

**Bay Area Air Quality Management District**

939 Ellis Street  
San Francisco, CA 94109  
(415) 771-6000

**Permit Evaluation  
and  
Statement of Basis  
for  
RENEWAL of the**

**MAJOR FACILITY REVIEW PERMIT**

for

**Sonoma County Central Landfill  
Facility #A2254**

**Facility Address:**

500 Mecham Road  
Petaluma, CA 94952

**Mailing Address:**

2300 County Center Drive, Room 117A  
Santa Rosa, CA 95403

Application Engineer: Robert Hull  
Site Engineer: Robert Hull

Application 23816

January 2013

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**Title V Statement of Basis for:  
Renewal of Major Facility Review Permit for  
Sonoma County Central Landfill, Site #A2254  
Application #23816**

**A. Background**

The Sonoma County Central Landfill is subject to the Major Facility Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit” more than 100 tons per year of a regulated air pollutant.

Major Facility Operating Permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR). The permits must contain all “applicable requirements” (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A2254.

The Sonoma County Central Landfill (Site #A2254) was initially issued a Major Facility Operating Permit (Title V Permit) on February 27, 2001. The Title V permit has since undergone two Significant Revisions and three Minor Revisions. The current application (A#23816) is for a Title V renewal. Although the existing permit expired on April 1, 2012, it continues in force until the District takes final action on the permit renewal.

Two additional permit applications have been processed since the last minor revision of this permit. Application #22513 added a note to Permit Condition #19933 to indicate that the IC Engines S-13 and S-14 were not operating and were not subject to the conditions while inactive. Application #22950 allowed the IC Engines S-13 and S-14 to be fired by compost biogas in addition to landfill gas. The resulting changes in permit conditions are shown in the proposed permit in strikeout/underline format. The permit evaluation for Application #22950 is included in Appendix C for reference. There is no evaluation for Application #22513; it was an administrative action.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of this Major Facility Review permit and determined that they are valid and correct. This review included an analysis of all applicability determinations for all sources. The review also included an assessment of the sufficiency of all monitoring for determination of compliance with applicable requirements. The statements of basis for permit revisions that have occurred through the last revision of the Major Facility Review permit are hereby incorporated by reference and are available upon request. The proposed permit shows all changes to the permit since the last revision in strikeout/underline format. These changes are discussed in this Statement of Basis.

## **B. Facility Description**

The Sonoma County Central Landfill is an active Class III municipal solid waste (MSW) landfill operated by the Sonoma County Department of Transportation and Public Works. The facility and accepts non-hazardous residential, commercial, industrial, and inert wastes. It has a total permitted area of 398.5 acres, with a permitted waste disposal footprint of 172.8 acres, and a design capacity of 32.65 million cubic yards (approximately 19.6 million tons). The waste-in-place as of June 1, 2011 was reported to be 23.68 million cubic yards, and the site's estimated closure is March 2023.

Landfills generate landfill gas due to the waste decomposition process. The landfill gas contains methane and carbon dioxide (which are greenhouse gases: GHG) and small amounts of non-methane organic compounds (NMOC) and sulfur compounds. Many of the NMOCs are precursor organic compounds (POC), and many NMOCs and also toxic air contaminants (TACs) and hazardous air pollutants (HAPs). Hydrogen sulfide, a TAC, makes up about 95% or more of the sulfur compounds. District and EPA regulations require that landfill gas from larger landfills be continuously collected and controlled to reduce emissions of NMOCs to the atmosphere. These collection and control requirements also reduce GHG, TAC, and HAP emissions. In order to meet these requirements, the Sonoma County Central Landfill (S-1) is equipped with an active landfill gas collection and control system. Landfill gas collection systems are perforated pipes that are buried in the refuse at numerous locations. For active collection systems, the perforated pipes are connected to blowers by solid pipes (referred to as laterals and headers). The blowers maintain a vacuum in the buried refuse and draw landfill gas into the perforated pipes. Under normal operating conditions the collection system operates continuously and, all of the collected landfill gas is vented to control devices. Typically the landfill gas is vented to the (10) Internal Combustion Engines (S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14). When one or more engines are shut down, some of the collected landfill gas is vented to the A-3 Landfill Gas Flare in addition to the remaining operational engines. Combustion destroys most of the methane, NMOC, TAC, and HAP that are present in the landfill gas; however, landfill gas combustion also produces secondary emissions comprised of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM), formaldehyde, and acid gases such as hydrogen chloride (HCl) and hydrogen fluoride (HF).

In the Title V renewal application, Sonoma County Central Landfill reported actual emissions for 2010 as follows:

**Table 1: 2010 Emissions Summary**

Source Number/Description	Emissions (tons/year)						
	NOx	HAP	POC	NPOC	PM10	SOx	CO
S-1, Landfill Surface Emissions		3.72	8.74	0.34			
LFG IC Engines	42.90	6.06	10.01	8.42	10.75	8.18	143.69
A-3, Enclosed LFG Flare	0.034	0.001	0.008	0.000	0.011	0.024	0.134
Fugitive Dust					8.32		
<b>Total Facility Emissions</b>	<b>42.93</b>	<b>9.78</b>	<b>18.75</b>	<b>8.76</b>	<b>19.08</b>	<b>8.20</b>	<b>143.83</b>

During the 2011 annual renewal of the BAAQMD permits to operate for this facility, the District split the existing landfill source (S-1) into three source numbers (S-1, S-22, and S-23) based on the type of emissions and the type of activities that occur at active landfills. These source description changes were necessary due to an amendment of BAAQMD Regulation 3, Fees, Schedule K that was approved by the BAAQMD Board of Directors in June 2011 and due to changes the District is making to its emission inventory calculation programs. All active landfills in the Bay Area (sixteen facilities) will be undergoing similar source description changes. The new source descriptions for this site are as follows:

- S-1 Sonoma County Central Landfill – Waste Decomposition Process; equipped with landfill gas collection system and abated by A-3 Enclosed Landfill Gas Flare
- S-22 Sonoma County Central Landfill – Waste and Cover Material Dumping
- S-23 Sonoma County Central Landfill – Excavating, Bulldozing, and Compacting Activities

These source description changes were incorporated into this Title V renewal permit by adding the new source descriptions to Table II-A and by adding the new source descriptions to the titles of the applicable tables (Tables IV-A and VII-A). All of the above sources are subject to the permit conditions, Condition # 4044, and regulatory requirements that applied to the original S-1.

**C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit. Routine changes to the standard permit text in Sections I “Standard Conditions”, III “Generally Applicable Requirements”, and X “Glossary” are not considered part of the Title V permit renewal process, but may be made at the discretion of the District during the term of this permit.

**I. Standard Conditions**

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard

condition pertaining to these programs. This permit does not include Title IV or accidental release provisions.

Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

#### Changes to the Permit, Section I:

- The dates of adoption and approval of rules in Standard Condition 1.A have been updated. In addition Regulation 2, Rule 5 and the SIP version of Regulation 2, Rule 6 have been added.
- New permit issuance and expiration dates will be added to Standard Condition I.B.1.
- The basis for Standard Condition I.B.11 was corrected.

## **II. Equipment**

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24). Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403. The permitted sources are listed in Table II-A.

As discussed in the Facility Description section, the District is splitting the existing active landfill source (S-1) into three source numbers (S-1, S-22, S-23). Source S-1 will represent the waste decomposition process for this landfill and will include all greenhouse gas, NMOC, TAC, and HAP emissions that occur due to the decomposition of decomposable materials in the landfill. S-1 will continue to include the landfill gas collection system equipment, which is vented to the A-3 Enclosed Landfill Gas Flare and IC Engines S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14. The waste and cover material dumping processes, which include particulate emissions resulting from material handling and delivery plus NMOC emissions due to the handling of VOC-laden or contaminated soil, will be covered under source S-22. Source S-23 will represent the excavating, bulldozing, and compacting activities that occur at this active landfill and will include the particulate emissions generated by these activities. The new source descriptions for S-1, S-22, and S-23 were used throughout this proposed permit renewal.

Significant sources are those sources that are exempt from permitting, but have a potential to emit more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year. There are no "significant sources" at this facility.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an “A” and a number (e.g., A-3). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an “S” number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or “A”) device. If the primary function of a device is a non-control function, the device is considered to be a source (or “S”).

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

#### Changes to the Permit, Section II:

- The description of S-1 was modified and the new source number (S-22 and S-23) were added to Table II-A.
- The applicable waste acceptance limits were clarified.
- The landfill gas collection system blower descriptions and well count have been updated.
- Biogas was added as a fuel for the IC Engines S-13 and S-14.

### **III. Generally Applicable Requirements**

This section of the permit lists requirements that generally apply to all sources at a facility, including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered “significant sources” as defined in BAAQMD Rule 2-6-239. This facility does not have any significant sources that do not have District permits.

#### Changes to the Permit, Section III:

- The dates of adoption or approval of the rules and their “federal enforceability” status in Table III have been updated.
- The following rules and standards have been added to conform to current practice:
  - SIP Regulation 2-1-429, Federal Emissions Statement
  - BAAQMD Regulation 6, Particulate Matter and Visible Emissions has been renamed and renumbered as Regulation 6, Rule 1, Particulate Matter - General Requirements
  - SIP Regulation 6, Particulate Matter and Visible Emissions
  - SIP Regulation 8, Rule 40, Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks

- SIP Regulation 8, Rule 47, Organic Compounds – Air Stripping and Soil Vapor Extraction Operations
- BAAQMD Regulation 9, Rule 2 – Inorganic Gaseous Pollutants – Hydrogen Sulfide
- California Health and Safety Code Section 95100-95109, Mandatory Greenhouse Gas Emissions Reporting
- California Code of Regulations, Title 17, Sections 95460-95476, Methane Emissions from Municipal Solid Waste Landfills

#### **IV. Source-Specific Applicable Requirements**

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District or EPA websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

#### New Complex Applicability Determinations:

##### Applicability of 40 CFR 64, Compliance Assurance Monitoring (CAM)

The Compliance Assurance Monitoring (CAM) regulation in 40 CFR 64 was developed to provide assurance that facilities comply with applicable emissions limitations by adequately monitoring control devices. The CAM rule was effective on November 21, 1997. However, most facilities are not affected by CAM requirements until they submit applications for Title V permit renewal.



CAM applies to a source of criteria pollutant or hazardous air pollutant (HAP) emissions if all the following requirements are met:

- The source is located at a major source for which a Title V permit is required; and
- The source is subject to a federally enforceable emission limitation or standard for a criteria pollutant or HAP; and
- The source uses a control device to comply with the federally enforceable emission limitation or standard; and
- The source has potential pre-control emissions of the regulated pollutant that are equal to or greater than the major source threshold for the pollutant (in BAAQMD, the major source thresholds are 100 tons per year for each criteria pollutant, 10 tons per year for a single HAP, and 25 tons per year for two or more HAPs); and
- The source is not otherwise exempt from CAM.

Sonoma County Central Landfill – Waste Decomposition Process Equipped with Gas Collection System, S-1; abated by Landfill Gas Flare, A-3:

The landfill waste decomposition process and its related emission control devices are exempt from CAM applicability criteria, 40 CFR Part 64.2(a)(1), pursuant to 40 CFR Part 64.2(b)(1)(i), because the landfill and landfill gas control systems are subject to the NSPS and NESHAPS requirements identified above, and these NSPS and NESHAP requirements were adopted pursuant to Sections 111 and 112 of the Clean Air Act after November 15, 1990. Since the applicable federal requirements contain adequate monitoring provisions, additional compliance monitoring is not necessary. CAM does not apply to S-1 and A-3. This exemption also applies to landfill gas that is fired (i.e. controlled) by the IC Engine/Generators S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14.

Sonoma County Central Landfill – Waste and Cover Material Dumping, S-22; and Sonoma County Central Landfill – Excavating, Bulldozing, and Compacting Activities, S-23:

These operations may emit fugitive NMOC due to the handling of VOC-laden and contaminated soils. Since these NMOC emissions are uncontrolled, CAM does not apply to this pollutant.

These operations also emit fugitive PM<sub>10</sub>, primarily due to on-site vehicle travel. Although some PM<sub>10</sub> emission reductions are employed for S-22 and S-23, such as using water sprays, dust suppressants, road sweeping, etc., these measures are more passive in nature and are intended to prevent PM<sub>10</sub> emissions from forming. Therefore, these emission controls do not constitute a control device as defined in Section 64.1, so CAM does not apply.

Lean Burn Internal Combustion Engine and Generator Sets, S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, and S-14 – Combustion Emissions:

These engines are not subject to CAM because they do not use a control device to comply with federally enforceable emissions limitations.

Changes to the permit, Section IV:

- In Tables IV-A and IV-B, the dates of adoption or approval of the rules and their “federal enforceability” status have been updated.
- In Tables IV-A and IV-B, Regulation 6 citations have been updated to the new numbering and name (now Regulation 6, Rule 1). A SIP citation of Regulation 6 has been added since the current District rule has been renumbered. Note that the standards are the same in both versions.
- In the title of Table IV-A, the descriptions for S-22 and S-23 were added.
- The requirements for Permit Condition #24894 were added to Table IV-B. These conditions are applicable to the IC Engines S-13 and S-14 while fueled by compost biogas.

**V. Schedule of Compliance**

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

Changes to permit:

None.

**VI. Permit Conditions**

Each permit condition is identified with a unique numerical identifier, up to five digits. The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- **BACT:** This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- **Cumulative Increase:** This term is used for a condition imposed by the APCO that limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- **Offsets:** This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- **PSD:** This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- **TRMP:** This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy. This policy was replaced by Regulation 2, Rule 5 in 2005.

During the initial Title V permit development, the District reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting requirements have been added to the permit.

Since the last Title V permit revision, the BAAQMD permits for the IC Engine/Generator Sets S-13 and S-14 have been modified to allow them to be fired by either landfill gas or compost biogas. In order to facilitate this change, a new permit condition was created (Condition #24894) and a note was added to the existing permit conditions for all IC Engine/Generator Sets (Condition #19933).

Changes to the permit, Section VI:

- The following additions to existing permit conditions will be made pursuant to BAAQMD Application #22950:

**Condition # 19933**

For S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13, S-14 Lean Burn Internal Combustion Engines and Generator Sets

Note: S-13 and S-14 are permitted to combust either landfill gas or compost biogas. While fueled by biogas or on inactive status (no landfill gas combusted during the annual reporting period), S-13 and S-14 are not subject to the provisions of these conditions. While fueled by biogas they are subject to Permit Condition #24894.

**Condition # 24894**

**For S-13, S-14 Lean Burn Internal Combustion Engines and Generator Sets - Fueled by Compost Biogas**

1. The Internal Combustion Engines S-13 and S-14 are permitted to be fueled either by landfill gas or compost generated biogas fuel. However, these conditions apply only to biogas fueling. When fueled by landfill gas, S-13 and S-14 are subject to the requirements of BAAQMD Permit Condition #19933. (Basis: Regulation 2-1-403)
2. The total fuel heat input to each of the Internal Combustion Engines S-13 and S-14 shall not exceed 92,199 million BTUs (MMBTU) during any rolling consecutive 12-month period, based on the higher heating value (HHV) of the fuel. Note: This is a maximum total fuel consumption limit regardless of the fuel type. (Basis: Cumulative Increase)
3. S-13 and S-14 shall be equipped with District approved flow meters, to measure fuel gas flow into the engines. (basis: Regulation 2-1-403)
4. Nitrogen Oxide (NO<sub>x</sub>) emissions, calculated as NO<sub>2</sub>, from each of the Internal Combustion Engines S-13 and S-14 shall not exceed 0.80 grams per brake horsepower hour (g/bhp-hr). (basis: BACT, Offsets, and Cumulative Increase)
5. Carbon Monoxide (CO) emissions from each of the Internal Combustion Engines S-13 and S-14 shall not exceed 2.1 g/bhp-hr. (basis: BACT)
6. Non-methane organic compounds (NMOC) emissions from each of the Internal Combustion Engines S-13 and S-14 shall not exceed 120 ppmv, expressed methane, dry basis, corrected to 3% O<sub>2</sub>. (Basis: Cumulative Increase)
7. In order to demonstrate compliance with Part 2 above, the Permit Holder shall ensure that each of the Internal Combustion Engines S-13 and S-14 is equipped with a non-resettable fuel usage meter to record gas flow in standard cubic feet (scf) to each engine. The monthly heat input to each engine is the product of the monthly landfill gas flow (scf) and the average fuel heat content (MMBTU, expressed as HHV) measured during the period. Measurements of fuel heat content shall be made with a District approved device and recorded on at least a weekly basis. (Basis: Cumulative Increase, Offsets, Toxics Risk Assessment)
8. In order to demonstrate compliance with Parts #4 through #7 above, and Regulation 9, Rule 8, Sections 302.1 and 302.3 the Permit Holder shall ensure that a District approved source test is conducted annually on each Internal

Combustion Engine S-13 and S-14. As a minimum, the annual source tests shall determine the following:

- a. biogas gas flow rate to each engine;
- b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), CH<sub>4</sub>, NMOC, and total hydrocarbons (THC) in the fuel gas;
- c. exhaust gas flow rate from each engine (dry basis);
- d. concentrations (dry basis) of NO<sub>x</sub>, CO, CH<sub>4</sub>, NMOC, THC, and O<sub>2</sub> in the exhaust gas from each engine; and
- e. fuel heat content in MMBTU (HHV)

Source tests for each engine shall be conducted no sooner than 9 months and no later than 12 months after the previous source test. The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date. (basis: BACT, Cumulative Increase, Regulations 9-8-302.1, and 9-8-302.3)

9. In order to demonstrate compliance with the above requirements, the Permit Holder shall maintain the following records in a District approved log for S-13 and S-14.
  - a. daily fuel consumption, summarized on a monthly basis
  - b. daily hours of operation, summarized on a monthly basis
  - c. weekly fuel heat value measurements in BTU/scf
  - d. monthly fuel heat input in MMBTU
  - e. all results of initial and annual source testing required in Part 8.

All records shall be maintained on site or shall be made readily available to District staff upon request for at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable rules or regulations. (basis: Cumulative Increase, Regulation 2-6-501)

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all “strike-out” language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

## **VII. Applicable Limits and Compliance Monitoring Requirements**

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

Monitoring decisions are typically the result of balancing several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring requirements only when it can support a conclusion that existing monitoring is inadequate.

Apart from the separation of landfilling activities into three sources and the modification to the permits for the IC Engine/Generator Sets S-13 and S-14 discussed above, the compliance monitoring requirements for this facility have not substantially changed from the most recently issued Title V permit. The District deems that the current monitoring is adequate to provide a reasonable assurance of compliance.

Changes to the permit, Section VII:

- The revised sources descriptions for S-1, A-12, S-22, and S-23 were incorporated into Table VII-A.
- Emissions limits and monitoring requirements associated with Condition #24984 (biogas fuel) are added to Table VII-B for IC Engines S-13 and S-14.

**VIII. Test Methods**

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not "applicable requirements" as defined by Regulation 2-6-202.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to the permit, Section VIII:

- The Regulation 6, Rule 1 reference has been updated and reference to the SIP version of Regulation 6 has been added.
- Test methods for NO<sub>x</sub>, CO, and NMOC were added for limits referenced by Condition #24894.

## **IX. Revision History**

### Changes to the permit, Section IX:

- The revision history will be updated to include this proposed permit renewal.

## **X. Glossary**

### Changes to the permit, Section X:

- Some additional standard terms have been added to the glossary and the section for commonly used symbols.

## **D. Alternate Operating Scenarios:**

No alternate operating scenario has been requested for this facility.

## **E. Compliance Status:**

An October 16, 2012 office memorandum from the Director of Compliance and Enforcement, to the Director of Engineering, presents a review of the compliance record of Sonoma County Central Landfill (Site #A2254). The Compliance and Enforcement Division staff has reviewed the records for this site as part of the District's evaluation of the application to renew the Title V permit. During the period subject to review (April 23, 2007 through October 16, 2012), activities known to the District include:

- (8) Notices of Violation
- (17) Air Pollution Complaints
- (1) Reportable Compliance Activity

The Compliance and Enforcement Division has concluded that Sonoma County Landfill has demonstrated no evidence of ongoing noncompliance and no recurring pattern of violations that would warrant consideration of a Title V compliance schedule for this facility.

The responsible official for Sonoma County Central Landfill certified that all equipment was operating in compliance on September 30, 2011. No ongoing non-compliance issues have been identified since this date.

## **F. Differences Between the Application and the Proposed Permit:**

The application for renewal of this Title V permit was received by the District on October 3, 2011. The changes requested by the applicant include the following:

- The District split S-1 into three source numbers: S-1, S-22, and S-23. These source description changes did not involve any modifications to these sources. The new source descriptions have been incorporated throughout the permit.

In addition, the District has proposed numerous updates to the standard permit language, regulatory descriptions, and regulatory amendment dates throughout the permit to reflect regulatory changes, to clarify limits and other applicable requirements, to explain permit terminology, to remove obsolete requirements, and to correct permit errors.

**APPENDIX A**  
**BAAQMD COMPLIANCE REPORT**



**COMPLIANCE & ENFORCEMENT DIVISION**

**Inter-Office Memorandum**

**October 16, 2012**

TO: JIM KARAS – DIRECTOR OF ENGINEERING

FROM: WAYNE KINO – DIRECTOR OF ENFORCEMENT

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

**CO. OF SONOMA, DEPT. OF TRANSPORTATION & PUBLIC WORKS,  
CENTRAL LANDFILL; SITE #A2254**

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**Background**

This review was initiated as part of the District evaluation of an application by Co. of Sonoma, Dept. of Transportation & Public Works Central Landfill for a Title V Permit Renewal. It is standard practice of the Compliance and Enforcement Division to undertake a compliance record review in advance of a renewal of a Title V Permit. The purpose of this review is to assure that any non-compliance problems identified during the prior five-year permit term have been adequately addressed, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit compliance schedule. In addition, the review checks for patterns of recurring violation that may be addressed by additional permit terms. Finally, the review is intended to recommend, if necessary, any additional permit conditions and limitations to improve compliance.

**Compliance Review**

Compliance records were reviewed for the time period from April 23, 2007 (the date of issuance of the initial Title V permit) through October 16, 2012. The results of this review are summarized as follows.

**1. Violation History**

Staff reviewed Sonoma County Landfill Annual Compliance Certifications and found no ongoing non-compliance and no recurring pattern of violations.

Staff also reviewed the District compliance records for the review period. During this period Sonoma County Landfill activities known to the District include:

REVIEW OF COMPLIANCE RECORD OF:

Co. of Sonoma, Dept of Transportation & Public Works, Central Landfill – SITE #A2254

October 16, 2012

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District-issued 8 Notices of Violation(s):

NOV#	Regulation	Date Occur	# of Days	Comments	Disposition
A48255	2-6-307	6/12/2007	1	CO excess per BAAQMD Source Test #07232	Resolution, Attorney
A49477	8-34-301.2 / 303	10/31/2007	1	Component Leak >1000 ppm / Surface Leak >500ppm	Resolution, Attorney
A49479	2-6-307	8/30/2007	1	CO excess per BAAQMD Source Test #08049	Resolution, Attorney
A49664	2-6-307	8/22/2007	1	CO greater than 2.1 g/hp-hr	Resolution, Attorney
A48654	8-34-303	8/13/2009	1	Surface Leak >500 ppm	Resolution, Attorney
A48649	8-34-301.2	9/9/2010	1	Component Leak >1000 ppm	Resolution, Attorney
A52681	8-34-301.2	8/29/2012	1	Component Leak >1000 ppm	Resolution, Attorney
A49477	8-34-303	8/29/2012	1	Surface Leak >500ppm	Resolution, Attorney

The District received 1 notification for Reportable Compliance Activities (RCA).

Episode	Date Occur	# of Days	Comments	Disposition
05D49	1/4/2008	5	Severe weather Friday 1/4/2008 caused electrical short	No Action

**2. Complaint History**

The District received 17 air pollution complaints alleging Sonoma County Landfill as the source.

REVIEW OF COMPLIANCE RECORD OF:

Co. of Sonoma, Dept of Transportation & Public Works, Central Landfill – SITE #A2254

October 16, 2012

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### **3. Reportable Compliance Activity**

Reportable Compliance Activity (RCA), also known as "Episode" reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, inoperative monitor reports and flare monitoring.

Within the review period, the District received 1 notification for RCA's. 0 NOV's were issued as a result of these RCA's.

### **4. Enforcement Agreements, Variances, or Abatement Orders**

There were no enforcement agreements, variances, or abatement orders for Sonoma County Landfill over review period.

### **Conclusion**

Following its review of all available facility and District compliance records from April 23, 2007 (the date of issuance of the initial Title V permit) through October 16, 2012, the District's Compliance and Enforcement Division has determined that Sonoma County Landfill was in intermittent compliance from the initial permit period through the present. However, Sonoma County Landfill has demonstrated no evidence of ongoing noncompliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule for this facility.

Based on this review and analysis of all the violations for the review period, the District has concluded that no schedule of compliance or change in permit terms is necessary beyond what is already contained in the facility's current Title V permit.

## **APPENDIX B**

### **GLOSSARY**

**ACT**

Federal Clean Air Act

**APCO**

Air Pollution Control Officer

**ARB**

Air Resources Board

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**Basis**

The underlying authority that allows the District to impose requirements.

**CAA**

The federal Clean Air Act

**CAAQS**

California Ambient Air Quality Standards

**CAPCOA**

California Air Pollution Control Officers Association

**CARB**

California Air Resources Board (same as ARB)

**CEQA**

California Environmental Quality Act

**CEM**

A “continuous emission monitor” is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO<sub>x</sub> concentration) in an exhaust stream.

**CFR**

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

**CH<sub>4</sub> or CH<sub>4</sub>**

Methane

**CO**

Carbon Monoxide

**CO<sub>2</sub>**

Carbon Dioxide

**Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

**District**

The Bay Area Air Quality Management District

**EG**

Emission Guidelines

**E6, E9, E12**

Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53E6 equals  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

**EPA**

The federal Environmental Protection Agency.

**Excluded**

Not subject to any District regulations.

**Federally Enforceable, FE**

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60, (NSPS), Part 61, (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

**FP**

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

**FR**  
Federal Register

**Grains**  
1/7000 of a pound

**H<sub>2</sub>S or H<sub>2</sub>S**  
Hydrogen Sulfide

**HAP**  
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

**HHV**  
Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60 °F and all water vapor is condensed to liquid.

**H&SC**  
Health and Safety Code

**LFG**  
Landfill gas

**LHV**  
Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60 °F.

**Major Facility**  
A facility with potential emissions of: (1) at least 100 tons per year of any regulated air pollutant, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

**MAX or Max**  
Maximum

**MFR**  
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

**MIN or Min**  
Minimum

**MOP**

The District's Manual of Procedures.

**MSW**

Municipal solid waste

**MW**

Molecular weight

**N2 or N<sub>2</sub>**

Nitrogen

**NA**

Not Applicable

**NAAQS**

National Ambient Air Quality Standards

**NESHAPS**

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63

**NMHC**

Non-methane Hydrocarbons

**NMOC**

Non-methane Organic Compounds (same as NMHC)

**NO<sub>2</sub>**

Nitrogen Dioxide

**NO<sub>x</sub>**

Oxides of nitrogen.

**NSPS**

Standards of Performance for New Stationary Sources are federal standards for emissions from new stationary sources that are mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.



**NSR**

New Source Review is a federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

**O2**

Oxygen

**Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

**Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

**POC**

Precursor Organic Compounds

**PM**

Particulate Matter

**PM10**

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns.

**PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

**RMP**

Risk Management Plan

**S**

Sulfur

**SIP**

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

**SO<sub>2</sub>**

Sulfur dioxide

**SSM**

Startup, Shutdown, or Malfunction

**SSM Plan**

A plan, which states the procedures that will be followed during a startup, shutdown, or malfunction, that is prepared in accordance with the general NESHAP provisions (40 CFR Part 63, Subpart A) and maintained on site at the facility.

**TAC**

Toxic Air Contaminant

**TBACT**

Best Available Control Technology for Toxics

**THC**

Total Hydrocarbons include all non-methane hydrocarbons plus methane and are the same as TOC.

**Title V**

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

**TOC**

Total Organic Compounds include all non-methane organic compounds plus methane and are the same as THC.

**TPH**

Total Petroleum Hydrocarbons

**TRMP**

Toxic Risk Management Policy. The District's TRMP was replaced by Regulation 2, Rule 5 in 2005.

**TRS**

Total Reduced Sulfur, which is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO<sub>2</sub> that will be present in the combusted fuel gas, since sulfur compounds are converted to SO<sub>2</sub> by the combustion process.

**TSP**

Total Suspended Particulate

**TVP**

True Vapor Pressure

**VOC**

Volatile Organic Compounds

**Symbols:**

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to

**Units of Measure:**

atm	=	atmospheres
bhp	=	brake-horsepower
btu or BTU	=	British Thermal Unit
°C	=	degrees Centigrade
cfm	=	cubic feet per minute
dscf	=	dry standard cubic feet
°F	=	degrees Fahrenheit
ft <sup>3</sup>	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
in	=	inches
kW	=	kilowatt
lb	=	pound
max	=	maximum
m <sup>2</sup>	=	square meter
m <sup>3</sup>	=	cubic meter
min	=	minute

mm	=	millimeter
MM	=	million
MMBtu	=	million Btu
MW	=	megawatts
MMcf	=	million cubic feet
Mg	=	mega grams
ppb	=	parts per billion
ppbv	=	parts per billion, by volume
ppm	=	parts per million
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scf	=	standard cubic feet
scfm	=	standard cubic feet per minute
sdcf	=	standard dry cubic feet
sdcfm	=	standard dry cubic feet per minute
yd <sup>3</sup>	=	cubic yards
yr	=	year

**APPENDIX C**

**NSR Permit Evaluations  
Application #22950**

**ENGINEERING EVALUATION REPORT  
SONOMA COUNTY DEPARTMENT OF PUBLIC WORKS  
APPLICATION NUMBER 022950**

**PROJECT SUMMARY:**

Sonoma Green Energy has applied for an alteration of the permit to operate the following equipment at the Sonoma County Central Landfill, P#2254

**S-13: Lean Burn IC Engine and Generator Set; Caterpillar 3516 SITA, 1138 HP, Compost Biogas or Landfill Gas Fired**

**S-14: Lean Burn IC Engine and Generator Set; Caterpillar 3516 SITA, 1138 HP, Compost Biogas or Landfill Gas Fired**

Due to declining landfill gas production, these engines were recently removed from service, but retained their permits to operate in an inactive status. Sonoma Green Energy in conjunction with Sonoma County is now proposing to put the engines back into service, fueled by biogas generated in an onsite gasification plant. The gasification plant captures a methane rich biogas from the anaerobic decomposition of biomass feed stocks that include the following:

- Agricultural crop residues
- Bark, lawn, yard, and garden clippings
- Leaves and tree and brush prunings
- Wood chips and wood waste

This is a resource recovery project. The IC engines will abate biogas from the composing operation while generating electricity to be sold to the power grid. The proposed project does not require alterations or modifications to the existing permits to operate for the Sonoma County Central Landfill or associated Gas Collection System.

**EMISSIONS DISCUSSION:**

It is anticipated that no significant change of emissions from the engines will occur in the switch from landfill gas to compost biogas. The IC Engines S-13 and S-14 will retain the existing emissions limits and operational requirements given in Permit Condition #19933 and the Title V permit for the facility. The existing NO<sub>x</sub> and CO emissions limits meet the current and future effective requirements of Regulation 9, Rule 8 "Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines"

**CEQA:**

This application is exempt from CEQA review per BAAQMD Regulation 2-1-312.1 as follows:

*2-1-312.1: "Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications".*

**NEW SOURCE REVIEW:**

BACT, Offsets, and PSD requirements are not triggered by this application. These requirements were met in the initial application for the equipment (Application #6178, PO issued 6/1/03) and have not been triggered by this application since there is no emissions increase.

**TOXIC RISK ASSESSMENT:**

A health risk screening analysis (HRSA) was prepared for the IC Engines S-13 and S-14 during their initial permitting (Application #6178, PO issued 6/1/03). Based on the raw materials that will generate biogas through decomposition, toxic air contaminant emissions (TAC) from the IC engines are expected to be equivalent to or less than TAC emissions from the engines while firing a similar amount of landfill gas. No new HRSA is required for this application

**MAJOR FACILITY REVIEW:**

Sonoma County Central Landfill Site# A2254 currently has a Title V Permit issued by the BAAQMD. The permit will be revised to reflect the proposed changes. In accordance with Regulation 2-6-215, the revision to the MFR Permit will be a "Minor Revision".

**PERMIT CONDITIONS:**

For S-13, S-14 Lean Burn Internal Combustion Engines and Generator Sets – Fueled by Compost Biogas

1. The Internal Combustion Engines S-13 and S-14 are permitted to be fueled either by landfill gas or compost generated biogas fuel. However, these conditions apply only to biogas fueling. When fueled by landfill gas, S-13 and S-14 are subject to the requirements of BAAQMD Permit Condition #19933. (Basis: Regulation 2-1-403)
2. The total fuel heat input to each of the Internal Combustion Engines S-13 and S-14 shall not exceed 92,199 million BTUs (MMBTU) during any rolling consecutive 12-month period, based on the higher heating value (HHV) of the fuel. Note: This is a maximum total fuel consumption limit regardless of the fuel type. (Basis: Cumulative Increase)
3. S-13 and S-14 shall be equipped with District approved flow meters, to measure fuel gas flow into the engines. (basis: Regulation 2-1-403)
4. Nitrogen Oxide (NO<sub>x</sub>) emissions, calculated as NO<sub>2</sub>, from each of the Internal Combustion Engines S-13 and S-14 shall not exceed 0.80 grams per brake horsepower hour (g/bhp-hr). (basis: BACT, Offsets, and Cumulative Increase)
5. Carbon Monoxide (CO) emissions from each of the Internal Combustion Engines S-13 and S-14 shall not exceed 2.1 g/bhp-hr. (basis: BACT)
6. Non-methane organic compounds (NMOC) emissions from each of the Internal Combustion Engines S-13 and S-14 shall not exceed 120 ppmv, expressed as methane, dry basis, corrected to 3% O<sub>2</sub>. (Basis: Cumulative Increase)
7. In order to demonstrate compliance with Part 2 above, the Permit Holder shall ensure that each of the Internal Combustion Engines S-13 and S-14 is equipped with a non-resettable fuel usage meter to record gas flow in standard cubic feet (scf) to each engine. The monthly heat input to each engine is the product of the monthly landfill gas flow (scf) and the average fuel heat content (MMBTU, expressed as HHV) measured during the period. Measurements of fuel heat content shall be made with a District approved device and recorded on at least a weekly basis. (Basis: Cumulative Increase, Offsets, Toxics Risk Assessment)
8. In order to demonstrate compliance with Parts #4 through #7 above, and Regulation 9, Rule 8, Sections 302.1 and 302.3 the Permit Holder shall ensure that a District approved source test is conducted annually on each Internal Combustion Engine S-13, and S-14. As a minimum, the annual source tests shall determine the following:
  - a. biogas gas flow rate to each engine;
  - b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), CH<sub>4</sub>, NMOC, and total hydrocarbons (THC) in the fuel gas;
  - c. exhaust gas flow rate from each engine (dry basis);
  - d. concentrations (dry basis) of NO<sub>x</sub>, CO, CH<sub>4</sub>, NMOC, THC, and O<sub>2</sub> in the exhaust gas from each engine; and
  - e. fuel heat content in MMBTU (HHV)

Source tests for each engine shall be conducted no sooner than 9 months and no later than 12 months after the previous source test. The Source Test Section of the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. They shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date. (basis: BACT, Cumulative Increase, Regulations 9-8-302.1, and 9-8-302.3)

9. In order to demonstrate compliance with the above requirements, the Permit Holder shall maintain the following records in a District approved log for S-13 and S-14.
- a. daily fuel consumption, summarized on a monthly basis
  - b. daily hours of operation, summarized on a monthly basis
  - c. weekly fuel heat value measurements in BTU/scf
  - d. monthly fuel heat input in MMBTU
  - e. all results of initial and annual source testing required in Part 8.

All records shall be maintained on site or shall be made readily available to District staff upon request for at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable rules or regulations. (basis: Cumulative Increase, Regulation 2-6-501)

**RECOMMENDATIONS:**

It is recommended that a Permit To Operate be issued to the Sonoma County Department of Public Works for the following

- S-13: Lean Burn IC Engine and Generator Set; Caterpillar 3516 SITA, 1138 HP, Compost Biogas or Landfill Gas Fired**
- S-14: Lean Burn IC Engine and Generator Set; Caterpillar 3516 SITA, 1138 HP, Compost Biogas or Landfill Gas Fired**

By: \_\_\_\_\_  
Ted Hull  
Senior Air Quality Engineer