

**Bay Area Air Quality Management District**

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**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

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San Jose, CA 95134

Application Engineer: Simrun Dhoot

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Application: 24035

November 2016

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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) more than 100 tons per year of the following regulated air pollutants: oxides of nitrogen, carbon monoxide, and volatile organic compounds.

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.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of the Major Facility Review permit and determined that they are still valid and correct. This review included an analysis of applicability determinations for all sources, including those that have been modified or permitted since the issuance of the last renewal Major Facility Review Permit. The review also included an assessment of all monitoring in the permit for sufficiency to determine compliance. The statement of basis documents for permit revisions that have occurred since the initial Major Facility Review permit was issued are hereby incorporated by reference and are available upon request.

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. The permit was renewed on June 26, 2007. This application is for the second permit renewal. Although the current permit expired on June 25, 2012, it continues in force until the District takes final action on the permit renewal. The standard sections 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.

Since the last renewal, the San Jose/Santa Clara Water Pollution Control Plant has submitted a number of District New Source review (NSR) applications listed in the table below. See Appendix D for the copies of the engineering evaluations.

**Table 1. Summary of Title V Revision/District NSR Applications**

District NSR Application #	Project Description	Outcome
16541	Replaced burners in S-38 and S-39 boilers to meet the new NOx standard in Regulation 9, Rule 7.	<b>PO issued for alteration (8/27/07)</b> <ul style="list-style-type: none"> <li>• S-38 and S-39</li> </ul>
17627	Replaced existing permitted S-64 and S-65 engines with S-218 and S-219 portable engines used for pumping sludge.	<b>PO issued for new sources (11/06/08)</b> <ul style="list-style-type: none"> <li>• S-218 and S-219</li> </ul> <b>Cancelled sources (11/06/2008)</b> <ul style="list-style-type: none"> <li>• S-64 and S-65</li> </ul>

<b>District NSR Application #</b>	<b>Project Description</b>	<b>Outcome</b>
17754	Raise CO emissions for S-36 and S-37 to 546 lb/day to maintain compliance with the 2012 NOx standard.	<b>Change of Conditions (5/19/08)</b> • 17900
20275	Install gasoline dispensing island.	<b>PO issued for new sources (11/19/12)</b> • S-26
23011	Permitted new diesel generator set: Perkins, 274 Hp.	<b>PO issued for new source (2/25/13)</b> • S-66
23356	Increase heat input for existing engines S-5 to S-7, S-9 to S-14, S-36, S-37, and S-54 by 10% and concurrently reduce emission limits for each engine.	<b>Change of Conditions (2/19/14)</b> • 17898, 17899, 17900, and 17901

## 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 produced by 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 boilers, emergency standby diesel generator sets, digester gas emergency flares, and cogeneration engine generators.

The criteria pollutant emissions from the combustion processes, specifically the NOx and CO, have the potential to emit more than 100 tons per year; hence, San Jose/Santa Clara Water Pollution Control Plant needs to obtain a Federal Title V Major Facility Permit. There has been no significant change in emissions since the issuance of the last renewal 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 Evaluation and Statement of Basis: Site A0778, San Jose/Santa Clara Water Pollution Control Plant, 700 Los Esteros Road, San Jose, CA 95134

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 monitoring periods and the District's address in Standard Condition 1.F have been updated. The method of submitting compliance information in Standard Condition 1.G has been updated. Standard Condition 1.K has been deleted because the facility removed gaseous chlorine and SO<sub>2</sub> from the site in 2011. The facility uses aqueous ammonia with a concentration of less than 20%. Therefore, the facility is not subject to 40 CFR 68, Chemical Accident Prevention Provisions.

## **II. Equipment**

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24).

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

Exempt sources are those sources that are exempt from major facility review permitting pursuant to the requirements of BAAQMD Regulation 2, Rule 6: Permits, Major Facility Review. Registered portable engines and non-road engines are exempt from BAAQMD Regulation 2, Rule 6 pursuant to BAAQMD Regulation 2-6-113 and 2-6-114, respectively, even though these engines may be required to have a BAAQMD permit to operate pursuant to BAAQMD Regulation 2, Rule 1: Permits, General Requirements.

Significant sources are those sources that have a potential to emit more than 2 tons per year of a "regulated air pollutant" (as defined in BAAQMD Rule 2-6-222) or 400 pounds per year of a "hazardous air pollutant" (as defined in BAAQMD Rule 2-6-210).

The District has reviewed the operations at San Jose/Santa Clara Water Pollution Control Facility and concluded that there are no sources at this facility that are exempt from District permit requirements 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. The equipment list has been revised to clarify the equipment names or description to remove portions of the description that are obsolete.

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 current Title V permit was modified on 2/17/09 and the permit proposal date:

*Devices Removed from Service or Archived since current permit was modified on 2/17/09:*

<b>S-#</b>	<b>Description</b>
S-4	Stationary IC Cogen Engine, E1 (digester gas, landfill gas, natural gas, diesel)
S-6	Stationary IC Engine, E3 (digester gas, landfill gas, natural gas, diesel)
S-8	Stationary IC Cogen Engine, E6 (digester gas, landfill gas, natural gas, diesel)
S-58	I C Engine (diesel)
S-59	I C Engine (diesel)
S-60	I C Engine (diesel)
S-61	I C Engine (diesel)
S-62	I C Engine (diesel)
S-63	I C Engine (diesel)
S-64	I C Engine (diesel)
S-65	I C Engine (diesel)
S-211	CH&E 6" Trash Pump, # 22317 (diesel)
S-212	10" Gorman Rupp Trash Pump # 22312 (diesel)
S-213	4" Gorman Rupp Trash Pump # 22314 (diesel)
S-214	IR Air Compressor # 22107 (diesel)
S-215	IR Air Compressor # 22104 (diesel)
S-216	CH&E 6" Trash Pump, # 22306 (diesel)

*Devices Permitted Since Application was submitted:*

<b>S-#</b>	<b>Description</b>
S-66	Emergency IC Engine, (diesel)

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

<b>S-#</b>	<b>Description</b>
S-218	LWT BOOSTER Pump Portable Diesel Engine (City ID # 26701)
S-219	LWT BOOSTER Pump Portable Diesel Engine (City ID # 26702)

### ***Corrections to Devices Shown in Application***

“Emergency” and/or “4-Stroke, Lean Burn” labels were added to source description of S-5, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37, S-54, S-55, S-56, and S-57 for clarity.

The description of S-38 and S-39, Boilers, has been changed to delete digester gas from the allowable fuels to reflect the permit condition #17900.

Table II C that lists permitted sources that are exempt from Title V was added to the permit.

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

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

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered “significant sources” as defined in BAAQMD Rule 2-6-239.

#### Changes to permit:

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

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

- BAAQMD Regulation 6, Particulate Matter and Visible Emissions has been designated as SIP Regulation 6, since the rule has been renamed and renumbered as Regulation 6, Rule 1, Particulate Matter, General Provisions.
- SIP Regulation 8, Rule 40
- SIP Regulation 8, Rule 47

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

- BAAQMD Regulation 5
- SIP Regulation 8, Rule 2
- SIP Regulation 8, Rule 47
- EPA Regulation 40 CFR 82

The description for the following has been changed:

- Subpart F, 40 CFR 82.156
- Subpart F, 40 CFR 82.161
- Subpart F, 40 CFR 82.166

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

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

The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally

enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.

- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

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

***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 potential to emit estimates for HAPs submitted by the SJ/SC Water Pollution Control Plant on September 9, 2015 and July 1, 2016. The first estimate was for HAP emissions emitted by combustion sources and the second was for HAP emissions emitted by the wastewater sources. The District concludes that the Plant is not a major source for a single HAP or for a combination of HAPs. The HAP with the highest emissions is methylene chloride, emitting at 2.4 tpy – significantly less than 10 tpy. The combined HAP emissions are 7.25 tpy, far less than 25 tpy. Neither of the thresholds for a major source of HAP is exceeded. The potential to emit estimates are attached in Appendix A.

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. Therefore, San Jose/Santa Clara Water Pollution Control Facility is not subject to 40 CFR 63, Subpart VVV - National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works.

Digester Gas Combustion, Applicable Regulation 8 Rule 34: 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 B) to estimate the NMOC potential emissions from digester gas. The use of NMOC potential emissions 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 B, 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 a 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:** Compliance assurance monitoring (CAM) is applicable when there is emission control device used to achieve compliance with a federally enforceable emissions limit and the unabated emission exceeds 100 tons per year. The applicability of 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 B, 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 B 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.

**NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE):**

The existing stationary RICE S-5, S-7, S-9 through S-14, S-36, S-37, and S-54 through S-57 are subject to the Code of Federal Regulation, Title 40, Part 63, subpart ZZZZ – NESHAP for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Per 40 CFR 63.6590(a)(1)(iii), the subpart ZZZZ applies to existing stationary RICE located at an area source of HAP emissions. The listed engines are considered “existing” because the construction or reconstruction was commenced before 6/12/06. Therefore, the engines are subject to Subpart ZZZZ.

S-5, S-6, S-7, and S-54 can be fired on gasoline fuel or diesel fuel and could be subject to the standards for compression ignition engines, which are more stringent than those for spark ignition engines. However, section 63.6675 defines engines that use less than 2% diesel as spark ignition engines. The definition is quoted below. The facility has agreed to limit use of diesel fuel at these engines to less than 2% per year. The definition and a limit has been added to Tables VII-A and VII-H.

“Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.”

Sandblasting Operation, Applicable Regulation 12 Rule 4: The sandblasting operations of S-52 occur outside on items greater than eight feet long. ARB certified steel or iron shot/grit is used exclusively. Such operations are subject to the provisions of Regulation 12, Rule 4. Regulation 6 does not apply per 6-1-110: Exemption, Temporary Sandblasting Operations.

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:

BAAQMD Regulation 6, Particulate Matter and Visible Emissions has been designated as SIP Regulation 6, since the rule has been renamed and renumbered as Regulation 6, Rule 1, Particulate Matter, General Provisions.

Table IV-G was updated to include Regulation 12, Rule 4, which is also a SIP rule. Regulation 6 and SIP Regulation 6 were deleted.

Table IV-J was deleted because the sources were deleted. A new Table IV-J was added for source S-66, Emergency Generator.

Table IV-L was updated to include SIP Regulation 8, Rule 2 and -2-301.

Table IV-M was deleted because the sources were portable engines that are not subject to Major Facility Review (Title V).

S-5, S-7, S-9 through S-14, S-36, S-37, S-54 through S-57, Stationary RICE

Specific requirements enforced by 40 CFR 63, subpart ZZZZ, were added to tables of affected sources in Section IV. Citations which apply to CI engines that are subject to emission limits or emission reduction requirements were initially added but subsequently removed from Table IV-A and Table IV-H. S-5, S-7, and S-54 combust 10% or more biogas, therefore, they are not subject to emissions limits or emission reduction requirements. S-5, S-7, and S-54 do not have crankcases, therefore, Section 63.6625(g) does not apply. 40 CFR Part 63, Subpart ZZZZ, Table 6, Part 10 or 11 was mistakenly added to Table IV-E. It was removed since the engines are fired on at least 10% biogas.

S-5, S-7, and S-54, Stationary RICE

Added the following requirements from Regulation 9, Rule 8, Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines:

- 9-8-306, Requirements for Dual Fuel Pilot Compression-Ignited Engines
- 9-8-502.2, Records of fuel usage

S-9 through S-14, S-36 and S-37, Stationary RICE

Deleted the following recordkeeping requirement from Regulation 9, Rule 8, Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines:

- 9-8-502, Records

There are no recordkeeping requirements in the rule unless the engines burn diesel fuel.

S-100, S-110, S-120, S-140, S-150, S-160, S-170, S-180, S-190, S-200, Wastewater Sources

Added non-federally enforceable requirement, BAAQMD Regulation 9, Rule 2, Hydrogen Sulfide because hydrogen sulfide may be emitted by these sources.

S-26, Gasoline Dispensing Facility

Conditions 18680 and 24298 have been added pursuant to Application 20275.

S-36, S-37, Cogen Units

40 CFR Part 63, Subpart ZZZZ, Table 6, Part 10 or 11 was mistakenly added to Table IV-E. It was removed since the engines are fired on at least 10% biogas. Condition 17900, Part 6 were revised by permit to daily thermal throughput limits.

S-38, S-39, Boilers

The Regulation 9, Rule 7, NOx limit in Table VII-F was changed from 30 to 15 ppmv @ 3% O<sub>2</sub>, because the boilers only burn natural gas. Accordingly, the citation was changed from 9-7-307.9 to 9-7-307.3.

S-66, Emergency IC Engine

S-66 is subject to 93115.6(b)(3)(A)2.b which provides for a limit on the annual maintenance and testing hours of 50 or less. This limit is included in Permit Condition No. 22820.

## **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.”

Initially, it was determined that the facility did not comply with the requirements of 40 CFR 63.6603(a) Table 2d, Part 3 for non-emergency, non-black CI stationary RICE > 500 HP. The engines falling in this category were S-5, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37, and S-54. The responsible official for San Jose/Santa Clara Water Pollution Control Facility submitted a signed Certification Statement form dated January 1, 2016. On this form, the responsible official certified that the following statement is true:

Based on information and belief formed after reasonable inquiry, the source(s) identified in the Schedule of Compliance application form that is(are) not in compliance with the applicable requirement(s) will comply in accordance with the attached compliance plan schedule.

However, in an email dated May 9, 2016, the facility agreed to operate the affected non-emergency engines with a diesel pilot fuel heat input of 2% or less of the total engine heat input. Therefore, the existing engines are categorized as SI engines and the requirements of 40 CFR 63.6603(a) Table 2d, Part 3 do not apply. Instead, the engines are subject to oil and filter change, spark plug inspection, and belt inspection work practice standards of 40 CFR 63.6603(a) Table 2d, Part 13 since the engines combust digester gas in excess of 10% of the gross heat input on an annual basis. The Certification Statement was disregarded due to the change described.

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 requirements have 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 that are obsolete or that have no regulatory basis have been deleted from the permit.

Conditions have also been deleted due to the following:

- The equipment has been taken out of service or is exempt.

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

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

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

Many conditions were reworded to include “owner/operator” to ensure legal accountability in the case of a violation.

Changes to permit:

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.
58, 60, 61, 62, 63, 64, 65	23208	None (shutdown)
218, 219	24188	None (exempt)

Condition # 23208 for source S-58, and S-60 through S-65

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

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

**Condition # 24188 for sources S-218 and S-219**

This condition was archived because portable engines are exempt from BAAQMD Regulation 2, Rule 6 pursuant to Regulation 2-6-113 and 2-6-114.

**Condition # 18680 and #24298 for sources S-26**

These conditions were added from NSR Application #20275.

**Condition #17898, #17899, #17900, and #17901 for sources S-5, S-6, S-7, S-9 through S-14, S-36 through S-39, and S-54**

These conditions were revised in NSR Application #23356. The older versions were removed and replaced.

Condition 17898 was also modified in this action because S-6 was removed from service.

The basis for parts 2 and 3 in Conditions 17898 and 17899 were changed from Regulation 9, Rule 8, to “cumulative increase” because the limits are no longer in Regulation 9, Rule 8.

**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 a 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 requirements 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>
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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	Regulation 9-7-307.9 (multiple fuels)	Heat-input weighted average limit	BAAQMD Condition #17900 Part 19 and 20
S-39, Commercial Boiler	Regulation 9-7-307.9 (multiple fuels)	Heat-input weighted average limit	BAAQMD Condition #17900 Part 19 and 20

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
<u>S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, S-54, Digester Gas Engines</u>	<u>Regulation 9-8-301.2 (natural gas)</u>	<u>65 ppm @ 15% O2, dry</u>	<u>Quarterly monitoring with portable analyzer, annual source test</u>
<u>S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, S-54, Digester Gas Engines</u>	<u>Regulation 9-8-302.2 (multiple fuels)</u>	<u>70 ppm @ 15% O2, dry</u>	<u>Quarterly monitoring with portable analyzer, annual source test</u>
<u>S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, S-54, Digester Gas Engines</u>	<u>SIP Regulation 9-8-301.2 (multiple fuels)</u>	<u>140 ppm @ 15% O2, dry</u>	<u>Annual source test</u>
<u>S-5, S-7, Digester Gas Engines</u>	<u>Condition 17898, Part 2</u>	<u>126 ppm @ 15% O2, dry</u>	<u>Annual source test</u>
<u>S-9, S-10, S-11, S-12, S-13 &amp; S-14, Digester Gas Engines</u>	<u>Condition 17899, Part 2</u>	<u>126 ppm @ 15% O2, dry</u>	<u>Annual source test</u>
<u>S-36, S-37, Digester Gas Engines</u>	<u>Condition 17900, Part 2</u>	<u>1.6 g/bhp-hr</u>	<u>Annual source test</u>
<u>S-36, S-37, Digester Gas Engines, S-39, S-38, Commercial Boilers</u>	<u>Condition 17900, Part 16</u>	<u>774 lb/24 hr combined emissions from S-36, S-37, S-38, S-39</u>	<u>Records</u>
<u>S-54, Digester Gas Engine</u>	<u>Condition 17901, Part 2</u>	<u>0.9 g/bhp-hr</u>	<u>Annual source test</u>

<u>S# &amp; Description</u>	<u>Emission Limit Citation</u>	<u>Federally Enforceable Emission Limit</u>	<u>Monitoring</u>
<u>S-54, Digester Gas Engine</u>	<u>Condition 17901, Part 9</u>	<u>36.2 tpy</u>	<u>Records</u>
<u>S-39, S-38, Commercial Boilers</u>	<u>Regulation 9-7-307.3</u>	<u>15 ppm @ 3% O<sub>2</sub></u>	<u>Annual Source Test</u>

**NOx Discussion:**

The monitoring is adequate for all sources with NOx limits.

CO Sources

<u>S# &amp; Description</u>	<u>Emission Limit Citation</u>	<u>Federally Enforceable Emission Limit</u>	<u>Monitoring</u>
<u>S-38, S-39, Commercial Boiler</u>	<u>Regulation 9-7-307.9</u>	<u>400 ppmv, dry at 3% O<sub>2</sub></u>	<u>BAAQMD Condition #17900 Part 19 and 20</u>

<u>S# &amp; Description</u>	<u>Emission Limit Citation</u>	<u>Federally Enforceable Emission Limit</u>	<u>Monitoring</u>
<u>S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, S-54, Digester Gas Engines</u>	<u>Regulation 9-8-301.3 and 9-8-302.3; SIP Regulation 9-8-301.3 and 9-8-302.3</u>	<u>2000 ppm @ 15% O<sub>2</sub>, dry</u>	<u>Quarterly monitoring with portable analyzer, annual source test</u>
<u>S-5, S-7, Digester Gas Engines</u>	<u>Condition 17898, Part 3</u>	<u>1800 ppm @ 15% O<sub>2</sub>, dry</u>	<u>Annual source test</u>
<u>S-9, S-10, S-11, S-12, S-13 &amp; S-14, Digester Gas Engines</u>	<u>Condition 17899, Part 3</u>	<u>1620 ppm @ 15% O<sub>2</sub>, dry</u>	<u>Annual source test</u>
<u>S-36, S-37, Digester Gas Engines</u>	<u>Condition 17900, Part 3</u>	<u>546 lb/24 hr period</u>	<u>Annual source test</u>
<u>S-54, Digester Gas Engine</u>	<u>Condition 17901, Part 6</u>	<u>2.97 g/bhp-hr</u>	<u>Annual source test</u>
<u>S-54, Digester Gas Engine</u>	<u>Condition 17901, Part 9</u>	<u>119.4 tpy</u>	<u>Records</u>
<u>S-38, S-39, Commercial Boiler</u>	<u>Regulation 9-7-307.9 &amp; SIP Regulation 9-7-301.2</u>	<u>400 ppmv, dry at 3% O<sub>2</sub></u>	<u>Annual Source Test</u>

**CO Discussion:**

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

The monitoring is adequate for all sources with CO limits.

**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-5, S-7, 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-66 Emergency Standby 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-38, Commercial Boiler; S-39, Commercial Boiler; S-55, S-56, S-57, S-66 Emergency Standby Diesel Engines	BAAQMD 9-1-302	300 ppm (dry)	Monitoring of digester gas sulfur content
S-55, S-56, S-57, S-66 Emergency Standby Diesel Engines	BAAQMD 9-1-304	Sulfur content of fuel < 0.5% by weight	None
S-36, Engine Generator 1; S-37, Engine Generator 2; S-38, Commercial Boiler; S-39, Commercial Boiler;	BAAQMD Condition # 17900 Part 17	150 lbs/24 hr combined emissions from S-36, S-37, S-38, and S-39	Records

<u>S# &amp; Description</u>	<u>Emission Limit Citation</u>	<u>Federally Enforceable Emission Limit</u>	<u>Monitoring</u>
<u>S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, Engines, S-38, S-39, Boilers; S-54, S-55, S-56, S-57, S-66 Engines</u>	<u>BAAQMD 9-1-301</u>	<u>Ground level concentrations of SO2 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</u>	<u>None</u>
<u>S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, Engines; S-38, S-39, Boilers</u>	<u>BAAQMD 9-1-302</u>	<u>300 ppm (dry)</u>	<u>Monitoring of digester gas sulfur content</u>
<u>S-55, S-56, S-57, S-66 Emergency Standby Diesel Engines</u>	<u>BAAQMD 9-1-304</u>	<u>Sulfur content of fuel &lt; 0.5% by weight</u>	<u>None</u>
<u>S-36, S-37, Engines, S-38, S-39, Boilers</u>	<u>BAAQMD Condition # 17900 Part 17</u>	<u>150 lbs/24 hr combined emissions from S-36, S-37, S-38, and S-39</u>	<u>Records</u>
<u>S-5, S-7, Digester Gas Engines</u>	<u>Condition 17898, Part 2</u>	<u>Sulfur content of fuel &lt; 0.0015% by weight</u>	<u>Certification of diesel sulfur content</u>
<u>S-54, Digester Gas Engine</u>	<u>Condition 17901, Part 4</u>	<u>Sulfur content of fuel &lt; 0.0015% by weight</u>	<u>Certification of diesel sulfur content</u>
<u>S-54, Digester Gas Engine</u>	<u>Condition 17901, Part 9</u>	<u>7.2 tpy SO2</u>	<u>Records</u>

**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 burning sources are exempt).

Gaseous Fueled Engines, S-5, S-7, S-9 through S-14, S-36, S-37, and S-54:

The SO<sub>2</sub> concentration depends on the sulfur content of the fuel. Pipeline natural gas is limited to 5 grains/100 scf, which is about 140 ppm, so the burning of natural gas cannot cause an exceedance of the standard.

The digester gas has a limit of 350 ppm sulfur. Since the sulfur is diluted during combustion, this concentration cannot cause an exceedance of the standard.

The diesel fuel that is burned together with natural gas and landfill gas has a sulfur content of 15 ppm.

Any landfill gas that is burned would come from the Republic Services Vasco Road, Facility A5095. The landfill gas is limited to an average of 350 ppm sulfur by BAAQMD Condition #818, part 12. Therefore, burning of landfill gas cause an exceedance of the standard.

Because none of these fuels could cause an exceedance of the standard, no additional monitoring is required.

Hence, monitoring of the diesel engines (S-55, S-56, S-57, S-66), 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-5 through S-7, S-54, S-55 through S-57, and S-66) will be fired exclusively with CARB-certified diesel fuel with a sulfur content of 0.0015 wt. percent. Hence, compliance with 0.5 wt% sulfur standard of Regulation 9-1-304 is expected.

PM Sources

<b># &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-5, S-7, S-9, S-10, S-11, S-12, S-13 & S-14, <del>Stationary Internal Combustion Engines;</del> S-36, <del>Engine Generator 1;</del> S-37, <del>Engines, Generator 2;</del> S-38, <del>Commercial Boiler;</del> S-39, <del>Commercial Boilers;</del> S-54, <del>Engine Generator</del>	BAAQMD Regulation 6-1-301	Ringelmann 1.0	None
<del>S-52, Sandblast Operations</del>	<del>BAAQMD Regulation 6-1-301</del>	<del>Ringelmann 1.0</del>	
S-55, S-56, S-57, S-66, Emergency Diesel Engines	BAAQMD Regulation 6-1-303	Ringelmann 2.0	None, operated infrequently

PM Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-5, S-7, 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; <del>S-38, Commercial Boiler; S-39, Commercial Boiler;</del> S-54, Engine Generator; <del>S-55, S-56, S-57, S-66 Emergency Diesel Engines</del>	BAAQMD Regulation 6-1-310	0.15 gr/dscf <del>at 6% O<sub>2</sub></del>	None, <del>operated</del> <del>infrequently</del>
<del>S-55, S-56, S-57, S-66 Emergency Diesel Engines</del>	<del>BAAQMD Regulation 6-1-310</del>	<del>0.15 gr/dscf</del>	<del>None, operated infrequently</del>
<del>S-38, S-39, Commercial Boilers Engine Generator 1; S-37, Engine Generator 2;</del>	<del>BAAQMD Regulation 6-1-310.3</del>	<del>0.15 gr/dscf at 6% O<sub>2</sub></del>	<del>None</del>
<del>S-52, Sandblast Operations</del>	<del>BAAQMD Regulation 6-1-311</del>	<del>For process Throughput, P&lt;57,320 lb/hr, The emission Limit (E, pound/hr) is: E = 0.026 * P<sup>0.67</sup> For P&gt;57,320 lb/hr, E=40 pounds/hr</del>	
<del>S-52, Sandblast Operations</del>	<del>BAAQMD Regulation 12-4-301</del>	<del>Ringelmann 1.0</del>	<del>None</del>
S-36, Engine Generator 1 S-37, Engine Generator 2	Condition # 17900, Part 4	36.4 lb <u>PM<sub>10</sub></u> /24 hr period <u>per engine</u>	Condition # 17900 Part 10.b (annual source test)
S-54, Engine Generator	Condition # 17901, Part 10	> Ringelmann 1.0 for no more than 3 min in any hour	None
S-54, Engine Generator	<u>Condition #17901, part 8</u>	<u>0.068 g/bhp-hr</u>	<u>Annual source test</u>

PM Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-54, Engine Generator	<u>Condition #17902, Part 9</u>	<u>3.1 tpy PM10</u>	<u>Records</u>

**PM Discussion:**

BAAQMD Regulation 6 “Particulate Matter and Visible Emissions”

Visible Emissions

BAAQMD Regulation 6-1-301 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 IC Engines (S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37) and Boilers (S-38, S-39). Since there is no gaseous fuel derived visible emissions expected, periodic monitoring to ensure compliance with Regulation 6-1-301 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. Engines (S-5 through S-7 and S-54) that have capability of firing diesel must run on diesel fuel containing no more than 15 ppm sulfur, by weight. Therefore, the diesel engines are not expected to exceed the standard.

BAAQMD Regulation 6-1-303 limits visible emissions to no darker than 2.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Sources S-55, S-56, S-57 and S-66 are fired exclusively on diesel fuel and are subject to the Regulation 6-1-303 limitation. These engines must run on diesel fuel containing no more than 15 ppm sulfur, by weight. Therefore, the diesel engines are not expected to exceed the standard.

Particulate Weight Limitation

BAAQMD Regulation 6-1-310 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-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37) and Boilers (S-38, S-39): There are no sources burning gaseous fuel (natural gas, landfill gas, digester gas) exclusively that would be expected to have emissions near this limitation. On a routine basis, there are no sources, which could approach the limit of 6-1-310, since only gaseous fuels are typically combusted.

The only sources that could potentially exceed these limits are the standby diesel generators. S-55, S-56, S-57, and S-66 would be operated as emergency backup generators in the event of an emergency. Engines (S-5 and S-7) fire diesel fuel only when natural gas, digester gas, or landfill gas is insufficient. S-54 uses diesel fuel as pilot fuel. Therefore, 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 grain loading is less than 1/2 of the standard. 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 6-1-310.

General Operations

In addition to the limitation of Section 6-1-310, according to 6-1-311 a person shall not discharge into the atmosphere from any general operation particulate matter from any emission point, at a rate in excess of that specified in Table 1 for the process weight rate indicated.

Allowable Rate of Emissions Based on Process Weight Rate

S-36 and S-37 have 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.

BAAQMD Regulation 12 “Miscellaneous Standards of Performance – Sandblasting”

Visible Emissions

BAAQMD Regulation 12-4-301 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). Pursuant to California Health & Safety Code 41905, the standards shall be statewide, and no rule or regulation of any district that is applicable to sandblasting operations shall be stricter or less strict than the standards adopted by the state board pursuant to the recommendation of the committee. The facility is required to and maintains that they follow Title 17 of the California Code of Regulations for abrasive blasting. Therefore, there are no monitoring requirements for S-52.

**POC [NMOC] Sources**

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-5, S-7, S-9, S-10, S-11, S-12, S-13, S-14, <del>Stationary Internal Combustion Engine</del> ; S-36, <del>Engine Generator 1</del> ; S-37, Engines <del>Generator 2</del> ; S-38, S-39, <del>Commercial Boilers</del> ; S-54, <del>Engine Generator</del> ; 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
<del>S-5, S-7, S-9, S-10, S-11, S-12, S-13 &amp; S-14, S-36, S-37, Engines</del>	<del>BAAQMD 8-34-301.4</del>	<del>98% by weight or greater reduction efficiency, or emit less than 120 ppm by volume of NMHC at the outlet</del>	<del>Annual Source Test</del>
<del>S-5, S-7, Digester Gas Engines</del>	<del>Condition 17898, Part 4a</del>	<del>98% by weight or greater reduction efficiency, or emit less than 108 ppm by volume of NMHC at the outlet</del>	<del>Annual Source Test</del>
<del>S-9, S-10, S-11, S-12, S-13 &amp; S-14, Engines</del>	<del>Condition 17899, Part 4a</del>	<del>98% by weight or greater reduction efficiency, or emit less than 108 ppm by volume of NMHC at the outlet</del>	<del>Annual Source Test</del>

**POC [NMOC] Sources**

<b><u>S# &amp; Description</u></b>	<b><u>Emission Limit Citation</u></b>	<b><u>Federally Enforceable Emission Limit</u></b>	<b><u>Monitoring</u></b>
<u>S-36, S-37, Engines</u>	<u>Condition 17899, Part 4a</u>	<u>98% by weight or greater reduction efficiency, or emit less than 120 ppm by volume of NMHC at the outlet</u>	<u>Annual Source Test</u>
<u>S-5, S-7, Digester Gas Engines</u>	<u>Condition 17898, Part 4b</u>	<u>225 ppmv @ 15% O2, dry when burning digester gas</u>	<u>Annual Source Test</u>
<u>S-9, S-10, S-11, S-12, S-13 &amp; S-14, Engines</u>	<u>Condition 17899, Part 4b</u>	<u>225 ppmv @ 15% O2, dry, when burning digester gas</u>	<u>Annual Source Test</u>
<u>S-36, S-37, Engines</u>	<u>Condition 17900, Part 5a</u>	<u>87.8 lb/24 hr period per engine</u>	<u>Annual Source Test</u>
<u>S-36, S-37, Engines</u>	<u>Condition 17900, Part 5b</u>	<u>98% by weight or greater reduction efficiency, or emit less than 108 ppm by volume of NMHC at the outlet</u>	<u>Annual Source Test</u>
<u>S-54, Engine</u>	<u>Condition 17901, Part 7a</u>	<u>0.72 g/bhp-hr</u>	<u>Annual Source Test</u>
<u>S-54, Engine</u>	<u>Condition 17901, Part 7b</u>	<u>98% by weight or greater reduction efficiency, or emit less than 108 ppm by volume of NMHC at the outlet</u>	<u>Annual Source Test</u>
<u>S-54, Engine</u>	<u>Condition 17901, Part 9</u>	<u>28.9 tpy</u>	<u>Records</u>
<u>S-15, Paint Spray Booth, S16, Paint Staging Building</u>	<u>BAAQMD 8-19-301.1</u>	<u>Baked coating: 2.3 lb/gal</u>	<u>Recordkeeping</u>
<u>S-15, Paint Spray Booth, S16, Paint Staging Building</u>	<u>BAAQMD 8-19-301.1</u>	<u>Air dried coating: 2.8 lb/gal</u>	<u>Recordkeeping</u>

**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, diesel fuel and digester gas (trace amounts) and the precursor organics that may result from the wastewater processes.

Combustion POC Sources (S-5, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37, S-38, S-39, and S-54): Annual source tests are imposed for these combustion sources. Test results indicate that the emissions from each source are far below 15 lbs/day and 300 ppm. Therefore, monitoring of POC emissions are not required for these sources.

Below is a past test result for each source:

Sources	Outlet Emissions		Test Date	Report No.
	lb/day	ppm		
S-5		<25	2/4/2010	10158
S-7		<100	2/17/2011	11141
S-9		51	4/20/2010	10221
S-10		52	11/29/2011	12080
S-11		14	12/16/2009	10118
S-12		16	4/25/2012	12154
S-13		<100	6/21/2011	11241
S-14		189	7/26/2011	12013
S-36		<100	1/20/2011	11121
S-37		<25	9/17/2009	10045
S-38*		0.053	4/27/2008	09178
S-39		0.053	4/27/2008	09178
S-54		<100	9/29/2010	11059

\*The test result for S-38 refers to the one for S-39 since they are identical boilers.

Wastewater POC Sources (S-100, S110, S120, S-140, S-150, S-160, S170, S-180, S-190, and S-200): 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:

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

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 citations of BAAQMD Regulation 6, Particulate Matter, were changed to show that it is now Regulation 6, Rule 1 and that it is no longer SIP-approved. SIP Regulation 1, Particulate Matter, was added.

Tables VII-A, VII-B, Table VII-E, and VII-H were amended to reflect changes in the limits for NOx, CO, and NMHC based on Application 23356.

Tables VII-A, VII-B, Table VII-E, and VII-H were amended to lower NOx limits in Regulation 9, Rule 8, Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines. The Key Parameters were modified to add clarifying language to the limit.

S-4, S-6, and S-8 were deleted from Table VII-A.

Time units added to Table VII-C and Table VII-D to clarify requirements.

Table VII-E was amended to clarify that the permit condition for mass emissions of CO, PM10, and NMHC per 24 hour period is on a per engine basis.

In Table VII-E, the name of the pollutant referred to by Condition 17900, part 4, was corrected from FP (filterable particulate) to PM10.

In Tables VII-A, B, E, G, H, and I, the FP limit in Regulation 6-1-310 was corrected from 0.15 g/dscf @ 6% O<sub>2</sub>, to 0.15 gr/dscf because the sources are not heat transfer operations.

In Table VII-H, the name of the pollutant referred to by Condition 17901, part 8, was corrected from FP (filterable particulate) to PM10.

The heat input limits were added to Table VII-H.

The diesel sulfur content in Conditions 17898 and 17901 in Tables VII-A and VII-H, respectively, was lowered from 0.5% to 0.0015%.

The Regulation 9, Rule 7, NO<sub>x</sub> limit in Table VII-F was changed from 30 to 15 ppmv @ 3% O<sub>2</sub>, because the boilers only burn natural gas. Accordingly, the citation was changed to 9-7-307.3.

S-59, and S-211 through S-216 were deleted from Table VII-I.

Table VII-J was deleted because the sources were deleted. A new Table VII-J was added for source S-66, Emergency Generator.

Regulation 9, Rule 2, Hydrogen Sulfide, was added where appropriate.

Table VII-M was deleted because the sources were portable engines that are not subject to Major Facility Review (Title V).

#### S-5, S-7, and S-54, Stationary RICE

Added the following requirements from Regulation 9, Rule 8, Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines:

- 9-8-306, Requirements for Dual Fuel Pilot Compression-Ignited Engines
- 9-8-502.2, Records of fuel usage

Section 9-8-306 imposes a limit on diesel fuel of 5% of total usage.

### **VIII. Test Methods**

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

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

### **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.

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

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. Therefore, this permit has no streamlining.

**X. Glossary**

This section contains terms that may be unfamiliar to the general public or EPA.

**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**

The San Jose/Santa Clara Water Pollution Control Plant certifies compliance on an annual basis by September 1<sup>st</sup> of each year. There is no change in compliance.

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

Following are the differences in the equipment list between the time that the current Title V permit was renewed on June 26, 2007 and the permit proposal date:

Changes to permit:

<b>District NSR Application #</b>	<b>Project Description</b>	<b>Outcome</b>
16541	Replaced burners in S-38 and S-39 boilers to meet the new NOx standard in Regulation 9, Rule 7.	<b>PO issued for alteration (8/27/07)</b> • S-38 and S-39
17627	Replaced existing permitted S-64 and S-65 engines with S-218 and S-219 portable engines used for pumping sludge.	<b>PO issued for new sources (11/06/08)</b> • S-218 and S-219 <b>Cancelled sources (11/06/2008)</b> • S-64 and S-65
17754	Raise CO emissions for S-36 and S-37 to 546 lb/day to maintain compliance with the 2012 NOx standard.	<b>Change of Conditions (5/19/08)</b> • 17900
20275	Install gasoline dispensing island.	<b>PO issued for new sources (11/19/12)</b> • S-26
23011	Permitted new diesel generator set: Perkins, 274 Hp.	<b>PO issued for new source (2/25/13)</b> • S-66

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23356	Increase heat input for existing engines S-5 to S-7, S-9 to S-14, S-36, S-37, and S-54 by 10% and concurrently reduce emission limits for each engine.	<b>Change of Conditions (2/19/14)</b> <ul style="list-style-type: none"><li>• 17898, 17899, 17900, and 17901</li></ul>
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## APPENDIX A

### HAZARDOUS AIR POLLUTANT EMISSIONS

Total Stationary HAP PTE Emissions

HAPs	Tons/year
Acetaldehyde	0.01
Acrolein	0.11
Acrylonitrile	0.20
Benzene	0.04
Biphenyl	0.04
Bromoform	0.00
1,3-Butadiene	0.07
Carbon Tetrachloride	0.01
Chlorobenzene	0.01
Chloroform	1.01
1,4-Dichlorobenzene	0.00
1,1-Dichloroethylene	0.00
1,1-Dichloroethane	0.00
Cis-1,3-Dichloropropene	0.00
Trans-1,3-Dichloropropene	0.30
Ethylbenzene	0.11
Ethylene Dibromide	0.01
Formaldehyde	0.07
Hexane	0.22
Methanol	0.47
Methylene Chloride	2.40
2-Methylnaphthalene	0.01
1,1,2,2-Tetrachloroethane	0.01
Toluene	0.75
1,1,1-Trichloroethane	0.00
1,1,2-Trichloroethane	0.01
Trichloroethylene	0.00
2,2,4-Trimethylpentane	0.05
Xylenes	1.33
<b>Total</b>	<b>7.25</b>

## APPENDIX B

### NMOC EMISSION CALCULATIONS

#### 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

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

## **APPENDIX C**

### **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

**CAM**

Compliance Assurance Monitoring per 40 CFR Part 64

**CAPCOA**

California Air Pollution Control Officers Association

**CEM**

Continuous Emission Monitor

**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

**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.

**IC**

Internal Combustion

**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 and POC)

**NMOC**

Non-methane Organic Compounds (Same as NMHC and POC)

**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 (Same as NMHC and NMOC)

**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.

**PTE**

Potential to Emit as defined by BAAQMD Regulation 2-6-218

**RICE**

Reciprocating internal combustion engine

**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

**TSP**

Total Suspended Particulate

**VOC**

Volatile Organic Compounds

**Units of Measure:**

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cu. ft.	=	cubic foot
cfm	=	cubic feet per minute
dscf	=	dry standard cubic foot
dscfm	=	dry standard cubic foot per minute
g	=	gram
gal	=	gallon
gpm	=	gallons per minute
gr	=	grain
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inch
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
tpy	=	tons per year
yr	=	year

## **APPENDIX D**

### **ENGINEERING EVALUATION APPLICATION 16541**

## EVALUATION REPORT

**Company**    **San Jose/Santa Clara Water Pollution Control**    **Application #**  
**16541**    **Plant #**    **778**

### 1. Background:

San Jose/Santa Clara Water Pollution Control has applied for an alteration to the following permitted source:

**S-38 Commercial Boiler # 1, 12.5 MMBTU/hr (burner replacement)**  
**S-39 Commercial Boiler # 2, 12.5 MMBTU/hr (burner replacement)**

San Jose/Santa Clara Water Pollution Control will replace the current burners with the exact same firing rate burners. They are replacing the burners in anticipation of the new standards proposed in Regulation 9, Rule 7, which have an effective date of January 1, 2012 for the subject boilers to meet a NO<sub>x</sub> limit of 15 ppmv at 3% O<sub>2</sub> (compared to the current standard of 30 ppmv) and a CO limit of 400 ppmv at 3% O<sub>2</sub> (no change). According to the manufacturer's specifications, the proposed new burners are expected to have a NO<sub>x</sub> emission rate between sub-9 and 12 ppm.

### 2. Emission Calculations:

The proposed project is the replacement of burners. The new burner has the same capacity as the old burner and will be operated at or below 12.5 MMBTU/hr. The Title V permit specifies the maximum capacity of S-38 and S-39 as 12.5 MMBTU/hr each. There will be no increase in permitted usage at this source or in upstream or downstream sources. As a result, there will be no change in emissions.

### 3. Statement of Compliance:

The Boilers (S-38 and S-39) are subject to and in compliance with Regulation 9-7. This proposed replacement meets the definition of an alteration, per Regulation 2-1-233. Because there are no emissions increase expected from any criteria pollutant, Best Available Control Technology (BACT) review and offsets are not triggered.

Regulation 10 - New Source Performance Standard and Regulation 11 - Hazardous Pollutants requirements are not triggered. This application is ministerial (permit handbook chapter 2.1). As a result, CEQA is not triggered.

The facility is not located within 1000 feet of any school. Hence, public noticing requirements are also not triggered.

### 4. Conditions:

No change is recommended for Condition # 17900.

**5. Authority to Construct:**

I recommend that the Authority to Construct be issued to San Jose/Santa Clara Water Pollution Control for the following:

- ALTERATION OF S-38 Replacement of Burner with Power Flame Burner, Model # NVC7-G-30, 12.5 MMBTU/hr**
- ALTERATION OF S-39 Replacement of Burner with Power Flame Burner, Model # NVC7-G-30, 12.5 MMBTU/hr**

**6. Exemptions:**

None.

12/80-ER1

By \_\_\_\_\_  
PSD Engineer  
Date \_\_\_\_\_

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

## ENGINEERING EVALUATION APPLICATION 17627

**ENGINEERING EVALUATION REPORT**  
**San Jose/Santa Clara Water Pollution Control Plant, Plant No. 778**  
**APPLICATION No. 17627**

**BACKGROUND**

San Jose/Santa Clara Water Pollution Control Plant (SJSCWPCP) submitted an application to obtain an Authority to Construct and/or Permit to Operate for the following sources:

**S-218 LWT BOOSTER Pump Portable Diesel Engine (City ID # 26701), John Deere, Model 6068HF-285, 200 HP**

**S-219 LWT BOOSTER Pump Portable Diesel Engine (City ID # 26702), John Deere, Model 6068HF-285, 200 HP**

*which will replace existing permitted engines (S-64 and S-65) which are used to pump sludge from the sludge lagoons to the drying beds. In addition, to provide emission offset credits, the facility will also shutdown S-8 generator.*

**EMISSIONS**

Basis:

Annual emissions from S-218 and S-219 are based on each having prime usage of 1040 hours per year (8 hrs/day, 5 days/week, and 26 weeks/year). Worst-case daily emissions are based on 24 hours per day operation. However, the facility anticipates that typical operation to be 8 hours per day (maximum of 10 hours per day), 5 days per week, and 26 weeks per year. Emissions of NO<sub>x</sub>, CO, and PM will be calculated using emission factors provided by Executive Order U-R-004-0282. The SO<sub>2</sub> emission factor is from mass balance, which is based on full conversion of fuel sulfur to SO<sub>2</sub> and which will therefore be considered applicable to any diesel engine (sulfur content is based on B-20 biodiesel, which is used at the facility and is less than 15 ppm sulfur):

$$\begin{aligned} \text{SO}_2 &= 9.6 \text{ gals/hr (7 lb/gal)}(15 \times 10^{-6}) \times 2 \text{ mole SO}_2/\text{S} = 0.002 \text{ lb/hr} \\ \text{NO}_x + \text{NMHC} &= 3.6 \text{ g/kw-hr}(0.742 \text{ kw/hp}) = 2.7 \text{ g/bhp-hr} \\ \text{NMHC (5\% of NO}_x + \text{NMHC)} &= 0.13 \text{ g/bhp-hr} \\ \text{NO}_x \text{ (95\% of NO}_x + \text{NMHC)} &= 2.6 \text{ g/bhp-hr} \\ \text{CO} &= 1.3 \text{ g/kw-hr}(0.742 \text{ kw/hp}) = 1.0 \text{ g/bhp-hr} \\ \text{PM}_{10} &= 0.18 \text{ g/kw-hr}(0.742 \text{ kw/hp}) = 0.13 \text{ g/bhp-hr} \end{aligned}$$

For S-218 and S-219 (each)

<b>Pollutant</b>	<b>Emission Factor (g/bhp-hr)</b>	<b>Maximum Annual Emissions (Cumulative Increase)<sup>1</sup> (TPY)</b>	<b>Maximum Daily Emissions per Engine<sup>2</sup> (lb/day)</b>
NO <sub>x</sub>	2.6	0.6	28
CO	1.0	0.23	11
PM <sub>10</sub>	0.13	0.03	1
POC	0.13	0.03	1
SO <sub>2</sub>	0.002 lb/hr	0 (negligible)	0.05

<sup>1</sup> Emissions are determined by the following calculation:

$$\text{lb/yr} = (1040 \text{ hr/yr}) (200 \text{ bhp}) (\text{Emission Factor [=]} \text{ g/bhp-hr}) (1 \text{ lb}/453.6 \text{ g})(1 \text{ T}/2000 \text{ lb})$$

<sup>2</sup> Maximum daily emissions based on 24 hours per day. Emissions are determined by the following calculation:

$$\text{lb/day} = (24 \text{ hr/day}) (200 \text{ bhp}) (\text{Emission Factor [=]} \text{ g/bhp-hr}) (1 \text{ lb}/453.6 \text{ g})$$

**Combined Emissions of S-218 and S-219**

Pollutant	S-218 (TPY)	S-2 (TPY)	TOTAL (TPY)
NO <sub>x</sub>	0.6	0.6	1.2
CO	0.23	0.23	0.5
PM <sub>10</sub>	0.03	0.03	0.06
POC	0.03	0.03	0.06
SO <sub>2</sub>	0.00001	0.00001	0.00002

**BACT**

*As per Regulation 2, Rule 2, Section 301, BACT is triggered for S-218 and S-219, because NO<sub>x</sub> and CO emissions are in excess of the 10-lb/highest day trigger level for BACT. Document number 96.1.2 of the District's BACT/TBACT Workbook gives BACT guidelines for the source category of IC Engines-Compression Ignition at or above 175 hp output rating.*

*The BACT guidelines per this section are as follows:*

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
POC	1. 0.30 g/bhp-hr [62 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b</sup> 2. 1.5 g/bhp-hr [309 ppmvd @ 15% O <sub>2</sub> ] <sup>b,c</sup>	1. Catalytic Oxidation and CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine <sup>a,b</sup> 2. CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine <sup>b,c</sup>
NO <sub>x</sub>	1. 1.5 g/bhp-hr [107 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b</sup> 2. 6.9 g/bhp-hr [490 ppmvd @ 15% O <sub>2</sub> ] <sup>a,b,c</sup> 3. 6.9 g/bhp-hr [490 ppmvd @ 15% O <sub>2</sub> ]	1. Selective Catalytic Reduction (SCR) + Timing Retard + Turbocharger w/ Intercooler <sup>a,b</sup> 2. Timing Retard ≤ 4° + Turbocharger w/ Intercooler <sup>a,b,c</sup> 3. Timing Retard ≤ 4° + Turbocharger w/ Intercooler
SO <sub>2</sub>	1. n/d 2. fuel oil < 0.05% sulfur <sup>a,b</sup>	1. n/d 2. Fuel Selection <sup>a,b</sup>
CO	1. n/s 2. 2.75 g/bhp-hr [319 ppmvd @ 15% O <sub>2</sub> ] <sup>b,c</sup>	1. Catalytic Oxidation <sup>b</sup> 2. CARB or EPA (or equivalent) low-CO emitting certified engine <sup>b,c</sup>
PM <sub>10</sub>	1. n/d 2. If practical, gas-fueled engine or electric motor. If not, "California Diesel Fuel" ( fuel oil w/ < 0.05% by weight sulfur and < 20% by volume aromatic	1. Catalyst Guard Bed <sup>a,b</sup> 2. Fuel Selection <sup>b,d</sup>

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
	<i>hydrocarbons)<sup>b</sup></i>  3. <i>0.1 grams/bhp-hr</i>	3. <i>CARB or EPA (or equivalent) low-particulate matter emitting certified engine, or particulate</i>

- a. **CARB/CAPCOA Clearinghouse**
- b. **BAAQMD NOTE: IC Engine BACT and TBACT is a low emitting, spark-ignited, gas-fueled engine with lean burn combustion or rich burn with non-selective catalytic reduction, or electric motor. A diesel engine will be permitted only if a gas-fueled engine, or electric motor, is not practical (e.g., a remote location without natural gas availability or electric power, or only a diesel engine will meet the portability and/or power/torque/rpm requirements of the application under review, or the engine is used exclusively for emergency use during involuntary loss of power).**
- c. **Timing retard, etc. controls alone may be acceptable only in very limited situations for temporary sources.**

Gas-fueled engines or electric motors are not practical and only a diesel engine will meet the portability and power requirements that are needed to pump solids from the lagoons to the drying beds. There are 28 lagoons, each 1200 feet by 300 feet, and there are 15 hydrants for connections to the booster pumps. There are no gas pipelines or electric lines in the lagoon area. To serve the area with gas or electricity would require installation of more than 15,000 feet of 4160-volt electric lines or gas pipelines, which is not practical. In addition, there are no propane-fired engines, which are certified for use to power a 200 hp-portable pump. Deutz and John Deere do not make propane-fired engines. Cummins and General Motors does not a certified propane engine for portable use in the 200 hp-size. Hence, use of diesel engines for this prime use is acceptable.

BACT (1) for NO<sub>x</sub> is typically achieved using a selective catalytic reduction (SCR) system with timing retard and a turbocharger with an intercooler. There is no certified SCR system available for the proposed engines to reduce NO<sub>x</sub> emissions. It is not technically feasible to add a SCR system to these portable engines because the engines are moved about the facility as needed to pump sludge. Typically, SCR units are bulky and should be left stationary due to its weight and size. As a result, BACT2 applies.

BACT(2) limits NO<sub>x</sub> emissions to 6.9 g/bhp-hr. The certified data indicates that the NO<sub>x</sub> emissions from S-218 and S-219 are less than 2.7 g/bhp-hr. Therefore, S-218 and S-219 meet the BACT(2) limits for NO<sub>x</sub> emissions. Similarly, for CO emissions (1.0 g/bhp-hr) will also meet the BACT2 requirements (2.75 g/bhp-hr) will be met. As a result, the sources (S-218 and S-219) meet BACT2 requirements.

## OFFSETS

Because SJSCWPCP is a major facility, offsets are required any existing cumulative and for application increase for NO<sub>x</sub> and POCs, per Regulation 2-2-302. There is no current pre-existing cumulative increase for this facility for either NO<sub>x</sub> or POC. Hence, the only offsets required are those from this application.

The application increase resulting from this application is the following:

NOx Increase = 1.2 TPY  
POC Increase = 0.06 TPY

SJSCWPCP will shutdown S-64, S-65, and S-8 upon the startup of S-218 and S-219. Per Regulation 2-2-605, the baseline period is September 11, 2005 through September 10, 2008 (date of receipt of S-8 logs via fax).

In reviewing the operation log of S-64 and S-65, source S-64 ran a total of 307 hours and S-65 ran a total of 1094 hours over the baseline period. The hourly logs were taken by facility staff.

Emission data (for Cummin's NT engines, configuration D091327FX02, ESN 30125637, CPL 413, rated 235 HP) was obtained from Cummins, the manufacturer of S-64 and S-65. The emissions data from Cummins indicated the following emission factors:

NOx = 7.5 g/bhp-hr  
POC = 0.16 g/bhp-hr

However, the ATCM for portable diesel engines requires the following Tier 1 limits in 2010 for these "in-use" engines:

NOx = 6.9 g/hhp-hr  
POC = 1 g/bhp-hr

As a result, to RACT-adjust the emissions, the lower emission factor for NOx from the ATCM shall be used with the Cummins provided POC emission factor. Based on the emission data and the number of hours of operation during the baseline period, the following contemporaneous reductions were calculated for the shutdown of S-64 and S-65:

NOx Emissions Credit =  $(307 + 1094 \text{ hours}/3 \text{ yr})(6.9 \text{ g/bhp-hr})(235 \text{ hp})(\text{lb}/453.6 \text{ g})(\text{ton}/2000 \text{ lb})$   
NOx Emissions Credit = 0.8 TPY

POC Emissions Credit =  $(307 + 1094 \text{ hours} /3 \text{ yr})(0.16 \text{ g/bhp-hr})(235 \text{ hp})(\text{lb}/453.6 \text{ g})(\text{ton}/2000 \text{ lb})$   
POC Emissions Credit = 0.02 TPY

Recordkeeping logs for S-8 for the baseline period between 2005 and 2008 were provided by the facility and accounted for 2,117 hours over the baseline period. The logs were taken by facility staff.

2005 Source test data for S-8 was used to estimate the resulting NOx emission reduction credits. The source test indicated that the level of POCs was below the detection level. In accordance with District practice, we have taken half the detection level as the emission factor for emission reduction calculations.

Based on the emission data and the number of hours of operation during the baseline period, the following contemporaneous reductions were calculated for the shutdown of S-8:

$$\begin{aligned} \text{NOx Emissions Credit} &= (2,117 \text{ hours}/3 \text{ yr})(\text{day}/24 \text{ hr})(47.5 \text{ lb}/\text{day})(\text{ton}/2000 \text{ lb}) \\ \text{NOx Emissions Credit} &= 0.70 \text{ TPY} \end{aligned}$$

$$\begin{aligned} \text{POC Emissions Credit} &= (2,117 \text{ hours}/3 \text{ yr})(\text{day}/24 \text{ hr})(3.8 \text{ lb}/\text{day})(\text{ton}/2000 \text{ lb}) \\ \text{POC Emissions Credit} &= 0.05 \text{ TPY} \end{aligned}$$

$$\begin{aligned} \text{CO Emission Credit} &= (2,117 \text{ hours}/3 \text{ yr})(\text{day}/24 \text{ hr})(254\text{lb}/\text{day})(\text{ton}/2000 \text{ lb}) \\ \text{CO Emission Credit} &= 3.7 \text{ TPY} \end{aligned}$$

$$\begin{aligned} \text{SO}_2 \text{ Emission Credit} &= (2,117 \text{ hours}/3 \text{ yr})(\text{day}/24 \text{ hr})(11.1 \text{ lb}/\text{day})(\text{ton}/2000 \text{ lb}) \\ \text{SO}_2 \text{ Emission Credit} &= 0.2 \text{ TPY} \end{aligned}$$

There is no RACT-adjustment for S-8 credits because the source tested emissions are below Regulation 9-8 requirements for gas-fired engines now and for those applicable in 2012 (Regulation 9-8-304). From these contemporaneous reductions, POC and NOx emissions were fully offset with NOx credits remaining. As a result, the following remaining credits should be issued to the facility as emission reduction credits:

$$\begin{aligned} \text{POC} &= 0.06 \text{ TPY} - 0.02 \text{ TPY} - 0.05 = 0 \text{ (fully offset)} \\ \text{NO}_x &= 1.2 \text{ TPY} - 0.8 \text{ TPY} - 0.70 \text{ TPY} = (0.3 \text{ TPY}) \text{ returned as credit} \\ \text{CO} &= 0.5 - 3.7 \text{ TPY} = (3.2 \text{ TPY}) \text{ returned as credit} \\ \text{SO}_2 &= 0 - 0.2 \text{ TPY} = (0.2 \text{ TPY}) \text{ returned as credit} \end{aligned}$$

### **TOXIC RISK SCREEN ANALYSIS**

Per the April 8, 2008 Risk Screening Assessment from the District's Toxics Evaluation Section, a risk screening analysis was performed on this application. The cancer risk is calculated based on the emission rate of diesel exhaust particulate matter. Diesel exhaust particulate matter is used as a surrogate for all toxic contaminants found in diesel exhaust. The District's Regulation 2, Rule 5 requires that the cumulative impacts from all related projects be evaluated in the risk screen.

For 1040 hours of operation per year for each engine (S-218 and S-219), the maximum cancer risk was calculated to be 0.5 chances in a million for resident and 8.2 chances in a million for an off-site worker. This level of risk is acceptable under District's Regulation 2, Rule 5, because the engines meet the TBACT and ATCM.

### **STATEMENT OF COMPLIANCE**

*S-218 and S-219 portable engines are subject to the Ringelmann No. 2 limitations of Regulation 6-303 (emissions opacity limitations). 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 operated and maintained diesel engines are expected to meet this requirement.*

S-218 and S-219 are also subject to the SO<sub>2</sub> limitations of Regulation 9-1-302 (ground level concentration) and 9-1-304 (0.5% by weight in fuel). Per Regulation 9, Rule 1, Section 302, a person shall not emit from any source a gas stream containing sulfur dioxide in excess of 300 ppm (dry). Additionally, per Regulation 9, Rule 1, Section 304, a person shall not burn any liquid fuel having sulfur content in excess of 0.5% by weight. Compliance with both Regulations 9-1-302 and 9-1-304 is likely since California law mandates using diesel fuel with a 0.05% by weight sulfur.

The proposed portable engines (S-218 and S-219) will be subject to emission standards of Regulation 9-8 starting in January 1, 2012. In addition, the proposed engines (S-218 and S-219) are subject to Tier 3 standards per the ATCM for new portable engines. The proposed engines (S-218 and S219) will meet the Tier 3 standards:

<u>Tier 3 Standards:</u>	<u>Proposed Engines (S-218 &amp; S-219)</u>
POC = 3.0 g/bhp-hr	POC = 0.13 g/bhp-hr
NOx = 2.6 g/bhp-hr	NOx = 2.6 g/bhp-hr
PM10 = 0.15 g/bhp-hr	PM10 = 0.13 g/bhp-hr

***This application is considered to be ministerial under the District's CEQA guidelines (Regulation 2-1-311) 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.***

Pursuant to the results of the Toxic Risk Screening Analysis, S-218 and S-219 shall be limited to 1040 hours per year of operation.

PSD, NSPS, and NESHAPS are not triggered.

The facility is not located within 1000 feet of any school. As a result, school public notice is not triggered.

### **PERMIT CONDITIONS**

I recommend that each of the engines (S-218 and S-219) be subject to the following permit conditions:

1. The owner/operator shall not exceed 1,040 hours per year per engine. [Basis: Cumulative Increase, Toxics Risk Screening]
2. The owner/operator shall operate each 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: Cumulative Increase, Toxics Risk Screening]
3. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 60 months from the date of entry. 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 (emergency).
  - b. Fuel usage for each engine.

[Basis: Cumulative Increase, Toxics Risk Screening, Regulation 2-6-501]

### **RECOMMENDATION**

***Authority to Construct be waived and Permit to Operate be issued to SJSCWPCP for the following:***

- S-218 LWT BOOSTER Pump Portable Diesel Engine (City ID # 26701), John Deere, Model 6068HF-285, 200 HP**
- S-219 LWT BOOSTER Pump Portable Diesel Engine (City ID # 26702), John Deere, Model 6068HF-285, 200 HP**

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

Archive the permits for the following sources:

**S-8 Stationary Engines**  
**S-64 IC Engine**  
**S-65 IC Engine**

Issue Banking Certificate to SJSCWPCP for the following:

**NOx 0.3 TPY**  
**CO: 3.2 TPY**  
**SO2: 0.2 TPY**

**BY:** \_\_\_\_\_  
M.K. Carol Lee, Senior AQ Engineer

\_\_\_\_\_ Date

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

## ENGINEERING EVALUATION APPLICATION 17754

## EVALUATION REPORT

**Company** San Jose/Santa Clara Water Pollution Control Plant **Application #**  
17754

**Plant #** 778

### 1. Background:

San Jose/Santa Clara Water Pollution Control Plant (SJ/SCWPCP) is applying for a Change of Condition for S-36 and S-37 Engine Generator (Condition ID # 17900, Part 3) to raise CO emissions from 413.4 lbs/day to 546 lbs/day. Due to the recent amendments to Regulation 9-8, S-36 and S-37 will be soon subject to a nitrogen oxide (NOx) limit of 70 ppm @ 15% oxygen (O<sub>2</sub>) for waste-derived fuel, which is to be effective in 2012. Any change to reduce the nitrogen oxide emissions will increase their carbon monoxide (CO) emissions to exceed their daily permit condition limit of 413.4 lbs/day. To be able to maintain compliance with the 2012 NOx standard, San Jose/Santa Clara Water Pollution Control Plant has requested that we allow them to increase CO emissions up to the level of the existing BACT2 limits of 2.65 g/bhp-hr.

### 2. Emission Calculations:

To attain BACT2 level for CO for S-36 and S-37, the CO limit is calculated as follows:

$$\begin{aligned} \text{Basis: } & \text{HP} = 3900 \text{ HP} \\ & \text{BACT2} = 2.65 \text{ g/bhp-hr CO} \end{aligned}$$

$$\text{CO limit} = 2.65 \text{ g/bhp-hr}(3900 \text{ HP})(24 \text{ hr/day})/454 \text{ g/lb} = 546 \text{ lbs/day}$$

The increase in CO emissions for this Change of Condition application is:

$$\begin{aligned} \text{CO} &= (546 \text{ lbs/day} - 413.4 \text{ lbs/day})(365 \text{ day/yr}) = 48,524 \text{ lbs/day} \\ \text{CO} &= 24.3 \text{ TPY} \end{aligned}$$

S-36 and S-37 has limits on NOx (Part 2), CO (Part 3), TSP (Part 4), and Non-Methane Hydrocarbons (NMHC = Part 5). The facility has only requested that the CO limit be increased. All other limits (for NOx, TSP and NMHC) shall remain unchanged.

### 3. Statement of Compliance:

#### BAAQMD Regulation 9-8

Operation of S-36 and S-37 Engine Generator is subject to Regulation 9, Rule 8 (Nitrogen Oxides and Carbon Monoxides for Stationary Internal Combustion Engines. Currently, the engine generators meet the NOx and CO standards of 210 and 2000 ppm @ 15% O<sub>2</sub>, respectively. The proposed change of conditions will ensure that the facility will continue to meet Regulation 9-8-302 when the standard for NOx is lowered to 70 ppm @ 15% O<sub>2</sub> (the CO limit remains at 2000 ppm @ 15% O<sub>2</sub>).

#### BACT

Because there is an increase in CO emissions from S-36 and S-37 as the result of the proposed change of conditions, Best Available Control Technology (BACT) review is triggered. The engine generators (S-36 and S-37) are permitted to be

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

fired on natural gas, sewage sludge digester gas, landfill gas, or a combination thereof (Condition # 17000, Part 1). As a result, the applicable BACT is that for landfill gas fired engines (see BACT Workbook (Document # 96.2.1)).

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**  
*Best Available Control Technology (BACT) Guideline*

*Source Category*

Source:	IC Engine - Landfill Gas Fired	Revision:	3
Class:	≥250 HP Output	Document #:	96.2.1
		Date:	06/02/95

*Determination*

POLLUTANT	BACT		TYPICAL TECHNOLOGY
	1. Technologically Feasible/ Cost Effective 2. Achieved in Practice		
POC	1. 0.6 g/bhp-hr <sup>a,T</sup> 2. 1.0 g/bhp-hr <sup>a,T</sup>		1. n/s 2. Lean Burn Technology <sup>a,T</sup>
NOx	1. 1.0 g/bhp-hr <sup>a</sup> 2. 1.25 g/bhp-hr <sup>a</sup>		1. n/s 2. Lean Burn Technology <sup>a</sup>
SO <sub>2</sub>	1. n/s 2. 0.3 g/bhp-hr <sup>a</sup>		1. Fuel Gas Treatment w/ ≥80% H <sub>2</sub> S Removal <sup>a</sup> 2. Addition of iron salts to digester sludge to remove H <sub>2</sub> S <sup>a</sup>
CO	1. 2.1 g/bhp-hr <sup>a</sup> 2. 2.65 g/bhp-hr <sup>a</sup>		1. n/s 2. Lean Burn Technology <sup>a</sup>
PM <sub>10</sub>	1. n/d 2. n/s		1. n/s 2. Lean Gas Pretreatment <sup>a</sup>
NPOC	1. n/a 2. n/a		1. n/a 2. n/a

*References*

a. BAAQMD T. TBACT
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The District's Source Test Section performed source tests on S-36 and S-37 in 2006 to determine compliance with their permit conditions (Condition # 17900 Parts 2 and Parts 3). The results are summarized below:

Pollutant	S-36	S-37	Reg 9-8-302 limit (Current)	Reg. 9-8-302 Limit (2012)
NOx, ppm @ 15% O <sub>2</sub>	40.8	35.1	210 ppm @ 15% O <sub>2</sub>	70 ppm @ 15% O <sub>2</sub>
NOx, g/bhp-hr	0.7	0.6	1.8 g/bhp-hr (Condition # 17900, Part 2)	
CO, ppm @ 15% O <sub>2</sub>	211.5	190.6	2000	2000
CO, g/bhp-hr	2.1	1.8		
CO, lb/day	420.1	359.2	413.4 lbs/day (Condition # 17900, Part 3)	

The facility has demonstrated from the 2006 source testing that they can meet the 2012 standard for NOx but the limit on CO did rise above the permit condition limit of 413.4 lb/day. The facility has indicated in their correspondence to the District that they have difficulty consistently meeting that permit condition limit especially when they burn waste derived fuels such as landfill and sewage sludge digester gas. Furthermore, in a recent meeting with the facility in April 2008, Kevin Maung and Chuck Hagenmaier of SJ/SCWPCP indicated concern that as the engine generators age that it would become increasingly difficult to keep CO levels at 2.1 g/bhp-hr while keep NOx levels below 70 ppm @ 15% O<sub>2</sub>. Randy Frazier, District expert on IC engines, agreed with them. He has recently

amended BACT for digester fired IC engines (BACT Workbook Document # 96.5.1) acknowledging that as engines age that they may need engine overhaul once emissions reach a certain level. BACT2 for Digester Gas Fired Engines is also 2.65 g/br-hr. Hence, S-36 and S-37 will meet both BACT2 for landfill and digester gas fired.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Best Available Control Technology (BACT) Guideline**

Source Category

Source:	IC Engine – Digester Gas Fired	Revision:	1
		Document #:	96.5.1
Class:	≥ 50 Hp Output	Date:	2/21/2008

Determination

Pollutant	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. 0.6 g/bhp-hr <sup>a</sup> 2. 1.0 g/bhp-hr <sup>a</sup>	1. n/s <sup>a</sup> 2. Lean Burn Technology <sup>a</sup>
NOx	1. 1.0 g/bhp-hr <sup>a</sup> 2. 1.25 g/bhp-hr <sup>a</sup>	1. n/s <sup>a</sup> 2. Lean Burn Technology <sup>a</sup>
SO <sub>2</sub>	1. n/s <sup>a</sup> 2. 0.3 g/bhp-hr <sup>a</sup>	1. Digester gas treatment w/ > 80% H <sub>2</sub> S removal <sup>a</sup> 2. Digester gas pretreatment to remove H <sub>2</sub> S <sup>a,f</sup>
CO	1. 2.1 g/bhp-hr <sup>a</sup> 2. a) Nominal Standard <sup>b,c</sup> : Either 2.65 g/bhp-hr or 265 ppm @15% oxygen b) Action Standard <sup>b,d</sup> : >345 ppm @15% oxygen c) Not to Exceed Standard <sup>b,e</sup> : 377 ppm @15% oxygen d) Engine Top End or major maintenance or overhaul required every 8,000 hrs of engine operation or 12 months of operation, whichever comes first <sup>b</sup> .	1. n/s <sup>a</sup> 2. Lean Burn Technology <sup>a</sup>
PM <sub>10</sub>	1. n/d <sup>a</sup> 2. n/s <sup>a</sup>	1. n/d <sup>a</sup> 2. Digester gas pretreatment <sup>a,f</sup>
NPOC	1. n/a <sup>a</sup> 2. n/a <sup>a</sup>	1. n/a <sup>a</sup> 2. n/a <sup>a</sup>

l  
f  
r

g-hr BACT1 level was not waste-derived fuels. As a (2.65 g/bhp-hr for CO).

**Offsets**

The increase of CO will not trigger offset requirements, because offsets are not required for CO.

**PSD**

Because the increase in CO does not exceed 100 tons per year at this existing major facility, PSD modeling is not triggered, per Regulation 2-2-305.2.

**Other Requirements**

There is a NSPS for Stationary Compression Ignition Internal Combustion Engines (Subpart IIII of Part 60), which applies to engines installed after 2005. S-36 and S-37 were installed prior to 2005. As a result, this application does not trigger **Regulation 10 - New Source Performance Standard**; or **Regulation 11 - Hazardous Pollutants**. Because this application is ministerial [Permit Handbook Chapters 2.3.2], the California Environmental Quality Act (CEQA) is not triggered.

S-36 and S-37 has limits on NOx (Part 2), CO (Part 3), TSP (Part 4), and Non-Methane Hydrocarbons (NMHC = Part 5). The facility has only requested that the CO limit be increased. All other limits (for NOx, TSP and NMHC) shall remain unchanged. The toxic emissions from S-36 and S-37 are not expected to increase or change for this change of condition application. As a result, a Toxic Risk Screening is not required.

**4. Conditions:**

I recommend the following changes to Permit Condition ID # 17900, Part 3 be amended: [strikethroughs indicate deletions while underlines indicate additions].

3. Emissions of CO shall not exceed ~~413~~4546 lb per engine in any consecutive 24 hour period. (Basis: Cumulative Increase)

A copy of the permit conditions in their entirety is attached to this evaluation report.

**5. Authority to Construct:**

See Section 4.

**6. Exemptions:**

None.

12/80-ER1

By \_\_\_\_\_  
M.K. Carol Lee, PSD Engineer

Date \_\_\_\_\_

## ENGINEERING EVALUATION APPLICATION 20275

**Evaluation Report  
A/N 20275**

**G# 6770 (Plant 778, Source 26)**

**City of San Jose Water Pollution Control Plant, 1380 Los Estros., San Jose**

**Background**

American Construction on behalf of the City of San Jose Water Pollution Control Plant has applied for an A/C to replace the Phase II vapor recovery on the existing GDF at Plant 778 with an EVR certified Phase II system. No other work is proposed under this application.

The City of San Jose Water Pollution Control Plant currently operates a 5,000 gallon underground tank split 2.5K gasoline/2.5K diesel with one diesel nozzle, one EW A4005 gasoline nozzle equipped with Phil Tite EVR Phase I and balance Phase II vapor recovery. This equipment is permitted as Source 26 at Plant 778 and is subject to condition #17738, which limits annual gasoline throughput to 50,000 gallons per year and #18680, the standard operating and testing condition for the Phil-Tite Phase I equipment.

Proposed Phase II equipment consists of the VST EVR Phase II system with the Veeder-Root Vapor Polisher pursuant to CARB Executive Order VR-203. ISD controls have not been proposed.

**Emissions**

No change in permitted throughput has been requested.

As the EVR Phase II equipment is certified to slightly more stringent standards than the existing balance Phase II vapor recovery equipment, there should be no increase in emissions per unit throughput.

The net emission increase under this A/N will be zero.

**Statement of Compliance**

As there will be no net emissions increase from this project, this application is not subject to the BACT and offset requirements of Regulation 2, Rule 2.

The proposed VST EVR Phase II equipment is certified under VR-203. Plans submitted with this application verify that the installation will satisfy the requirements of this Executive order:

The proposed VST EVR Phase II equipment is certified under VR-203. Plans submitted with this application verify that the installation will satisfy the requirements of this Executive order:

- The dispenser will each be equipped with a VST-EVR-NB nozzle
- The site has a V-R TLS 350 console and will be equipped with the proper software and controls for operation of the VST EVR Phase II system with the V-R Vapor Polisher
- A Vapor Pressure Sensor will be installed in the dispenser
- This site is not equipped with vapor pots or condensate traps. This site has not modified their underground piping since April 1, 2003 and thus is not subject the piping size requirements of VR-203
- The outlet of the V-R Vapor Polisher will be 12' above grade, and the vent pipes will be adequately supported

ISD equipment will not be installed. This GDF is conditioned to less than 600,000 gal/yr and is not subject to ISD requirements.

Use of CARB certified equipment satisfies all requirements of District Regulation 8, Rule 7.

**Permit Conditions**

*Authority to Construct Conditions:*

*Authority to Construct Conditions:*

COND# 24297 -----

1. The VST EVR Phase II Vapor Recovery System with the Veeder-Root Vapor Polisher, including all associated underground plumbing, shall be installed, operated, and maintained in accordance with the most recent revision of the California Air Resources Board (CARB) Executive Order (E.O.). VR-203. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board.
2. Only CARB-certified EVR Phase I vapor recovery systems shall be used in conjunction with the VST EVR Phase II Vapor Recovery System.
3. The owner/operator of the facility shall maintain records in accordance with the following requirements. Records shall be maintained on site and made available for inspection for a period of 24 months from the date the record is made.
  - a. Monthly throughput of gasoline pumped, summarized on an annual basis
  - b. A record of all testing and maintenance as required by E.O. VR-203, Exhibit 2. The records shall include the maintenance or test date, repair date to correct test failure, maintenance or test performed, affiliation, telephone number, name and Certified Technician Identification Number of individual conducting maintenance or test.
4. All applicable components shall be maintained to be leak free and vapor tight. Leak Free, as per BAAQMD (District) Regulation 8-7-203, is a liquid leak of no greater than three drops per minute. Vapor Tight is as defined in District Manual of Procedures, Volume IV, ST-30.
5. Start-up notification: applicant must contact the assigned Permit Engineer, listed in the correspondence section of this letter, by phone, by fax [(415) 749-4949], or in writing at least three days before the initial operation of the equipment is to take place. Operation includes any start-up of the source for testing or other

purposes. Operation of equipment without notification being submitted to the District, may result in enforcement action. Please do not send start-up notifications to the Air Pollution Control Officer.

6. The following performance tests shall be successfully conducted at least ten (10) days, but no more than thirty (30) days after start-up. For the purpose of compliance with this Condition, all tests shall be conducted after back-filling, paving, and installation of all required Phase I and Phase II components.

- a. Static Pressure Performance Test using CARB Test Procedure TP-201.3 (3/17/99) in accordance with E.O. VR-203, Ex. 4. If the tank size is 500 gallons or less, the test shall be performed on an empty tank.
- b. Dynamic Back Pressure Test using CARB Test Procedure TP-201.4 (7/3/02) in accordance with the condition listed in item 1 of the Vapor Collection Section of E.O. VR-203, Exhibit 2. The dynamic back pressure shall not exceed 0.35" WC @ 60 CFH and 0.62" WC @ 80 CFH.
- c. Liquid Removal Test using E.O. VR-203, Exhibit 5.
- d. Vapor Pressure Sensor Verification Test using E.O. VR-203, Exhibit 8
- e. Nozzle Bag Test on all nozzles in accordance with E.O. VR-203, Exhibit 10.
- f. Veeder-Root Vapor Polisher Operability Test in accordance with E.O. VR-204, Exhibit 11.
- g. Veeder-Root Vapor Polisher Emissions Test in accordance with E.O. VR-204, Exhibit 12.

7. The VST EVR Phase II system with the Veeder-Root Vapor Polisher shall be capable of demonstrating on-going compliance with the vapor integrity requirements of CARB Executive Order E.O. VR-203. The owner or operator shall conduct and pass the following tests at least once in each consecutive 12-month period following successful completion of start-up testing. Tests shall be conducted and evaluated using the above referenced test methods and standards.

- a. Static Pressure Performance Test - TP-201.3
- b. Dynamic Back Pressure Test - TP-201.4
- c. Liquid Removal Test - E.O. VR-203, Exhibit 5
- d. Vapor Pressure Sensor Verification Test - E.O. VR-203, Exhibit 8
- e. Veeder-Root Vapor Polisher Operability Test in accordance with E.O. VR-204, Exhibit 11.
- f. Veeder-Root Vapor Polisher Emissions Test in accordance with E.O. VR-204, Exhibit 12.

8. The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted in a District-approved format within thirty days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For

annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email (gdfresults@baaqmd.gov), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).

9. The maximum length of the coaxial hose assembly, including breakaway, swivels, and whip hoses, shall be fifteen (15) feet..
10. The dispensing rate shall not exceed ten (10.0) gallons per minute (gpm), nor be less than six (6.0) gpm with the trigger at the highest setting. Compliance with this condition shall be verified using the applicable provisions of E.O. VR-203, Ex. 5. Flow limiters may not be used.
11. A Vapor Pressure Sensor shall be installed in the dispenser closest to the underground tanks.
12. The TLS console controlling the Veeder-Root Vapor Polisher shall be equipped with a printer and have an open RS232 port that is accessible to District staff during operating hours.
13. Except when necessary for testing and maintenance, the Veeder-Root Vapor Polisher shall be on and in automatic vapor processor mode with the inlet valve in the open position per E.O. VR-203, Ex. 2. The handle shall not be removed for any reason.
14. The outlet of the Veeder-Root Vapor Polisher shall be at least 12 feet above grade.
15. The station shall maintain OSHA-approved access to the Veeder-Root Vapor Polisher. This access should be provided immediately upon request by District personnel
16. The VST EVR Phase II Vapor Recovery System shall be maintained and operated in accordance with E.O. VR-203 and the System Operating Manual approved by CARB.
17. Security tags shall be installed and maintained on the Veeder-Root Vapor Polisher. A Veeder-Root Vapor Polisher Operability Test and a Veeder-Root Vapor Polisher Emissions Test shall be performed after the replacement of any damaged or missing tags using the above referenced test methods and subject to the above notification and reporting requirements.
18. The headspace of all underground tanks connected to VST EVR Phase II Vapor Recovery System shall be connected by a manifold below grade at the tanks and/or a manifold between the vent lines.
19. For stations installed or performing a major

modification of underground vapor piping after April 1, 2003, all vapor recovery piping shall be a minimum of 2" from the vent stack or dispensers to the first manifold and a minimum of 3" in diameter from the manifold to the underground tanks, with the headspace of all tanks connected by a below-grade manifold. The following piping shall slope down towards the lowest octane tank with a minimum slope of 1/8" per linear foot:

- a) Any manifold piping connecting the storage tank headspaces.
- b) All vapor recovery piping between the dispenser and storage tank.
- c) Vent piping from the base of the vent pipe to the storage tank(s).

A major modification is considered a project that adds to, replaces, or removes more than 50% of the underground vapor piping.

20. Condensate traps or knock-out pots are prohibited.

21. Each storage tank vent pipe shall be equipped with a CARB certified pressure/vacuum relief valve as required by the applicable Phase I E.O.. Vents pipes may be manifolded to reduce the number of relief valves needed. No relief valve shall be installed on the Veeder-Root Vapor Polisher outlet.

22. The Veeder-Root EVR system and TLS console may only be installed and serviced by contractors that have completed the Veeder-Root training program. Installation and start-up shall be in accordance with VR-203 and the Veeder Root installation manual.

*Permit to Operate Conditions*

COND# 17738 -----

For S -26, Gasoline Dispensing Island

- \*1) Annual gasoline throughput shall not exceed 50,000 gallons in any consecutive 12 month period.  
(Basis: Cumulative Increase)
- \*2) To demonstrate compliance with the above condition, the permit holder shall maintain monthly records of gasoline throughput. These records shall be kept on a District-approved log. All records shall be retained on-site for five years from the date of entry, and made available for District inspection upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.  
(Basis: 2-6-409.2)

COND# 18680

1. The Phil Tite EVR Phase I Vapor Recovery System, including all associated plumbing and components, shall be operated and maintained in accordance with the most recent version of California Air Resources Board (CARB) Executive Order VR-101. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board.
2. The owner or operator shall conduct and pass a Rotatable Adaptor Torque Test (CARB Test Procedure TP201.1B) and either a Drop Tube/Drain Valve Assembly Leak Test (TP201.1C) or, if operating drop tube overflow prevention devices ("flapper valves"), a Drop Tube Overflow Prevention Device and Spill Container Drain Valve Leak Test (TP201.1D) at least once in each 36-month period. Measured leak rates of each component shall not exceed the levels specified in VR-101.

The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted within fifteen (15) days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email ([gdfresults@baaqmd.gov](mailto:gdfresults@baaqmd.gov)), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).

COND# 24298 -----

1. The VST EVR Phase II Vapor Recovery System with the Veeder-Root Vapor Polisher without ISD, including all associated underground plumbing, shall be installed, operated, and maintained in accordance with the most recent revision of the California Air Resources Board (CARB) Executive Order (E.O.). VR-203. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board.
2. The owner/operator of the facility shall maintain records in accordance with the following requirements. Records shall be maintained on site and made available for inspection for a period of 24 months from the date the record is made.
  - a. Monthly throughput of gasoline pumped, summarized on

an annual basis

3. All applicable components shall be maintained to be leak free and vapor tight. Leak Free, as per BAAQMD (District) Regulation 8-7-203, is a liquid leak of no greater than three drops per minute. Vapor Tight, as per District Regulation 8-7-206, is a leak of less than 100 percent of the lower explosive limit on a combustible gas detector measured at a distance of 1 inch from the source or absence of a leak as determined by the District Manual of Procedures, Volume IV, ST-30 or CARB Method TP-201.3.

4. The VST EVR Phase II system with the Veeder-Root Vapor Polisher without ISD shall be capable of demonstrating on-going compliance with the vapor integrity requirements of CARB Executive Order E.O. VR-203. The owner or operator shall conduct and pass the following tests at least once in each consecutive 12-month period following successful completion of start-up testing. Tests shall be conducted and evaluated using the below referenced test methods and standards.

- a. Static Pressure Performance Test - TP-201.3
- b. Dynamic Back Pressure Test - TP-201.4 (7/3/02) in accordance with the condition listed in item 1 of the Vapor Collection Section of E.O. VR-203, Exhibit 2. The dynamic back pressure shall not exceed 0.35" WC @ 60 CFH and 0.62" WC @ 80 CFH
- c. Liquid Removal Test - E.O. VR-203, Exhibit 5, Option 1 (Only test hoses containing more than 25 ml liquid)
- d. Vapor Pressure Sensor Verification Test - E.O. VR-203, Exhibit 8,
- e. Veeder-Root Vapor Polisher Operability Test. E.O. VR-203, Exhibit 11
- f. Veeder-Root Vapor Polisher Emissions Test - E.O. VR-203, Exhibit 12

5. The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted in a District-approved format within thirty days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email ([gdfresults@baaqmd.gov](mailto:gdfresults@baaqmd.gov)), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, 939 Ellis Street, San Francisco CA 94109).

6. The maximum length of the coaxial hose assembly, including breakaway, swivels, and whip hoses, shall be fifteen (15) feet..

7. The dispensing rate shall not exceed ten (10.0) gallons per minute (gpm), nor be less than six (6.0) gpm with the

nozzle trigger at the highest setting. Compliance with this condition shall be verified using the applicable provisions of E.O. VR-203, Ex. 5. Flow limiters may not be used.

8. The TLS console controlling the Veeder-Root Vapor Polisher shall be equipped with a printer and have an open RS232 port that is accessible to District staff during operating hours.

9. Except when necessary for testing and maintenance, the Veeder-Root Vapor Polisher shall be on and in automatic vapor processor mode with the inlet valve in the open position per E.O. VR-203, Ex. 2. The handle shall not be removed for any reason.

10. The station shall maintain OSHA-approved access to the Veeder-Root Vapor Polisher. This access should be provided immediately upon request by District personnel

11. Security tags shall be installed and maintained on the Veeder-Root Vapor Polisher. A Veeder-Root Vapor Polisher Operability Test and a Veeder-Root Vapor Polisher Emissions Test shall be performed after the replacement of any damaged or missing tags using the above referenced test methods and subject to the above notification and reporting requirements.

12. Each storage tank vent pipe shall be equipped with a CARB certified pressure/vacuum relief valve as required by the applicable Phase I E.O.. Vents pipes may be manifolded to reduce the number of relief valves needed. No relief valve shall be installed on the Veeder-Root Vapor Polisher outlet.

**Title V Permit Revisions**

This plant has a Title V permit. This project will require a minor revision of the Title V permit.

Proposed revisions to the Title V permit are attached.

**Recommendation**

All fees have been paid. Recommend that an A/C be issued for the above project.

By \_\_\_\_\_ date \_\_\_\_\_

Scott Owen  
Supervising AQ Engineer

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

## ENGINEERING EVALUATION APPLICATION 23011

**ENGINEERING EVALUATION**  
**San Jose/Santa Clara Water Pollution Control**  
**Plant: 778**

**Application: 23011**

**BACKGROUND**

San Jose/Santa Clara Water Pollution Control has applied to obtain an Authority to Construct (AC) and/or a Permit to Operate (PO) for the following equipment:

**S-66**

Emergency Standby Diesel Generator Set

**2008 Perkins, Model: D150-8**  
**274 BHP, 1.62 MMBTU/hr**

The Emergency Diesel Engine Generator Set (S-66) will be located at 700 Los Esteros Road, San Jose, CA 95134 and is equipped with the best available control technology (BACT) for minimizing the release of air borne criteria pollutants and harmful air toxins due to fuel combustion. The criteria pollutants are nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), precursor organic compounds (POC) from unburned diesel fuel, sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM<sub>10</sub>). All of these pollutants are briefly discussed on the District's web site at [www.baaqmd.gov](http://www.baaqmd.gov).

S-66 meets the Environmental Protection Agency and California Air Resources Board (EPA/CARB) Tier 3 Off-road standard. The engine will burn commercially available California low sulfur diesel fuel. The sulfur content of the diesel fuel will not exceed 0.0015% by weight. The operation of the engine should not pose any health threat to the surrounding community or the public at large.

The engine is subject to attached condition no. 22850.

*(i) EMISSIONS*

S-66 has been certified by CARB to be a cleaner burning engine. Except for SO<sub>2</sub>, the emission factors for this engine are from the CARB Certification (CARB Executive Order # U-R-022-0112). The SO<sub>2</sub> emissions were calculated based on the maximum allowable sulfur content (0.0015 wt% S) of the diesel fuel with assumption that all of the sulfur present will be converted to SO<sub>2</sub> during the combustion process. The POC emission factor is assumed to be 5% of the total CARB's certified NO<sub>x</sub> and POC (NMHC+NO<sub>x</sub>) factor based on District Policy.

Basis:

- 274 hp output rating
- 50 hr/yr operation for testing and maintenance
- 11.8 gallons/hr max fuel use rate
- NMHC + NO<sub>x</sub>, CO and PM<sub>10</sub> emission factors provided by CARB Certification with Executive Order # U-R-022-0112
- POC is assumed to be 5% of NMHC + NO<sub>x</sub>
- NO<sub>x</sub> is assumed to be 95% of NMHC + NO<sub>x</sub>

- SO<sub>2</sub> emissions are quantified based on the full conversion of 0.0015 wt% (~ 15 ppm) sulfur in the ULS diesel fuel. The SO<sub>2</sub> emission factor was derived from EPA AP-42, Table 3.4-1.

**Annual Average Emissions:**

Annual emissions are calculated based on the number of hours per year of operation for testing and maintenance. See Table 1.

**Daily Emissions:**

Daily emissions are calculated to establish whether a source triggers the requirement for BACT (10 lb/highest day total source emissions for any class of pollutants). 24-hr/day of operation will be assumed since no daily limits are imposed on intermittent and unexpected operations. See Table 1.

**Table 1. Annual and Daily Emissions from CARB/EPA Certified Data**

From CARB/EPA Certified Data Pollutant	Emission Factor (g/hp-hr)	Annual Emissions (lb/yr)	Annual Emissions (TPY)	Max. Daily (lb/day)
NO <sub>x</sub>	2.55	77.0	0.038	37.0
POC	0.13	4.1	0.002	1.9
CO	1.34	40.5	0.020	19.4
PM <sub>10</sub>	0.13	3.8	0.002	1.8
SO <sub>2</sub> *	0.001515	0.1	0.000	0.1

Note: \* From Table 3.4-1 of AP-42  
15ppm ULSD

lb SO<sub>2</sub>/MMBTU

**PLANT CUMULATIVE INCREASE**

*San Jose/Santa Clara Water Pollution Control at “700 Los Esteros Road, San Jose, CA 95134” (Plant No. 778) is an existing facility. Therefore, the District’s database contains information on existing emissions at the plant. Table 2 summarizes the pre 4/5/91 cumulative increase in criteria pollutant emissions that will result at Plant 778 from the operation of S-66.*

**Table 2. Plant Cumulative Emissions Increase (pre 4/5/91)**

Pollutant	Current Emissions (TPY)	Increase with This Application (TPY)	Cumulative Emissions (TPY)
NO <sub>x</sub>	0.000	0.038	0.038
POC	0.004	0.002	0.006
CO	31.530	0.020	31.550
PM <sub>10</sub>	3.140	0.002	3.142
SO <sub>2</sub>	0.000	0.000	0.000
NPOC	119.400	0.000	119.400

### **TOXIC RISK SCREENING ANALYSIS**

This application required a Toxics Risk Screening Analysis because the diesel particulate emissions from the operation of S-66 are greater than the toxic trigger level. Regulation 2-5 requires that the cumulative impacts from all related projects permitted within the last two years be included in the risk screening analysis. San Jose/Santa Clara Water Pollution Control does not have any related project permitted within the last two years. Therefore, the only project included in the Toxics Risk Screening Analysis was S-66.

**Table 3. Diesel Exhaust Particulate Matter Emissions**

<b>Toxic Pollutant Emitted</b>	<b>Emission Rate (lb/yr)</b>	<b>Risk Screening Trigger (lb/yr)</b>
PM <sub>10</sub> (Diesel Particulate)	3.8	0.34

S-66 meets Best Available Control Technology for toxics (TBACT) since the diesel particulate emissions are less than 0.15 g/bhp-hr. For an engine that meets the TBACT requirement, it must also pass the toxic risk screening level of less than ten in a million. Estimates of residential risk assume exposure to annual average toxic air contaminant concentrations occur 24 hours per day, 350 days per year, for a 70-year lifetime. Risk estimates for offsite workers assume exposure occurs 8 hours per day, 245 days per year, for 40 years. Risk estimates for students assume a higher breathing rate, and exposure is assumed to occur 10 hours per day, 36 weeks per year, for 9 years.

Based on 50 hours per year of operation, the emergency generator set passed the Health Risk Screening Analysis (HRSA) conducted on March 3, 2011 by the District's Toxic Evaluation Section. The source poses no significant toxic risk, since the increased cancer risk to the maximally exposed receptor (Resident) is 0.01 in a million. The hazard index for a resident is 0.000005. The increased cancer risk to workers is 0.2 in a million and the hazard index is 0.0001. The emergency generator set is not located near students. Thus, in accordance with Regulation 2, Rule 5, this source is in compliance with the TBACT and project risk requirements.

(ii)

(iii) *BACT*

In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NO<sub>x</sub>, CO, SO<sub>2</sub> or PM<sub>10</sub>.

BACT is triggered for NO<sub>x</sub> and CO since the maximum daily emissions of these pollutants exceeds 10 lb/day. Please refer to the discussion in "Emissions" section of this evaluation. BACT for this source is presented in the current BAAQMD BACT/TBACT Workbook for IC Engine – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, Document # 96.1.3, Revision 7 dated 12/22/2010. For NO<sub>x</sub> and CO, BACT(2) is the CARB ATCM standards at applicable horsepower rating. BACT(1) has not been determined.

S-66 satisfies the current BACT 2 standards (emission limits of 2.8 g/hp-hr and 2.6 g/hp-hr for NO<sub>x</sub> and CO, respectively, for maximum engine power greater than or equal to 175 hp and less than 300 hp). The more restrictive BACT 1 standards are not applicable to this engine because it will be limited to operation as emergency standby engine.

**OFFSETS**

San Jose/Santa Clara Water Pollution Control at “700 Los Esteros Road, San Jose, CA 95134” (Plant No. 778) is a major facility which emits in excess of 100 tons per year of NOx, POC, and CO. Therefore, offsets are required any existing cumulative and for application increase for NOx and POC, pursuant to Regulation 2-2-302. CO emissions are not offsetable. The facility does not emit more than 100 tons per year of PM<sub>10</sub>. Therefore, offsets are not required for PM<sub>10</sub> according to Regulation 2-2-303.

The following are the current pre-existing cumulative increases for this facility:

<u>N O X E M I S S I O N I N C R E A S E (tpy, post 4/5/91)</u>					
<u>Application</u>	<u>incr.</u>	<u>contemp reduction</u>	<u>ratio</u>	<u>offsets</u>	<u>Bank No.</u>
17627	1.200	1.200	1.00		
7171	36.170		1.00	36.170	1157
Balance (tons/year):		.000	(* = ERCs returned to Small Facility Bank)		

<u>P O C E M I S S I O N I N C R E A S E (tpy, post 4/5/91)</u>					
<u>Application</u>	<u>incr.</u>	<u>contemp reduction</u>	<u>ratio</u>	<u>offsets</u>	<u>Bank No.</u>
17627	.060	.060	1.00		
7171	28.940		1.00	28.940	1157
9072	.004				
Balance (tons/year):		.004	(* = ERCs returned to Small Facility Bank)		

For NOx, all the current pre-existing cumulative increase has been fully offset for this facility; hence, the only NOx offset required is that from this application. For POC, there is a current pre-existing cumulative increase of 0.004 TPY that has not been fully offset for this facility; hence, the POC offsets required are both from that pre-existing cumulative increase and from this application.

The following is the summary of offsets required from this facility:

NOx emission increase to offset = 0.038 TPY

*POC emission increase to offset = 0.002 TPY + 0.004 TPY = 0.006 TPY*

Per Regulation 2-2-302, before an Authority to Construct or a Permit to Operate is issued for a new source at a facility emitting 35 tons per year or more, on a pollutant specific basis, of POC or NOx, emission offsets shall be provided, for the emissions from the new source and any pre-existing cumulative increase, minus any onsite contemporaneous emission reductions, at a 1.15 to 1.0 ratio. San Jose/Santa Clara Water Pollution Control possesses and has submitted the Emission Reduction Credit (ERC) Certificates #1132 and #1164 to offset the above NOx and POC emission increases. The following amount of credits will be deducted from the ERC Certificates:

Total NOx offset obligation = 0.038 TPY \*1.15/1.0 = 0.044 TPY  
 Total POC offset obligation = 0.006 TPY \*1.15/1.0 = 0.007 TPY

Available ERCs on Certificate #1132: NOx = 0.300 TPY  
 SO<sub>2</sub> = 0.200 TPY  
 CO = 3.200 TPY

Available ERCs on Certificate #1164: POC = 3.000 TPY



Section 60.4209(a) requires a non-resettable hour meter. This requirement is already in the standard permit conditions.

The engine will comply with the requirements of Section 60.4211(c) because it has been certified in accordance with 40 CFR Part 89.

The engine will comply with the requirement in Section 60.4211(e) to run for less than 100 hours per year for maintenance checks and readiness testing, and the prohibition of running for any reason other than emergency operation, maintenance, and testing because it is limited by permit condition to 50 hours per year for reliability testing and otherwise may only operate for emergencies.

The owner/operator is not required to perform tests in accordance with Section 60.4212 or 60.4213.

Section 60.4214 states that owner/operators do not have to submit an initial notification to EPA for emergency engines.

Because the engine does not have a diesel particulate filter, the owner/operator is not subject to Section 60.4214(c).

The owner/operator is required to comply with certain sections of 40 CFR 60, Subpart A, General Provisions. The owner/operator is expected to comply with this requirement.

## **NESHAP**

This engine is not subject to the emission or operating limitations in 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because it is an emergency stationary reciprocating internal combustion engine (40 CFR 63.6600(c)).

## **CARB STATIONARY DIESEL ENGINE ATCM**

The State Office of Administrative Law approved the Airborne Toxic Control Measure (ATCM) on November 8, 2004. State law requires the local Air Districts to implement and enforce the requirements of the ATCM. Effective January 1, 2005, there is a prohibition on the operation of new diesel emergency standby engines greater than 50 bhp unless the following operating requirements and emission standards are met:

**“Stationary Diesel Engine ATCM” section 93115, title 17, CA Code of Regulations.**

### **New Emergency Standby Diesel-Fueled CI Engine (>50 bhp) Operating Requirements and Emission Standards**

1. Meet the applicable emission standards for all pollutants for the same model year and maximum horsepower rating as specified in Table 1 Emission Standards for New

- Stationary Emergency Standby Diesel-Fueled CI Engines (see below), in effect on the date of acquisition or submittal, as defined in section 93115.4; and
2. After December 31, 2008, be certified to the new non-road compression-ignition (CI) engine emission standards for all pollutants for 2007 and later model year engines as specified in 40 CFR Parts 60, 85, et al. Standards of Performance for Stationary Compression-Ignition Internal Combustion Engines; and
  3. Operate 50 hours per year, or less, for maintenance and testing (except emergency use and emissions testing);
- or
1. Meet 0.01 g/bhp-hr PM standard;
  2. Operate up to 100 hours per year for maintenance and testing (except emergency use and emissions testing), upon approval by the District.

**Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)**

<u>Maximum Engine Power</u>	<u>Model year(s)</u>	<u>PM</u>	<u>NMHC+NOx</u>	<u>CO</u>
<u>50 ≤ HP &lt; 75</u> <u>(37 ≤ kW &lt; 56)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>5.6 (7.5)</u> <u>3.5 (4.7)</u>	<u>3.7 (5.0)</u>
	<u>2008+</u>			
<u>75 ≤ HP &lt; 100</u> <u>(56 ≤ kW &lt; 75)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>5.6 (7.5)</u> <u>3.5 (4.7)</u>	<u>3.7 (5.0)</u>
	<u>2008+</u>			
<u>100 ≤ HP &lt; 175</u> <u>(75 ≤ kW &lt; 130)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>3.0 (4.0)</u>	<u>3.7 (5.0)</u>
	<u>2008+</u>			
<u>175 ≤ HP &lt; 300</u> <u>(130 ≤ kW &lt; 225)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>3.0 (4.0)</u>	<u>2.6 (3.5)</u>
	<u>2008+</u>			
<u>300 ≤ HP &lt; 600</u> <u>(225 ≤ kW &lt; 450)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>3.0 (4.0)</u>	<u>2.6 (3.5)</u>
	<u>2008+</u>			
<u>600 ≤ HP &lt; 750</u> <u>(450 ≤ kW &lt; 560)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>3.0 (4.0)</u>	<u>2.6 (3.5)</u>
	<u>2008+</u>			
<u>HP &gt; 750</u> <u>(kW &gt; 560)</u>	<u>2007</u>	<u>0.15 (0.20)</u>	<u>4.8 (6.4)</u>	<u>2.6 (3.5)</u>
	<u>2008+</u>			

This emergency standby diesel engine (S-66) is in compliance with the above ATCM requirements. The diesel engine will operate for no more than 50 hours per year for maintenance and reliability testing. S-66 is subject to the applicable emission standards for all pollutants for the same model year and maximum horsepower rating as specified in Table 1 Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines. As shown in the Table 5, the engine meets these requirements.

**Table 5. ATCM Compliance**

<b>Pollutant</b>	<b>CARB Certified g/bhp-hr</b>	<b>ATCM Standards g/bhp-hr</b>
NMHC+NOx	2.69	3.0
NOx	N/A	N/A
NMHC (POC)	N/A	N/A
CO	1.34	2.6

PM <sub>10</sub>	0.13	0.15
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## **STATEMENT OF COMPLIANCE**

*Source S-66 is subject to and expected to be in compliance with the requirements of District Regulation 1-301 (Public Nuisance), Regulation 6-1-303 (Particulate Matter and Visible Emissions), Regulation 9-1 (Sulfur Dioxide) and Regulation 9-8 (NOx and CO from Stationary Internal Combustion Engines). In order to ensure compliance with the requirements of these regulations, the facility will be conditionally permitted to meet the requirements.*

*From Regulation 1-301, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30 day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct.*

S-66 is subject to the limitations of Regulation 6-1-303 (*Particulate Matter*). Regulation 6, Rule 1, Section 303 states that 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. This low PM10 emitting engine is not expected to produce visible emissions or fallout in violation of this regulation, and it will be assumed to be in compliance with Regulation 6 pending a regular inspection.

S-66 is also subject to the SO<sub>2</sub> limitations of Regulation 9-1-301 (*Limitations on Ground Level Concentrations of Sulfur Dioxide*), Regulation 9-1-302 (*Limitations Sulfur Dioxide Emissions*) and 9-1-304 (*Burning of Solid and Liquid Sulfur Dioxide Fuel*). From Regulation 9-1-301, the ground level concentrations of SO<sub>2</sub> will not exceed 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. Per Regulation 9, Rule 1, Section 302, a person shall not emit from any source a gas stream containing sulfur dioxide in excess of 300 ppm (dry). And Regulation 9, Rule 1, Section 304, states that a person shall not burn any liquid fuel having sulfur content in excess of 0.5% by weight. Compliance with Regulation 9, Rule 1 is very likely since diesel fuel with a 0.0015% by weight sulfur is mandated for use in California.

From Regulation 9, Rule 8 (*NOx and CO from Stationary Internal Combustion Engines*), Section 110.5 (*Emergency Standby Engines*), S-66 is exempt from the requirements of Regulations 9-8-301 (*Emission Limits on Fossil Derived Fuel Gas*), 9-8-302 (*Emission Limits on Waste Derived Fuel Gas*), 9-8-303 (*Emissions Limits – Delayed Compliance, Existing Spark-Ignited Engines, 51 to 250 bhp or Model Year 1996 or Later*), 9-8-304 (*Emission Limits – Compression-Ignited Engines*), 9-8-305 (*Emission Limits – Delayed Compliance, Existing Compression-Ignited Engines, Model Year 1996 or Later*), 9-8-501 (*Initial Demonstration of Compliance*) and 9-8-503 (*Quarterly Demonstration of Compliance*). However, it is subject to the monitoring and record keeping procedures described in Regulation 9-8-530 (*Emergency Standby Engines*,

*Monitoring and Recordkeeping*). The requirements of this Regulation are included in the permit conditions below.

S-66 is also subject to and expected to comply with Regulation 9-8-330 (*Emergency Standby Engines, Hours of Operation*) since non-emergency hours of operation will be limited in the permit conditions to 50 hours per year.

This application is considered to be ministerial under the District's Regulation 2-1-311 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.

PSD is not triggered.

*This facility is located greater than 1,000 feet from the nearest school and therefore is not subject to the public notification requirements of Regulation 2-1-412.*

CONDITION 22850-----  
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1. Operating for reliability-related activities is limited to 50 hours per year per engine.  
[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
  
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 hours 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**

*I recommend that San Jose/Santa Clara Water Pollution Control be issued an Authority to Construct and/or Permit to Operate for the following equipment:*

**S-66**

Emergency Standby Diesel Generator Set

**2008 Perkins, Model: D150-8**

**274 BHP, 1.62 MMBTU/hr**

**Prepared by:** \_\_\_\_\_

**Date:** \_\_\_\_\_

(iv) *Kevin Oei*  
**Air Quality Engineer**

## ENGINEERING EVALUATION APPLICATION 23356

**ENGINEERING EVALUATION REPORT**  
**City of San Jose**  
**Plant Number 778**  
**Application Number 23356**

**I BACKGROUND**

The City of San Jose has requested a change of condition for the following engine sources associated. Table 1 lists the source numbers and the respective condition numbers.

Table 1 Source Numbers and Condition Numbers

Source Number	Source Description	Condition Number	
S-5 to S-7	IC Engine	17898	
S-9 to S-14	IC Engines	17899	
S-36, S-37	IC Engines	17900	
S-54	IC Engine	17901	

The City is requesting an increase of 10 percent in the heat input for the engines and a corresponding reduction in the conditioned emissions so that the existing criteria and toxic air contaminant emissions remain the same qualifying them for an Administrative Change of Condition. Prior source tests demonstrate that the engines are capable of consistently meeting the lower emission limits

**II EMISSION CALCULATIONS**

The permitted emission will not change because the increased heat input will be balanced by a corresponding reduction in emission limits in the permit condition. No additional emission calculations are required.

**III FINAL CONDITIONS**

The following presents the Change of Conditions for Sources S-5 through S-7, S-9 through S-14, S-36, S-37 and S-54. Condition 17898 for sources S-5, S-6, S-7 and Condition 17901 for source S-54 allow unrestricted usage of diesel fuel as one of the alternate fuels. Diesel particulate is a toxic air contaminant. To maintain the risk level below the existing risk, diesel usage will be restricted in the condition to a maximum of the previous 3 year average. Table 2 shows the reported three year usage during 2010, 2011 and 2012 and the three year average.

Table 2: 3-year Average Diesel Fuel Throughput

Source #	Annual Reported Maximum Diesel Throughput (Gallons)			3-Year Average Usage	Comment
	2010	2011	2012		
5	800	2000	1800	1533	Conditioned at 1500 gallons/year
6	1000	1700	2200	1633	Conditioned at 1600 gallons/year
7	900	7700	5000	4573	Conditioned at 4500 gallons/year

54	21,000	31,100	31,000	27,700	Conditioned at 27,700 gallons/year
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Condition Change for Sources S-5, S-6, S-7; Condition# 17898

S-5 1130 Bhp Stationary IC Engine, Plt E2, P&E

~~S-6 1130 Bhp Stationary IC Engine, Plt E3, P&E~~

S-7 2466 Bhp Stationary IC Engine, Plt E5, P&E

1. The Owner/Operator of S-5, ~~S-6,~~ and S-7 shall fire the engines on natural gas, sewage sludge digester gas, landfill gas, diesel fuel, or any combination thereof. S-5, ~~S-6,~~ and S-7 shall not exceed 1500, 1600 and 4500 gallons per year respectively of firing diesel fuel. (Basis: Cumulative Increase, Toxics)
2. The Owner/Operator of S-5, ~~S-6,~~ and S-7 shall not exceed NOx emissions, expressed as NO2, 126 ppmv NOx at 15% O2. (Basis: 9-8-301.2, 302.1)
3. The Owner/Operator of S-5, ~~S-6,~~ and S-7 shall not exceed CO emissions of 1800 ppmv at 15% O2. (Basis: 9-8-301.3, 9-8-302.3)
4. The Owner/Operator of S-5, ~~S-6,~~ and S-7 shall not exceed the following NMHC emission Limits:
  - a. Landfill Gas Combustion Operations:  
This source shall achieve a NMHC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 108 ppm by volume of NMHC, dry basis, as methane corrected to 3% oxygen. (Basis: Regulation 8-34-301.4)
  - b. Digester Gas Combustion:  
NMHC concentration of engine exhaust from digester gas combustion shall not exceed 225 ppmv at 15% O2. (Basis: Cumulative Increase)
5. Thermal Capacity Limitations: The Owner/Operator of S-5, ~~S-6,~~ and S-7 shall not exceed the following thermal throughput limits during any consecutive 24 hour period (Basis: Cumulative Increase)
  - S-5 240 MM Btu/day
  - ~~S-6 240 MM Btu/day~~
  - S-7 552 MM Btu/day
6. The Owner/Operator shall not use diesel fuel that contains sulfur in excess of 0.0015% by weight. 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 9-1-304, 2-6-409.2, 2-6-501)
7. The Owner/Operator of S-5, ~~S-6,~~ and S-7 shall not vent supplied landfill gas to the atmosphere. (Basis: 8-34-301)
8. Monitoring Equipment

The Owner/Operator of S-5, ~~and S-6,~~ S-7 shall install the following equipment and shall use it to assist in demonstrating compliance with the NMHC 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

- a) Effective January 1, 2007, ~~the Owner/Operator of S-5, S-6, and~~ S-7 shall measure the cylinder exhaust of ~~S-5, S-6,~~ and S-7 using a continuous temperature monitor(s) and recorder meeting the requirements of 40 CFR 60.756(b)(1).
- b) Effective January 1, 2007, the Owner/Operator of S-5, ~~S-6, and~~ S-7, 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 shut down within 5 minutes of measuring the temperature.
- c) The Owner/Operator of S-5, ~~S-6, and~~ S-7 shall retain onsite all records 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) Deleted upon issuance of Title V Renewal (2006).
- b) Ongoing Compliance Testing: The Owner/Operator of S-5, ~~S-6~~ and S-7 shall ensure that a performance test is conducted on each ~~engine~~ at least once every 8760 hours 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 NMHC 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 NMHC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)
- c) NMHC Emissions Testing to Demonstrate Compliance:  
The Owner/Operator of S-5, ~~S-6~~ and S-7 shall ensure that a performance test for NMHC is conducted on each engine at least once every 8760 hours of engine operation after the previous performance test. All performance tests for NMHC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMHC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMHC emission levels.

The maximum allowable ppmv concentration of NMHC 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 NMHC 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 Owner/Operator of S-5, ~~S-6~~, and S-7 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 diesel 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 Change for Sources S-9, S-10, S-11, S-12, S-13 and S-14; Condition#: 17899

S-9 2345 Bhp Stationary IC Engine, Plt A3, Location SBB  
S-10 2345 Bhp Stationary IC Engine, Plt A2, Location SBB  
S-11 2345 Bhp Stationary IC Engine, Plt A1, Location SBB  
S-12 2345 Bhp Stationary IC Engine, Plt B1, Location SBB  
S-13 1855 Bhp Stationary IC Engine, Plt B2, Location SBB  
S-14 1855 Bhp Stationary IC Engine, Plt B3, Location SBB

- 1. The Owner/Operator of engines S-9, S-10, S-11, S-12, S-13, S-14 shall fire the engines on natural gas, sewage sludge digester gas, landfill gas, or any combination thereof.  
(Basis: Cumulative Increase)
- 2. The Owner/Operator of engines S-9, S-10, S-11, S-12, S-13, S-14 shall not exceed 126ppmv of NO<sub>x</sub> emissions expressed as NO<sub>2</sub> at 15% O<sub>2</sub>. (Basis: 9-8-301.2, 302.1)
- 3. The Owner/Operator of engines S-9, S-10, S-11, S-12, S-13, S-14 shall not exceed 1620 ppmv of CO emissions at 5% O<sub>2</sub>.  
(Basis: 9-8-301.3, 9-8-302.3)
- 4. NMHC emission Limits
  - a. Landfill Gas Combustion Operations: The Owner/Operator of engines S-9, S-10, S-11, S-12, S-13, S-14 shall achieve a NMHC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 108 ppm by volume of NMHC, dry basis, as methane corrected to 3% oxygen. (Basis: Regulation 8-34-301.4)
  - b. Digester Gas Combustion: The Owner/Operator of engines S-9, S-10, S-11, S-12, S-13, S-14 shall not exceed 225 ppmv of NMHC at 15% O<sub>2</sub> from Digester gas combustion.  
(Basis: Cumulative Increase)
- 5. Thermal Capacity Limitations: The Owner/Operator of S-9, S-10, S-11, S-12, S-13, S-14 total thermal throughput shall not exceed the following limits  
(Basis: Cumulative Increase)

- S-9 525 MM Btu/ day
- S-10 525 MM Btu/ day
- S-11 525 MM Btu/ day
- S-12 415 MM Btu/ day
- S-13 415 MM Btu/ day
- S-14 415 MM Btu/ day

6. The Owner/Operator of S-9, S-10, S-11, S-12, S-13 and S-14 shall not vent supplied landfill gas to the atmosphere.  
(Basis: 8-34-301)

7. Monitoring Equipment

The Owner/Operator of S-9, S-10, S-11, S-12, S-13, S-14 shall install and use the following equipment to assist in demonstrating compliance with the NMHC 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

- a. Effective January 1, 2007, the Owner/Operator of S-9, S-10, S-11, S-12, S-13 and S-14 shall measure the cylinder exhaust of S-5, ~~S-6~~, and S-7 using a continuous temperature monitor(s) and recorder meeting the requirements of 40 CFR 60.756(b)(1).
- b. Effective January 1, 2007, the Owner//Operator of S-9, S-10, S-11, S-12, S-13 and S-14, 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 shut down within 5 minutes of measuring the temperature.
- c. The Owner/Operator of S-9, S-10, S-11, S-12, S-13 and S-14 shall retain onsite all records for five years from the date of entry, and make them 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. Deleted upon issuance of Title V Renewal (2006).
- b. Ongoing Compliance Testing: The Owner/Operator of S-9, S-10, S-11, S-12, S-13 and S-14 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 NMHC 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 NMHC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)

- c. NMHC Emissions Testing to Demonstrate Compliance: The Owner/Operator of S-9, S-10, S-11, S-12, S-13 and S-14 Owner/Operator shall ensure that a performance test for NMHC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMHC identified in Regulation 8-34-412 and shall determine NMHC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMHC emission levels. The maximum allowable ppmv concentration of NMHC 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 NMHC 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. The Owner/Operator of S-9, S-10, S-11, S-12, S-13 and S-14, to determine compliance with the above conditions, 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 Change for Sources S-36, S-37, 38 and 39; Condition# 17900

Condition number 17900 covers Sources S-36, 37, 38 and 39. However the sources that are subject to condition change are S-36 and S-37.

S-36, Engine Generator 2, Cogen Unit, Plt EG-2  
S-37, Engine Generator 3, Cogen Unit, Plt EG-3

1. The Owner/Operator of S-36, S-37 shall fire the engines on natural gas, sewage sludge digester gas, landfill gas, or any combination thereof.  
(Basis: Cumulative Increase)
2. The Owner/Operator of S-36, S-37 shall not exceed 1.6 grams per hp-hr of NO<sub>x</sub> emissions per engine. (Basis: BACT)
3. The Owner/Operator of S-36, S-37 shall not exceed 546 lb per engine of CO emissions in any consecutive 24-hour period. (Basis: Cumulative Increase)

4. The Owner/Operator of S-36, S-37 shall not exceed 36.4 lb per engine of PM<sub>10</sub> in any consecutive 24-hour period. (Basis: Cumulative Increase)
5. NMHC Emission Limits
  - a. Daily Limit: The Owner/Operator of S-36, S-37 shall not exceed 87.8 lb per engine of NMHC in any consecutive 24-hour period.  
(Basis: Cumulative Increase)
  - b. Landfill Gas Combustion Operations:  
The Owner/Operator of S-36, S-37 shall achieve a NMHC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 108 ppm by volume of NMHC, dry basis, as methane corrected to 3% oxygen.  
(Basis: Regulation 8-34-301.4)
6. Thermal Capacity Limitations: The Owner/Operator of S-36, S-37 shall not exceed the following total thermal throughput limits.  
(Basis: Cumulative Increase)  
  
S-36 792 MM Btu/ day  
S-37 792 MM Btu/day
7. The Owner/Operator of S-36, S-37 shall not vent supplied landfill gas to the atmosphere untreated. (Basis: 8-34-301)
8. Monitoring Equipment: The Owner/Operator of S-36, S-37 shall install, and use the following equipment to assist in demonstrating compliance with the NMHC emission standards and thermal capacity limitations:
  - a. Flow meters on each gas supply line to determine relative component fuel gas.
  - b. Flow to each engine.
  - c. Calorimeters of fuel gas mixture feed to engines.
  - d. Calorimeter or Gas Chromatograph on landfill gas feed to mixing station.
  - e. Engine cylinder thermocouples & recording instruments.

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

9. Key Operating Parameter
  - a. Effective January 1, 2007, the Owner/Operator of S-36, S-37 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 shut down by the Owner/Operator within 5 minutes of measuring the temperature.
  - c. Effective January 1, 2007, the Owner/Operator of S-36 and S-37 shall retain all records onsite for five years from the date of entry and make 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. Deleted upon issuance of Title V Renewal (2006).
  - b. Ongoing Compliance Testing: The Owner/Operator of S-36, S-37 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 TSP limits required by parts 2,3 and 4. The Owner/Operator of S-36, S-37 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 NMHC. Approvals shall be processed using the permit modification procedure contained in Regulation 2, Rule 6. (Basis: Regulation 2-6-409.2)
  - c. NMHC Emissions Testing to Demonstrate Compliance: The Owner/Operator of S-36, S-37 shall ensure that a performance test for NMHC is conducted on each engine at least once every 8760 hrs of engine operation after the previous performance test. All performance tests for NMHC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMHC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMHC emission levels. The maximum allowable ppmv concentration of NMHC 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 NMHC 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 Specific to following Sources:

S-38, Boiler, Low NO<sub>x</sub>

S-39, Boiler, Low NO<sub>x</sub>

11. These boilers may be fired on natural gas only.  
(Basis: Cumulative Increase)
12. Deleted 02/07/2005.
13. Deleted 02/07/2005.
14. The Owner/Operator of S-38, S-39 shall install District approved flow meters, to measure fuel flow into the boiler, shall be installed prior to any operation and maintained in good working order.  
(Basis: Regulation 2-6-409.2)
15. Thermal Capacity Limitations: The Owner/Operator of S-38, S-39 shall not exceed the following total thermal throughput limits  
(Basis: Cumulative Increase)

S-38: 12.5 MM Btu/hr

S-39: 12.5 MM Btu/hr

Conditions Applicable to the following sources:

S-36, Engine Generator 2 - Cogen Unit, Plt EG-2

S-37, Engine Generator 3 - Cogen Unit, Plt EG-3

S-38, Boiler, Low NOx

S-39, Boiler, Low NOx

16. The Owner/Operator of S-36, S-37, 38 and 39 shall not exceed a total of 774 lb. of NOX in any consecutive 24-hour period.  
(Basis: BACT, Cumulative Increase)
17. The Owner/Operator of S-36, S-37, S-38 and S-39 shall not exceed a total of 150 lb. of SO2 in any consecutive 24-hour period.  
(Basis: Cumulative Increase)
18. The Owner/Operator of S-37, S-38, S-39 and S-39, to determine compliance with the above conditions 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 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.

19. The Owner/Operator of S-38, S-39 within 60 days of issuance of the 2006 Title V renewal permit and annually thereafter shall conduct District approved source tests on S-38 and S-39 to determine compliance with the nitrogen oxide and carbon monoxide limits of Regulation 9-7-301. The Owner/Operator shall submit the source test results to the District staff no later than 60 days after the source test. (basis: 9-7-301, 2-6-409.2)
20. The Owner/Operator of S-36, S-37, S-38 and S-39 shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The Owner/Operator shall comply with all applicable testing requirements as specified in Volume V of the District's Manual of procedures. The Owner/Operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. (basis: 9-7-301)

Condition Change for Source S-54; Condition# 17901

1. The Owner/Operator shall only fire S-54 on sewage sludge digester gas, natural gas, landfill gas, or a blend of any of the above fuels, with a diesel pilot fuel. S-54 shall not exceed combusting 27,700 gallons per year of diesel fuel.  
(Basis: Cumulative Increase)

2. The Owner/Operator shall not exceed a firing rate of 763 MM Btu/day in S-54.  
(Basis: Cumulative Increase)
3. The Owner/Operator of S-54 in the event of catastrophic damage to the natural gas fuel supply, the Owner/Operator may fire S-54 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 land fill gas exists.  
(Basis: Cumulative Increase)
4. The diesel fuel shall not contain sulfur content in excess of 0.0015% by weight. 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 9-1-304, 2-6-409.2, 2-6-501)
5. NO<sub>x</sub> emissions, calculated as NO<sub>2</sub>, shall not exceed 0.9 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 2.97 grams/bhp-hr.  
(Basis: BACT, Cumulative Increase)
7. NMHC Emission Limits
  - a. Digester Gas or Natural Gas Combustion: NMHC emissions derived from digester gas or natural gas combustion shall not exceed 0.72 grams/bhp-hr  
(Basis: BACT, Cumulative Increase)
  - b. Landfill Gas Combustion Operations:  
This source shall achieve a NMHC emission reduction from landfill gas combustion of at least 98% by weight or shall emit less than 108 ppm by volume of NMHC, dry basis, as methane corrected to 3% oxygen.  
(Basis: Regulation 8-34-301.4)
8. The Owner/Operator of S-54 shall not exceed 0.068 grams/bhp-hr of PM<sub>10</sub> emissions, 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 Owner/Operator of S-54 shall not exceed the following total release amounts in any consecutive 365-day period:  
NO<sub>x</sub> 36.2 tons (BACT, Cumulative Increase)  
CO 119.4 tons (BACT, PSD)  
NMHC 28.9 tons (BACT, Cumulative Increase)  
PM<sub>10</sub> 3.1 tons (Cumulative Increase)  
SO<sub>2</sub> 7.2 tons (Cumulative Increase)
10. The Owner/Operator of S-54 shall not emit particulate emissions exceeding Ringelmann 1.0. (Basis: Regulation 6-301)

11. The Owner/Operator of S-54 shall not vent supplied landfill gas to the atmosphere.  
(Basis: 8-34-301)

12. Monitoring Equipment

The Owner/Operator shall install the following equipment, and use it to assist in demonstrating compliance with the NMHC 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

- a. Effective January 1, 2007, the Owner/Operator of S-54 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, the Owner/Operator of S-54, 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 shut down within 5 minutes of measuring the temperature.
- c. Effective January 1, 2007, The Owner/Operator of S-54 shall retain all records 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. Deleted upon issuance of Title V Renewal (2006).
- b. NO<sub>x</sub>, CO, TSP Testing: The Owner/Operator of S-54 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. NMHC Emissions Testing to Demonstrate Compliance:  
The Owner/Operator of S-54 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 NMHC emissions shall be conducted in accordance with the methods and test specifications identified in Regulation 8-34-412 and shall determine NMHC emissions in ppm at 3% oxygen as methane, dry. The results of the source test shall be compared against the maximum allowable NMHC emission levels. The

maximum allowable ppmv concentration of NMHC 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 NMHC 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. The Owner/Operator of S-36, S-37 to determine compliance with the above conditions 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.

#### IV. PLANT CUMULATIVE INCREASE

There is an increase in the fuel throughput. However, there is a corresponding reduction in the conditioned emission limits. Thus there is no increase in the annual emissions due to the change of conditions.

#### V. APPLICABLE REQUIREMENTS

There is no change in the compliance status of Sources S-5, ~~S-6~~, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37 and S-54 since the change of condition is an administrative change.

**Offsets:** Offsets must be provided for any facility that cumulatively emits more than 10 tons per year of POC or NO<sub>x</sub>. Offsets must be provided for any new or modified source at a Major Facility that emits more than 1 ton/year of PM10 or SO<sub>2</sub>. A Major Facility is a facility that has the potential to emit 100 tons/yr of any regulated air pollutant or 10 tons/yr of any single hazardous air pollutant or 25 tons of a combination of hazardous air pollutants. There is no change in the permitted emissions of sources S-5, ~~S-6~~, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37 and S-54. Thus there is no increase or decrease in the potential emissions due to the Change of Condition.

**CEQA:** This project is exempt from CEQA in accordance with Regulation 2-1-312.1 that states "Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications". There is no physical modification done on sources S-5, ~~S-6~~, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37 and S-54 and there is no change in the potential emissions due to the Change of Condition.

**PSD, NSPS, and NESHAPS do not apply.**

*The project is over 1000 feet from the nearest school and therefore not subject to the public notification requirements of Reg. 2-1-412.*

## VI. PERMIT CONDITIONS

Condition change for sources S-5, ~~S-6~~, S-7, S-9, S-10, S-11, S-12, S-13, S-14, S-36, S-37 and S-54 in Section III. Changes will be made in the data bank upon approval by the supervisor and manager.

Table 1 Source Numbers and Condition Numbers

Source Number	Source Description	Condition Number
S-5 to S-7	IC Engine	17898
S-9 to S-14	IC Engines	17899
S-36, S-37	IC Engines	17900
S-54	IC Engine	17901

## VII. RECOMMENDATIONS

It is recommended that the above Change of Condition be effective immediately.

## VIII. EXEMPTIONS

None

**By:** \_\_\_\_\_  
Hari S. Doss

**Date:** 2/3/2014