

**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**

**MAJOR FACILITY REVIEW PERMIT**

**for  
San Jose/Santa Clara  
Water Pollution Control  
Facility #A0778**

**Facility Address:**

700 Los Esteros Road  
San Jose, CA 95134

**Mailing Address:**

700 Los Esteros Road  
San Jose, CA 95134

Application Engineer: M.K. Carol Lee  
Site Engineer: Kevin-Win Maung

Application: 14261

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## **Title V Statement of Basis**

### **A. Background**

This facility is subject to the 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,” as defined by BAAQMD Regulation 2-6-218, of 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. 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 A0778.

This facility received its initial Title V permit on October 5, 2001. This application is for a permit renewal. Although the current permit expired on September 30, 2006, it continues in force until the District takes final action on the permit renewal. The standard sections of this permit have been upgraded to include new standard language used in all Title V permits. The proposed permit shows all changes to the permit in ~~strikeout~~/underline format.

### **B. Facility Description**

The San Jose/Santa Clara Water Pollution Control Plant is one of the largest advanced wastewater treatment facilities in California. It treats and cleans the wastewater of over 1,500,000 people that live and work in the 300-square mile area encompassing San Jose, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno.

The Water Pollution Control Plant has the capacity to treat 167,000,000 gallons of wastewater per day. It is located in Alviso, at the southernmost tip of the San Francisco Bay. Originally constructed in 1956, the Plant had the capacity to treat 36,000,000 gallons of water per day and only provided primary treatment. In 1964, the Plant added a secondary treatment process to its system. In 1979, the Plant upgraded its wastewater treatment process to an advanced, tertiary system.

The sources that are permitted include liquid and semi-liquid wastewater process sources, support systems such as a gasoline dispensing station, and a number of combustion sources to convert the plant produced digester gas into electricity and hot water to supply the plant energy needs. Liquid sources include preliminary treatment, primary treatment, secondary treatment, clarification, disinfection, sludge handling, and sludge digestion. Combustion operations include a boilers, emergency standby diesel generator sets, digester gas emergency flares, and cogeneration engine generators.

The criteria pollutant emissions from the combustion processes, specifically the NO<sub>x</sub> and CO have the potential to emit more than 100 tons per year; hence, San Jose/Santa Clara Water Pollution Control need for a Federal Title V Major Facility Permit. There has been no significant change in emissions since the issuance of the original Title V permit.

### **C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the 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. 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 permit:

The dates of adoption and approval of rules in Standard Condition 1.A have been updated.

The following language was added to Standard Condition I.B.1: "If the permit renewal has not been issued by [            ], but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application." This is the "application shield" pursuant to BAAQMD Regulation 2-6-407.

The following language was added as Standard Condition I.B.12: "The permit holder is responsible for compliance, and certification of compliance, with all conditions of the permit, regardless whether it acts through employees, agents, contractors, or subcontractors. (Regulation 2-6-307)." The purpose is to reiterate that the Permit Holder is responsible for ensuring that all activities at the facility comply with all applicable requirements.

Standard Condition I.E.1 requiring the permit holder to provide any information, records, and reports requested or specified by the APCO, was added because it was omitted in error.

The dates of the reporting periods and reporting deadlines have been added to Standard Conditions I.F and I.G for additional clarity.

The first sentence of Standard Condition I.F has been changed from " All required monitoring reports must be submitted to the District at least once every six months." to " Reports of all required monitoring must be submitted to the District at least once every six months, except where an applicable requirement specifies more frequent reporting. " to conform more closely to BAAQMD Regulation 2-6-409.18.

Standard Conditions I.H and I.J were modified to conform to the current standard.

## **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., S24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of 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.

The District has reviewed the operations at the San Jose/Santa Clara Water Pollution Control and concluded that there are no sources at this facility that are exempt and significant, as defined above.

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-24). 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.

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.

Following are explanations of the differences in the equipment list between the time that the facility's original Title V permit was issued and this Title V renewal:

Changes to permit:

*Devices Removed from Service or Archived since original Title V permit was issued:*

Source #	Description	Application Number	Explanation
S-42	Cold Cleaner	N/A	Archived in August 2003
S-43	Cold Cleaner	N/A	Archived in August 2003
S-44	Cold Cleaner	N/A	Archived in August 2002
S-45	Cold Cleaner	N/A	Archived in August 2002
S-46	Cold Cleaner	N/A	Archived in May 2001
S-47	Cold Cleaner	N/A	Archived in May 2001
S-49	Cold Cleaner	N/A	Archived in August 2003
S-50	Cold Cleaner	N/A	Archived in August 2003
S-51	Cold Cleaner	N/A	Archived in August 2003
S-220	Cold Cleaner	N/A	Archived in August 2002
S-221	Cold Cleaner	N/A	Archived in August 2002

*Devices Permitted Since original Title V permit was issued:*

Source #	Description	Application Number	Explanation
S-55	Emergency Genset (diesel)	2656	Permitted under loss of exemption
S-56	Emergency Genset (diesel)	2656	Permitted under loss of exemption
S-57	Emergency Genset (diesel)	2656	Permitted under loss of exemption
S-58	4" Gorman Rupp Trash Pump 22305 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption
S-59	Emergency Air Compressor	2656	Permitted under loss of exemption
S-60	CH&E 6" Trash Pump 22304 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption
S-61	Pump 22315 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption
S-62	Mudcat Booster Pump # 22309 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption
S-63	Mudcat Booster Pump # 22316 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption
S-64	Mudcat Booster Pump # 22311 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption
S-65	Mudcat Booster Pump # 22310 Diesel Engine (diesel)	2656, 14946	Permitted under loss of exemption

Source #	Description	Application Number	Explanation
S-211	CH&E 6" Trash Pump, # 22317 (diesel)	2656, 14946	Permitted under loss of exemption
S-212	10" Gorman Rupp Trash Pump # 22312 (diesel)	2656, 14946	Permitted under loss of exemption
S-213	4" Gorman Rupp Trash Pump # 22314 (diesel)	2656, 14946	Permitted under loss of exemption
S-214	IR Air Compressor # 22107 (diesel)	2656, 14946	Permitted under loss of exemption
S-215	IR Air Compressor # 22104 (diesel)	2656, 14946	Permitted under loss of exemption
S-216	CH&E 6" Trash Pump, # 22306 (diesel)	2656, 14946	Permitted under loss of exemption

***District permit applications not included in this proposed permit***

At this time, there are no outstanding permit applications, which have not been incorporated into the Title V Permit for the San Jose/Santa Clara Water Pollution Control.

***Corrections***

New model numbers were made when pre-combustion chambers were added to three sets of engines in 1995-1996. This was done to comply with emission requirements from Regulation 9-8 for gas-fired engines. S-4, S-5, S-6, Model numbers changed from DSCG-8 to DGSG-8-CB (CB represents Cleanburn). S-7 and S-8 Model numbers changed from DGSR-38 to DGSR 38-CB. The horsepower rating did not change for any of these engines, but corrections were made to the HP for some to correct typos.

A correction was made to the capacity indicated for source S-26 to reflect actual, maximum, permitted capacity. The equipment and operations of these sources have not changed. This is just a correction of a typo in the original Title V permit.

Sources S-58 and S-59, which were permitted as loss of exemption sources, were amended to fix errors in misidentifying engine make and size. The changes do not result in any change in permit status because the changes are insignificant and would not have resulted in any further action if the correct information were available at the time of issuance:

S-#	Current Language	Correct Language
S-58	Gorman	Ford
S-59	119 HP	145 HP

**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* pursuant to the definition in BAAQMD Rule 2-6-239.

Changes to permit:

Language has been added to Section III to clarify that this section contains requirements that may apply to temporary sources. This provision allows contractors that have "portable" equipment permits that require them to comply with all applicable requirements to work at the facility on a temporary basis, even if the permit does not specifically list the temporary source. Examples are temporary sandblasting or soil-vapor extraction equipment.

Section III has been modified to say that SIP standards are now found on EPA's website and are not included as part of the permit.

The note regarding SIP information from the Rule Development Section has been deleted since the SIP standards are now found on EPA's website.



Table III has been updated by adding the following rules and standards to conform to current practice:

- BAAQMD Regulation 2, Rule 1, General Requirements
- BAAQMD 2-1-429, Federal Emissions Statement
- SIP Regulation 2, Rule 1, General Requirements
- BAAQMD Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- SIP Regulation 5, Open Burning
- Regulation 8, Rule 2, Miscellaneous Operations
- BAAQMD Regulation 8, Rule 40 Aeration of Contaminated Soil and Removal of Underground Storage Tanks
- BAAQMD Regulation 8, Rule 47, Air Stripping and Soil Vapor Extraction Operations
- SIP Regulation 8, Rule 51, Adhesive and Sealant Products
- California Health and Safety Code Section 41750 et seq., Portable Equipment
- California Health and Safety Code Section 44300 et seq., Air Toxics “Hot Spots” Information and Assessment Act of 1987
- California Health and Safety Code Section 93115 et seq., Airborne Toxic Control Measure for Stationary Compression Ignition Engines
- 40 CFR Part 61, Subpart M, National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos

The dates of adoption or approval of the rules and their "federal enforceability" status in Table III have also been updated.

#### **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's or EPA's 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.

***Complex applicability determination-POTW NESHAP:*** 40 CFR Part 63, Subpart VVV contains the NESHAP standards for POTWs. This NESHAP was evaluated to determine if San Jose/Santa Clara Water Pollution Control was subject to the MACT emission control requirements. The NESHAP requires MACT controls at POTWS which are major sources for HAP which are defined thusly: *...any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate 10 tons per year (tpy) or more of any HAP or 25 tpy or more of any combination of HAP.*

The District has reviewed the wastewater borne emissions potential of the most frequently seen HAPs and concludes that San Jose/Santa Clara Water Pollution Control is not a major source for HAP emissions or for combined HAP emissions. A conservative estimate of HAP emissions may be obtained by using the 80<sup>th</sup> % factors as developed by the BAAT-AMSA – CWEA studies in the 1990s. This procedure is the most conservative of the 7 accepted procedures developed for calculating emissions from wastewater processes. Most conservatively, the total plant throughput would have to be over 177 million gallons per dry-weather day on an ongoing basis to be a major source for HAP, based on the 80<sup>th</sup> percentile (most conservative) calculation basis. The San Jose/Santa Clara Water Pollution Control maximum dry weather flow rate is 167 million gallons per day. Therefore, we conclude the facility is not a major source for HAP.

In addition, this POTW is an existing POTW that has not been reconstructed (as defined by 40 CFR 63.1595). Furthermore, the San Jose/Santa Clara Water Pollution Control is not an Industrial POTW as defined by 40 CFR 63.1595. San Jose/Santa Clara Water Pollution Control processes strictly domestic wastewater streams.

Digester Gas Combustion, Applicable Regulation 8 Rule: The anaerobic digesters S-210 produce digester gas, which is principally combusted in the digester gas engines or boilers, and secondarily in the digester gas flares. The composition of the digester gas is roughly 62% methane, 38% carbon dioxide, 0.4% nitrogen with about 63 ppmv of non methane organic compounds as hexane. The District evaluated whether the digester S-210 as well as the associated digester gas energy recovery sources and digester gas flares were subject to Regulation 8-1-110.3 (exemption from Regulation 8 Rules) or to 8-2-301 (Organic Compounds – Miscellaneous Operations). This discussion of applicability follows.

Regulation 8-1-110.3 states

**8-1-110 Exemptions:** The following shall be exempted from the provisions of this regulation:

110.1 Any structure designed and used exclusively as a dwelling for not more than two families, provided that this exclusion does not apply to the application of an architectural coating.

110.2 Any internal combustion engine.

**110.3 Any operation or group of operations which are related to each other by being a part of a continuous process, or a series of such operations on the same process material, which are subject to Regulation 8, Rule 2 or Rule 4, and for which emissions of organic compounds are reduced at least 85% on a mass basis. Where such reduction is achieved by incineration, at least 90% of the organic carbon shall be oxidized to carbon dioxide.**

Regulation 8-2-301 states:

8-2-301 Miscellaneous Operations: A person shall not discharge into the atmosphere from any miscellaneous operation an emission containing more than 6.8 kg. (15 lbs.) per day and containing a concentration of more than 300 PPM total carbon on a dry basis.

Organic compounds are defined in 8-1-201 as “any compound of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate”. The District has performed a conservative calculation (see Appendix C) to estimate the NMOC emissions potential from digester gas. The use of NMOC emissions potential is conservative since this includes all compounds of carbon with the exception of methane and carbon dioxide. San Jose/Santa Clara Water Pollution Control has estimated a maximum daily digester gas production rate (highest month average) of 1.5 million cu ft, with a conservative maximum concentration of 63 micro-grams NMOC per liter of digester gas (63 ppmv). While it is expected that the destruction efficiency of NMOC in the heat recovery sources would easily exceed 90% it cannot be assured in any of the digester gas combustion devices. This is due to the very low inlet concentration (13 ppmv) of NMOC, which, upon combustion at 90% efficiency would result in an outlet concentration less than 2 ppm NMOC. It is difficult to ensure outlet concentrations at such low levels and to source test for NMOC at concentration levels near the error limits of the test methods. Based on these findings the District concludes 8-1-110.3 is not applicable to digester gas sources and combustion (abatement) devices.

We conclude the 8-2-301 is applicable to the digester gas sources and combustion devices. Based on the aforementioned calculation presented in Appendix C, and assuming all digester gas is vented at the maximum NMOC concentration gives a daily uncontrolled emission rate of approximately 5.9 lb per day (controlled emissions estimated as 0.6 lb/day), at an maximum concentration of 2 ppmv. Since the controlled emission level of NMOC from digester gas is less than both the daily limit and the emission stream concentration limit (on both molar and mass basis) as specified in 8-2-301, we conclude that the digester S-210 and the respective digester gas fired engines and flares are subject to and will comply with Regulation 8-2-301. Regulation 8-2-301 will be included Table IV, Applicable Requirements for S-210 Anaerobic Digester as well as all combustion devices burning or abating digester gas.

Compliance Assurance Monitoring: The applicability of compliance assurance monitoring (CAM) must be considered at this facility because the facility uses an emission control device to achieve compliance with a federally enforceable emission limit. The control devices in use are flares A-401, A-402, A-403, A-404, and A-405. In addition, cogeneration engines S-4 through S-14, S-36, and S-37 burn digester gas to make power and heat and therefore control emissions of digester gas. These flares and other combustion devices control emissions from the anaerobic digesters S-210, and are subject to the requirements of Regulation 8, Rule 2-301 (see discussion above). This section prohibits the discharge of an emission containing more than 15 lbs/day and a concentration of more than 300 ppm total carbon.

In Appendix C, the District performed a conservative calculation to estimate the NMOC emissions potential from digester gas. The calculation includes all compounds of carbon with the exception of methane and carbon dioxide. San Jose/Santa Clara Water Pollution Control has a maximum daily digester gas production rate of 1,500,000 cu ft, with a maximum concentration of 63 micro-grams NMOC per liter (63 ppmv), of digester gas. Assuming all digester gas is vented at the maximum NMOC concentration gives a daily uncontrolled emission rate of approximately 5.9 lb per day (see Appendix C for calculation). CAM only applies if the uncontrolled emissions are more than 100 tpy. Since the maximum potential annual uncontrolled emissions are 1.1 ton (2151 lb/yr), CAM is not required.

112 (j) Case By Case MACT: This requirement does not apply because there are no major sources for HAP, nor does the facility qualify as a major facility for HAP.

Changes to permit:

Section IV has been modified to say that SIP standards are now found on EPA's website and are not included as part of the permit.

BAAQMD Regulation 8, Rule 2, Miscellaneous Operations, has been added to all sources that burn digester gas, since the digester is subject to the standard and the combustion sources are control devices.

Digester Gas-Incidental leakage: The issue of unintentional, non-accidental and unavoidable digester gas leakage needs to be addressed. The condition 17741 has been interpreted to mean that all digester gas must be processed first in a heat recovery unit and if heat recovery is not possible, in a gas destruction unit (a flare). This is an impossible requirement due to the digester gas system design; on an ongoing basis there will be some unavoidable leakage of digester gas to the atmosphere.

Each digester unit of the Anaerobic Digesters (S-210) has an external floating cover, with a pressure relief valve, and flexible piping joined to the digester gas header system. Operationally the digesters are all unique, with some producing more or less digester gas based on the biological conditions and the nature of the digester feed. Due to the pressure drop created by the length of flexible piping involved, occasionally a floating cover relief valve will vent. Owing to the system's physical design this is unavoidable, as the tank pressure must be relieved for safety

reasons. Although this is not a daily occurrence, it does happen on occasion and may be discovered upon operator inspection.

Furthermore, the external floating roof covers, while fairly snug, are not airtight. Over the years of operation, some activated digester sludge material has extruded from around the edges of the cover and bubbling occurs where some digester gas is produced and/or escapes into the ambient air above the cover of the tank. This has been happening since the tanks were constructed and placed in service and will continue until the tanks are redesigned or replaced with fixed roof tanks.

In addition to these more unavoidable releases, there are occasional releases from the digester gas pressure relief system. Each individual digester along with the digester gas holder is fitted with a pressure relief valve. Excess pressure can build up in the system as a result of a power failure, feed imbalance, gas line blockage or other system problem. Excess pressure in the system is first relieved at the gas flares where the excess gas is burned. If the excess pressure is isolated to a single digester as in the case of overfeeding or a gas line blockage the gas will be relieved to atmosphere at the digester. Though very infrequent, release of gas through the pressure relief system does happen and is part of system design.

Unavoidable digester gas leakage from the normal operations of the anaerobic digester(s) S-210 are not expected to be an acute or chronic health concern. This has been demonstrated in a similar situation at East Bay Municipal Utility District (EBMUD), during an April 2004 leak episode, where the environmental impact of this digester gas release was not significant. District Staff modeled the resulting concentrations of H<sub>2</sub>S and POC at the fence line to estimate the acute health risks as well as the chronic health risk (carcinogenic and non-cancer). The modeling study indicated that the acute and chronic hazard indices for both H<sub>2</sub>S and POC (conservatively modeled as acrolein for acute risks and 1, 3 butadiene for cancer risk) combined were well below 1.0, which is the established level of significance. The maximum measured H<sub>2</sub>S level in the purged membrane gas was 1 ppm. Furthermore, the carcinogenic residential risk from POC (modeled as 1, 3 butadiene, as worst case) at the fence line, was less than 1 in a million, which is the established level of significance. The chronic hazard index and carcinogenic risks were based on a 70 year continuous exposure. Further, based on 120 ppm H<sub>2</sub>S in digester gas (high end, conservative), the modeled H<sub>2</sub>S concentration at the location of the maximally exposed individual (fenceline) was 0.00003 ppm - well below the 0.06 ppm 3-minute average specified in Regulation 9-1-301.

In reality, the fugitive or short-term unavoidable and incidental emissions of digester gas are expected to be far less than occurred during the EBMUD leak episode, and therefore are not considered significant health or environmental risk.

Issues of digester gas leakage from the normal day-to-day operations of the anaerobic digester(s) S-180 are not expected to be an acute or chronic health concern. Failure to abate digester gas emissions from the following causes or activities shall not be considered a failure to meet the permit conditions of Condition # 17741:

- a. Digester gas leaks from the floating roof sludge seals and digester gas piping systems, provided the sludge seals and piping systems are maintained in good operating condition.

- b. Preventative maintenance on pressure relief valves to ensure proper operation.
- c. Manual draining of condensate from digester gas piping.
- d. Removing a digester or digester gas component from service.
- e. Collecting digester sludge samples through thief holes on digester covers.

The concern from digester gas leakage is related to noxious odors or public nuisance. On a long term basis, the Permit Holder plans to remedy the leakage of digester gas from the pressure relief valves and external floating covers when the entire system of digesters are redesigned to a fixed roof configuration and a low pressure-drop digester gas supply header. In the interim, Part 6 was added to Condition # 17741 to allow for this unavoidable leakage of digester gas to the atmosphere.

## **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.

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance over the past year and has no records of compliance problems at this facility during the past year. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

### Changes to permit

None.

## **VI. Permit Conditions**

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

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.

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.

Conditions have also been deleted due to the following:

- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).

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 which 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.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

### **Summary of Changes to Operating Conditions**

The following table lists the sources in order with their previous and future (final) condition status. The condition changes will be discussed in the numerical order of the conditions.

Source Number(s)	Previous Condition No.	Post-Permit Condition No.
4, 5, 6, 7, 8	10475	17898
9, 10, 11, 12, 13, 14	17736	17899
36, 37, 38, 39	6065	17900
42, 43, 44, 45, 46, 47, 49, 50, 51	17739	None (shutdown)
54	8499	17901
55, 56, 57, 59	18212	22820
58, 60, 61, 62, 63, 64, 65	18212	23208
220	5408	None (shutdown)
221	7910	None (shutdown)

**Condition # 10475 for sources S-4, S-5, S-6, S-7, and S-8**

This condition was archived and replaced with Condition # 17898 as a result of the Change of Condition permit application (Application # 1671). A copy of the evaluation report for Application # 1671 is attached to this Evaluation Report/Statement of Basis.

Furthermore, Condition # 17898 will be amended to remove outdated conditions. In addition, a monitoring approach for maintaining compliance with required NMOC destruction efficiencies was proposed by the facility using source test data that determined the appropriate operation temperatures of the cylinder exhaust of the engines (above 600°F). Any operation below 600 F would require shutdown of the engine. This requirement has been added to the permit conditions to replace the requirement that required this monitoring approach be developed. [See strikethroughs for deletions and underlines for additions.]

1. This engine shall be fired on natural gas, sewage sludge digester gas, landfill gas, diesel fuel, or any combination thereof. (Basis: Cumulative Increase)
2. NOx emissions, expressed as NO2, shall not exceed 140 ppmv NOx at 15% O2. (Basis: 9-8-301.2, 302.1)
3. CO emissions shall not exceed 2000 ppmv at 15% O2. (Basis: 9-8-301.3, 9-8-302.3)
4. NMOC emission Limits
  - a. Landfill Gas Combustion Operations: ~~Effective July 1 2002, t~~This source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen. (Basis: Regulation 8-34-301.4)
  - b. Digester Gas Combustion: NMOC concentration of engine exhaust from digester gas combustion shall not exceed 250 ppmv at 15% O2. (Basis: Cumulative Increase)
5. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)
 

S-4	9.1 MM Btu/hr
S-5	9.1 MM Btu/hr
S-6	9.1 MM Btu/hr
S-7	20.9 MM Btu/hr
S-8	20.9 MM Btu/hr



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6. San Jose/Santa Clara WWTP shall not burn diesel fuel with a sulfur content in excess of 0.5% by weight. (Basis: BAAQMD Regulation 9-1-304)

To demonstrate compliance with this limit, every delivery of diesel oil received onsite shall be accompanied by a vendor certification of sulfur content or shall be tested for sulfur content using a District-approved method. The vendor certifications or lab results shall be maintained onsite for at least 5 years and shall be made available to the District upon request. (Basis: Regulation 2-6-409.2, 2-6-501)

7. Under no circumstances shall supplied landfill gas be vented to the atmosphere. (Basis: 8-34-301)
8. Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

- a. Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.
- b. Calorimeters of fuel gas mixture feed to engines.
- c. Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
- d. Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Regulation 8-34-508)

9. Key Operating Parameter

~~During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.~~

~~San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 4 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan. (Basis: 8-34-509)~~

- a. Effective January 1, 2007, the owner/operator shall measure the cylinder exhaust of S-4, S-5, S-6, S-7, and S-8 using a continuous temperature monitor(s) and recorder meeting the requirements of 40 CFR 60.756(b)(1).
- b. Effective January 1, 2007, except as a result of loss in utility power or natural gas supply or during the first 5 minutes of landfill gas use during engine startup, any engine with a cylinder exhaust temperature below 600 °F shall be shutdown within 5 minutes of measuring the temperature.
- c. Effective January 1, 2007 All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

10. Performance Testing to Demonstrate Compliance

- a. ~~Initial Compliance Testing: In order to demonstrate compliance with parts 2, 3, and 4, the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source. The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test. (Basis: BACT, Cumulative Increase, 8-34-301.2, 9-8-302.1, 9-8-302.3) Deleted upon issuance of Title V Renewal (2006).~~
- b. Ongoing Compliance Testing: The owner/operator shall ensure that a performance test is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NOx, CO, and NMOC limits required by parts 2, 3, and 4. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement for all pollutants

except NMOC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)

- c. NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test for NMOC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

11. To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)
  - a. Monthly records of the quantity of gaseous fuels (therms) and distillate oil (gal) burned at this source.
  - b. Records of all landfill gas and digester gas methane content measurements.
  - c. Daily records of methane throughput to this source, summarized on a monthly basis.
  - d. Records of key emission control system operating parameter readings (as noted in Condition 9, above).
  - e. Records of all compliance demonstration test data.
  - f. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

### **Condition # 17736 for sources S-9, S-10, S-11, S-12, S-13, and S-14**

This condition was archived and replaced with Condition # 17899 as a result of the Change of Condition permit application (Application # 1671). A copy of the evaluation report for Application # 1671 is attached to this Evaluation Report/Statement of Basis.

Furthermore, Condition # 17899 will be amended to remove outdated conditions. In addition, a monitoring approach for maintaining compliance with required NMOC destruction efficiencies was proposed by the facility using source test data that determined the appropriate operation temperatures of the cylinder exhaust of the engines (above 600°F). Any operation below 600 F would require shutdown of the engine. This requirement has been added to the permit conditions to replace the requirement that required this monitoring approach be developed. [See strikethroughs for deletions and underlines for additions.]

1. These engines shall be fired on natural gas, or sewage sludge digester gas, landfill gas, or any combination thereof. (Basis: Cumulative Increase)
2. NOx emissions, expressed as NO2, shall not exceed 140 ppmv NOx at 15% O2. (Basis: 9-8-301.2, 302.1)
3. CO emissions shall not exceed 2000 ppmv at 15% O2. (Basis: 9-8-301.3, 9-8-302.3)

4. NMOC emission Limits

- a. Landfill Gas Combustion Operations: ~~Effective July 1 2002,~~ This source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen. (Basis: Regulation 8-34-301.4)
- b. Digester Gas Combustion: NMOC concentration of engine exhaust from digester gas combustion shall not exceed 250 ppmv at 15% O<sub>2</sub>. (Basis: Cumulative Increase)

5. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

S-9	19.9 MM Btu/hr
S-10	19.9 MM Btu/hr
S-11	19.9 MM Btu/hr
S-12	15.7 MM Btu/hr
S-13	15.7 MM Btu/hr
S-14	15.7 MM Btu/hr

6. Under no circumstances shall supplied landfill gas be vented to the atmosphere. (Basis: 8-34-301)

7. Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

- a. Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.
- b. Calorimeters of fuel gas mixture feed to engines.
- c. Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
- d. Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Regulation 8-34-508)

8. Key Operating Parameter

~~During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.~~

~~San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 4 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan. (Basis: 8-34-509)~~

- a. Effective January 1, 2007, the owner/operator shall measure the cylinder exhaust of S-9, S-10, S-11, S-12, S-13, and S-14 using a continuous temperature monitor(s) and recorder meeting the requirements of 40 CFR 60.756(b)(1).
- b. Effective January 1, 2007, except as a result of loss in utility power or natural gas supply or during the first 5 minutes of landfill gas use during engine startup, any engine with a cylinder exhaust temperature below 600 °F shall be shutdown within 5 minutes of measuring the temperature.
- c. Effective January 1, 2007, all records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

9. Performance Testing to Demonstrate Compliance

- a. ~~Initial Compliance Testing: In order to demonstrate compliance with parts 2, 3, and 4, the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source. The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test. (Basis: BACT, Cumulative Increase, 8 34 301.2, 9 8 302.1, 9 8 302.3) Deleted upon issuance of Title V Renewal (2006).~~
- b. Ongoing Compliance Testing: The owner/operator shall ensure that a performance test is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NOx, CO, and NMOC limits required by parts 2, 3, and 4. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement for all pollutants except NMOC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)
- c. NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test for NMOC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

10. To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)
  - a. Monthly records of the quantity of gaseous fuels (therms) burned at this source.
  - b. Records of all landfill gas and digester gas methane content measurements.
  - c. Daily records of methane throughput to this source, summarized on a monthly basis.
  - d. Records of key emission control system operating parameter readings (as noted in Condition 8, above).
  - e. Records of all compliance demonstration test data.
  - f. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

**Condition # 6065 for sources S-36, S-37, S-38, S-39**

This condition was archived and replaced with Condition # 17900 as a result of the Change of Condition permit application (Application # 1671). A copy of the evaluation report for Application # 1671 is attached to this Evaluation Report/Statement of Basis.

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1. These engines shall be fired on natural gas, or sewage sludge digester gas, landfill gas, or any combination thereof. (Basis: Cumulative Increase)
2. Emissions of NOx shall not exceed 1.8 grams per hp-hr per engine. (Basis: BACT)
3. Emissions of CO shall not exceed 413.4 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)
4. Emissions of TSP shall not exceed 36.4 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)
5. NMOC Emission Limits
  - a. Daily Limit: NMOC emissions shall not exceed 87.8 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)
  - b. Landfill Gas Combustion Operations: ~~Effective July 1, 2002,~~ This source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen. (Basis: Regulation 8-34-301.4)
6. Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

S-36	30 MM Btu/hr
S-37	30 MM Btu/hr
7. Under no circumstances shall supplied landfill gas be vented to the atmosphere. (Basis: 8-34-301)
8. Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

  - a. Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.
  - b. Calorimeters of fuel gas mixture feed to engines.
  - c. Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
  - d. Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Regulation 8-34-508)
9. Key Operating Parameter

~~During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.~~

~~San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 5 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan. (Basis: 8-34-509)~~

  - a. Effective January 1, 2007, the owner/operator shall measure the cylinder exhaust of S-36 and S-37 using a continuous temperature monitor(s) and recorder meeting the requirements of 40 CFR 60.756(b)(1).
  - b. Effective January 1, 2007, except as a result of loss in utility power or natural gas supply or during the first 5 minutes of landfill gas use during engine startup, any engine with a cylinder exhaust temperature below 600 °F shall be shutdown within 5 minutes of measuring the temperature.
  - c. Effective January 1, 2007, all records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.
10. Performance Testing to Demonstrate Compliance

- a. ~~Initial Compliance Testing: In order to demonstrate compliance with parts 2, 3, 4, and 5 the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source. The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test. (Basis: BACT, Cumulative Increase, 8-34-301.2, 9-8-302.1, 9-8-302.3) Deleted upon issuance of Title V Renewal (2006).~~
- b. Ongoing Compliance Testing: The owner/operator shall ensure that a performance test is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NOx, CO, and NMOC limits required by parts 2, 3, and 5.

The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement for all pollutants except NMOC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)

- c) NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test for NMOC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

### **Condition # 17739 for sources S-42, S-43, S-44, S-45, S-46, S-47, S-49, S-50, and S-51**

This condition was archived because the sources have been shutdown and removed from the facility.

### **Condition # 8499 for sources S-54**

This condition was archived and replaced with Condition # 17901 as a result of the Change of Condition permit application (Application # 1671). A copy of the evaluation report for Application # 1671 is attached to this Evaluation Report/Statement of Basis.

Furthermore, Condition # 17901 will be amended to remove outdated conditions. In addition, a monitoring approach for maintaining compliance with required NMOC destruction efficiencies was proposed by the facility using source test data that determined the appropriate operation temperatures of the cylinder exhaust of the engines (above 600°F). Any operation below 600 F would require shutdown of the engine. This requirement has been added to the permit conditions to replace the requirement that required this monitoring approach be developed. [See strikethroughs for deletions and underlines for additions.]

1. S-54 shall be fired on sewage sludge digester gas, natural gas, landfill gas, or a blend of any of the above fuels, with a diesel pilot fuel. (Basis:Cumulative Increase)
2. Total thermal throughput shall not exceed 28.9 MM Btu/hr.(Basis:Cumulative Increase)

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3. In the event of catastrophic damage to the natural gas fuel supply, the engine may be fired solely on sewage sludge digester gas or landfill gas, with a diesel pilot fuel, or solely on diesel fuel if insufficient sewage sludge digester gas or landfill gas exists. (Basis: Cumulative Increase)

4. San Jose/Santa Clara WWTP shall not burn diesel fuel with a sulfur content in excess of 0.5% by weight (Basis: Regulation 9-1-304).

To demonstrate compliance with this limit, every delivery of diesel fuel received onsite shall be accompanied by a vendor certification of sulfur content or shall be tested for sulfur content using a District-approved method. The vendor certifications or lab results shall be maintained onsite for at least 5 years and shall be made available to the District upon request. (Basis: Regulation 2-6-409.2, 2-6-501)

5. NO<sub>x</sub> emissions, calculated as NO<sub>2</sub>, shall not exceed 1.0 gram/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel or solely on sewage sludge digester gas or landfill gas, with a diesel pilot fuel. (Basis: BACT, Cumulative Increase)

6. CO emissions from S-54 shall not exceed 3.3 grams/bhp-hr. (Basis: BACT, Cumulative Increase)

7. NMOC Emission Limits

- a. Digester Gas or Natural Gas Combustion: NMOC emissions derived from digester gas or natural gas combustion shall not exceed 0.80 grams/bhp-hr. (Basis: BACT, Cumulative Increase)

- b. Landfill Gas Combustion Operations: ~~Effective July 1 2002, this source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen.~~ (Basis: Regulation 8-34-301.4)

8. Particulate emissions from S-54 shall not exceed 0.085 grams/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel or solely on sewage sludge digester gas, or landfill gas, with a diesel pilot fuel. (Basis: Cumulative Increase)

9. The total release of emissions from S-54 shall not exceed the following amounts in any consecutive 365 day period:

NO <sub>x</sub>	36.2 tons (BACT, Cumulative Increase)
CO	119.4 tons (BACT, PSD)
NMOC	28.9 tons (BACT, Cumulative Increase)
PM10	3.1 tons (Cumulative Increase)
SO <sub>2</sub>	7.2 tons (Cumulative Increase)

10. Visible particulate emissions from S-54 shall not exceed Ringelmann 1.0. (Basis: Regulation 6-301)

11. Under no circumstances shall supplied landfill gas be vented to the atmosphere. (Basis: 8-34-301)

12. Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

- a. Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.  
b. Calorimeters of fuel gas mixture feed to engines.  
c. Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.  
d. Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Regulation 8-34-508)

13. Key Operating Parameter

~~During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.~~

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~~San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 7 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan. (Basis: 8-34-509)~~

- a. Effective January 1, 2007, the owner/operator shall measure the cylinder exhaust of S-54 using a continuous temperature monitor(s) and recorder meeting the requirements of 40 CFR 60.756(b)(1).
- b. Effective January 1, 2007, except as a result of loss in utility power or natural gas supply or during the first 5 minutes of landfill gas use during engine startup, any engine with a cylinder exhaust temperature below 600 °F shall be shutdown within 5 minutes of measuring the temperature.
- c. Effective January 1, 2007, all records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

14. Performance Testing to Demonstrate Compliance

- a. ~~Initial Compliance Testing: In order to demonstrate compliance with parts 5, 6, 7, 8, and 9, the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source. The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test. (Basis: BACT, Cumulative Increase, 8-34-301.2, 9-8-302.1, 9-8-302.3) Deleted upon issuance of Title V Renewal (2006).~~
- b. NOx, CO, TSP Testing: The owner/operator shall ensure that a performance test is conducted on this engine at a frequency of not less than once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NOx, CO, and TSP limits required by parts 5, 6, 8 and 9, respectively. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)
- c. NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test is conducted on this engine at a frequency of not less than once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

15. To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)

- a. Daily records of the hours of operation and horsepower or kilowatt output of S-54.
- b. Monthly records of the quantity of gaseous fuels (therms) and distillate oil (gal) burned at this source.
- c. Records of all landfill gas and digester gas methane content measurements.
- d. Daily records of methane throughput to this source, summarized on a monthly basis.
- e. Records of key emission control system operating parameter readings (as noted in Condition 13, above).
- f. Records of all compliance demonstration test data.



- g. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

**Condition # 5408 for source S-220**

This condition was archived because the sources have been shutdown and removed from the facility.

**Condition # 7910 for source S-221**

This condition was archived because the sources have been shutdown and removed from the facility.

**Condition # 18212 for sources S-55, S-56, S-57, and S-59**

This condition was archived and replaced with Condition # 22820 to reflect the ATCM requirements for stationary emergency use engines. A copy of the evaluation report for Application # 14946 is attached to this Evaluation Report/Statement of Basis.

**Condition # 18212 for sources S-58, S-60, S-61, S-62, S-63, S-64, and S-65**

This condition was archived and replaced with Condition # 23208 to reflect the repermitting of these sources as loss-of-exemption, non-emergency diesel engines. A copy of the evaluation report for Application # 14946 is attached to this Evaluation Report/Statement of Basis.

**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.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the following exceptions.

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of balancing of 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 only when it can support a conclusion that existing monitoring is inadequate.

NOX Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-38, Commercial Boiler S-39, Commercial Boiler	Regulation 9-7-301.1 (natural gas)	40 ppmv, dry at 3% O <sub>2</sub>	BAAQMD Condition # 17900 Part 19 and 20

**NOx Discussion:**

Commercial Boilers (S-38 and S-39): These boilers are subject to Regulation 9-7, Inorganic Pollutants, Industrial Boilers. This regulation sets the NO<sub>x</sub> and CO standards for boilers. The potential to emit NO<sub>x</sub> (using AP-42 emission factors from Table 1.4-1) from each boiler if fired 100% of the time is estimated to be the following:

NO<sub>x</sub> PTE: (100 lb NO<sub>x</sub>/1E6 scf)(scf/1013 Btu)(12.5 E6 Btu/hr)(8760 hr/yr) = 10,809 lb/yr  
NO<sub>x</sub> PTE: 5.4 TPY

The District has imposed an annual source test requirement for NO<sub>x</sub> limits for boilers in other Title V permits. Annual source testing is a standard monitoring method for natural gas boilers. In addition, since the estimated potential to emit is relatively low, annual source testing is adequate (parts 19 and 20 were added to Condition # 17900).

CO Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-38, Commercial Boiler S-39, Commercial Boiler	Regulation 9-7-301.3	400 ppmv, dry at 3% O <sub>2</sub>	BAAQMD Condition # 17900 Part 19 and 20

**CO Discussion:**

Commercial Boilers (S-38 and S-39): These boilers are subject to Regulation 9-7, Inorganic Pollutants, Industrial Boilers. This regulation sets the NO<sub>x</sub> and CO standards for boilers. The potential to emit CO (using AP-42 emission factors from Table 1.4-1) from each boiler if fired 100% of the time is estimated to be the following:

NO<sub>x</sub> PTE: (84 lb NO<sub>x</sub>/1E6 scf)(scf/1013 Btu)(12.5 E6 Btu/hr)(8760 hr/yr) = 9,080 lb/yr  
NO<sub>x</sub> PTE: 4.5 TPY

The District has imposed an annual source test requirement for CO limits for boilers in other Title V permits. Annual source testing is a standard monitoring method for natural gas boilers.

In addition, since the estimated potential to emit is relatively low, annual source testing is adequate (parts 19 and 20 were added to Condition # 17900).

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

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13 & S-14, Stationary Internal Combustion Engines; S-36, Engine Generator 1; S-37, Engine Generator 2; S-38, Commercial Boiler; S-39, Commercial Boiler; S-54, Engine Generator; S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216 (diesel) Engines	BAAQMD 9-1-301	Ground level concentrations of SO <sub>2</sub> shall not exceed: 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None
S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216 (diesel) Engines	Regulation 9-1-302	300 ppm SO <sub>2</sub> from any source	None
S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216 (diesel) Engines	Regulation 9-1-304	0.5% liquid fuel sulfur content	None

## **SO2 Discussion:**

### BAAQMD Regulation 9-1-301

Area monitoring to demonstrate compliance with the ground level SO<sub>2</sub> concentration requirements of Regulation 9-1-301 is at the discretion of the APCO (per BAAQMD Regulation 9-1-501). This facility does not have equipment that emits large amounts of SO<sub>2</sub> and therefore is not required to have ground level monitoring by the APCO.

All facility combustion sources are subject to the SO<sub>2</sub> emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. Therefore, no monitoring is necessary for this requirement.

### BAAQMD Regulation 9-1-302 (300 ppmv maximum, from any vapor stream)

This regulation prohibits the discharge of any stream containing SO<sub>2</sub> in excess of 300 ppm (liquid or solid fuel burning sources are exempt). Hence, monitoring of the diesel engines (S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216), which burn liquid diesel fuel, is not required.

### BAAQMD Regulation 9-1-304 ( Sulfur Content of Liquid & Solid Fuels)

This section establishes sulfur limits for liquid and solid fuels. The only liquid fuels at this facility is diesel fuel, hence the rule is applicable only to those sources burning diesel fuel. The diesel engines (S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216) will be fired exclusively with CARB-certified diesel fuel with a sulfur content of 0.05 wt. Hence, compliance with 0.5 wt% sulfur standard of Regulation 9-1-304 is expected.

PM Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13 & S-14, Stationary Internal Combustion Engines; S-36, Engine Generator 1; S-37, Engine Generator 2; S-38, Commercial Boiler; S-39, Commercial Boiler; S-54, Engine Generator	BAAQMD Regulation 6-301	Ringelmann 1.0	None
S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216 (diesel) Engines	BAAQMD Regulation 6-303	Ringelmann 2.0	None, operated infrequently
S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13 & S-14, Stationary Internal Combustion Engines; S-36, Engine Generator 1; S-37, Engine Generator 2; S-38, Commercial Boiler; S-39, Commercial Boiler; S-54, Engine Generator; S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216 (diesel) Engines	BAAQMD Regulation 6-310.3	0.15 gr/dscf at 6% O <sub>2</sub>	None
S-52, Sandblast Operations	BAAQMD Regulation 6-311	$4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None
S-36, Engine Generator 1 S-37, Engine Generator 2	Condition # 17900 Part 4	36.4 lb/24 hr period	Condition # 17900 Part 10.b (annual source test)

PM Sources

<b># &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-54, Engine Generator	Condition # 17901 Part 10	> Ringelmann 1.0 for no more than 3 min in any hour	None

**PM Discussion:**

BAAQMD Regulation 6 “Particulate Matter and Visible Emissions”

Regulation 6-301 Visible Emissions

BAAQMD Regulation 6-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Visible emissions are normally not associated with combustion of gaseous fuels. This includes emissions from all sources burning natural gas, landfill gas, and digester gas at Stationary IC Engines (S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14), Engine Generators (S-36, S-37, S-54), and Boilers (S-38, S-39). Since there is no gaseous fuel derived visible emissions expected, periodic monitoring to ensure compliance with Regulation 6-301 from liquid sources as well as combustion sources burning digester gas is not required. No monitoring for visible emissions from the gaseous fuel combustion is necessary.

Regulation 6-303 Visible Emissions

BAAQMD Regulation 6-303 applies to sources S-55, S-56, S-57, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216 diesel engines. Regulation 6-301 (Ringelmann 1.0) does not apply since 6-303 applies to these engines due to their use in emergency standby service (6-303.1). Although there may be a potential for some visible emissions from diesel engine operation, we do not expect the intermittent and brief operation of the diesel engines to necessarily exceed the Ringelmann 2.0 standard. No monitoring for visible emissions from or diesel combustion sources is necessary.

Particulate Weight Limitation

BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Section 310.3 limits filterable particulate emissions from “heat transfer operations” to 0.15 gr/dscf @ 6% O<sub>2</sub>. These are the “grain loading” standards.

Stationary IC Engines (S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14), Engine Generators (S-36, S-37, S-54), and Boilers (S-38, S-39):

There are no sources burning gaseous fuel (natural gas, landfill gas, digester gas) that would ever be expected to have emissions near this limitation. On a routine basis, there are no sources, which could approach the limit of 6-310, since only gaseous fuels are

typically combusted. The only sources that could potentially exceed these limits are the standby diesel generators. The standby diesel generators include sources S-211, S-212, S-213, S-214, S-215, S-216, and S-217 as well as the cogeneration engines S-36, S-37, and S-54, which would be operated as emergency backup generators in the event of an emergency.

The diesel engines (S-55, S-56, S-57, S-58, S-58, S-59, S-60, S-61, S-62, S-63, S-64 S-65, S-211, S-212, S-213, S-214, S-215, S-216) operate infrequently and we do not expect any periodic monitoring to be required. AP-42 gives a factor of 0.31 lb/MM Btu for diesel engines. The flue gas factor for diesel combustion is 9190 dscf/MM Btu at 0% oxygen. At typical oxygen levels of 15% in the flue gas, the factor becomes 32,358 dscf/MM Btu. Converting the AP-42 factor into a grain loading and then an exhaust concentration gives the following  $[(0.31 \text{ lb/MM Btu})(7000 \text{ grain/lb})]/32,358 \text{ dscf flue gas} = 0.067 \text{ gr/dscf}$ . The calculated compliance margin is greater than 2.2. Periodic monitoring is not necessary for these sources since their operation is intermittent and since it is expected the engines will easily meet the 0.15 gr/scf standard of 6-310.

#### Allowable Rate of Emissions Based on Process Weight Rate

Sandblast Operations (S-52):

Using the AP-42 emission factor for Abrasive Blasting Operations from Table 13.2.6-1, the following emissions are estimated from S-52:

$$\text{S-52 PTE} = 91 \text{ lb/1000 ton}(30 \text{ ton/year}) = 2.73 \text{ lbs/yr} < 4.10 \text{ P}0.67 \text{ lb/hr} = 40 \text{ lbs/hr}$$

As a result, no source testing is required because this operation is not estimated to exceed any standard of Regulation 6.

S-36 and S-37 is has a TSP limit (36.4 lb per consecutive 24 hour period). A typo was discovered in Part 10.b and corrected. Part 10.b now requires annual source testing to verify the emissions limits of NO<sub>x</sub>, CO, and TSP (instead of NMOC). Part 10.c. requires annual source testing to verify the NMOC limit.



**POC Sources**

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-4, Stationary Internal Combustion Engine; S-5, Stationary Internal Combustion Engine; S-6, Stationary Internal Combustion Engine; S-7, Stationary Internal Combustion Engine; S-8, Stationary Internal Combustion Engine; S-9, Stationary Internal Combustion Engine; S-10, Stationary Internal Combustion Engine; S-11, Stationary Internal Combustion Engine; S-12, Stationary Internal Combustion Engine; S-13, Stationary Internal Combustion Engine; S-14, Stationary Internal Combustion Engine; S-36, Engine Generator 1; S-37, Engine Generator 2; S-38, Commercial Boiler; S-39, Commercial Boiler; S-54, Engine Generator; S-100, Municipal Wastewater Treatment Plant; S-110, Preliminary Treatment; S-120, Primary Treatment; S-140, Flow Equalization; S-150, Secondary Treatment; S-160, Secondary Clarifiers; S-170, Tertiary Treatment; S-180, Disinfection; S-190, Reclamation; S-200, Sludge Handling	8-2-301	15 lb/day and greater than 300 ppm total carbon	None

### **POC Discussion:**

Potential POC emission sources include the combustion sources as a result of incomplete combustion of any organics that may be in the natural gas, landfill gas, and digester gas (trace amounts) and the precursor organics that may result from the wastewater processes. Conservative landfill gas and digester gas sampling indicates the precursor organic levels are less than 82 microgram/liter (5.1 lb/MM cu ft). For the purposes of this PTE calculation, we will estimate uncontrolled emissions as well as worst-case un-combusted organics assuming a conservative 90% destruction efficiency.

Gas Combustion: The PTE is based on the estimated maximum digester gas production rate of 62,500 cu ft/hr (maximum digester production rate)

PTE, organics from digester gas, uncontrolled = (62,500 scf DG/hr)(8760 hr/yr)(5.1 lb/1E6 scf DG) = 2,792 lb/yr (7.7 lb/day)

PTE, organics from digester gas, after combustion = (2,792 lb/yr)(0.1) = 279 lb/yr (0.8 lb/day)

Since the potential to emit POC from digester gas combustion sources is less than 100 ton per year, no compliance assurance monitoring of POC emissions from digester gas sources is needed.

Wastewater POC Sources: The PTE for organics from the wastewater sources is based on emission factors developed from the AB-2588 programs for sewage treatment plants. The maximum plant liquid flow rate is 145 MM gpd with an uncontrolled POC emission factor of 243 lb/yr per million gallon per day (BAAT-AMSA 80% Conservative Emission Factor). The PTE for POCs from the wastewater processes is:

PTE = (145 E6 gpd)(243 lb/yr-1E6 gpd) = 35,235 lb/yr (97 lb/day throughout wastewater sources, all locations combined)

The emissions of POCs occur at various locations, at numerous liquid sources throughout the wastewater processes and are typically represented in high volume, highly dilute vapor streams, spread out over many processes that are difficult to capture and control. Modern grassroots POTWs are increasingly designed to be covered and vented to high efficiency control systems, but the costs associated with such retroactive controls are not cost effective. There are no conditions to control and/or monitor POC emissions from any of the liquid wastewater sources. We do not expect any wastewater POC emission source to have a concentration approaching 300 ppmv, hence no monitoring is needed.

### Changes to permit:

The standard language at the beginning of the section has been updated.

A note has been added at the beginning of the section to clarify that this section is a summary of the limits and monitoring, and that in the case of a conflict between Sections I-VI and Section VII, the preceding sections take precedence.

The description of the BAAQMD 6-301 limit in Section VII has been corrected to say "for < 3 min/hr."

#### **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.

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

#### **IX. Permit Shield:**

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has no permit shields.

**X. Glossary**

Changes to permit:

The glossary was updated.

**XI. Appendix A - State Implementation Plan**

Changes to permit:

This section has been deleted. The address for EPA's website is now found in Sections III and IV.

**D. Alternate Operating Scenarios:**

No alternate operating scenario has been requested for this facility.

**E. Compliance Status:**

A December 1, 2006 office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services, presents a review of the compliance record of San Jose/Santa Clara Water Pollution Control (Site #: A0778). The Compliance and Enforcement Division staff has reviewed the records for the period between October 5, 2001 through October 4, 2006. This review was initiated as part of the District evaluation of the facility's renewal of their Title V permit. No ongoing non-compliance and no recurring patterns of violation were found.

Staff also reviewed the District compliance records for San Jose/Santa Clara Water Pollution Control for October 5, 2005 through October 4, 2006. During this period, the facility's activities known to the District include:

- The District issued two Notices of Violation (NOVs). These NOVs were issued on November 15 and May 10, 2005 for late submittal of their semi-annual monitoring reports as specified by District Regulation 2-6-307. Both violations were returned to compliance before the end of the review period.
- The District received no air pollution complaints alleging the facility as the source.
- The District received no notifications of a Reportable Compliance Activity.
- The facility is not operating under any enforcement agreements, open variances or open abatement orders from the District Board.

The Compliance and Enforcement Division has made a determination that for the five year period SJWP was in intermittent compliance. There is no evidence of on-going non-compliance and no recurring pattern of violation that would warrant consideration of a Title V permit compliance schedule.

**F. Differences between the Application and the Proposed Permit:**

Permit Evaluation and Statement of Basis: A0778, San Jose/Santa Clara Water Pollution Control,  
700 Los Esteros Road, San Jose, CA 95134

The application was correct at the time it was originally submitted, which was at the same time as the backup generator permit application (Application # 14261), which has been included into this Title V permit renewal. A copy of the evaluation report for Application # 14261 is included with this report.

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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 which 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

**CEQA**

California Environmental Quality Act

**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.

**CO**

Carbon Monoxide

**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). Cumulative increase is used to determine whether threshold-based requirements are triggered.

**District**

The Bay Area Air Quality Management District

**dscf**

Dry Standard Cubic Feet

**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 (MACT), 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.

**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.

**Major Facility**

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (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.

**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.

**MOP**

The District's Manual of Procedures.

**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 (Same as NMOC)

**NMOC**

Non-methane Organic Compounds (Same as NMHC)

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

Oxides of nitrogen.



**NSPS**

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. 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. 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.)

**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, NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.

**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

**PM<sub>10</sub>**

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.

**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

**THC**

Total Hydrocarbons (NMHC + Methane)

**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 (NMOC + Methane, Same as THC)

**TPH**

Total Petroleum Hydrocarbons

**TRMP**

Toxic Risk Management Plan

**TSP**

Total Suspended Particulate

**VOC**

Volatile Organic Compounds

**Units of Measure:**

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m <sup>2</sup>	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

## APPENDIX C CALCULATIONS

### 1. NMOC Compound Concentrations in Digester Gas

Average MW of NMOC: 113 lb/lb-mole (113 g/g-mole)

Concentration of NMOC: 63  $\mu\text{g/l}$  = 63 E-06 g/l (taken from San Jose/Santa Clara Water Pollution Control tests, based on highest observed concentration;  $\mu\text{g}$  = microgram = 1,000,000<sup>th</sup> of a gram)

Highest monthly average Digester Gas Production Rate, estimated: 1,500,000 cu ft/day (62,500 cu ft/hr)

Digester Gas Typical Composition:

Methane: 62% (typical, dry basis)

CO<sub>2</sub>: 38%

(Average DG Density = 1.22 g/l at STP)

Nitrogen + Oxygen: <1%

NMOC Emissions, maximum-Uncontrolled = (1,500,000 cu ft/day)(63 E-06 g NMOC/liter)(1000 liter/cu m)(cu m/35.314cu ft)(lb/454 g) = 5.9 lb/day (2,151 lb/yr)

Conversion of 63  $\mu\text{g/l}$  to ppmv, basis 1,000,000 liter digester gas: (63 E-06 g NMOC/liter DG)(1,000,000 liter DG)(g-mole NMOC/113 g NMOC)(22.4 liter NMOC/g-mole NMOC) = 12.5 liter NMOC per 1,000,000 liter DG = 13 ppmv

Concentration Conversion from Volume to Weight basis:

[63 E-6 g/l DG][L DG/1.22 g] = 52 ppm, wt

300 ppm Carbon in Digester Gas (DG):

MW, Methane: 16.1 lb/mole

Highest monthly average digester gas production rate: 1,500,000 cu ft/day

Total carbon (NMOC) emitted @ 300 ppm = [1,500,000 cu ft/day][300 cu ft NMOC as methane/1E6 cu ft DG][lb-mole/386 cu ft][16.1 lb/lb-mole] = 19 lb/day

## APPENDIX D

### PERMIT APPLICATION ENGINEERING EVALUATIONS

Engineering Evaluations for the following permit applications are attached to the Statement of Basis in this Appendix.

<u>AN</u>	<u>TITLE</u>
1671	Change of Conditions for the Internal Combustion Engine Generators at the San Jose/Santa Clara Water Pollution Control Plant
2656	Application for Permits to Operate for loss-of-exemption diesel fired internal combustion engines.
14260	Application for Permits to Operate for loss-of-exemption diesel fired internal combustion engines.
14946	Application for Permits to Operate for loss-of-exemption diesel fired internal combustion engines

**ENGINEERING EVALUATION REPORT**

<b>PLANT NAME</b>	<b>San Jose/Santa Clara WPCP</b>
<b>APPLICATION NUMBER</b>	<b>1671</b>
<b>PLANT NUMBER</b>	<b>778</b>
<b>DATE</b>	<b>23 May 2001</b>

**1. BACKGROUND**

This application is for an Authority to Construct/Permit to Operate for a change of conditions for the internal combustion engine generators at the San Jose/Santa Clara Water Pollution Control Plant (SJWPC). The sources impacted by this permit application include the following:

- S-4 Stationary Internal Combustion Engine, Plt E1 - P&E, DG, LFG, NG, or Diesel fired, 998 HP**
- S-5 Stationary Internal Combustion Engine, Plt E2 - P&E, DG, LFG, NG, or Diesel fired, 998 HP**
- S-6 Stationary Internal Combustion Engine, Plt E3 - P&E, DG, LFG, NG, or Diesel fired, 998 HP**
- S-7 Stationary Internal Combustion Engine, Plt E5 - P&E, DG, LFG, NG, or Diesel fired, 2466 HP**
- S-8 Stationary Internal Combustion Engine, Plt E6 - P&E, DG, LFG, NG, or Diesel fired, 2466 HP**
- S-9 Stationary Internal Combustion Engine, Plt A3 - SBB, DG, LFG, or NG fired, 2345 HP**
- S-10 Stationary Internal Combustion Engine, Plt E2 - SBB, DG, LFG, or NG fired, 2345 HP**
- S-11 Stationary Internal Combustion Engine, Plt A1 - SBB, DG, LFG, or NG fired, 2345 HP**
- S-12 Stationary Internal Combustion Engine, Plt B1 - SBB, DG, LFG, or NG fired, 1855 HP**
- S-13 Stationary Internal Combustion Engine, Plt B2 - SBB, DG, LFG, or NG fired, 1855 HP**
- S-14 Stationary Internal Combustion Engine, Plt B3 - SBB, DG, LFG, or NG fired, 1855 HP**
- S-36 Engine Generator 1 – Cogen Unit, 12.5 MM Btu/hr, DG, LFG, or NG fired, 3900 HP**
- S-37 Engine Generator 2 – Cogen Unit, 12.5 MM Btu/hr, DG, LFG, or NG fired, 3900 HP**
- S-54 Engine Generator, 12 Cylinder Turbocharged LSVB, Plt EG-1, DG or NG fired, 3900 HP**

The purpose of this permit application is to replace natural gas (NG) in the fuels slate for these engines in favor of landfill gas (LFG) from the Newby Island facility of Gas Recovery Systems, Inc nearby (plt 11670). Gas Recovery Systems processes landfill gas from the Newby Island Facility of International Disposal Corporation of California (BAAQMD Plant 9013). Presently the majority of landfill gas is used to fuel IC engine generators at Newby with the remaining LFG (approximately 2,600 cfm) being flared at Newby Island. This LFG is available for use at San Jose/Santa Clara Water Pollution Control facility.

Other than the piping and instrumentation systems, no hardware changes are proposed for the actual combustion engines. This evaluation will review the emissions, District regulations and toxic risk from the proposed project.

**2. EMISSION CALCULATIONS**

This section presents a summary of the emissions calculations and comparisons between various fuel operating modes at SJWPC. When all 14 engines were originally permitted, they were permitted to burn 100% of any of the fuels respectively allowed. Baseline operation for all of the engines was 24/7 operation at nameplate Btu/bhp capacity. This basis constitutes the regulatory operating limit.

The emissions baseline is developed from combustion of an allowed fuel at 100% of the engine's capacity. All engines are permitted to burn 100% of either digester gas or natural gas (although 100% diesel is allowed in emergencies, this will not be considered as a basis since this is an extraordinary operational mode).

Emission levels are a function of the fuel. Actual source testing provides flue gas flowrates as well as flue gas concentrations of NOx, CO, NMOC. The actual source test numbers will be used where available and reliable in conjunction with actual flue gas flowrates. Table 1 presents the engine theoretical capacities as well as the regulatory maximum emission levels for all of the respective engines while Table 2 presents the Baseline Emissions Calculation parameters. These parameters listed in Table 2 will be used in a sample equation to demonstrate the development of baseline emission rates.

Table 3 presents the parameters to be used to calculate the emissions from landfill gas combustion at the respective engines. The NOx and NMOC emission factors are based on emissions tests conducted at the lean-burn engines at the West Contra Costa Sanitary Landfill. The CO and PM10 emissions were calculated based on AP-42 emission

factors (see Table 2.4-5, AP-42). SO<sub>2</sub> emissions were calculated using actual sulfur concentrations of digester gas and landfill gas. The digester gas (baseline) factor was obtained by developing an average concentration during several months of operation. The landfill gas factor represents the upper bound of a 95% confidence interval of samples taken at a number of Laidlaw landfill facilities.

**TABLE 1 REGULATORY OPERATIONAL LEVELS-CURRENT CASE (PRE-LFG USE)**

SOURCE	FIRED CAP. (MM Btu/hr)	RATING BHP	NO <sub>x</sub> (ppm)	NMOC (ppm)	CO (ppm)	TSP (gr/dscf)	SO <sub>2</sub> (ppm)
S-4	9.1	998	140	250	2000	0.15	300
S-5	9.1	998	140	250	2000	0.15	300
S-6	9.1	998	140	250	2000	0.15	300
S-7	20.9	2466	140	250	2000	0.15	300
S-8	20.9	2466	140	250	2000	0.15	300
S-9	19.9	2345	140	250	2000	0.15	300
S-10	19.9	2345	140	250	2000	0.15	300
S-11	19.9	2345	140	250	2000	0.15	300
S-12	15.7	1855	140	250	2000	0.15	300
S-13	15.7	1855	140	250	2000	0.15	300
S-14	15.7	1855	140	250	2000	0.15	300
S-36	30	3900	1.8 g/hp-hr	0.069 lb/mscf	0.325 lb/mscf	0.053 lb/mscf	0.0998 lb/mscf dg
S-37	30	3900	1.8 g/hp-hr	0.069 lb/mscf	0.325 lb/mscf	0.053 lb/mscf	0.0998 lb/mscf dg
S-54	30	3900	1 g/hp-hr	0.8 g/hp-hr	3.3 g/hp-hr	0.085 g/hp-hr	0.2 g/hp-hr

Each engine was originally permitted to be fired with either a mixture of fuels or 100% of any of the respective fuels. The permit basis is the worst case 100% fuel case.

**Flue gas factors:**

Natural Gas:  $F = 8.71 \text{ dscf FG/dscf NG @ 0\% O}_2$   
 $F = [8.71][20.95/(20.95-15)] = 30.67 \text{ dscf FG/dscf NG @ 15\% O}_2$   
 (40 CFR60 Appendix A, Method 19)

Digester Gas:  $F = 5.905251 \text{ dscf FG/dscf DG @ 0\% O}_2$   
 $F = [5.90521][20.95/(20.95-15)] = 20.79 \text{ dscf FG/dscf DG @ 15\% O}_2$

Landfill Gas:  $F = 4.1695468 \text{ dscf FG/dscf NG @ 0\% O}_2$  (PSD Combustion Equations)  
 $F = [4.1695468][20.95/(20.95-15)] = 14.68 \text{ dscf FG/dscf LFG}$

MW, NO<sub>x</sub>: 46.01  
 MW, CO: 28.01  
 MW, NMOC: 16.05 (as methane)  
 MW, SO<sub>2</sub>: 64.1

Landfill gas: 420 BTU/scf

**TABLE 2 BASELINE EMISSIONS CALCULATION PARAMETERS**

Source	FLUE GAS FLOW PER S/T, (DSCFM)	NOx S/T CONC ppm, (fuel basis)	CO S/T CONC ppm, (fuel basis)	NMOC S/T CONC ppm, (fuel basis)
S-4	3630	135 (Nat gas)	216 (Nat gas)	135 (Nat gas)
S-5	3470	57 (Nat gas)	223 (Nat gas)	216 (Nat gas)
S-6	3610	127 (Nat gas)	241 (Nat gas)	37 (Nat gas)
S-7	4765	40 (Nat gas)	272 (Nat gas)	42 (Nat gas)
S-8	4780	40 (no S/T, S-7 ppm)*	272 (no S/T, S-7 ppm)*	42 (no S/T, S-7 ppm)*
S-9	5970	37 (Nat gas)	351 (Nat gas)	152 (Nat gas)
S-10	5420	58 (Nat gas)	207 (Nat gas)	68 (Nat gas)
S-11	4910	80 (Nat gas)	225 (Nat gas)	61 (Nat gas)
S-12	3520	83 (no S/T S-13 ppm)	226 (no S/T S-13 ppm)*	182 (no S/T, S-13 ppm)*
S-13	3790	83 (Nat gas)	226 (Nat gas)	182 (Nat gas)
S-14	3700	83 (no S/T S-13 ppm)	226 (no S/T S-13 ppm)*	182 (no S/T, S-13 ppm)*
S-36	8980	45 (mix NG/DG)*	201 (S-37 ppm)*	246 (mix NG/DG)*
S-37	9550	68 (mix NG/DG)*	201 (mix NG/DG)	246 (S-36 ppm)*
S-54	11400	91 (mix NG/DG)*	244 (mix NG/DG)	182 (mix NG/DG)*

\*No natural gas source test available. Used concentration from similar engine or mixed gas combustion numbers.

**TABLE 3 LANDFILL GAS EMISSIONS CALCULATION PARAMETERS**

Source	FLUE GAS FLOW PER S/T, (DSCFM)	NOx CONC FACTOR <sup>1</sup> (ppm)	CO FACTOR <sup>2</sup> (LB/MM DSCF LFG)	NMOC CONC FACTOR <sup>3</sup> (ppm)	PM10 FACTOR <sup>2</sup> (LB/MM DSCF LFG)
S-4	3630	39	197	44	20
S-5	3470	39	197	44	20
S-6	3610	39	197	44	20
S-7	4765	39	197	44	20
S-8	4780	39	197	44	20
S-9	5970	39	197	44	20
S-10	5420	39	197	44	20
S-11	4910	39	197	44	20
S-12	3520	39	197	44	20
S-13	3790	39	197	44	20
S-14	3700	39	197	44	20
S-36	8980	39	197	44	20
S-37	9550	39	197	44	20
S-54	11400	39	197	44	20

<sup>1</sup>Factor taken from source tests at West Contra Costa Sanitary District, 100% Landfill Gas, Lean Burn IC Engine Configuration

<sup>2</sup>JAP-42, Chapter 2, Table 2.4-5 Emission Rates for Secondary Compounds Exiting Control Devices

<sup>3</sup> Factor taken from source tests at West Contra Costa Sanitary District, 100% Landfill Gas, Lean Burn IC Engine Configuration

**NOx Emissions – Baseline vs. Landfill Gas, S-4 IC Engine Generator**

Natural Gas Combustion-S-4

$$\text{NOx emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][135 \text{ mole NOx/1E6 mole FG}][\text{mole FG/387 dscf FG}][46.01 \text{ lb NOx/mole NOx}] = 83.9 \text{ lb/day}$$

Landfill Gas Combustion-S-4

$$\text{NOx emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][39 \text{ mole NOx/1E6 mole FG}][\text{mole FG/387 dscf FG}][46.01 \text{ lb NOx/mole NOx}] = 24.2 \text{ lb/day}$$

Table 4 presents a comparative summary of NOx emissions from landfill gas combustion against those derived from natural gas combustion. The landfill gas emissions are lower in every case. We conclude that using landfill gas instead of natural gas will not result in an increase in NOx emissions.

**TABLE 4 NOx EMISSIONS COMPARISON; LANDFILL GAS VS NATURAL GAS**

ENGINE	NOX EMISSIONS, BASE CASE NAT GAS COMB, (LB/DAY)	NOX EMISSIONS, LANDFILL GAS COMBUSTION, (LB/DAY)
S-4	83.9	24.2
S-5	33.9	23.2
S-6	78.5	24.1
S-7	32.6	31.8
S-8	32.7, (No S/T, see S-7 ppm)	31.9
S-9	37.8	39.9
S-10	53.8	36.2
S-11	67.2	32.8
S-12	50, (No S/T, see S-13 ppm)	23.5
S-13	53.8	25.3
S-14	52.6, (No S/T, see S-13 ppm)	24.7
S-36	69.2 (mixed NG + DG)	60
S-37	111.2 (mixed NG + DG)	63.8
S-54	177.6 (mixed NG + DG)	76.1

**CO Emissions – Baseline vs. Landfill Gas, S-4 IC Engine Generator**

Natural Gas Combustion-S-4

$$\text{CO emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][216 \text{ mole CO/1E6 mole FG}][\text{mole FG}/387 \text{ dscf FG}][28.01 \text{ lb CO/mole CO}] = 81.7 \text{ lb/day}$$

Landfill Gas Combustion-S-4

$$\begin{aligned} \text{Factor: } & 470 \text{ lb CO/MM dscf CH}_4 \\ & = [470 \text{ lb CO/1E6 dscf CH}_4][0.42 \text{ dscf CH}_4/\text{dscf LFG}] = 197.4 \text{ lb CO/MM dscf LFG} \end{aligned}$$

$$\text{Landfill gas rate} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][1 \text{ dscf LFG}/14.68 \text{ dscf FG}] = 356,076 \text{ dscf LFG/day}$$

$$\text{CO emissions} = [356,076 \text{ dscf LFG/day}][197.4 \text{ lb CO/1E6 dscf LFG}] = 70.3 \text{ lb/day}$$

Table 5 presents a comparative summary of CO emissions from landfill gas combustion against those derived from natural gas combustion. Based on Table 5, we conclude that using landfill gas instead of natural gas will not result in an increase in CO emissions.



**TABLE 5 CO EMISSIONS COMPARISON; LANDFILL GAS VS NATURAL GAS**

ENGINE	CO EMISSIONS, BASE CASE NAT GAS COMB, (LB/DAY)	CO EMISSIONS, LANDFILL GAS COMBUSTION, (LB/DAY)
S-4	81.7	70.3
S-5	80.6	67.2
S-6	90.7	69.9
S-7	135.1	92.2
S-8	135.5, (No S/T, see S-7 ppm)	92.5
S-9	218.4	115.6
S-10	116.9	104.9
S-11	115.1	95.1
S-12	82.9, (No S/T, see S-13 ppm)	68.1
S-13	89.3	73.4
S-14	87.1, (No S/T, see S-13 ppm)	71.6
S-36	188.1, (No S/T, see S-37 ppm)	173.9
S-37	200.1 (mixed NG + DG)	184.9
S-54	289.9 (mixed NG + DG)	220.7

**NMOC Emissions – Baseline vs. Landfill Gas, S-4 IC Engine Generator**

Natural Gas Combustion-S-4

$$\text{NMOC emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][135 \text{ mole NMOC/1E6 mole FG}][\text{mole FG}/387 \text{ dscf FG}][16.05 \text{ lb NMOC/mole NMOC}] = 29.3 \text{ lb/day}$$

Landfill Gas Combustion-S-4

$$\text{NMOC emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][44 \text{ mole NMOC/1E6 mole FG}][\text{mole FG}/387 \text{ dscf FG}][16.05 \text{ lb NMOC/mole NMOC}] = 9.5 \text{ lb/day}$$

A comparison of the tabulated data in Table 6 shows a general trend toward less NMOC emitted with landfill gas than with natural gas or with mixed fuel combustion. Eleven of the 14 engines predict lower NMOC emissions as compared with those for natural gas or mixed gas combustion. All fourteen of the respective IC engines are expected to meet or exceed the Reg 8-34 control requirements for landfill gas VOC emission control eventually meeting a minimum control efficiency of 98% or maximum outlet NMOC concentration of 120 ppm (at 3% oxygen). The estimation of landfill gas generated emissions of NMOC at S-6, S-7, S-8 are essentially the same as the natural gas derived emissions. No other source test data was available for these engines. Based on this observed data we have reason to believe that the introduction of landfill gas into the fuel system will not increase emissions of NMOC.

It should be noted that after a revised permit to operate is issued for these engines the engines will be allowed to burn any or all of the fuels listed (with the exception of diesel – which is understood to be for emergency use only). Convention in Permit Services is to identify engines as sources rather than abatement devices. In accordance with this the NMOC standard for digester gas borne exhaust emissions is 250 ppm NMOC at 15% oxygen. In like fashion the NMOC standard for landfill gas combustion derived emissions is 120 ppm @3%.

The maximum allowable NMOC emissions will be calculated based on a summation of the maximum NMOC emissions allowed by the combustion of the individual fuels. To determine compliance the maximum allowable NMOC will be compared against the measured NMOC emissions.

**TABLE 6 NMOC EMISSIONS COMPARISON; LANDFILL GAS VS NATURAL GAS**

ENGINE	NMOC EMISSIONS, BASE CASE NAT GAS COMB, (LB/DAY)	NMOC EMISSIONS, LANDFILL GAS COMBUSTION, (LB/DAY)
S-4	29.3	9.5
S-5	44.8	9.1
S-6	8	9.5
S-7	12	12.5
S-8	12 (No S/T, see S-7 ppm)	12.6
S-9	54.2	15.7
S-10	22	14.2
S-11	17.9	12.9
S-12	38.3, (no S/T see S-13 ppm)	9.2
S-13	41.2	10
S-14	40.2, (no S/T see S-13 ppm)	9.7
S-36	131.9 (mixed NG + DG)	23.6
S-37	140.3 (no S/T, see S-36 ppm)	25.1
S-54	123.9 (mixed NG + DG)	30

**PM10 Emissions – Baseline vs. Landfill Gas, S-4 IC Engine Generator**

Natural Gas Combustion-S-4

No source test data is available to allow a comparison of TSP emissions cases. TSP emissions from natural gas combustion or digester gas combustion are not significant. Future TSP emissions from landfill gas combustion are expected to continue to be minimal. Gaseous fuels in general, do not produce significant particulate emissions as long as the combustion equipment is operated properly. In terms of particulate emissions, landfill gas is not expected to be any different than digester gas.

Worst case Reg 6 emissions of PM10 =  $[0.15 \text{ grain/dscf FG}][3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][\text{lb}/7,000 \text{ grain} = 112 \text{ lb/day}$

Landfill Gas Combustion-S-4

PM10 emissions =  $[3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][1 \text{ dscf LFG}/14.68 \text{ dscf FG}][48 \text{ lb PM10}/1\text{E6 dscf CH}_4][0.42 \text{ dscf CH}_4/\text{dscf LFG}] = 7.2 \text{ lb/day}$

AP-42 presents the above emission factor for PM10 emissions from IC engine combustion of landfill gas or other waste gas. This emission factor is 48 lb PM10/MM dscf of methane burned. Since the factor is on a methane burned basis, the emissions from burning landfill gas will be equal to the emissions from burning digester gas. Hence there will be no increase of PM10 emissions as a result of this project.

**TABLE 7 PM10 EMISSIONS COMPARISON; LANDFILL GAS VS NATURAL GAS**

ENGINE	PM10 EMISSIONS, BASE CASE PERMIT LIMIT, (LB/DAY)	PM10 EMISSIONS, LANDFILL GAS COMBUSTION, (LB/DAY)
S-4	112	7.2
S-5	107.1	6.9
S-6	111.4	7.1
S-7	147	9.4
S-8	147.5	9.5
S-9	184.2	11.8
S-10	167.2	10.7
S-11	151.5	9.7
S-12	108.6	7
S-13	116.9	7.5
S-14	114.2	7.3
S-36	97.9	17.8
S-37	104.1	18.9
S-54	199.3	22.5

### SO<sub>2</sub> Emissions

Since sulfur concentrations in natural gas are trace, the combustion of digester gas will be considered the base case for calculations of SO<sub>2</sub>.

Following are the sulfur concentrations of digester gas at San Jose WWTP and landfill gas at Newby Island.

DG Sulfur Content: 127 ppm average (data from 1/97 – 3/97; upper 95% ~183 ppm)  
LFG Sulfur Content: 56 ppm (95% confidence – upper bound, landfill gas sampling)  
(The above data developed from approx 35 samples from BFI landfills. Actual LFG S at GRS ~ 30 ppm)

#### Digester Gas Combustion-S-4

$$\text{SO}_2 \text{ emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][\text{dscf DG}/20.79 \text{ dscf FG}][127 \text{ mole S}/1\text{E}6 \text{ mole DG}][\text{mole DG}/387 \text{ dscf DG}][1 \text{ mole SO}_2/\text{mole S}][64.1 \text{ lb SO}_2/\text{mole SO}_2] = 5.3 \text{ lb/day}$$

#### Landfill Gas Combustion-S-4

$$\text{SO}_2 \text{ emissions} = [3630 \text{ dscf FG/min}][60 \text{ min/hr}][24 \text{ hr/day}][\text{dscf DG}/20.79 \text{ dscf FG}][56 \text{ mole S}/1\text{E}6 \text{ mole DG}][\text{mole DG}/387 \text{ dscf DG}][1 \text{ mole SO}_2/\text{mole S}][64.1 \text{ lb SO}_2/\text{mole SO}_2] = 3.3 \text{ lb/day}$$

TABLE 8 SO<sub>2</sub> EMISSIONS COMPARISON; LANDFILL GAS VS NATURAL GAS

ENGINE	SO <sub>2</sub> EMISSIONS, BASE CASE DIGESTER GAS COMBUSTION, (LB/DAY)	SO <sub>2</sub> EMISSIONS, LANDFILL GAS COMBUSTION (LB/DAY)
S-4	5.3	3.3
S-5	5	3.2
S-6	5.2	3.3
S-7	6.9	4.3
S-8	6.9	4.3
S-9	8.7	5.4
S-10	7.9	4.9
S-11	7.1	4.5
S-12	5.1	3.2
S-13	5.5	3.4
S-14	5.4	3.4
S-36	13.0	8.2
S-37	13.8	8.7
S-54	16.5	10.4

### Toxic Emissions

Toxic emissions from landfill gas were based on factors developed for the Keller Canyon Landfill gas combustion application # 19432. Those factors were developed by using the higher of a comparison listing of the CARB 1996 CATEF database for IC engines burning landfill gas with the default AP-42 concentration/control efficiency listings. As with the criteria emissions, the toxic emissions are based on 8760 hours per year burning 156,000 scf/hr of landfill gas. A summary of the toxic emissions is listed in Table 3.

### 3. EMISSION SUMMARY

Criteria Pollutants: Pollutant levels are expected to decrease.

Toxic Pollutants: Table III presents a summary of the toxic pollutant emissions as calculated based on Keller Canyon Landfill Combustion project factors (AN 19432). These factors were used to determine the carcinogenic risk from the proposed project.

**Table 9 Emissions Summary – Toxic Pollutants**

<b>Pollutant</b>	<b>Estimated Lb/year</b>	<b>Estimated Gram/sec</b>
1,1 dichloroethane (ethylidene dichloride)	57.8	8.3E-4
1,1,2,2 tetrachloroethane	23.3	3.3e-4
1,2 dichloroethane (ethylene dichloride)	5.1	7.3e-5
Acrylonitrile	83.9	0.0012
Benzene	120	0.0017
Benzo(a)anthracene	1.54E-1	2.2E-6
Benzo(a)pyrene	2.48E-1	3.57E-6
Benzo(b)fluoranthene	3.5E-1	5.1E-6
Benzo(k)fluoranthene	2.9E-1	4.21E-6
Carbon tetrachloride	5.4	7.7E-5
Chloroform	4.1	5.9E-5
Dibenz(a,h)anthracene	1.25E-2	1.8E-7
Dichlorobenzene	3.8	5.5E-5
Dichloromethane (methylene chloride)	153	0.0022
Ethylene dibromide	6.54E-1	9.4E-6
Formaldehyde	887	0.013
Tetrachloroethene (perchloroethylene)	77.2	0.0011
Vinyl chloride	57	8.2E-4

Note: For detail on Table 9, see the attached emissions calculation spreadsheet. Toxic emissions were based on landfill gas emission factors developed for the Keller Canyon Landfill Combustion Project AN 19432.

**4. PERMIT REQUIREMENTS/DISCUSSION OF EXEMPTION**

There are no exemptions which apply to these sources.

**5. OFFSETS**

There are no pollutant increases resulting from this project. Hence offsets are not applicable.

**6. APPLICABLE REQUIREMENTS**

**A. Toxic Risk Management Policy:**

A toxic risk assessment was performed for this source. The risk assessment was requested at the outset of this project and was based on emissions of the above compounds listed in Table 3, above.

The facility was within the ALV Met Blob—allowing the actual met data to be used in conjunction with the ISCST modeling program. The facility was mapped out on a grid with the stack locations, emission rates (proportional to engine/stack operations), stack locations, velocities, property fenceline, nearest residential and industrial receptors all identified. A receptor grid was developed at key property line locations as well as the nearest industrial and residential receptors.

Based on this study, the carcinogenic risk to the maximally exposed individual was 0.23 in a million at the location of the residential receptor while the risk at the nearest industrial receptor was 0.17 in a million. Since these levels are below significance (1 in a million), no further evaluation is needed.

**B. Regulation 1 – General Provisions and Definitions**

§1-301: Prohibits discharging emissions in quantities that cause injury, detriment, nuisance, or annoyance.

There are no physical changes to this existing facility which is located in a rural area alongside the mud-flats in the south bay. A large buffer separates this facility from the major population center.

**C. Permits – General Requirements, Regulation 2 Rule 1**

The source is not located with 1000 feet of the nearest school, and is therefore not subject to the public notification requirements of 2-1-412.

**D. Permits – New Source Review, Regulation 2 Rule 2 (dated 10/7/98)**

1. **BACT:** A BACT review is required for any new or modified source *which results in an emission from a new source or an increase in emissions from a modified source of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO2), PM10 or carbon monoxide (CO), in excess of 10.0 pounds per highest day.*

There are no emission increases above baseline levels, therefore BACT is not applicable.

2. **Offset Requirements:** §2-2-302: No emission increases, therefore offsets are not required for these pollutants.

3. **Prevention of Significant Deterioration:** §2-2-304: See 2, above.

**E. Regulation 2 Rule 6**

This is a major facility for Title V. A Title V permit application (AN 17491) has been reviewed and a draft permit issued for public comment. Although there are no emissions increases resulting from this landfill gas project, the Title V permit will be revised to reflect these operating revisions.

**F. Regulation 3 – Fees**

San Jose/Santa Clara has paid the appropriate application, initial and permit fees for this project. It is expected that the applicant will continue to comply with fee requirements.

**G. Particulate Matter and Visible Emissions, Regulation 6**

1. Section 301 prohibits for more than 3 minutes per hour, visible emissions as dark or darker than Ringelmann 1 or equivalent opacity. All engines are expected to continue to comply with this standard.
2. Section 305 prohibits emissions of visible particles from causing a nuisance on property other than the operators. All engines are expected to easily comply with this standard.
3. Section 310 limits the particulate concentration in exhaust gases to 0.15 gr/dscf. Particulate emissions are not expected to increase, and the combustion of landfill gas is expected to easily comply with this requirement.
4. Section 401 requires that the operation have the means to know the appearance of the emissions from the source at all times. The operator is expected to comply with this requirement.

**H. NSPS (Regulation 10)/NESHAPS (Regulation 11)**

Landfills are subject to the requirements of 40CFR60, Subpart CC, NSPS – Landfills. The requirements identified in the NSPS have been integrated into District Regulation 8 Rule 34. See Section J for discussion of the applicable requirements.

**I. CEQA**

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. Permit Handbook Chapter 34 deals with the permitting of internal combustion engines. A ministerial project is not considered discretionary, as defined by CEQA and therefore is not subject to CEQA review. There was no environmental impact report prepared for this project.

**J. Regulation 8, Rule 34**

Regulation 8 Rule 34 limits methane and organic compound emissions from landfill gas operations. The IC engine and associated piping will comply with Section 301.1 by having no leaks that exceed 1000 ppmv as methane. The applicant will demonstrate compliance with this limit by conducting

quarterly leak inspections of gas collection and emission control system components in accordance with Section 503.

A backup flare will be used at Newby Island for abatement when the IC engines which use the landfill gas for fuel are out of service. This flare (A-10) is in the control of GRS (plt 11670). Neither GRS nor IDCC are allowed to vent raw landfill gas to the atmosphere.

Destruction efficiencies from landfill gas combustion are addressed in 8-34-301.4 which states:

Effective July 1, 2002 the collected gases [must be] processed in an emission control system device, or series of devices, other than a flare, which reduces the amount of NMOC in the collected gases by at least 98 percent by weight or emits less than 120 ppm by volume of NMOC at the outlet, dry basis, expressed as methane, corrected to 3% oxygen.

Section 8-34-229 identifies the Administrator of this regulation as being the APCO. Further, this section states that the APCO can only approve alternatives to the test methods, standards, or work practices allowed by this Rule, where such authority has been granted in 40 CFR 60.750 et. Seq, such as in 40 CFR 60.752(b)(2)(i), 60.753(c) and (d).

40 CFR 60.752 (b)(2)(i) states in part

“...the owner or operator [of the landfill] shall submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year: ... (B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions...”

In accordance with this, SCS Engineers has submitted a Gas Collection and Control System (GCCS) Design Plan for Newby Island Sanitary Landfill (plt 9013, International Disposal Corporation of California, AKA BFI) at Milpitas which contains an alternative method for determining and monitoring the NMOC emissions from combustion of combined fuels in the IC engines at the San Jose Wastewater Treatment Plant. .

The proposal involves installing the following monitoring equipment:

- 1) Flowmeters on all fuels going into the fuel gas header for the IC engines.
- 2) Flowmeters on the fuel going into each engine.
- 3) Calorimeters or other monitoring devices for determining the heating value of fuel from all component fuel supply lines going into the fuel gas header for the IC engines.
- 4) Calorimeter on the combined fuel gas for the IC engines.
- 5) Oxygen monitors on engine exhaust lines.

Further, the proposal is for San Jose WWTP to use the inputs from the above monitoring devices to estimate the quantity of landfill gas/landfill gas borne post-combustion exhaust flow, as well as the quantity of digester gas/digester gas borne post-combustion exhaust flow and if applicable, similar parameters for natural gas combustion.

Based on the emission standards for landfill gas combustion (120 ppm NMOC at 3% oxygen, 8-34-301.4) and the NMOC standard for digester gas combustion (typically 250 ppm at 15% oxygen) the total allowable NMOC emissions will be calculated using individual fuel flowrates and calculated exhaust outputs from landfill gas and digester gas combustion. Summing the allowable NMOC emissions from the combustion of each fuel will result in the maximum allowable NMOC emission level for each engine in lb/day. This mass emission rate can be used to calculate the concentration of maximum allowable concentration of NMOC at 3% oxygen

The actual NMOC will be monitored according to methods specified in 8-34-601, recorded, converted to ppm NMOC at 3% oxygen and compared with the above allowable NMOC emissions level. Compliance with the NMOC standards will be achieved as long as the measured NMOC concentration is less than the allowable NMOC concentration. A source (engine) shall be considered to be in violation if the NMOC emissions measured by any of the referenced test methods exceed the maximum allowable NMOC as calculated by the above calculation procedure.

NMOC emissions shall be calculated by applying the testing sampling and evaluation procedures noted in Reg 8-34-601 to calculate emissions of NMOC from the respective engine exhaust.

The Appendix of the GCCS Design Plan provides details and sample calculations based on this alternative monitoring procedure.

This alternative monitoring procedure will be written into the operating conditions for the San Jose Wastewater Treatment Plant.

**K. Regulation 9, Rule 1**

Regulation 9, Rule 1 limits sulfur dioxide emissions. Section 301 limits ground level SO<sub>2</sub> concentrations at the facilities property line to no more than 0.5 ppm for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, and 0.05 ppm averaged over 24 hours. With the introduction of landfill gas into these engines, we do not expect any problems in meeting these limits.

Section 302 limits the sulfur dioxide concentration in any exhaust stream to no more than 300 ppm SO<sub>2</sub>, dry basis. This limit will not be exceeded and will continue to be written into the operating permit conditions.

**L. Regulation 9, Rule 2**

Regulation 9, Rule 2 limits the concentration of hydrogen sulfide (H<sub>2</sub>S) at the property line. H<sub>2</sub>S concentrations are higher in digester gas than in landfill gas. We would expect to continue to meet the ground-level concentration limits.

**M. Regulation 9, Rule 8**

These limits on Nox and CO will continue to be written into the operating conditions for the applicable combustion sources. Sources S-36, S-37 and S-54 were permitted after Reg 9-8 and represent BACT. Reg 9-8 is therefore not applicable for these sources.

**7. CONDITIONS**

Recommend the following condition revisions (see crossed out/underlined text) for the IC engine generators, S-4 – S-14, S-36, S-37, and S-54:

**Old Condition 10475**                      **New Condition No:**                      **17898**

For S-4, Stationary IC Engine, Plt E1, P&E  
S-5, Stationary IC Engine, Plt E2, P&E  
S-6, Stationary IC Engine, Plt E3, P&E  
S-7, Stationary IC Engine, Plt E5, P&E  
S-8, Stationary IC Engine, Plt E6, P&E

- 1) This engine shall be fired on natural gas, sewage sludge digester gas, landfill gas, diesel fuel, or any combination thereof.  
(Basis: Cumulative Increase)
- 2) NOx emissions, expressed as NO<sub>2</sub>, shall not exceed 140 ppmv NOx at 15% O<sub>2</sub>.  
(Basis: 9-8-301.2, 302.1)
- 3) CO emissions shall not exceed 2000 ppmv at 15% O<sub>2</sub>. (Basis: 9-8-301.3, 9-8-302.3)

- 4) ~~NMHC emissions shall not exceed 250 ppmv at 15% O<sub>2</sub>.  
NMOC emission Limits~~

a) Landfill Gas Combustion Operations: Effective  
July 1 2002, this source shall achieve a NMOC  
emission reduction from landfill gas combustion  
of at least 98% by weight or shall emit less than  
120 ppm by volume of NMOC, dry basis, as methane  
corrected to 3% oxygen. (Basis: Reg 8-34-301.4)

b) Digester Gas Combustion: NMOC concentration  
of engine exhaust from digester gas combustion  
shall not exceed 250 ppmv at 15% O<sub>2</sub>.  
(Basis: Cumulative Increase)

- 5) ~~District approved flowmeters, to measure fuel flow into the engine, shall be installed prior to any operation and  
maintained in good working order.~~

- 6) ~~Visible particulate emissions shall not exceed 0.5 on the Ringelmann chart.~~

- 5) Thermal Capacity Limitations: Total  
thermal throughput shall not exceed the  
following limits (Basis: Cumulative Increase)

S-4 9.1 MM Btu/hr  
S-5 9.1 MM Btu/hr  
S-6 9.1 MM Btu/hr  
S-7 20.9 MM Btu/hr  
S-8 20.9 MM Btu/hr

- 6) San Jose/Santa Clara WWTP shall not burn  
diesel fuel with a sulfur content in excess  
of 0.5% by weight.  
(Basis: BAAQMD Regulation 9-1-304)

To demonstrate compliance with this limit,  
every delivery of diesel oil received  
onsite shall be accompanied by a vendor  
certification of sulfur content or shall  
be tested for sulfur content using a  
District-approved method. The vendor  
certifications or lab results shall be  
maintained onsite for at least 5 years and  
shall be made available to the District  
upon request.  
(Basis: Regulation 2-6-409.2, 2-6-501)

- 7) Under no circumstances shall supplied landfill  
gas be vented to the atmosphere.  
(Basis: 8-34-301)



8) Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

- a) Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.
- b) Calorimeters of fuel gas mixture feed to engines.
- c) Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
- d) Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Reg 8-34)

~~8) The owner/operator shall ensure that an annual performance test is conducted on each engine in accordance with the District test procedures to demonstrate compliance with the NO<sub>x</sub>, CO, and NMHC limits required by parts 2, 3, and 4, respectively. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the annual source testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)~~

9) Key Operating Parameter

During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.

San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 4 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan. (Basis: 8-34-509)

10) Performance Testing to Demonstrate Compliance

a) Initial Compliance Testing: In order to demonstrate compliance with parts 2, 3, and 4, the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source. The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test. (Basis: BACT, Cumulative Increase, 8-34-301.2, 9-8-302.1, 9-8-302.3)

b) Ongoing Compliance Testing: The owner/operator shall ensure that a performance test is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NO<sub>x</sub>, CO, and NMOC limits required by parts 2, 3, and 4. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement for all pollutants except NMOC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)

c) NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test for NMOC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Reg 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

11) To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)

a. Monthly records of the quantity of gaseous fuels (therms) and distillate oil (gal) burned at this source.

b. Records of all landfill gas and digester gas methane content measurements.

c. Daily records of methane throughput to this source, summarized on a monthly basis.

d. Records of key emission control system operating parameter readings (as noted in Condition 9, above).

e. Records of all compliance demonstration test data.

f. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

**Condition 17736                      New Condition No:                      17899**

For S-9, Stationary IC Engine, Plt A3, Location SBB  
S-10, Stationary IC Engine, Plt A2, Location SBB  
S-11, Stationary IC Engine, Plt A1, Location SBB  
S-12, Stationary IC Engine, Plt B1, Location SBB  
S-13, Stationary IC Engine, Plt B2, Location SBB  
S-14, Stationary IC Engine, Plt B3, Location SBB

1) These engines shall be fired on natural gas, or sewage sludge digester gas, landfill gas, or any combination thereof.  
(Basis: Cumulative Increase)

2) NOx emissions, expressed as NO2, shall not exceed 140 ppmv NOx at 15% O2.  
(Basis: 9-8-301.2, 302.1)

3) CO emissions shall not exceed 2000 ppmv at 15% O2. (Basis: 9-8-301.3, 9-8-302.3)

4) ~~NMHC emissions shall not exceed 250 ppmv at 15% O2. (Basis: Cumulative Increase)~~  
NMOC emission Limits

a) Landfill Gas Combustion Operations: Effective July 1 2002, this source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen. (Basis: Reg 8-34-301.4)

~~b) Digester Gas Combustion: NMOC concentration of engine exhaust from digester gas combustion shall not exceed 250 ppmv at 15% O<sub>2</sub>. (Basis: Cumulative Increase)~~

~~5) District approved flowmeters, to measure fuel flow into the engine(s), shall be installed prior to any operation and maintained in good working order. (Basis: Cumulative Increase)~~

5) Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

S-9	19.9 MM Btu/hr
S-10	19.9 MM Btu/hr
S-11	19.9 MM Btu/hr
S-12	15.7 MM Btu/hr
S-13	15.7 MM Btu/hr
S-14	15.7 MM Btu/hr

~~6) Visible particulate emissions shall not exceed 0.5 on the Ringelmann chart.~~

~~6) Under no circumstances shall supplied landfill gas be vented to the atmosphere. (Basis: 8-34-301)~~

7) Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

- a) Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.
- b) Calorimeters of fuel gas mixture feed to engines.
- c) Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
- d) Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Reg 8-34)

~~8) The owner/operator shall ensure that an annual performance test is conducted on each engine in accordance with the District test procedures to demonstrate compliance with the NO<sub>x</sub>, CO, and NMHC limits required by parts 2, 3, and 4, respectively. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the annual source testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-400.2)~~

8) Key Operating Parameter

During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.

San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 4 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan.  
(Basis: 8-34-509)

9) Performance Testing to Demonstrate Compliance

a) Initial Compliance Testing: In order to demonstrate compliance with parts 2, 3, and 4, the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source.

The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test.

(Basis: BACT, Cumulative Increase, 8-34-301.2, 9-8-302.1, 9-8-302.3)

b) Ongoing Compliance Testing: The owner/operator shall ensure that a performance test is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NOx, CO, and NMOC limits required by parts 2, 3, and 4.

The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement for all pollutants except NMOC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6.  
(Basis: Regulation 2-6-409.2)

c) NMOC Emissions Testing to Demonstrate Compliance:

The owner/operator shall ensure that a performance test for NMOC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Reg 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

10) To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)

a. Monthly records of the quantity of gaseous fuels (therms) burned at this source.

b. Records of all landfill gas and digester gas methane content measurements.

c. Daily records of methane throughput to this source, summarized on a monthly basis.

d. Records of key emission control system operating parameter readings (as noted in Condition 8, above).

e. Records of all compliance demonstration test data.

f. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

**Condition 6065**                      **New Condition No:**                      **17900**

For S-36, Engine Generator 1 - Cogen Unit, Plt EG-2  
S-37, Engine Generator 2 - Cogen Unit, Plt EG-3  
S-38, Commercial Boiler #1, 12.5 MM Btu/hr  
S-39, Commercial Boiler #2, 12.5 MM Btu/hr

Conditions for S-36 and S-37

- 1) These engines shall be fired on natural gas, or sewage sludge digester gas, landfill gas, or any combination thereof. (Basis: Cumulative Increase)
- 2) Emissions of NOx shall not exceed 1.8 grams per hp-hr per engine. (Basis: BACT)
- 3) Emissions of CO shall not exceed 413.4 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)
- 4) Emissions of TSP shall not exceed 36.4 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)
- 5) NMOC Emission Limits
  - a) Daily Limit: Emissions of NMOC emissions shall not exceed 87.8 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)
  - b) Landfill Gas Combustion Operations: Effective July 1 2002, this source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen. (Basis: Reg 8-34-301.4)
- 6) Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)  
  
S-36    30 MM Btu/hr  
S-37    30 MM Btu/hr
- 7) Under no circumstances shall supplied landfill gas be vented to the atmosphere.  
(Basis: 8-34-301)

8) Monitoring Equipment

The following equipment shall be installed,  
and used to assist in demonstrating  
compliance with the NMOC emission standards  
and thermal capacity limitations:

- a) Flow meters on each gas supply line to  
determine relative component fuel gas flow  
to each engine.
- b) Calorimeters of fuel gas mixture feed to  
engines.
- c) Calorimeter or Gas Chromatograph on landfill  
gas feed to mixing station.
- d) Engine cylinder thermocouples & recording  
instruments.

The above equipment shall be maintained in  
good working order. (Basis: Reg 8-34)

9) Key Operating Parameter

During the initial period of landfill gas introduction  
into these sources, the owner/operator shall  
continuously monitor and record engine cylinder  
temperatures as a key operating parameter to  
ensure compliance with Reg 8-34-301.

San Jose/Santa Clara WWTP shall propose a  
monitoring approach for maintaining compliance  
with the NMOC limits of part 5 NMOC destruction  
efficiencies. The Administrator (BAAQMD) shall  
review the proposed monitoring approach  
and either approve or disapprove of the key  
operational parameter monitoring plan. Upon  
approval, the Administrator shall revise the  
operating conditions to include the key  
operational parameter monitoring plan.  
(Basis: 8-34-509)

10) Performance Testing to Demonstrate Compliance

- a) Initial Compliance Testing: In order to  
demonstrate compliance with parts 2, 3, 4, and 5  
the owner/operator of these sources shall  
conduct an initial compliance demonstration  
test on each of these sources within 120 days of  
the introduction of landfill gas into the source.  
The owner/operator shall notify the District's  
Source Test Section of the scheduled test  
dates at least seven days in advance. Upon  
completion of the source testing & analysis, the  
owner/operator shall submit all test results to  
the District's Compliance and Enforcement Division  
within 30 days of conducting the test.  
(Basis: BACT, Cumulative Increase, 8-34-301.2,  
9-8-302.1, 9-8-302.3)



b) Ongoing Compliance Testing: The owner/operator shall ensure that a performance test is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NOx, CO, and NMOC limits required by parts 2, 3, and 5. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement for all pollutants except NMOC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6.  
(Basis: Regulation 2-6-409.2)

c) NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test for NMOC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Reg 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.

The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).

Conditions for S-38 and S-39 (per boiler basis)

- 11) These boilers may be fired on natural gas only. (Basis: Cumulative Increase)
- 12) NOx emissions, expressed as NO2, shall not exceed 30 ppmv at 15% O2. (Basis: 9-7-301.1)
- 13) CO emissions shall not exceed 400 ppmv at 15% O2. (Basis: 9-7-301.2)
- 14) District approved flowmeters, to measure fuel flow into the boiler, shall be installed prior to any operation and maintained in good working order.  
(Basis: Reg 2-6-409.2)

15) Thermal Capacity Limitations: Total thermal throughput shall not exceed the following limits (Basis: Cumulative Increase)

S-38 12.5 MM Btu/hr  
S-39 12.5 MM Btu/hr

CONDITIONS for S-36, S-37, S-38, and S-39 Combined:

16) The combined emissions of NOx from S-36, S-37, S-38 and S-39 shall not exceed a total of 774 lb. in any consecutive 24 hour period.  
(Basis: BACT, Cumulative Increase)

17) The combined emissions of SO2 from S-36, S-37, S-38 and S-39 shall not exceed a total of 150 lb. in any consecutive 24 hour period.  
(Basis: Cumulative Increase)

~~14) The owner/operator shall ensure that an annual performance test is conducted on each engine or boiler in accordance with the District test procedures to demonstrate compliance with the NOx, CO, NMHC, SO2 and TSP limits (where applicable) as required by parts 2, 3, 4, 5, 8, 9, 12, and 13 respectively. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the annual source testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)~~

18) To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)

a. Monthly records of the quantity of gaseous fuels (therms) ~~and distillate oil (gal)~~ burned at this source.

b. Records of all landfill gas and digester gas methane content measurements.

c. Daily records of methane throughput to this source, summarized on a monthly basis.

d. Records of key emission control system operating parameter readings (as noted in Condition 9, above).

e. Records of all compliance demonstration test data.

bf. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained onsite for five years from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable District Regulations.

**Condition 8499**                      **New Condition No:                      17901**

For S-54 Engine Generator, 12 Cylinder Turbocharged  
LSVB, Plt EG-1

- 1) S-54 shall be fired on sewage sludge digester gas, natural gas, landfill gas, or a blend of ~~sewage sludge digester gas and natural gas~~, any of the above fuels, with a diesel pilot fuel. (Basis: Cumulative Increase)
- 2) Total thermal throughput shall not exceed 28.9 MM Btu/hr. (Basis: Cumulative Increase)
- 3) In the event of catastrophic damage to the natural gas fuel supply, the engine may be fired solely on sewage sludge digester gas or landfill gas, with a diesel pilot fuel, or solely on diesel fuel if insufficient sewage sludge digester gas or landfill gas exists. (Basis: Cumulative Increase)
- 4) San Jose/Santa Clara WWTP shall not burn diesel fuel with a sulfur content in excess of 0.5% by weight (Basis: BAAQMD Regulation 9-1-304).

To demonstrate compliance with this limit, every delivery of diesel fuel received onsite shall be accompanied by a vendor certification of sulfur content or shall be tested for sulfur content using a District-approved method. The vendor certifications or lab results shall be maintained onsite for at least 5 years and shall be made available to the District upon request. (Basis: Regulation 2-6-409.2, 2-6-501)

- 5) NOx emissions, calculated as NO2, shall not exceed 1.0 gram/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel or solely on sewage sludge digester gas or landfill gas, with a diesel pilot fuel. (Basis: BACT, Cumulative Increase)
- 6) CO emissions from S-54 shall not exceed 3.3 grams/bhp-hr. (Basis: BACT, Cumulative Increase)
- 7) ~~NMHC emissions from S-54 shall not exceed 0.80 grams/bhp-hr. (Basis: BACT, Cumulative Increase)~~  
NMOC Emission Limits

a) Digester Gas or Natural Gas Combustion: NMOC emissions derived from digester gas or natural gas combustion shall not exceed 0.80 grams/bhp-hr. (Basis: BACT, Cumulative Increase)

- b) Landfill Gas Combustion Operations: Effective July 1 2002, this source shall achieve a NMOC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 120 ppm by volume of NMOC, dry basis, as methane corrected to 3% oxygen. (Basis: Reg 8-34-301.4)
- 8) ~~SO<sub>2</sub> emissions from S-54 shall not exceed 0.20 grams/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel or solely on sewage sludge digester gas with a diesel pilot fuel. (Basis: Cumulative Increase)~~
- 8) Particulate emissions from S-54 shall not exceed 0.085 grams/bhp-hr, except in the event of catastrophic damage to the natural gas fuel supply, when the engine may be fired solely on diesel fuel or solely on sewage sludge digester gas, or landfill gas, with a diesel pilot fuel. (Basis: Cumulative Increase)
- 9) The total release of emissions from S-54 shall not exceed the following amounts in any consecutive 365 day period:
- |                 |            |                             |
|-----------------|------------|-----------------------------|
| NOx             | 36.2 tons  | (BACT, Cumulative Increase) |
| CO              | 119.4 tons | (BACT, PSD)                 |
| NMOC            | 28.9 tons  | (BACT, Cumulative Increase) |
| PM10            | 3.1 tons   | (Cumulative Increase)       |
| SO <sub>2</sub> | 7.2 tons   | (Cumulative Increase)       |
- 10) Visible particulate emissions from S-54 shall not exceed Ringelmann 1.0. (Basis: Regulation 6-301)
- ~~11) A District approved flowmeter to measure fuel flow into S-54 shall be installed and maintained. (Basis: Regulation 1-441)~~
- 11) Under no circumstances shall supplied landfill gas be vented to the atmosphere. (Basis: 8-34-301)

12) Monitoring Equipment

The following equipment shall be installed, and used to assist in demonstrating compliance with the NMOC emission standards and thermal capacity limitations:

- a) Flow meters on each gas supply line to determine relative component fuel gas flow to each engine.
- b) Calorimeters of fuel gas mixture feed to engines.
- c) Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
- d) Engine cylinder thermocouples & recording instruments.

The above equipment shall be maintained in good working order. (Basis: Reg 8-34)

~~13) The owner/operator shall ensure that an annual performance test is conducted on this engine in accordance with the District test procedures to demonstrate compliance with the NO<sub>x</sub>, CO, NMHC, SO<sub>2</sub> and TSP limits as required by parts 5, 6, 7, 8, 9, and 10 respectively. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the annual source testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)~~

13) Key Operating Parameter

During the initial period of landfill gas introduction into these sources, the owner/operator shall continuously monitor and record engine cylinder temperatures as a key operating parameter to ensure compliance with Reg 8-34-301.

San Jose/Santa Clara WWTP shall propose a monitoring approach for maintaining compliance with the NMOC limits of part 7 NMOC destruction efficiencies. The Administrator (BAAQMD) shall review the proposed monitoring approach and either approve or disapprove of the key operational parameter monitoring plan. Upon approval, the Administrator shall revise the operating conditions to include the key operational parameter monitoring plan. (Basis: 8-34-509)

14) Performance Testing to Demonstrate Compliance

a) Initial Compliance Testing: In order to demonstrate compliance with parts 5, 6, 7, 8, and 9, the owner/operator of these sources shall conduct an initial compliance demonstration test on each of these sources within 120 days of the introduction of landfill gas into the source. The owner/operator shall notify the District's Source Test Section of the scheduled test dates at least seven days in advance. Upon completion of the source testing & analysis, the owner/operator shall submit all test results to the District's Compliance and Enforcement Division within 30 days of conducting the test. (Basis: BACT, Cumulative Increase, 8-34-301.2, 9-8-302.1, 9-8-302.3)

- b) NO<sub>x</sub>, CO, TSP Testing: The owner/operator shall ensure that a performance test is conducted on this engine at a frequency of not less than once every 8760 hrs of engine operation after the previous performance test. The performance test shall be conducted in accordance with District test procedures to demonstrate compliance with the NO<sub>x</sub>, CO, and TSP limits required by parts 5, 6, 8 and 9, respectively. The owner/operator may submit an alternative monitoring plan to the District for approval. If the alternative monitoring plan is approved, the plan shall supersede the above 8760 hour source testing requirement. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)
- c) NMOC Emissions Testing to Demonstrate Compliance: The owner/operator shall ensure that a performance test is conducted on this engine at a frequency of not less than once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMOC emissions shall be conducted in accordance with the methods and test specifications identified in Reg 8-34-412 and shall determine NMOC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMOC emission levels.
- The maximum allowable ppmv concentration of NMOC at 3 percent oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (operated by International Disposal Corporation of California, plant 9013), Section 4.9 (1). The actual ppmv concentration of NMOC emissions at 3% oxygen shall be calculated according to the procedure presented in the Gas Collection and Control System (GCCS) Design Plan for Newby Island Landfill (IDCC, plant 9013), Section 4.9 (2).
- 15) To determine compliance with the above conditions, the Permit Holder shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions. (Basis: Regulation 2-6-409.2)
- a. Daily records of the hours of operation and horsepower or kilowatt output of S-54.
  - b. Monthly records of the quantity of gaseous fuels (therms) and distillate oil (gal) burned at this source.
  - c. Records of all landfill gas and digester gas methane content measurements.
  - d. Daily records of methane throughput to this source, summarized on a monthly basis.
  - e. Records of key emission control system operating

Permit Evaluation and Statement of Basis: A0778, San Jose/Santa Clara Water Pollution Control,  
700 Los Esteros Road, San Jose, CA 95134

parameter readings (as noted in Condition 13, above).

f. Records of all compliance demonstration test data.

g. Monthly records shall be totaled for  
each consecutive 12-month period.

All records shall be retained onsite for five  
years from the date of entry, and made available  
for inspection by District staff upon request.  
These recordkeeping requirements do not replace  
the recordkeeping requirements contained in any  
applicable District Regulations.

by:

\_\_\_\_\_  
Randy E. Frazier, P.E.  
23 May 2001



**ENGINEERING EVALUATION REPORT**

<b>PLANT NAME</b>	<b>San Jose/Santa Clara Water Pollution Control Plant</b>
<b>APPLICATION NUMBER</b>	<b>2656</b>
<b>PLANT NUMBER</b>	<b>A0778</b>
<b>DATE</b>	<b>15 August 2001</b>

**1. BACKGROUND**

San Jose/Santa Clara Water Pollution Control Plant has applied for Permits to Operate for the following diesel fired internal combustion engine:

- S-55 Emergency Genset, Detroit Diesel, 500 KW
- S-56 Emergency Genset, Detroit Diesel, 250 KW
- S-57 Emergency Genset, Cummins Diesel, 500 KW
- S-58 Emergency Pump, Diesel Powered, Gorman, 110 HP
- S-59 Emergency Air Compressor, Diesel Powered, John Deere, 119 HP
- S-60 Emergency Pump, Diesel Powered, John Deere, 80 HP
- S-61 Emergency Genset, Diesel Fired, Deutz, 107 HP, Equip #8401
- S-62 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22309
- S-63 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22316
- S-64 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22311
- S-65 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22310

All of these engines were excluded from District permitting requirements since they were used for emergency standby power generation only according to Regulation 1-110.2 (10/7/98). Since Regulation 2-1 was revised in May of 2000 and again in August of 2001, the exclusions or exemptions no longer apply to these diesel engines. The engines will be permitted to operate as emergency engines only – with 200 hours of use for reliability purposes (since these engines are used for an essential public service.

This exclusion has been eliminated in the latest version of regulations 1 and 2. Standby engine generators with power curtailment contracts with PG&E no longer qualify for any exclusions or exemptions from permit requirements. See Regulation 2-1-114.2.3.2

**2. EMISSION CALCULATIONS**

Emissions will not be calculated per se, but emission factors will be presented. Sulfur dioxide emissions will be estimates based on an engine operating 100 hours per year, burning 104 gal/hr.

***No specific emissions factors were provided by the applicant for these engines. Factors will be taken from AP-42, Chapter 3.3 (Diesel engines up to 600 hp)***

**For Diesel Engines Smaller than 600 HP**

- **NOx**      **4.41 lb/MM Btu (Uncontrolled, AP-42, Table 3.3-1)**
- **CO**        **0.95 lb/MM Btu (AP-42, Table 3.3-1)**
- **POC**      **0.36 lb/MM Btu (AP-42, Table 3.3-1)**
- **PM**        **0.31 Lb/MM Btu (AP-42, Table 3.3-1)**
- **SO<sub>2</sub>**      **0.044 lb/MM Btu (calc shown below, sulfur in diesel is 500 ppm max)**

SO<sub>2</sub> Factor: Diesel Usage = [100 hr/yr][104 gal/hr] = 10,400 gal  
 Annual SO<sub>2</sub> = [10,400 gal/yr][6.11 lb/gal][500 # S/1E6 # diesel]  
 [mole S/32.06 # S][mole SO<sub>2</sub>/mole S][64.1 lb SO<sub>2</sub>/mole] = 63.5 lb/yr SO<sub>2</sub>

Emission Factor = [63.5 lb/yr]/[[10,400 gal][0.140 MM Btu/gal]] = 0.044 lb/MM Btu  
 Factor Conversion: [4.41 lb NOx/MM Btu][140 MM Btu/M gal] = 617.4 lb/m gal

#### 4. CUMULATIVE EMISSIONS

Not applicable since emissions from sources subject to a loss of exemption permit are excluded from the cumulative increase at their facility.

#### 4. PERMIT REQUIREMENTS/DISCUSSION OF EXEMPTION

There are no exemptions which apply to this source.

#### 5. OFFSETS

BACT and Offsets are not required because this source is not a new or modified source.

#### 6. TOXIC RISK ASSESSMENT

The toxic risk assessment only applies to new and modified sources. Since these IC engines are not new or modified sources (all existing standby emergency operations engines), no risk evaluation is necessary.

#### 7. STATEMENT OF COMPLIANCE

These engines are subject to the requirements of Regulation 6 "Particulate Matter and Visible Emissions" and Regulation 9, Rule 1 "Inorganic Gaseous Pollutants – Sulfur Dioxide".

##### Particulate Matter and Visible Emissions

BAAQMD Regulation 6-310 limit PM emissions to 0.15 gr/dscf. If it is assumed that the diesel engine exhaust gases contain 15% excess oxygen under normal operating conditions, the Regulation 6-310 limit can be compared to the AP-42 emission factor:

From 40 CFR part 60, Appendix 1, Method 19 (Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates), a stoichiometric dry gas combustion factor of 9,190 dscf/MMBtu is given for distillate oil combustion (Table 19-1). At 15% excess O<sub>2</sub> this factor becomes:

$$[9,190 \text{ dscf/MMBtu}] \times [21\% / (21\% - 15\%)] = 32,165 \text{ dscf (combustion products)/MMBtu diesel}$$

The conversion of 0.15 gr/dscf @ 15% O<sub>2</sub> to lb/MMBtu becomes:

$$[0.15 \text{ gr/dscf}] \times [1\text{lb}/7000 \text{ gr}] \times [32,165 \text{ dscf/MMBtu}] = 0.689 \text{ lb/MMBtu}$$

The estimated particulate emission factor of 0.31 lb/MM Btu is less than 0.689 lb/MMBtu, therefore we conclude these sources will be in compliance with the Reg 6-310 limit.

Compliance with the Ringelmann 1.0 limit specified in Regulation 6-301 can be demonstrated by visual observation.

##### SO<sub>2</sub> Emissions

Regulation 9-1-304 requires all liquid fuels to have a sulfur content less than 0.5% (wt basis). vendor fuel sulfur content certifications will be required and used to ensure ongoing compliance with this limit. However, the California standard for diesel is 500 ppm or 0.05%. The Reg 9-1-304 standard will be met.

##### Other Requirements

PSD, NSPA, and NESHAPs do not apply. This application is exempt from the requirements of a CEQA Review per Regulation 2-1-312.4, loss of exemption permitting.

#### 8. CONDITIONS

Recommend the following permit conditions for sources S-55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66.

1. Hours of Operation

The emergency standby engine shall only be operated to mitigate emergency conditions or for reliability-related activities. Operation for reliability-related activities shall not exceed 200 hours in any calendar year. Operation while mitigating emergency conditions is unlimited. (Basis: Reg 9-8-330)

2. Emergency Conditions is defined as any of the following:  
(Basis: Reg 9-8-231)

- a. Loss of regular natural gas supply.
- b. Failure of regular power supply.
- c. Flood mitigation.
- d. Sewage overflow mitigation.
- e. Fire.
- f. Failure of a primary motor, but only for such time as needed to repair or replace the primary motor.

3. Reliability-related activities is defined as any of the following: (Basis: Reg 9-8-232)

- a. Operation of an emergency standby engine to test its ability to perform for an emergency use, or
- b. Operation of an emergency standby engine during maintenance of a primary motor.

4. The emergency standby engine shall be equipped with either a) a non-resettable totalizing meter that measures and records the hours of operation for the engine, or b) a non-resettable fuel usage meter.  
(Basis: Reg 9-8-530)

5. Records

The following monthly records shall be maintained in a District-approved log for at least 2 years and shall be made available for District inspection upon request. (Basis: Reg 9-8-530, 1-441)

- a. Total hours of operation.
- b. Hours of operation under emergency conditions and a description of the nature of each emergency condition.
- c. Fuel usage.

**8. RECOMMENDATIONS**

It is recommended that Permits to Operate be issued to San Jose Santa Clara Water Pollution Control Plant for the following emergency standby diesel engines:

**Source List**

- S-55 Emergency Genset, Detroit Diesel, 500 KW**
- S-56 Emergency Genset, Detroit Diesel, 250 KW**
- S-57 Emergency Genset, Cummins Diesel, 500 KW**
- S-58 Emergency Pump, Diesel Powered, Gorman, 110 HP**
- S-59 Emergency Air Compressor, Diesel Powered, John Deere, 119 HP**
- S-60 Emergency Pump, Diesel Powered, John Deere, 80 HP**
- S-61 Emergency Genset, Diesel Fired, Deutz, 107 HP, Equip #8401**
- S-62 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22309**
- S-63 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22316**
- S-64 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22311**
- S-65 Emergency Pump, Diesel Fired, Mudcat, 235 HP, Equip #22310**

**Condition #** 18212

by: \_\_\_\_\_  
Randy E. Frazier, P.E.  
15 August 2001

**ENGINEERING EVALUATION**  
**San Jose/Santa Clara Water Pollution Control**  
**Application Number 14260; Plant Number 778**

**BACKGROUND**

San Jose/Santa Clara Water Pollution Control has applied for permits to operate six existing diesel engine (S-211 through S-216), which were previously exempt by the District. The engines have been in operating before 2001, when the Regulation 2-1 was amended to no longer exempt engines less than 250 HP. As such, S-211 through S-216 constitutes Loss-Of-Exemption sources not subject to Regulations 2-1-301 or 2-1-302 (“new” and “modified sources”).

S-211	CH&E 6” Trash Pump, # 22317, John Deere, Model 4045DF150, 80 HP
S-212	10” Gorman Rupp Trash Pump # 22312, Detroit, Model 1043-7100, 120 HP
S-213	4” Gorman Rupp Trash Pump # 22314, Dewtz, Model F4L912, 62 HP
S-214	IR Portable Air Compressor # 22107, Dewtz, Model F6L912, 109 HP
S-215	IR Portable Air Compressor # 22104, Dewtz, Model F6L912, 109 HP
S-216	CH&E 6” Trash Pump, # 22306, John Deere, Model 4045DF150, 80 HP

**EMISSIONS**

Emissions from S-211 through S-216 do not need to be calculated since S-211 through S-216 are not new or modified sources.

**CUMULATIVE INCREASE**

Emissions from S-211 through S-216 do not count towards the facility’s cumulative increase since they are not new or modified sources.

**BACT**

Since S-211 through S-216 are loss-of-exemption sources, they are not subject to BACT requirements pursuant to Regulation 2-2-301.

**OFFSETS**

Offsets are not required because S-211 through S-216 are not new or modified sources pursuant to Regulation 2-2-302.

**TOXIC RISK SCREEN ANALYSIS**

A Toxic Risk Screen Analysis is not required for the sources since S-211 through S-216 are not new or modified sources and not subject to Regulation 2-1-316.

**STATEMENT OF COMPLIANCE**

S-211 through S-216 are loss-of-exemption standby generator installed before September 1, 2001 and therefore not subject to Regulations 9-8-301, 9-8-302, and 9-8-502. S-211 through S-216 are subject to the monitoring and record keeping procedures described in Regulation 9-8-530, the SO<sub>2</sub> limitations of Regulation 9-1-302 (ground level concentration) and 9-1-304 (0.5% by weight in fuel), and the Ringelmann No. 2 limitations of Regulation 6-303(emissions opacity limitations). Requirements for Regulation 9-8-530 are included in the proposed permit conditions. Compliance with Regulation 9-1-302 and Regulation 9-1-304 is likely since California law mandates using diesel fuel with a 0.05% by weight sulfur. Because the requirements of the Airborne Toxic Control Measure (ATCM) are more stringent than Regulation 9-8 hourly limitations, S-211 through S-216 shall each be subject to the 20 hour per year limit of the ATCM by choice of the facility.

Per Regulation 6, Section 303, a person shall not emit for a period or periods aggregating more than three minutes in any hour, a visible emission that is as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, nor shall said emission, as perceived by an opacity sensing device in good working order, where such device is required by District regulations, be equal to or greater than 40% opacity. Properly maintained engines will comply with this requirement.

This application is considered to be ministerial under the District's CEQA guidelines (Regulation 2-1-313) and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.3.

The sources (S-211 through S-216) are not defined as a new or modified source and are therefore not subject to the public notification requirements of Regulation 2-1-412. In addition, they are not within 500 feet of any school. As a result, it is not restricted to operating during school hours.

A toxic risk screening analysis is not required.

BACT, PSD, NSPS, and NESHAPS are not triggered.

**PERMIT CONDITIONS**

I recommend that S-211 through S-216 be subject to the following conditions: (Condition # 22820)

COND# 22820 -----

1. Operating for reliability-related activities is limited to 20 hours per year per engine.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(B)(3) or Regulation 2-5]

2. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3)] or (e)(2)(B)(3)]

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection(e)(4)(G)(1)]

4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
- a. Hours of operation for reliability-related activities (maintenance and testing).
  - b. Hours of operation for emission testing to show compliance with emission limits.
  - c. Hours of operation (emergency).
  - d. For each emergency, the nature of the emergency condition.
  - e. Fuel usage for each engine(s).

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(I), (or, Regulation 2-6-501)]

5. At School and Near-School Operation:

If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:

The owner or operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds).
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

"School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(1)] or (e)(2)(B)(2)]

End of Conditions

## **RECOMMENDATION**

Waive Authority to Construct and issue a Permit to Operate to City of Burlingame Wastewater Treatment Facility for:

Permit Evaluation and Statement of Basis: A0778, San Jose/Santa Clara Water Pollution Control,  
700 Los Esteros Road, San Jose, CA 95134

- S-211 CH&E 6" Trash Pump, # 22317, John Deere, Model 4045DF150, 80 HP
- S-212 10" Gorman Rupp Trash Pump # 22312, Detroit, Model 1043-7100, 120 HP
- S-213 4" Gorman Rupp Trash Pump # 22314, Dewtz, Model F4L912, 62 HP
- S-214 IR Portable Air Compressor # 22107, Dewtz, Model F6L912, 109 HP
- S-215 IR Portable Air Compressor # 22104, Dewtz, Model F6L912, 109 HP
- S-216 CH&E 6" Trash Pump, # 22306, John Deere, Model 4045DF150, 80 HP

MCL:mcl

BY:

\_\_\_\_\_  
M.K. Carol Lee  
Senior Air Quality Engineer

\_\_\_\_\_  
Date

|



**ENGINEERING EVALUATION**  
**San Jose/Santa Clara Water Pollution Control**  
**Application Number 14946; Plant Number 778**

**BACKGROUND**

San Jose/Santa Clara Water Pollution Control has applied for an administrative change to their permits to operate the following permitted diesel engines:

S-58	4" Gorman Rupp Trash Pump 22305 Diesel Engine, 59 HP
S-60	CH&E 6" Trash Pump 22304 Diesel Engine, 80 HP
S-61	Pump 22315 Diesel Engine, 62 HP
S-62	Mudcat Booster Pump # 22309 Diesel Engine, 235 HP
S-63	Mudcat Booster Pump # 22316 Diesel Engine, 235 HP
S-64	Mudcat Booster Pump # 22311 Diesel Engine, 235 HP
S-65	Mudcat Booster Pump # 22310 Diesel Engine, 235 HP

In 2001, they were permitted as loss-of-exemption emergency engines in Application # 2656. However, the facility now indicates that the above-described engines were permitted erroneously as "emergency" engines. These engines were rather operated at will depending on the facilities need to dewater drying beds and sludge lagoons or to drain various tanks and wells that require maintenance.

The facility has requested that the engines be "repermitted" as loss-of-exemption non-emergency engines. The engines have been in operating before 2001, when the Regulation 2-1 was amended to no longer exempt engines less than 250 HP. As such, S-58, S-60, S-61, S-62, S-63, S-64, and S-65 constitutes Loss-Of-Exemption sources not subject to Regulations 2-1-301 or 2-1-302 ("new" and "modified sources") and not subject to the requirements of Regulation 9-8 because they are all less than 250 HP and not for emergency use.

Sources S-55, S-56, S-57, S-59, which were also permitted, as part of Application # 2656 remain unchanged because they are emergency use engines. However, the permit conditions for these sources (S-55, S-56, S-57, and S-59) shall be amended to reflect the ATCM requirements for stationary emergency use engines.

**EMISSIONS**

Emissions from S-58, S-60, S-61, S-62, S-63, S-64, and S-65 do not need to be calculated since they are not new or modified sources.

**CUMULATIVE INCREASE**

Emissions from S-58, S-60, S-61, S-62, S-63, S-64, and S-65 do not count towards the facility's cumulative increase since they are not new or modified sources.

**BACT**

Since S-58, S-60, S-61, S-62, S-63, S-64, and S-65 are loss-of-exemption sources, they are not subject to BACT requirements pursuant to Regulation 2-2-301.

**OFFSETS**

Offsets are not required because S-58, S-60, S-61, S-62, S-63, S-64, and S-65 are not new or modified sources pursuant to Regulation 2-2-302.

**TOXIC RISK SCREEN ANALYSIS**

A Toxic Risk Screen Analysis is not required for the sources since S-58, S-60, S-61, S-62, S-63, S-64, and S-65 are not new or modified sources and not subject to Regulation 2-1-316.

**STATEMENT OF COMPLIANCE**

S-58, S-60, S-61, S-62, S-63, S-64, and S-65 are loss-of-exemption diesel engines installed before September 1, 2001. Sources S-58, S-60, S-61, S-62, S-63, S-64, and S-65 are subject to the SO2 limitations of Regulation 9-1-302 (ground level concentration) and 9-1-304 (0.5% by weight in fuel), and the Ringelmann No. 2 limitations of Regulation 6-303(emissions opacity limitations). Compliance with Regulation 9-1-302 and Regulation 9-1-304 is likely since California law mandates using diesel fuel with a 0.05% by weight sulfur. In addition, they are not subject to the requirements of Regulation 9-8 because they are all less than 250 HP and not for emergency use.

Per Regulation 6, Section 303, a person shall not emit for a period or periods aggregating more than three minutes in any hour, a visible emission that is as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, nor shall said emission, as perceived by an opacity sensing device in good working order, where such device is required by District regulations, be equal to or greater than 40% opacity. Properly maintained engines will comply with this requirement.

Because the engines meet the definition of "portable" by Airborne Toxic Control Measure (ATCM) for portable engines, the engines shall be subject to the requirements of the ATCM for portable diesel engines. The permit conditions for these sources shall require compliance with the portable diesel engine ATCM.

This application is considered to be ministerial under the District's CEQA guidelines (Regulation 2-1-313) and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.3.1.

The sources (S-58, S-60, S-61, S-62, S-63, S-64, and S-65) are not defined as a new or modified source and are therefore not subject to the public notification requirements of Regulation 2-1-412. In addition, they are not within 500 feet of any school. As a result, it is not restricted to operating during school hours.

A toxic risk screening analysis is not required.

BACT, PSD, NSPS, and NESHAPS are not triggered.

**PERMIT CONDITIONS**

I recommend that Condition # 18212 be archived. I recommend the following conditions for S-58, S-60, S-61, S-62, S-63, S-64, and S-65:

1. The owner/operator of Sources S-58, S-60, S-61, S-62, S-63, S-64, and S-65 shall comply with the requirements of the Airborne Toxic Control Measure for portable diesel engines when operating these portable diesel engines. [basis: ATCM for Portable Diesel Engines]
2. By January 1, 2010, the owner/operator shall either surrender the permit(s) to operate or obtain certification that Sources S-58, S-60, S-61, S-62, S-63, S-64, and S-65 meets a federal or California standard for newly manufactured nonroad engine pursuant to 40 CFR Part 89 or Title 13 of the California Code of Regulations. [basis: ATCM for Portable Diesel Engines, Section 93116.3 (b)(1)(A)]

I recommend that Sources S-55, S-56, S-57, S-59 be subject to Condition # 22820 (instead of Condition # 18212) to reflect the ATCM requirements for stationary emergency use engines:

COND# 22820 -----

1. Operating for reliability-related activities is limited to 20 hours per year per engine.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(B)(3) or Regulation 2-5]

2. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3)] or (e)(2)(B)(3)]

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection(e)(4)(G)(1)]

4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
  - a. Hours of operation for reliability-related activities (maintenance and testing).
  - b. Hours of operation for emission testing to show compliance with emission limits.
  - c. Hours of operation (emergency).
  - d. For each emergency, the nature of the emergency condition.
  - e. Fuel usage for each engine(s).

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(I), (or, Regulation 2-6-501)]

5. At School and Near-School Operation:  
If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:

The owner or operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency

use, including maintenance and testing, during the following periods:

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds).
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

"School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(1)] or (e)(2)(B)(2)]  
End of Conditions

### RECOMMENDATION

Waive Authority to Construct and issue an amended Permit to Operate to San Jose/Santa Clara Water Pollution Control:

- S-58 4" Gorman Rupp Trash Pump 22305 Diesel Engine, 59 HP
- S-60 CH&E 6" Trash Pump 22304 Diesel Engine, 80 HP
- S-61 Pump 22315 Diesel Engine, 62 HP
- S-62 Mudcat Booster Pump # 22309 Diesel Engine, 235 HP
- S-63 Mudcat Booster Pump # 22316 Diesel Engine, 235 HP
- S-64 Mudcat Booster Pump # 22311 Diesel Engine, 235 HP
- S-65 Mudcat Booster Pump # 22310 Diesel Engine, 235 HP

MCL:mcl

**BY:**

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**M.K. Carol Lee**  
**Senior Air Quality Engineer**

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**Date**