instrument used for the measurement of methane must be a gas detector or other equivalent instrument approved by the APCO that meets the calibration, specifications, and performance criteria of EPA Reference Method 21, Determination of Volatile Organic Compound Leaks. For the purposes of demonstrating compliance with this permit, methane replaces all references to volatile organic compounds (VOC) in Method 21 and methane shall be used as the calibration gas for the detector. [Title 17 CCR, Section §95471(a)]
- Instantaneous and integrated landfill surface emissions monitoring shall be performed as follows [Title 17 CCR, Sections §95471(a) & §95471(c)(1)]:
  - a. The landfill surface methane concentration shall be measured using a hydrocarbon detector that meets the requirements of Condition 30.
  - b. The entire landfill surface shall be divided into individually identified 50,000 square foot grids.
  - c. Testing shall be conducted by holding the hydrocarbon detector's probe within three inches

of the landfill surface while traversing the grid, with the exception being for low-lying vegetation where measurements may be conducted with the probe tip placed within three inches from the top of the vegetation per MBARD Approved Alternative Compliance Option as approved on October 29, 2013.

- d. The walking pattern shall be no more than a 100-foot spacing interval and shall traverse each monitoring grid. Any subsequent exceedances of the concentration limits specified in Condition 18 that cannot be remediated within ten calendar days or that are detected during a compliance inspection shall revert the walking pattern to 25-foot spacing intervals. The walking pattern may return to 100-foot intervals upon consecutive four successive quarterly monitoring periods that result in compliance with the concentration limits specified in Condition 18 per MBARD Approved Alternative Compliance Option letter dated October 29, 2013.
  - e. Testing shall be terminated when the average wind speed exceeds 10 miles per hour or the instantaneous wind speed exceeds 20 miles per hour. Average wind speed shall be determined on a 15-minute average using an on-site anemometer with a continuous recorder for the entire duration of the monitoring event per MBARD Approved Alternative Compliance Option letter dated October 29, 2013.
  - f. Testing shall be conducted only when there has been no measurable precipitation in the preceding 24 hours during the months of December through April, and the preceding 72 hours during the months of May through November per MBARD Approved Alternative Compliance Option letter dated October 29, 2013.
- In conducting instantaneous surface emissions monitoring, the Permit Holder shall record any instantaneous readings of methane 200 ppmv or greater (other than non-repeatable, momentary readings). Surface areas of the landfill that exceed a methane concentration of 500 ppmv must be marked and remediated as required by Condition 39 herein. The wind speed must be recorded during the sampling period. Landfill surface areas with cover penetrations, distressed vegetation, cracks or seeps must be inspected visually and with a hydrocarbon detector. [Title 17 CCR, Section §95471(c)(2)]
  - In conducting integrated surface emissions monitoring, the Permit Holder shall record readings and then average them for each grid. Individual monitoring grids that exceed an average methane concentration of 25 ppmv must be identified and remediated as required by Condition 40 herein. The wind speed must be recorded during the sampling period. [Title 17 CCR, Section §95471(c)(3)]
  - Gauge pressure shall be determined using a hand-held manometer, magnahelic gauge, or other pressure measuring device approved by the APCO that is calibrated and operated in accordance with manufacturer's specifications. [Title 17 CCR, Section §95471(g)]

The proposed conditions will be added to to add multiple permit conditions to include the requirements of this regulation.

The requirements of this subpart apply to stationary compression ignition (CI) internal combustion engines that commence construction after July 11, 2005. The emergency diesel generator was installed prior to 2005 and it is exempt from the requirements of 40 CFR 60, Subpart III.

No conditions pertaining to this part will be included on the permit

40 CFR Part 63, Subpart ZZZZ – NESHAPS for Stationary Reciprocating Internal Combustion Engines

The requirements of this subpart apply to existing, new, and reconstructed stationary reciprocating internal combustion engines (RICE), at area and major sources of hazardous air pollutants (HAPs). The emergency IC engine-generator set is a RICE unit located at an area source of HAP emissions, therefore 40 CFR 63 Subpart ZZZZ applies.

*Emission Limitations, Management Practices, and Other Requirements: §63.6603(a), Table 2d*

Pursuant to Section §63.6603, the owner/operator of RICE must comply with the requirements in Table 2D, #4 of Subpart ZZZZ.

*Fuel Requirements (applies to the diesel powered engines): §63.6604*

Pursuant to Section §63.6604(b), existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in §63.6640(f)(4)(ii), must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for non-road diesel fuel. The stationary emergency diesel engines are not in a demand response program and are not subject to this requirement. However, MBARD Rule 1010 requires the use of CARB diesel fuel for these engines.

*Monitoring, Installation, Collection, Operation, and Maintenance Requirements: §63.6625*

Pursuant to Section §63.6625(e), the engines and the after-treatment device (if any) must be operated and maintained according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

Pursuant to Section §63.6625(f), existing emergency stationary RICE located at an area source of HAP emissions. The facility is an area source of HAPs and must install a non-resettable hour meter if one is not already installed. The existing diesel emergency engine-generator set is equipped with a non-resettable hour meter.

Pursuant to Section §63.6625(i), the diesel-fired engines have the option of utilizing an oil analysis program in order to extend the specified oil change requirements of Table 2d, item 1 or 4, of this subpart, as long they are performed at the same frequency as specified in Table 2d.

*Continuous Compliance: §63.6605, 63.6640*

Pursuant to Section §63.6605(a), the facility must be in compliance with the emission limitations and operating limitations in this subpart at all times.

Pursuant to Section §63.6605(b), the facility must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety



and good air pollution control practices for minimizing emissions.

*Recordkeeping Requirements: §63.6655*

The engines must maintain records of the maintenance conducted on the RICE and records required in Table 6, item 9.

Permit conditions will be included on the permit to comply with Subpart ZZZZ.

40 CFR Part 63, Subpart CCCCCC - National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Pursuant to Section §63.11111, the affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. It is noted that the County of Santa Cruz Public Works Department does not own or operate any gasoline cargo tank.

The facility has elected to limit the monthly gasoline throughput to less than 10,000 gallons per month. In addition, the facility annual gasoline throughput is limited to less than 120,000 gallons per year. Pursuant to Section §63.11111(b), GDFs with a monthly throughput of less than 10,000 gallons of gasoline, must comply with the requirements of Section §63.11116.

*Affected Parts – Section §63.11112*

Pursuant to Section §63.11112(a), the emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

*General Requirements – Section §63.11115*

Each owner or operator of an affected source under this subpart must comply with the requirements of paragraphs (a) and (b) of this section.

- a) You must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. The equipment is permitted to require to maintain the equipment in accordance with the latest CARB vapor recovery executive orders for the specific vapor control equipment.
- b) You must keep applicable records and submit reports as specified in §63.11125(d) and §63.11126(b).

*Requirements – Section §63.11116*

Pursuant to Section §63.11116(a), GDFs with a monthly throughput of less than 10,000 gallons of gasoline, must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for

extended periods of time. Measures to be taken include, but are not limited to, the following:

- (1) Minimize gasoline spills;
- (2) Clean up spills as expeditiously as practicable;
- (3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;
- (4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

The facility does not have an open gasoline waste collection system. Pursuant to Section §63.11116(b), the facility must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

*Recordkeeping Requirements – Section §63.11125(d)*

Pursuant to Section §63.11125(d), each owner or operator of an affected source under this subpart shall keep records as specified in paragraphs (d)(1) and (2) of this section.

- (1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.
- (2) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

It is noted that for facilities with a throughput of less than 10,000 gallons per month, this Subpart does not require operation of air pollution control and monitoring equipment.

*Reporting Requirements – Section §63.11126*

Section §63.11126 lists reporting requirements to facilities subject to the management practices in Section §63.11118. The facility is not subject to the requirements of Section §63.11118 and is not subject to the reporting requirements of this Section.

MBARD is proposing to add the following conditions:

- The monthly gasoline throughput from the ancillary above ground gasoline dispensing facility shall not equal or exceed 10,000 gallons per month. [40 CFR 63, Subpart CCCCCC, Section §63.11111(b)]
- The County of Santa Cruz Department of Public Works must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following: [40 CFR 63, Subpart CCCCCC, Section §63.11111(a)]
  - a. Minimize gasoline spills;
  - b. Clean up spills as expeditiously as practicable;
  - c. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed

seal when not in use:

- The County of Santa Cruz Department of Public Works shall keep monthly records of the gasoline throughput. Records must be available within 24 hours of a request by MBARD. [Basis: 40 CFR 63, Subpart CCCCC, Section §63.11116(b)]

#### 40 CFR Part 63, Subpart AAAA – NESHAPS for Municipal Solid Waste Landfills

The requirements of this Subpart apply to any landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and meets any one of the three criteria in paragraphs (a)(1) through (3) of this section:

- Landfill is a major source of hazardous air pollutants (HAPs).
- Landfill is collocated with a major source of HAPs.
- Landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million cubic meters (m<sup>3</sup>) and has estimated uncontrolled emissions equal to or greater than 50 Mg/yr NMOC.

The facility is not a major source of HAPs nor is it co-located with a major source of HAPs (Ameresco Santa Cruz Energy is not a major source of HAPs). The facility is a landfill with a design capacity equal to or greater than 2.5 million MG and 2.5 million cubic meters and the estimated uncontrolled emissions are less than 50 Mg/yr NMOC (2018 NMOC report estimated the emission rate as 23.5 megagrams per year). Thus, the facility is not subject to the requirements of this Subpart. As noted in the Rule 218 applicability analysis, the facility will be required to calculate the NMOC emission rate until such time that the estimated rate is equal to or greater than 50 megagrams per year to determine if the facility is subject to this Subpart.

MBARD is proposing to add the following condition:

- After the first report required by Condition 63 in which the Non-Methane Organic Compound (NMOC) emission rate equals or exceeds 50 megagrams per year, the County of Santa Cruz Department of Public Works shall comply with requirements of 40 CFR 63, Subpart AAAA. [40 CFR 63, Subpart AAAA]

#### 40 CFR Part 64 – Compliance Assurance Monitoring

The requirements of this subpart apply to emissions units at Title V facilities that meet all of the three criteria specified in 40 CFR Part 64 Section §64.2(a)(1-3). The three applicability criteria are:

- The emission unit must be subject to a Federal emission limitation or standard for a regulated air pollutant, other than an exempt limitation.
- The emission unit uses a control device to achieve compliance with any such emission limitation or standard.
- This emission unit has potential pre-control device emissions of the specific pollutant being controlled greater than the major facility emissions threshold for that pollutant.

Pursuant Section §64.2(b)(1)(i), the CAM requirements do not apply to equipment subject to emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to Section 111 or 112 of the Act. The landfill waste decomposition process and its related emission control device, enclosed flares, are subject to the requirements of 40 CFR 60, Subpart Cf, which requires implementation

of CARB’s Landfill Methane Regulation and few sections of 40 CFR 62, Subpart OOO. Since Subpart Cf requirements are in accordance with Section 111(d) of the Act, the landfill and its equipment are exempt from CAM requirements.

**THE FOLLOWING CONDITIONS WILL BE INCLUDED ON THE TITLE V PERMIT:**

The permit conditions listed on the Title V Permit are derived from MBARD issued Authorities to Construct or Permits to Operate. The permit also includes the regulatory basis for each permit condition. Permit conditions are divided into the following sections: federally enforceable limits and standards, testing requirements and procedures, record keeping requirements, reporting requirements, and general conditions.

As discussed in the Rule applicability analysis, MBARD is proposing to add new conditions to add the requirements of the following Regulations:

- Rule 218 – new monitoring condition requiring the landfill to calculate the NMOC emission rate for the landfill.
- 40 CFR 63, Subpart AAA – new condition requiring the facility to comply with this Subpart when the NMOC emission rate equals or exceeds 50 Mg/yr
- 40 CFR 62, Subpart OOO – new conditions to implement the provisions of 40 CFR §62.16716(c), §62.16720(a)(5), §62.16722(a)(2) and (3), §62.16724(k), and §62.16726(e)(2) and (5).
- CARB Landfill Methane Regulation.
- 40 CFR 63, Subpart CCCCCC – new conditions for the ancillary above ground gasoline dispensing facility.
- 40 CFR 60, Subpart WWW – conditions referencing the requirements of Subpart WWW will be removed from the permit.

In addition, permit condition will be added or modified for the addition of the new 15 MMBtu/Hr flare.

**FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS**

In addition to adding the proposed conditions above, MBARD is proposing to modify current Conditions 1, 2, and 3 to address the addition of the new 15 MMBtu/Hr landfill gas flare.

Proposed modification of Condition 1:

1. ~~The amount of gas vented to the flare shall not exceed 1.8 million cubic feet per day. The heat input rate to the flare shall not exceed 54 MMBtu/hr. The combined heat input rate to both the 54 MMBtu/hr & 15 MMBtu/hr flare shall not exceed 1,296 MMBtu/day (this translates to 2.592 million cubic feet per day when the landfill gas heat content is 500 Btu/Cf). [District MBARD Rule 207]~~

Proposed modification of Condition 2:

2. Emissions from the 54 MMBtu/Hr flare shall not exceed the following limits: [District MBARD Rule 207]

<u>Pollutant</u>	<u>Emission Level</u>	<u>Emission Limit</u>
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<i>NO<sub>x</sub></i>	<i>0.06 lbs/MMBTU</i>	<i>137 lbs/day</i>
<i>VOC</i>	<i>0.03 lbs/MMBTU</i>	<i>137 lbs/day</i>
<i>CO</i>	<i><del>0.59</del> 0.40 lbs/MMBTU</i>	<i>550 lbs/day</i>

Proposed modification of Condition 3:

3. ~~The flare combustion temperature shall be maintained at 1400°F or greater within 30 minutes of start up. The minimum combustion zone temperature limit for the enclosed ground flares shall be equal to the average combustion temperature determined during the most recent complying source test minus 50°F, provided that the limit is not less than 1,400°F. The combustion temperature of the landfill gas flare shall be maintained at or above 1,400°F or the limit determined by the most recent source test (whichever temperature is higher), averaged over any three-hour period, excluding periods of startup, shutdown, and malfunction. The process time that it takes to complete a startup or shutdown shall not exceed one (1) hour. [District MBARD Rule 207, and 17 CCR, Section 95470(a)(K)(1)]~~

MBARD is proposing to add new conditions to address the addition of the new 15 MMBtu/Hr.

- ~~Emissions from the 15 MMBtu/Hr flare shall not exceed the following limits: [MBARD Rule 207]~~

<u>Pollutant</u>	<u>Emission Level (lb/MMBtu)</u>	<u>Emission Level (lb/hr)</u>
<i>NO<sub>x</sub></i>	<i>0.06 lbs/MMBTU</i>	
<i>VOC</i>		<i>0.76 lbs/hr</i>
<i>CO</i>	<i>0.20 lbs/MMBtu</i>	

- ~~The facility wide emissions shall not exceed the following limits; excluding emissions from sources, processes, or devices that are exempted from the Offset requirements of Rule 207, which includes emergency engines and gasoline dispensing facilities: [Rule 207, Offsets]~~

<u>Pollutant</u>	<u>Emission Level</u>
<i>NO<sub>x</sub></i>	<i>137 lbs/day</i>
<i>VOC</i>	<i>137 lbs/day</i>
<i>CO</i>	<i>550 lbs/day</i>
<i>SO<sub>x</sub></i>	<i>150 lbs/day</i>

~~SO<sub>x</sub> emissions shall be calculated based on daily fuel flow to all landfill gas fired equipment owned by the County of Santa Cruz Department of Public Works and the latest monthly H<sub>2</sub>S concentration of the landfill gas as required in Condition 37. Daily SO<sub>x</sub> facility-wide emissions shall be calculated using a MBARD approved method. Daily emission calculations shall be compiled in a log on a monthly basis.~~

**TESTING REQUIREMENTS AND PROCEDURES**

MBARD is proposing to modify current Condition 13 for the annual source test of the landfill gas flares.

- ~~13. Annual performance tests on the enclosed ground flare shall be conducted in accordance with District test procedures to verify compliance with Condition 2. A testing protocol shall be submitted~~

~~to the District for approval at least thirty (30) days prior to the scheduled testing date. The District must be notified at least ten days prior to the actual testing in order that a District representative may be present, and the written results of the performance test shall be provided to the District within thirty (30) days after testing. Annual performance testing of each of the Enclosed Ground Flares shall be conducted on or prior to December 31 of each year. The County of Santa Cruz Department of Public Works shall conduct performance tests in accordance with CARB Method 100 for NO<sub>x</sub>, CO and EPA Method 18 or 25 for VOCs, or other EPA-approved alternative test methods approved by MBARD to verify compliance with condition numbers 2, 3, 4, 6, 7, 8, 11 and 12. The County of Santa Cruz Department of Public Works shall furnish MBARD written results of such performance tests within sixty (60) days of the test completion. [MBARD Rule 207, MBARD Rule 404, MBARD Rule 412, and 17 CCR, Section §95464(b)(4)]~~

- ~~a. Oxides of Nitrogen as NO<sub>2</sub>: lb/MMBTU, lb/MMCF, ppmv dry at 3% O<sub>2</sub>, and lbm/hr.~~
- ~~b. Carbon Monoxide: lb/MMBTU, lb/MMCF, ppmv dry at 3% O<sub>2</sub>, and lbm/hr.~~
- ~~c. Total and Non-Methane Hydrocarbons: lb/MMBTU, lb/MMCF, ppmv, and lbm/hr.~~
- ~~d. Total hydrocarbon, THC, destruction efficiency, as determined by EPA Test Method 18 or 25.~~

~~And the following parameters:~~

- ~~e. Landfill gas rate vented to flare: SDCFM.~~
- ~~f. Landfill gas heating value: BTU/SCF.~~
- ~~g. Landfill gas concentration of Total Sulfur as Hydrogen Sulfide: ppmv dry and Grains per 100 SCF.~~
- ~~h. Calculated SO<sub>2</sub> exhaust gas concentration at 3% O<sub>2</sub> in ppm, assuming all total sulfur is converted to SO<sub>2</sub>.~~
- ~~i. Flare exhaust stack gas temperature: degrees Fahrenheit.~~
- ~~j. Flare exhaust stack gas flow rate: SDCFM.~~

MBARD is proposing to delete current Conditions 16 and 17, which address testing the sulfur concentration in the landfill gas, since the proposed modification of the annual source testing condition requires the determination of the hydrogen sulfide concentration of the landfill gas.

MBARD is proposing to delete current Conditions 16 and 17:

~~16. — No testing is specified for the generic (Rule 412) sulfur concentration limit in Condition 6. The gas destruction device(s) are assumed to be in compliance with the sulfur concentration limit based upon the calculations contained in the engineering evaluation. If testing is conducted for Condition 6, the County of Santa Cruz should conduct testing in accordance with the methodology contained in EPA Method 20. [District Rule 218]~~

~~17. — Annual testing of the landfill gas from the gas collection system(s) to determine the sulfur content shall be completed. The County of Santa Cruz shall conduct testing in accordance with ASTM D 1072-80, ASTM D 3031-81, ASTM D 3246-81 or SCAQMD Method 307-91 to verify compliance with Condition 7. [District Rule 218]E~~

| **MONITORING AND RECORD KEEPING REQUIREMENTS**

MBARD is proposing to add new monitoring and record keeping conditions. See permit for new conditions.

**REPORTING REQUIREMENTS**

MBARD is proposing to add new monitoring and record keeping conditions. See permit for new conditions.

**GENERAL CONDITIONS**

MBARD is not proposing to change the general conditions.

\*\*\*\*

**MONTEREY BAY AIR RESOURCES DISTRICT  
TITLE V OPERATING PERMIT TV-106**

24580 Silver Cloud Court  
Monterey, CA 93940  
Telephone: (831) 647-9411

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**ISSUED TO:**

Santa Cruz County Public Works  
701 Ocean Street, Room 410  
Santa Cruz, CA 95060

**PLANT SITE LOCATION:**

150 Rountree Lane  
Watsonville, California

**ISSUED BY:**

\_\_\_\_\_  
Richard Stedman, Air Pollution Control Officer

\_\_\_\_\_  
TBD  
Effective Date

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Nature of Business:   Municipal Solid Waste Landfill

SIC Code:       4953 - Refuse Systems

**RESPONSIBLE OFFICIAL:**

Name: Mr. Matt Machado  
Title: Deputy CAO, Director of Public Works,  
[Santa Cruz County](#)  
Phone: (831) 454-2160

**ALTERNATIVE RESPONSIBLE OFFICIAL:**

Name: Mr. Kasey Kolassa  
Title: Recycling & Solid Waste Services Manager  
Phone: (831) 454-2377

**FACILITY CONTACT PERSON:**

Name: Ms. Sarah McBee  
Title: Superintendent  
Phone: (831) 454-5332



TABLE OF CONTENTS

FACILITY DESCRIPTION ..... 3  
EQUIPMENT DESCRIPTION..... 3  
FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS ..... 4  
TESTING REQUIREMENTS AND PROCEDURES..... 11  
MONITORING AND RECORD KEEPING REQUIREMENTS ..... 14  
REPORTING REQUIREMENTS ..... 20  
GENERAL CONDITIONS ..... 25

## FACILITY DESCRIPTION

The County of Santa Cruz's Buena Vista Landfill is a Municipal Solid Waste (MSW) Landfill permitted by the CalRecycle to receive a maximum of 774,838 tons per day of MSW in ~~2001~~ 2005 with a 2% increase in allowed tonnage in each following year. This landfill site has been accepting waste since the site opened in 1981.

~~The landfill is subject to the federal New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills based upon the design capacity of the landfill being greater than 2.5 million cubic meters. Landfills subject to the MSW Landfill NSPS are also subject to the Title V permitting requirements.~~

Pursuant to the requirements of 40 CFR Part 60, Subpart Cf Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, the landfill, which has a design capacity of greater than 2.5 million megagrams and 2.5 million cubic meters, is subject to Title V regulations.

Landfills subject to the NSPS 40 CFR Part 60, Subpart WWW or to the Emission Guidelines under Subpart Cc that are not new, reconstructed or modified after July 18, 2014, are now subject to the approved State Plan and/or 2021 Federal Plan for Subpart Cf in 40 CFR Part 62, Subpart OOO. Landfills that are new or reconstructed or modified after July 18, 2014 are subject to the requirements of 40 CFR Part 60, Subpart XXX. The Buena Vista Landfill is not a new or reconstructed Landfill and is subject to the State Plan and parts of the 2021 Federal Plan.

Located at the landfill is a landfill gas collection, treatment, and destruction system, ~~which is not subject to the NSPS requirements as the facilities' non-methane organic compounds (NMOC) emission rate is below the 50 Mg per year threshold.~~ The collected landfill gas is treated and combusted in three (3) third-party owned and operated internal combustion engines which drive generators to produce electricity or in ~~an~~ two (2) enclosed ground flares owned and operated by Santa Cruz County. The electricity generated is sold to the local utility company. The three internal combustion engine-generator sets are owned and operated by Ameresco Santa Cruz Energy (Ameresco).

## EQUIPMENT DESCRIPTION

### MUNICIPAL SOLID WASTE LANDFILL CONSISTING OF:

1. 126 Acre Landfill Site Of Which 61 Acres Are Permitted For Waste Disposal.
2. ~~NSPS Exempt~~ Landfill Gas Collection System, Vertical Wells, Lateral Collector Pipes, Header Pipe, And Gas Movers To Collect And Route Landfill Gas To The Landfill Gas Destruction Systems.
3. ~~NSPS Exempt~~ Landfill Gas Treatment System, System To Filter, De-water, And Compress Landfill

Gas. Treated Gas Routed To Gas Destruction Systems.

- 4. ~~NSPS Exempt~~ Treated Gas Destruction Systems:
  - A) Three (3) Third Party Owned and Operated Gas Engine-Generator Sets, Each Nominally Rated At 1,400 Bhp And 1 Mw Output.
  - B) One (1) Third Party Owned and Operated Internal Combustion Landfill Gas Engine Rated At 1,400 Bhp.
  - C) Enclosed Ground Flare, Rated At 54 MMBtu/Hr Maximum.
  - D) Enclosed Ground Flare, Rated at 15 MMBtu/Hr With A Landfill Gas Flow Rate Capacity Range Of 60-500 SCFM.

- 5. Ancillary Equipment
  - Above-Ground Gasoline Storage Tank
  - Emergency Diesel-Powered Engine Generator Set
  - Third Party Owned And Operated Portable Aggregate Crushing Screening
  - Third Party Owned And Operated Portable Tub Grinder
  - Third Party Owned And Operated Portable Trommel Screen

**FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS**

- 1. ~~The amount of gas vented to the flare shall not exceed 1.8 million cubic feet per day. The heat input rate to the flare shall not exceed 54 MMBtu/hr. The combined heat input rate to both the 54 MMBtu/hr & 15 MMBtu/hr flare shall not exceed 1,296 MMBtu/day (this translates to 2.592 million cubic feet per day when the landfill gas heat content is 500 Btu/Cf).~~ [Monterey Bay Air Resources District (MBARD) Rule 207]
- 2. Emissions from the 54 MMBtu/Hr flare shall not exceed the following limits: [~~District~~MBARD Rule 207]

<u>Pollutant</u>	<u>Emission Level</u>	<u>Emission Limit</u>
NO <sub>x</sub>	0.06 lbs/MMBTU	<del>137 lbs/day</del>
VOC	0.03 lbs/MMBTU	<del>137 lbs/day</del>
CO	<del>0.590</del> .40 lbs/MMBTU	<del>550 lbs/day</del>

3. Emissions from the 15 MMBtu/Hr flare shall not exceed the following limits: [MBARD Rule 207]

<u>Pollutant</u>	<u>Emission Level (lb/MMBtu)</u>	<u>Emission Level (lbs/hr)</u>
<u>NO<sub>x</sub></u>	<u>0.06 lbs/MMBtu</u>	
<u>VOC</u>		<u>0.76 lbs/hr</u>
<u>CO</u>	<u>0.20 lbs/MMBtu</u>	

4. The facility wide emissions shall not exceed the following limits; excluding emissions from sources, processes, or devices that are exempted from the Offset requirements of Rule 207, which includes emergency engines and gasoline dispensing facilities: [Rule 207, Offsets]

<u>Pollutant</u>	<u>Emission Level</u>
<u>NO<sub>x</sub></u>	<u>137 lbs/day</u>
<u>VOC</u>	<u>137 lbs/day</u>
<u>CO</u>	<u>550 lbs/day</u>
<u>SO<sub>x</sub></u>	<u>150 lbs/day</u>

SO<sub>x</sub> emissions shall be calculated based on daily fuel flow to all landfill gas fired equipment owned by the County of Santa Cruz Department of Public Works and the latest monthly H<sub>2</sub>S concentration of the landfill gas as required in Condition 37. Daily SO<sub>x</sub> facility-wide emissions shall be calculated using a MBARD approved method. Daily emission calculations shall be compiled in a log on a monthly basis.

~~3.5. The flare combustion temperature shall be maintained at 1400°F or greater within 30 minutes of start up. The minimum combustion zone temperature limit for the enclosed ground flares shall be equal to the average combustion temperature determined during the most recent complying source test minus 50°F, provided that the limit is not less than 1,400°F. The combustion temperature of the landfill gas flare shall be maintained at or above 1,400°F or the limit determined by the most recent source test (whichever temperature is higher), averaged over any three-hour period, excluding periods of startup, shutdown, and malfunction. The process time that it takes to complete a startup or shutdown shall not exceed one (1) hour. [District MBARD Rule 207, MBARD Rule 400 and 17 CCR, Section 95470(a)(K)(1)]~~

4.6. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity. [~~District MBARD Rule 400~~ Adopted 12/15/04]

~~5.7. Particulate matter shall not exceed 0.15 grains per standard dry cubic foot in the exhaust stream of the enclosed ground flare. [District MBARD Rule 403~~ Adopted 2/16/05]

~~6.8. Sulfur compounds calculated as sulfur dioxide (SO<sub>2</sub>) shall not exceed 0.2 percent by volume in the exhaust stream of the enclosed ground flare. [District MBARD Rule 404~~ Adopted 12/15/04]

~~7.9.~~ The landfill gas combusted shall contain no more than 50 grains of sulfur compounds (calculated as hydrogen sulfide) per 100 cubic feet of gas. [~~District~~MBARD Rule 412-~~Adopted 8/21/02~~ and MBARD Rule 403]

~~8.~~ No later than 1 year after the first report required by Condition 27 in which the Non Methane Organic Compound (NMOC) emission rate equals or exceeds 50 megagrams per year, the County of Santa Cruz shall submit to the District and the EPA Administrator a collection and control system design plan prepared by a professional engineer. This plan shall meet the design requirements specified in §60.752(b)(2)(ii) [restated in Condition 9] and must include the information required by §60.752(b)(2)(i). [~~District Rule 437 Adopted 10/16/96 and 40 CFR Part 60, Subpart WWW~~]

~~9.~~ No later than 30 months after the first report required by Condition 27 in which the NMOC emission rate equal or exceeds 50 megagrams per year, the County of Santa Cruz shall cause to be operated a landfill gas collection system that effectively captures the gas generated such that [~~District Rule 437 Adopted 10/16/96 and 40 CFR Part 60, Subpart WWW~~]:

- ~~A) the system is 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 collection system; and~~
- ~~B) landfill gas is collected from each area, cell or group of cells in which non asbestos degradable solid waste has been placed for a period of 5 years or more for active areas or 2 years or more for closed areas; and~~
- ~~C) offsite migration of subsurface gas is minimized; and~~
- ~~D) each wellhead is under negative pressure except under the following conditions:
  - ~~i) a fire or increased well temperature. The County of Santa Cruz shall record instances when positive pressure occurs in efforts to avoid a fire; or~~
  - ~~ii) use of a geomembrane or synthetic cover. Acceptable pressure limits shall be submitted by the County of Santa Cruz in their design plan; or~~
  - ~~iii) a decommissioned well.~~~~
- ~~E) the collected landfill gas temperature is less than 55°C at each operating well with a nitrogen level less than or equal to 20 percent or an oxygen level less than or equal to 5 percent; and~~
- ~~F) the surface methane concentration over the landfill shall not exceed 500 ppm above background.~~

10. Collected landfill gas shall be routed to the gas control systems except during the following events: [Title 17 CCR, Section §95464(b)(1)(A)]
  - a. Individual wells involved in well raising provided that new waste is being added or compacted in the immediate vicinity around the well and installed gas collection well extensions are sealed or capped until the raised well is reconnected to a vacuum source; or, [Title 17 CCR, Section §95464(d)]
  - b. Temporary shutdown of individual landfill gas collection system components due to repair, catastrophic episodes such as earthquakes or fires, connection of new components to the existing system, or construction activities, provided that any new components are included in the most recent design plan and methane emissions are minimized during the shutdown. [Title 17 CCR, Section §95464(e)]
11. The landfill gas collection and control systems shall be operated so that there is no landfill gas leak that exceeds 500 ppmv other than non-repeatable, momentary readings, measured as methane, at any component under positive pressure. [Title 17 CCR, Section §95464(b)(1)(B)]
12. The landfill gas collection system shall be operated to draw all the gas toward the control system. [Title 17 CCR, Section §95464(b)(1)(C)]
13. The minimum total methane destruction efficiency of the flares shall be 99 percent by weight. [Title 17 CCR, Section §95464(b)(2)(A)(1)]
14. The flares shall be equipped with automatic dampers, an automatic shutdown device, and a flame arrester. [Title 17 CCR, Section §95464(b)(2)(A)(2)]
15. During restart or startup, not to exceed one (1) hour, there must be a sufficient flow of propane or commercial natural gas to the burners to prevent unburned collected methane from being emitted to the atmosphere. [Title 17 CCR, Section §95464(b)(2)(A)(3)]
16. The flares shall be operated within the parameters ranges established during the initial or most recent source test. [Title 17 CCR, Section §95464(b)(2)(A)(4)]
17. Each wellhead shall be operated under negative pressure (vacuum) except during the following [Title 17 CCR, Section §95464(c)]:
  - a. During the following events:
    - A. Individual wells involved in well raising provided that new waste is being added or

compacted in the immediate vicinity around the well and installed gas collection well extensions are sealed or capped until the raised well is reconnected to a vacuum source; or, [Title 17 CCR, Section §95464(d)]

B. Temporary shutdown of individual landfill gas collection system components due to repair, catastrophic episodes such as earthquakes or fires, connection of new components to the existing system, or construction activities, provided that any new components are included in the most recent design plan and methane emissions are minimized during the shutdown. [Title 17 CCR, Section §95464(e)]

b. Use of a geomembrane or synthetic cover for which acceptable pressure limits for the included wellheads have been developed and included in the gas collection and control system (GCCS) design plan; or,

c. Well that has been decommissioned.

18. No location on the landfill surface may exceed either of the following methane concentration limits: [Title 17 CCR, Sections §95465 and §95466]

a. 500 ppmv, other than non-repeatable, momentary readings, as determined by instantaneous surface emissions monitoring.

b. An average methane concentration limit of 25 ppmv as determined by integrated surface emissions monitoring.

The above concentration limits do not apply to the following:

A. Individual wells involved in well raising provided that new waste is being added or compacted in the immediate vicinity around the well and installed gas collection well extensions are sealed or capped until the raised well is reconnected to a vacuum source;

B. Temporary shutdown of individual landfill gas collection system components due to repair, catastrophic episodes such as earthquakes or fires, connection of new components to the existing system, or construction activities, provided that any new components are included in the most recent design plan and methane emissions are minimized during the shutdown.

C. Working face of the landfill; or

D. To areas of the landfill surface where the landfill cover material has been removed and refuse has been exposed for the purpose of installing, expanding, replacing, or repairing components of the landfill gas, leachate, or gas condensate collection and removal system, or for law enforcement activities requiring excavation.

19. The gas collection and control system at the closed landfill can be capped or removed provided the following requirements are met: [Title 17 CCR, Section §95467]
  - a. The gas collection and control system was in operation for at least 15 years, unless the owner or operator can demonstrate to the satisfaction of the Executive Officer that due to declining methane rates the landfill will be unable to operate the gas collection and control system for a 15-year period.
  - b. Surface methane concentration measurements do not exceed the following limits:
    - A. 500 ppmv, other than non-repeatable, momentary readings, as determined by instantaneous surface emissions monitoring.
    - B. An average methane concentration limit of 25 ppmv as determined by integrated surface emissions monitoring.
  - c. The County of Santa Cruz Department of Public Works submits an Equipment Removal Report to the Executive Officer pursuant to Section §95470(b)(2) of the California Code of Regulations (CCR) Title 17.
  
20. The County of Santa Cruz Department of Public Works must operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit). The County of Santa Cruz Department of Public Works may establish a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to MBARD for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (i.e., neither causing fires nor killing methanogens is acceptable). [40 CFR 62, Subpart OOO, Section §62.16716(c)]
  
21. The County of Santa Cruz Department of Public Works' gas collection and control system must minimize off-site migration of subsurface gas through the use of a gas collection and control system that conforms to the specifications provided in Section §62.16728. The County of Santa Cruz Department of Public Works must provide the system design plan and it must conform to specifications for active collection systems in §62.16728 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 62.16728. [40 CFR 62, Subpart OOO, Section §62.16720(a)(5)]
  
22. The County of Santa Cruz Department of Public Works may request alternatives to the compliance measures, monitoring requirements, test methods and procedures of sections 95464, 95469, and 95471 of Title 17 of the California Code of Regulations. Any alternatives requested must be submitted in writing to the APCO. Alternative compliance option requests may include, but are not limited to, the following: [Title 17 CCR, Section 95468(a)]



- a. Semi-continuous operation of the gas collection and control system due to insufficient landfill gas flow rates.
- b. Additional time allowance for leak repairs for landfills having consistent issues related to the procurement and delivery of necessary parts to complete the repair, or adverse weather conditions that impede repair work.
- c. Alternative wind speed requirements for landfills consistently having winds in excess of the limits specified in this subarticle.
- d. Alternative walking patterns to address potential safety and other issues, such as: steep or slippery slopes, monitoring instrument obstructions, and physical obstructions.
- e. Exclusion of construction areas and other dangerous areas from landfill surface inspection.
- f. Exclusion of paved roads that do not have any cracks, pot holes, or other penetrations from landfill surface inspection.

~~10.23.~~ The County of Santa Cruz shall comply with the requirements of 40 CFR Part 68 – Risk Management Plans. The County of Santa Cruz shall submit a Risk Management Plan (RMP) if the facility becomes subject to the requirements of Part 68. [40 CFR Part 68]

~~11.24.~~ The County of Santa Cruz shall comply with the requirements of 40 CFR Part 82 – Protection of Stratospheric Ozone. [ 40 CFR Part 82]

~~12.25.~~ The County of Santa Cruz shall operate and maintain the Diesel Fired Emergency Generator in accordance with manufacturer specifications and shall implement the following engine management practice standards. [40 CFR Part 63, Subpart ZZZZ]

- A) Change oil and filter every 500 hours of operation or annually, whichever comes first;
- B) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and,
- C) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The specified oil change-out frequency above may be extended provided an optional oil analysis program is instituted with prior ~~District~~ MBARD approval as follows:

- i) The oil analysis program must be performed at the same frequency as the oil change-out timelines.
- ii) The oil analysis program must, at a minimum, analyze the Total Base Number, Viscosity,

and Percent Water Content of the present engine oil. Should the Total Base Number remain 30 percent or more of the Total Base Number for new oil, viscosity change no more than 20 percent from the viscosity for new oil, and water content by volume be no more than 0.5 percent, the present engine oil does not need to be changed. If any of the limits are exceeded, the oil must be changed within two (2) business days of receiving the results of the analysis, or before recommencing operation if the engine is out of service.

26. The monthly gasoline throughput from the ancillary above-ground gasoline dispensing facility shall not equal or exceed 10,000 gallons per month. [40 CFR 63, Subpart CCCCC, Section §63.11111(b)]
27. The County of Santa Cruz Department of Public Works must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following: [40 CFR 63, Subpart CCCCC, Section §63.11111(a)]
  - a. Minimize gasoline spills;
  - b. Clean up spills as expeditiously as practicable;
  - c. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;
28. After the first report required by Condition 63 in which the Non-Methane Organic Compound (NMOC) emission rate equals or exceeds 50 megagrams per year, the County of Santa Cruz Department of Public Works shall comply with requirements of 40 CFR 63, Subpart AAAA. [40 CFR 63, Subpart AAAA]

## TESTING REQUIREMENTS AND PROCEDURES

- ~~13.29. Annual performance tests on the enclosed ground flare shall be conducted in accordance with District test procedures to verify compliance with Condition 2. A testing protocol shall be submitted to the District for approval at least thirty (30) days prior to the scheduled testing date. The District must be notified at least ten days prior to the actual testing in order that a District representative may be present, and the written results of the performance test shall be provided to the District within thirty (30) days after testing. Annual performance testing of each of the enclosed ground flares shall be conducted on or prior to December 31 of each year. The County of Santa Cruz Department of Public Works shall conduct performance tests in accordance with CARB Method 100 for NO<sub>x</sub>, CO and EPA Method 18 or 25 for VOCs, or other EPA-approved alternative test methods approved by MBARD to verify compliance with Condition numbers 1, 2, 3, 4, 5, 8, 9 and 13. The County of Santa Cruz Department of Public Works shall furnish MBARD written results of such performance tests within sixty (60) days of the test completion. [MBARD Rule 207,~~

MBARD Rule 404, MBARD Rule 412, and 17 CCR, Section §95464(b)(4)]

- a. Oxides of Nitrogen as NO<sub>2</sub>: lb/MMBTU, lb/MMCF, ppmv dry at 3% O<sub>2</sub>, and lbm/hr.
- b. Carbon Monoxide: lb/MMBTU, lb/MMCF, ppmv dry at 3% O<sub>2</sub>, and lbm/hr.
- c. Total and Non-Methane Hydrocarbons: lb/MMBTU, lb/MMCF, ppmv, and lbm/hr.
- d. Total hydrocarbon, THC, destruction efficiency, as determined by EPA Test Method 18 or 25.

And the following parameters:

- e. Landfill gas rate vented to flare: SDCFM.
- f. Landfill gas heating value: BTU/SCF.
- g. Landfill gas concentration of Total Sulfur as Hydrogen Sulfide: ppmv dry and Grains per 100 SCF.
- h. Calculated SO<sub>2</sub> exhaust gas concentration at 3% O<sub>2</sub> in ppm, assuming all total sulfur is converted to SO<sub>2</sub>.
- i. Flare exhaust stack gas temperature: degrees Fahrenheit.
- j. Flare exhaust stack gas flow rate: SDCFM.

30. Any instrument used for the measurement of methane must be a gas detector or other equivalent instrument approved by the APCO that meets the calibration, specifications, and performance criteria of EPA Reference Method 21, Determination of Volatile Organic Compound Leaks. For the purposes of demonstrating compliance with this permit, methane replaces all references to volatile organic compounds (VOC) in Method 21 and methane shall be used as the calibration gas for the detector. [Title 17 CCR, Section §95471(a)]

31. Instantaneous and integrated landfill surface emissions monitoring shall be performed as follows [Title 17 CCR, Sections §95471(a) & §95471(c)(1)]:

- a. The landfill surface methane concentration shall be measured using a hydrocarbon detector that meets the requirements of Condition 30.
- b. The entire landfill surface shall be divided into individually identified 50,000 square foot grids.
- c. Testing shall be conducted by holding the hydrocarbon detector's probe within three inches of the landfill surface while traversing the grid, with the exception being for low-lying

vegetation where measurements may be conducted with the probe tip placed within three inches from the top of the vegetation per MBARD Approved Alternative Compliance Option as approved on October 29, 2013.

- d. The walking pattern shall be no more than a 100-foot spacing interval and shall traverse each monitoring grid. Any subsequent exceedances of the concentration limits specified in Condition 18 that cannot be remediated within ten calendar days or that are detected during a compliance inspection shall revert the walking pattern to 25-foot spacing intervals. The walking pattern may return to 100-foot intervals upon consecutive four successive quarterly monitoring periods that result in compliance with the concentration limits specified in Condition 18 per MBARD Approved Alternative Compliance Option letter dated October 29, 2013.
  - e. Testing shall be terminated when the average wind speed exceeds 10 miles per hour or the instantaneous wind speed exceeds 20 miles per hour. Average wind speed shall be determined on a 15-minute average using an on-site anemometer with a continuous recorder for the entire duration of the monitoring event per MBARD Approved Alternative Compliance Option letter dated October 29, 2013.
  - f. Testing shall be conducted only when there has been no measurable precipitation in the preceding 24 hours during the months of December through April, and the preceding 72 hours during the months of May through November per MBARD Approved Alternative Compliance Option letter dated October 29, 2013.
32. In conducting instantaneous surface emissions monitoring, the Permit Holder shall record any instantaneous readings of methane 200 ppmv or greater (other than non-repeatable, momentary readings). Surface areas of the landfill that exceed a methane concentration of 500 ppmv must be marked and remediated as required by Condition 39 herein. The wind speed must be recorded during the sampling period. Landfill surface areas with cover penetrations, distressed vegetation, cracks or seeps must be inspected visually and with a hydrocarbon detector. [Title 17 CCR, Section §95471(c)(2)]
33. In conducting integrated surface emissions monitoring, the Permit Holder shall record readings and then average them for each grid. Individual monitoring grids that exceed an average methane concentration of 25 ppmv must be identified and remediated as required by Condition 40 herein. The wind speed must be recorded during the sampling period. [Title 17 CCR, Section §95471(c)(3)]
34. Gauge pressure shall be determined using a hand-held manometer, magnahelic gauge, or other pressure measuring device approved by the APCO that is calibrated and operated in accordance with manufacturer's specifications. [Title 17 CCR, Section §95471(g)]
- ~~14.35.~~ No testing is specified for the generic (Rule 400) opacity requirement from Condition 4. The gas destruction device(s) are assumed to be in compliance with the opacity requirement due to the firing

of gaseous fuel. If testing is conducted for Condition 4, the County of Santa Cruz should conduct testing in accordance with the methodology contained in EPA Method 9 and the averaging/aggregating period contained in ~~District~~MBARD Rule 400. [~~District~~MBARD Rule 218 Adopted 3/26/97]

~~15.36.~~ No testing is specified for the generic (Rule 403) particulate matter emission standard from Condition 5. The gas destruction device(s) are assumed to be in compliance with the particulate matter emission standard due to the firing of gaseous fuel. If testing is conducted for Condition 5, the County of Santa Cruz should conduct testing in accordance with the methodology contained in EPA Method 5. [~~District~~MBARD Rule 218]

~~16.~~ No testing is specified for the generic (Rule 412) sulfur concentration limit in Condition 6. The gas destruction device(s) are assumed to be in compliance with the sulfur concentration limit based upon the calculations contained in the engineering evaluation. If testing is conducted for Condition 6, the County of Santa Cruz should conduct testing in accordance with the methodology contained in EPA Method 20. [District Rule 218]

~~17.~~ Annual testing of the landfill gas from the gas collection system(s) to determine the sulfur content shall be completed. The County of Santa Cruz shall conduct testing in accordance with ASTM D 1072-80, ASTM D 3031-81, ASTM D 3246-81 or SCAQMD Method 307-91 to verify compliance with Condition 7. [District Rule 218]

### MONITORING AND RECORD KEEPING REQUIREMENTS

~~37.~~ The landfill gas hydrogen sulfide (H<sub>2</sub>S) concentration shall be analyzed once a month. The measurements shall be performed using a MBARD approved method, and shall be reported to MBARD, upon request. The monthly H<sub>2</sub>S results shall be used in a MBARD approved method to calculate the SO<sub>x</sub> facility-wide daily emissions as required by Condition 4. [Basis: MBARD Rule 207]

~~38.~~ The County of Santa Cruz Department of Public Works shall conduct the instantaneous and integrated landfill surface emissions monitoring shall be performed on the following frequency: [Title 17 CCR, Section §95469(a)]

<u>Landfill Area</u>	<u>Monitoring Frequency</u>
<u>All</u>	<u>Quarterly</u>

~~39.~~ Any landfill surface methane concentration in excess of 500 ppmv, other than non-repeatable, momentary readings as determined by instantaneous surface emissions monitoring, shall be deemed as an exceedance and shall initiate the following actions: [Title 17 CCR, Section §95469(a)(1)(A)]

& (B)]

- a. The date, location and value of each exceedance along with re-test dates and results shall be recorded, with the grid location of each exceedance clearly marked and identified on the topographic map of the landfill; and,
  - b. Corrective actions and re-monitoring shall be completed within ten (10) calendar days of a measured exceedance.
    - A. If the re-monitoring of the grid location after the initial exceedance shows a second exceedance, additional corrective action shall be taken no later than ten (10) calendar days after the second exceedance.
    - B. If the re-monitoring of the grid location after the second exceedance shows a third exceedance, a new or replacement well shall be installed no later than 120 calendar days after detection of the third exceedance.
40. Any average landfill surface methane concentration in excess of 25 ppmv, as determined by integrated surface emissions monitoring, shall be deemed as an exceedance and shall initiate the following actions [Title 17 CCR, Section §95469(a)(2)(A) & (B)]:
- a. The date, location and value of each exceedance along with re-test dates and results shall be recorded, with the grid location of each exceedance clearly marked and identified on the topographic map of the landfill; and,
  - b. Corrective actions and re-monitoring shall be completed within ten (10) calendar days of a measured exceedance.
    - A. If the re-monitoring of the grid location after the initial exceedance shows a second exceedance, additional corrective action shall be taken no later than ten (10) calendar days after the second exceedance.
    - B. If the re-monitoring of the grid location after the second exceedance shows a third exceedance, a new or replacement well shall be installed no later than 120 calendar days after detection of the third exceedance.
41. The flares must be equipped with a temperature monitoring device equipped with a continuous recorder which has an accuracy of plus or minus (+) 1 percent of the temperature being measured expressed in degrees Celsius or Fahrenheit. [MBARD Rule 207 and 17 CCR, Section §95469(b)(1)(A)]
42. The flares must be equipped with at least one gas flow rate measuring device which must record the flow to the control device(s) at least every 15 minutes. [MBARD Rule 207 and 17 CCR, Section §95469(b)(1)(B)]

43. Components containing landfill gas and under positive pressure must be monitored quarterly for leaks. Any component leak must be tagged and repaired within ten (10) calendar days. [Title 17 CCR, Section §95469(b)(3)]
44. Each wellhead pressure shall be measured on a monthly basis. Corrective actions shall be initiated within five (5) calendar days of any positive pressure reading, further mitigation actions shall be initiated if the pressure cannot be corrected within fifteen (15) calendar days of the date the positive pressure reading was first measured, and final actions shall be completed within 120 calendar days of the date the positive pressure reading was first measured. [Title 17 CCR, Section §95469(c)]
45. The County of Santa Cruz Department of Public Works must monitor the nitrogen or oxygen concentration in the landfill gas on a monthly basis as follows: [40 CFR 62, Section §62.16722(a)(2)]
- a. The nitrogen level must be determined using EPA Method 3C of Appendix A-2 of 40 CFR Part 60, unless an alternative test method is established as allowed by §62.16724(d)(2).
  - b. Unless an alternative test method is established as allowed by §62.16724(d)(2), the oxygen level must be determined by an oxygen meter using EPA Method 3A of Appendix A-7 of 40 CFR Part 60, EPA Method 3C of Appendix A-7 of 40 CFR Part 60, or ASTM D6522-11. Determine the oxygen level by an oxygen meter using EPA Method 3A, 3C, or ASTM D6522-11 (if sample location is prior to combustion) except that:
    - A. The span must be set between 10- and 12-percent oxygen;
    - B. A data recorder is not required;
    - C. Only two calibration gases are required, a zero and span;
    - D. A calibration error check is not required;
    - E. The allowable sample bias, zero drift, and calibration drift are ±10 percent.
  - c. A portable gas composition analyzer may be used to monitor the oxygen levels provided:
    - A. The analyzer is calibrated; and
    - B. The analyzer meets all quality assurance and quality control requirements for EPA Method 3A or ASTM D6522-11.
46. The County of Santa Cruz Department of Public Works must monitor the temperature of the landfill gas on a monthly basis. The temperature measuring device must be calibrated annually using the procedure in 40 CFR Part 60, Appendix A-1, EPA Method 2, Section 10.3. If a well exceeds the operating parameter for temperature, action must be initiated to correct the exceedance within 5 calendar days. Any attempted corrective measure must not cause exceedances of other operational or performance standards. [40 CFR 62, Section §62.16722(a)(3) and §62.16720(a)(4)]

- a. If a landfill gas temperature less than 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 15 calendar days of the first measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit), the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) was first measured. The County of Santa Cruz Department of Public Works must keep records according to Condition 47(n).
  - b. If corrective actions cannot be fully implemented within 60 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit) for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55 degrees Celsius (131 degrees Fahrenheit). The County of Santa Cruz Department of Public Works must keep records according to Condition 47(o) and must report the information in the annual report according to Condition 55(k).
  - c. If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to MBARD. The County of Santa Cruz Department of Public Works must keep records according to Condition 47(p) and must report the information in the annual report according to Condition 55(k).
47. The County of Santa Cruz Department of Public Works shall retain the following records for at least five (5) years in a readily accessible location, and made available to MBARD staff within five (5) business days upon request: [Title 17 CCR, Section §95470(a) and 40 CFR 62, Subpart OOO]:
- a. All gas collection system downtime exceeding five (5) calendar days, including individual well shutdown and disconnection times, and the reason for the downtime.
  - b. All gas control system downtime exceeding one (1) hour, the reason for the downtime, and the length the gas control system was shutdown.
  - c. Expected gas generation flow rate.
  - d. All instantaneous landfill surface readings of 200 ppmv of methane or greater, all leaks from components under positive pressure greater than 500 ppmv (as methane), all instantaneous surface monitoring readings greater than 500 ppmv, all integrated surface monitoring readings greater than 25 ppmv, the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, date of any required re-monitoring and the re-monitored concentration in ppmv, wind speed during surface sampling, and the installation date and location of each well installed as part of a gas collection system expansion.
  - e. The installation date and location of each well installed as part of a gas collection system



expansion.

- f. Any positive wellhead gauge pressure measurements, date of the measurements, well identification number, and corrective actions taken.
- g. Annual solid waste acceptance rate and the current amount of waste-in-place.
- h. Nature, location, amount, and date of deposition of non-degradable waste for any landfill areas excluded from the gas collection system.
- i. Source test results.
- j. Mitigation measures taken to prevent the release of methane or other emissions into the atmosphere: when solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; during repairs or temporary shutdown of gas collection system components; or when solid waste was excavated and moved.
- k. Any construction activities including: a description of the actions being taken, the areas of the landfill affected by these actions, the reason the actions are required, and any landfill gas collection system components affected by these actions; construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components; a description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts.
- l. Emission control device operating parameters required to be monitored per Conditions 41 and 42 as well as periods of operation during which the parameter boundaries established during the most recent source test are exceeded including: all three (3) hour periods of operation during which the average flare temperature was more than 50 °F below the average combustion temperature during the most recent source test where compliance with the 99% methane destruction efficiency was demonstrated.
- m. Each wellhead temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent.
- n. For any corrective action analysis, as required by Condition 46(a), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
- o. For any corrective action analysis, as required by Condition 46(b), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

p. For any corrective action analysis, as required by Condition 46(c), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates, and a copy of any comments or final approval on the corrective action analysis or schedule from MBARD.

48. The County of Santa Cruz Department of Public Works shall maintain the following records for the life of the emissions control device: [Title 17 CCR, Section §95470(a)(2)]

a. The control device vendor specifications.

b. The expected methane generation flow rate per Condition 47(c) using data measured during the initial source test.

c. The percent reduction of methane achieved by the control device during the initial source test.

18.49. As applicable the County of Santa Cruz shall maintain the following general records of required monitoring information [~~District~~MBARD Rule 218]:

A) the date and time of sampling or measurements;

B) the date(s) analyses were performed;

C) the company or entity that performed the analyses;

D) the analytical techniques or methods used;

E) the results of such analyses;

F) the operating conditions existing at the time of sampling or measurement; and

G) the records of quality assurance for continuous monitoring systems (including, but not limited to quality control activities, audits, and calibration drift checks) and source testing methods.

19.50. The County of Santa Cruz shall maintain records on the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the equipment under this permit. [~~District~~MBARD Rule 218]

20.51. The County of Santa Cruz shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring, sample collection,

measurement, report, and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. [~~District~~MBARD Rule 218 Adopted 3/26/97]

~~21.~~52. The County of Santa Cruz shall maintain records of the parameters that are analyzed as part of the oil analysis program, the results of the analysis, and the oil changes for the engine as required by condition ~~42~~ 25. The records must be kept for a period of 5 years following the date of each occurrence, measurement, or maintenance. [40 CFR Part 63, Subpart ZZZZ, Section §63.6660(b)]

53. The County of Santa Cruz Department of Public Works shall keep monthly records of the gasoline throughput. Records must be available within 24 hours of a request by MBARD. [Basis: 40 CFR 63, Subpart CCCCC, Section §63.11116(b)]

## REPORTING REQUIREMENTS

54. For corrective actions that are required by Condition 46(c), the County of Santa Cruz Department of Public Works must submit the following information: [40 CFR 62, Subpart OOO, Section §62.16724(k)]

- a. If the corrective action is expected to take longer than 120 days after the initial exceedance to complete, the County of Santa Cruz Department of Public Works must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55 degrees Celsius (131 degrees Fahrenheit) or above. MBARD must approve the plan for corrective action and the corresponding timeline.
- b. If the corrective action is not completed within 60 days after the initial exceedance, the County of Santa Cruz Department of Public Works must submit a notification to MBARD as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature exceedance.

55. An Annual Report shall be submitted to MBARD for the period of January 1 through December 31 of each year. Each annual report must be submitted to MBARD by March 15 of the following year, and shall contain the following information: [Title 17 CCR, Section 95470(b)(3) and 40 CFR 62, Subpart OOO]

- a. Landfill name, owner and operator, address, and solid waste information (SWIS) identification number;
- b. Total volume of landfill gas collected, in standard cubic feet;

- c. Average composition of the landfill gas collected, in percent methane and percent carbon dioxide by volume;
- d. Gas control device type, rating, and total volume of landfill gas combusted, in standard cubic feet;
- e. The date that the gas collection and control system was installed and in full operation;
- f. Percent methane destruction efficiency of the flare;
- g. Type and amount of supplemental fuels burned with the landfill gas in the flare;
- h. Total volume of landfill gas shipped off-site, the composition of the landfill gas collected in percent methane and percent carbon dioxide by volume, and the recipient of the gas;
- i. Most recent topographic map of the site showing the areas with final cover and a geomembrane and the areas with final cover without a geomembrane with corresponding percentages over the landfill surface;
- j. The information required by Sections 95470(a)(1)(A) through 95470(a)(1)(F), 95470(a)(1)(H), and 95470(a)(1)(K), which includes the following:
  - A. All gas collection system downtime exceeding five (5) calendar days, including individual well shutdown and disconnection times, and the reason for the downtime;
  - B. All gas control system downtime exceeding one (1) hour, the reason for the downtime, and the length the gas control system was shutdown;
  - C. Expected gas generation flow rate;
  - D. Records of all landfill surface methane concentrations of 200 ppmv or greater other than non-repeatable, momentary readings as determined by instantaneous surface emissions monitoring;
  - E. Records of all landfill surface methane concentrations in excess of 500 ppmv other than non-repeatable, momentary readings as determined by instantaneous surface emissions monitoring, average landfill surface methane concentrations in excess of 25 ppmv as determined by integrated surface emissions monitoring, and landfill gas leaks in excess of 500 ppmv other than non-repeatable, momentary readings, measured as methane, at any component under positive pressure, along with the location of the leak (or grid), leak concentration in ppmv, date and time of measurement, action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during sampling;

F. Any positive wellhead gauge pressure measurements, date of the measurements, well identification number, and corrective actions taken;

G. Annual solid waste acceptance rate and the current amount of waste-in-place;

H. Most recent source test results; and,

I. Temperature data records, a daily log of the amount of landfill gas vented to the flare, as recorded at least every 15 minutes and all 3-hour periods of flare operation during which the average temperature difference was more than 50 degrees Fahrenheit below the average combustion temperature during the most recent source test at which compliance was determined.

k. For any corrective action analysis for which corrective actions are required in accordance with Condition 46 and that take more than 60 days to correct the exceedance, the root cause analysis conducted, including a description of the recommended corrective action(s), the date for corrective action(s) already completed following the positive pressure or elevated temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

56. When the County of Santa Cruz Department of Public Works ceases to accept waste at the Buena Vista Landfill, the County of Santa Cruz Department of Public Works must submit a Closure Notification to MBARD within 30 days of waste acceptance cessation. [Title 17 CCR, Section §95470(b)(1)]

a. The Closure Notification must include the last day solid waste was accepted, the anticipated closure date of the MSW landfill, and the estimated waste-in-place.

b. MBARD may request additional information as necessary to verify that permanent closure has taken place in accordance with the requirements of any applicable federal, State, local, or tribal statutes, regulations, and ordinances in effect at the time of closure.

57. An Equipment Removal Report shall be submitted to MBARD no later than thirty (30) days prior to well capping, removal, or cessation of operation of the gas collection, treatment, or control system equipment. The report shall contain the following information: [Title 17 CCR, Section §95470(b)(2)]

a. A copy of the Closure Notification;

b. A copy of the initial source test report or other documentation demonstrating that the gas collection and control system has been installed and operated for a minimum of fifteen years, unless substantiating data can demonstrate that due to declining methane rates the landfill is unable to operate the gas collection and control system for a 15-year period; and,

c. Surface emissions monitoring results to verify that the landfill surface methane

measurements do not exceed the limits specified in Condition 18.

22.58. The County of Santa Cruz shall report all breakdowns to the Air Pollution Control Officer (APCO) within 1 hour of the occurrence. This one hour period may be extended up to six hours for good cause by the APCO.

The estimated time for repair of the breakdown shall be supplied to the APCO within 24 hours of the occurrence and a written report shall be supplied to the APCO within 5 days after the occurrence has been corrected. This report shall include at a minimum [~~Distriet~~MBARD Rule 214]:

- A) a statement that the condition or failure has been corrected and the date of the correction; and
- B) a description of the reasons for the occurrence; and
- C) a description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future; and
- D) an estimate of the emissions caused by the condition or failure.

23.59. The County of Santa Cruz shall report any violation of any requirement contained in this permit to ~~the Distriet~~MBARD within 96 hours after such occurrence. The violation report shall include the time intervals, date and magnitude of excess emissions; nature and cause of the excess (if known), corrective actions and preventative measures adopted. [~~Distriet~~MBARD Rule 218]

24.60. For protection from enforcement action based upon an emergency, as defined in ~~Distriet~~MBARD Rule 218, the responsible official for the County of Santa Cruz shall submit to ~~the Distriet~~MBARD relevant evidence which demonstrates [~~Distriet~~MBARD Rule 218]:

- A) an emergency occurred; and
- B) that the County of Santa Cruz can identify the cause(s) of the emergency; and
- C) that the facility was being properly operated at the time of the emergency; and
- D) that all steps were taken to minimize the emissions resulting from the emergency; and
- E) within two working days of the emergency event, the County of Santa Cruz provided ~~the Distriet~~MBARD with a description of the emergency and any mitigating or corrective actions taken.

25.61. The County of Santa Cruz shall submit semiannual monitoring reports to ~~the Distriet~~MBARD, in a ~~Distriet~~MBARD approved format, no later than August 15 for the period of January 1 through

June 30 and no later than February 15 for the period of July 1 through December 31. [~~Distriet~~MBARD Rule 218]

These monitoring reports shall include at a minimum

- A) the time intervals, date and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions and preventative measures adopted; and
- B) the averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant in question; and
- C) all information pertaining to any monitoring as required by the permit; and
- D) a negative declaration specifying when no excess emissions occurred.

~~26.62.~~ The County of Santa Cruz shall submit an annual compliance certification report to ~~the~~ ~~Distriet~~MBARD and U.S. EPA, in a ~~Distriet~~MBARD approved format, no later than February 15 for the period of January 1 through December 31 of the preceding year. [~~Distriet~~MBARD Rule 218]

This report shall include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report and shall include at a minimum:

- A) identification of each term or condition of the permit that is the basis of the certification; and
- B) the compliance status; and
- C) whether compliance was continuous or intermittent; and
- D) the method(s) used for determining the compliance status of the source, currently and over the reporting period.

~~27.63.~~ Every five (5) years, the County of Santa Cruz Public Works shall calculate the NMOC emission rate for the landfill until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed. The NMOC emissions rate shall be calculated using the calculating procedures specified in 40 CFR 63, Section §63.1959. [MBARD Rule 218]Every five years, the County of Santa Cruz shall submit a NMOC emission rate report to the District as specified in §60.757(b)(1)(ii) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed. [District Rule 437 Adopted 10/16/96 and 40 CFR Part 60, Subpart WWW]

~~28.~~ ~~The County of Santa Cruz shall submit a closure report to the District within 30 days of waste~~

~~acceptance cessation. If a closure report has been submitted to the District, no additional wastes may be placed into the landfill without filing a notification of modification as described in 40 CFR §60.7(a)(4). [District Rule 437 Adopted 10/16/96 and 40 CFR Part 60, Subpart WWW]~~

## GENERAL CONDITIONS

~~29-64.~~ The County of Santa Cruz shall comply with all conditions of this federal operating permit. Any noncompliance with a permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [~~District~~MBARD Rule 218]

~~30-65.~~ In an enforcement action, the fact that the County of Santa Cruz would have to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit is not a defense. [~~District~~MBARD Rule 218]

~~31-66.~~ This permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by ~~the District~~MBARD. The filing of a request by the County of Santa Cruz for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [~~District~~MBARD Rule 218]

~~32-67.~~ This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. [~~District~~MBARD Rule 218 Adopted 3/26/97]

~~33-68.~~ The County of Santa Cruz shall furnish to ~~the District~~MBARD, within a reasonable time, any information that ~~the District~~MBARD may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the County of Santa Cruz shall also furnish to ~~the District~~MBARD copies of records required to be retained by this permit. [~~District~~MBARD Rule 218]

~~34-69.~~ For applicable requirements that will become effective during the permit term, the County of Santa Cruz shall meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement. [~~District~~MBARD Rule 218]

~~35-70.~~ Any document submitted to ~~the District~~MBARD pursuant to this permit shall contain certification by the responsible official of truth, accuracy and completeness. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. The County of Santa Cruz shall promptly, upon



discovery, report to ~~the District~~MBARD a material error or omission in these records, reports, plans, or other documents. [~~District~~MBARD Rule 218]

~~36.71.~~ Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, record keeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with. [~~District~~MBARD Rule 218]

~~37.72.~~ For this federal operating permit to remain valid through the permit term of five years from the date of issuance, the County of Santa Cruz shall pay an annual emission fee based upon the requirements of ~~District~~MBARD Rule 308. [~~District~~MBARD Rule 218]

~~38.73.~~ The County of Santa Cruz shall have available at the facility at all times a copy of this federal operating permit. [~~District~~MBARD Rule 218]

~~39.74.~~ Upon presentation of credentials, the County of Santa Cruz shall allow ~~the District~~MBARD, the ARB, the EPA, or an authorized representative, to perform the following [~~District~~MBARD Rule 218]:

- A) enter upon the premises where the federal operating permit source is located or in which any records are required to be kept under the terms and conditions of this federal operating permit;
- B) to have access to and copy any records required to be kept under the terms and conditions of this federal operating permit;
- C) to inspect any equipment, operation, or process described or required in this federal operating permit; and,
- D) to sample emissions from the source.

~~40.75.~~ The renewal application for this permit shall be submitted at least 6 months but no greater than 18 months prior to permit expiration. [~~District~~MBARD Rule 218]

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