Bay Area Air Quality Management District

375 Beale Street, Suite 600
San Francisco, CA 94105
(415) 771-6000

Permit Evaluation
and
Statement of Basis
for
SIGNIFICANT REVISION
and ADMINIISTRATIVE AMENDMENT
of
MAJOR FACILITY REVIEW PERMIT

for

San Jose/Santa Clara
Water Pollution Control
Facility #A0778

Facility Address:
700 Los Esteros Road
San Jose, CA 95134

Mailing Address:
700 Los Esteros Road
San Jose, CA 95134

Application Engineer: Brenda Cabral

Site Engineer: Ryan Atterbury

Applications: 30091, 699830

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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, March 6, 2017, and May 3, 2022. This application is for a significant revision, a minor revision, and administrative amendments to the permit.

The purpose of the significant revision is to amend Condition 26639 to allow the facility to use EPA Method 18 to determine the ethane emissions in the exhaust of Sources S67, S68, S69, and S70, Cogeneration Systems, and to subtract the ethane from the non-methane organic compounds (NMOC) to determine compliance with the following precursor organic compound (POC) limit in part 15 of the condition:

> "…0.12 grams of POC per brake-horsepower-hour, or the equivalent outlet concentration of 30.6 ppmv of POC (as methane), corrected to 15% oxygen, dry basis…"

The ethane can be subtracted from the total NMOC because ethane is not defined as POC in BAAQMD Regulation 1-234 or as a volatile organic compound (VOC) by EPA in 40 CFR 51.100(s).

On June 6, 2014, Jodi Howard of the EPA Measurement Technology Group wrote to Jordan Laster of Alliance Source Testing with an approval of a method to subtract ethane from the NMOC total. This letter is the basis for the approval of changes to Condition 26639. The letter is attached in Appendix B. The letter has the following requirements to use Method 18 to determine the ethane emissions. These requirements will be incorporated into the condition.

- You must use a direct interface and heated sampling line from the sampling point to the gas chromatographic injection valve. All sampling components leading to the analyzer must be heated to greater than 110°C (220°F) throughout the sampling period (unless safety reasons are present as described in Section 5.2 of Method 25A).

- You must calibrate the instrument with a mixture of ethane, propane and the required NMEOC hydrocarbon in Method 25A or the applicable rule if it is different from propane. This requirement assumes methane is separated from ethane and passes through the separator column prior to ethane. The ethane and propane are necessary in the mixture to confirm the separation of ethane from other NMEOC while not retaining additional NMEOC, which would bias the NMEOC results low. The ethane may be calibrated at a single high point on the calibration curve to demonstrate proper ethane to NMEOC separation. Linearity, calibration error, and calibration drift must be demonstrated using the NMEOC hydrocarbon specified in the applicable rule or propane according to Method 25A.

- If you are required to measure and report methane, ethane, and NMEOC, you must calibrate the instrument with a mixture of methane, ethane, and propane (or the required NMEOC hydrocarbon in Method 25A or the applicable rule if it is different from propane). The methane and ethane in this calibration gas are necessary to generate quantitative concentrations for these components, as well as to confirm the separation of methane and ethane from other NMEOC while not retaining additional NMEOC, which would bias the NMEOC results low. If you are required to report all three components independently, you must check linearity, calibration error, and calibration drift using methane, ethane, and the required NMOC hydrocarbon.

- You must collect the measurement data required in the bullets above for each test run at a minimum of one measurement every 15 minutes.

- You must also follow the appropriate procedures in Sections 8, 9, and 10 of Method 25A to ensure that linearity, calibration drift error, and drift are within the Method 25A limits.

- You must report calibration results for each organic compound required to demonstrate compliance. You must also report results demonstrating proper separation of methane or ethane from the required NMOC or NMEOC hydrocarbons.

The following administrative amendments will be made in this action:

- Update the responsible official from Amit Mutsuddy, Deputy Director, to Mariana Chavez-Vazquez, Regional Wastewater General Manager.
- Delete the following sources:
  - S9, S10, S11, 2345-hp Digester Gas/Natural Gas Engines
  - S38, S39, Natural Gas Boilers
- Delete the custom Schedule of Compliance in Section V for S67, S68, and S69, 4834-hp Digester Gas/Natural Gas Engines, because complying source tests have been approved for each source.
- Update the requirements of 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, for S67-S70, Cogen Engines.
- The tables in Sections IV and VII will be reordered at the time of issuance.
- Obsolete future effective dates have been removed.
- Obsolete permit conditions have been removed.

The significant revisions will be based on District NSR Application 699829 and Title V Application 699830.

Application 699829 is for the change in monitoring described in the Background section above.

Application 699830 is for a significant revision and an administrative amendment.

This action will also incorporate revisions pursuant to NSR Application 30091, which added A20, Biotower, as a control device for S110, Preliminary Treatment. This results in a minor revision to the Title V permit.

The proposed statement of basis will show all proposed changes to the permit in strikeout/underline format. It will only address revisions that are being considered in this action.

The evaluation report for BAAQMD NSR Application 30091 is attached in Appendix C. The evaluation report for BAAQMD NSR Application 699829 is attached in Appendix D. These applications form part of this Statement of Basis.

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.

No emissions increases will result from this significant revision.

C. Permit Content

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

Title Page

The responsible official will be updated. The new responsible official is Mariana Chavez-Vazquez, Regional Wastewater General Manager.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

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

Changes to permit:
No changes will be made to this section.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

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

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).

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., A24). 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 an Authority to Construct or 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.

Changes to permit:
The following changes will be made in this section.

A20, Biotower, which abates S110, Preliminary Treatment, has been added to the list of abatement devices. This is a minor revision of the permit.

The information for S9-S11, Engines, and S38 and S39, Boilers, has been removed because these sources have been demolished. These are administrative amendments per BAAQMD Regulation 2-6-301.

The information regarding S67-S70, Engines, S110, Preliminary Treatment, and S210, Anaerobic Digesters, is provided for information. There are no changes to the descriptions of these sources.

Table II A – Permitted Sources

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition J 1. and Regulation 2-1-301.

S#	Description	Make or Type	Model	Capacity
~~S9~~	~~Stationary, 4-Stroke, Lean Burn, IC Cogen Engine, A3 (digester gas, natural gas)~~	~~Cooper-Bessemer~~	~~LS-8-SCG~~	~~2345 HP/19.9 MM Btu/hr~~
~~S10~~	~~Stationary, 4-Stroke, Lean Burn, IC Cogen Engine, A2 (digester gas, natural gas)~~	~~Cooper-Bessemer~~	~~LS-8-SGC~~	~~2345 HP/19.9 MM Btu/hr~~
~~S11~~	~~Stationary, 4-Stroke, Lean Burn, IC Cogen Engine, A1 (digester gas, lnatural gas)~~	~~Cooper-Bessemer~~	~~LS-8-SGC~~	~~2345 HP/19.9 MM Btu/hr~~
~~S38~~	~~Boiler, Low NOx, Firetube (natural gas)~~	~~Gordon Piatt~~	~~F16.9G50/15934~~	~~12.5 MM Btu/hr~~
~~S39~~	~~Boiler, Low NOx, Firetube (natural gas)~~	~~Gordon Piatt~~	~~F16.9G50/15934~~	~~12.5 MM Btu/hr~~
S67	Cogeneration System #1 (digester gas, natural gas)	Caterpillar	CG-260-16	4834 hp/31 MMbtu/hr
S68	Cogeneration System #2 (digester gas, natural gas)	Caterpillar	CG-260-16	4834 hp/31 MMbtu/hr
S69	Cogeneration System #3 (digester gas, natural gas)	Caterpillar	CG-260-16	4834 hp/31 MMbtu/hr
S70	Cogeneration System #4 (digester gas, natural gas)	Caterpillar	CG-260-16	4834 hp/31 MMbtu/hr
S110	Preliminary Treatment	Custom	N/A	15 MM gal/hr
S210	Anaerobic Digesters	Custom	N/A	5.5 MM gal/hr

Table II B – Abatement Devices

A#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
A20	Biotower	S110	BAAQMD 8-2-301	None	15 lb/day and more than 300 ppm total carbon as methane, excluding 1,1,1, trichloro-ethane, methylene chloride, methane and chlorofluorocarbons
			BAAQMD Condition # 27178, Part 2	None	1.5 ppm H2S at outlet

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:
No changes will be made to this section.

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 determinations

S67, S68, S69, S70, Cogeneration Engines

As discussed in the evaluation for Application 699829, attached, the source testing requirement for the engines has been amended to allow the facility to subtract ethane from the results for the precursor organic compound (POC) limit because ethane is not a POC.

Various requirements in NSPS, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, have been added and corrected. Additional reporting requirements have been incorporated.

The engines have not been certified by EPA. Therefore, the facility is required to perform ongoing testing for compliance with the NSPS.

Changes to permit:

The tables have been renumbered. When the action is finalized, the tables will be put in a new order. All of the non-wastewater sources will be first. The wastewater sources will be listed later, in number order.

S9-S11, Engines, and S38 and S39, Boilers

The tables for S9-S11, Engines, and S38 and S39, Boilers, have been removed because these sources have been demolished. These are administrative amendments per BAAQMD Regulation 2-6-301.

S67, S68, S69, S70, Cogeneration Engines
Various requirements from 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, were added.

The requirements of BAAQMD Condition 17741 regarding combustion of digester gas and monitoring of sulfur content of digester gas, omitted in error, were added.

Part 3 of BAAQMD Condition 26639 were deleted in NSR Application 699829 because it is obsolete. One of the bases in part 18 was corrected from BAAQMD Regulation 9-1-302.3 to 9-8-302.3.

No other changes to the description of Condition 26638 in Section VI were required.

S110, Primary Treatment
S110 has been removed from the general wastewater sources table and a new table has been added for S110. In addition to the requirements listed in Application 30091, a requirement for monitoring of precursor organic compounds has been added to ensure compliance with BAAQMD Regulation 8-2-301.

S120, Primary Treatment, and 200, Sludge Handling
The references to future effective dates in Tables L and M have been removed because Application 30725 has been finalized.

S210, Digesters
Condition 17741 was laid out in two parts: one before the startup of the thermophilic operation and one after the startup of the thermophilic operation. Since the thermophilic operation has begun and Application 27366 was finalized on May 19, 2022, the old provisions and the effective dates have been removed. This is an administrative amendment.

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."

Changes to permit:
The custom schedule of compliance that required the facility to submit approvable source tests for S67-S70, Engines, was deleted because the source tests have been approved. This is an administrative amendment.

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.

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.

Changes to permit:
The tables have been renumbered. When the action is finalized, the tables will be put in a new order. All of the non-wastewater sources will be first. The wastewater sources will be listed later, in number order.

Condition 17741, S210, Digesters
The condition was laid out in two parts: one before the startup of the thermophilic operation and one after the startup of the thermophilic operation. Since the thermophilic operation has begun and Application 27366 was finalized on May 19, 2022, the old provisions and the effective dates have been removed. This is an administrative amendment.

Sources S9, S10, and S11, Engines have been deleted from Part 1 because they have been demolished.

Condition# 17899, Sources S9, S10, and S11:
The condition was deleted because the sources have been demolished. This is an administrative amendment per BAAQMD Regulation 2-6-201.

Condition# 17900, Sources S38 and S39:
The condition was deleted because the sources have been demolished. This is an administrative amendment per BAAQMD Regulation 2-6-201.

Condition 26639, S67 through S70, Engines
Condition 26639 was amended to allow the facility to test POC as NMOC. The details are in the evaluation for Application 699829, which is in Appendix D.

Part 3 was also deleted because it is obsolete.

Condition 27178, S110, Preliminary Treatment
Condition 27178 was added for S110 pursuant to Application 30091.

Since the addition of A20, Biotower, created an emission point for S110, testing for the 300 ppm total carbon limit in BAAQMD Regulation 8-2-301 is now feasible. In lieu of testing, weekly monitoring using a portable monitor has been added. If the source is below 150 ppm for 12 consecutive weeks, the facility may monitor on a monthly basis.

The monitoring in parts 5 and 6 of this condition have been added in this action.

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.

Changes to permit:

S67-S70, Engines
The District has amended the source testing conditions for S67-S70, Engines and has determined the monitoring is adequate.

The details of the changes are in the evaluation for Application 699829, which can be found in Appendix D.

S110, Preliminary Treatment
The weekly H2S monitoring in condition 27178 is adequate to ensure compliance with the H2S limit.

The District has added weekly monitoring with a portable monitor to ensure compliance the 300 ppm total carbon limit in BAAQMD Regulation 8-2-301. If the source is below 150 ppm for 12 consecutive weeks, the facility may monitor on a monthly basis.

S210, Digesters
Condition 17741 was laid out in two parts: one before the startup of the thermophilic operation and one after the startup of the thermophilic operation. Since the thermophilic operation has begun and Application 27366 was finalized on May 19, 2022, the old provisions and the effective dates have been removed. This is an administrative amendment.

VIII. Test Methods

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

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

Changes to permit:
The test methods for S67-S70, Engines, have been revised in this action.

VIII. Permit Shield

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

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

This facility has no permit shields. Therefore, this permit has no streamlining.

X. Glossary

This section contains terms that may be unfamiliar to the general public or EPA. The definitions of NMOC and NMHC will be amended as follows:

NMHC
Non-methane Hydrocarbons (Same as NMOC and POC)

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

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 1st of each year.

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 March 3, 2017 and the permit proposal date:

None.

APPENDIX A

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)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx
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, NOx, PM10, and SO2.

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

POC
Precursor Organic Compounds (Same as NMHC and NMOC)

PM
Particulate Matter

PM10

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

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

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.

SO2
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^2	=	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 B

EPA Letter of June 6, 2014 from Jodie Howard to Jordan Laster of Alliance Source Testing

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

JUN G 2014

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. Jordan Laster, Sr. Project Manager
Alliance Source Testing
24 Hagerty Blvd, Unit 13
West Chester, PA 19382

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

Dear Mr. Laster:

Thank you for your email of April 22, 2014, requesting approval of an alternative to Method 25A and Method 18 to measure volatile organic compounds (VOC) for spark ignition internal combustion engines (SI ICE) as required in 40 CFR part 60, Subpart JJJJ. Subpart JJJJ refers to 40 CFR Section 51.lOO(s) to define VOC. The definition in Part 51 allows for the exclusion of methane and ethane when reporting VOC by using a combination of Method 18 and Method 25A testing (methane and ethane are measured by Method 18, and then this result is subtracted from the total gaseous organic measurement of Method 25A). You are requesting to use an alternative method that measures VOC directly rather than by difference. The measurement instrument you are proposing for this purpose is based on gas chromatography with flame ionization detection (GC/FID), and is manufactured by VIG Industries, Inc.

We understand you are requesting approval to use this technology as an alternative to avoid the error involved in subtracting large amounts of methane and ethane from a total Method 25A organic measurement that contains relatively small amounts of non-methane, non-ethane organic compounds (NMEOC). The alternative testing approach you requested involves separation of the methane and ethane components of the emission gas from the remaining VOC. Methane and ethane are separated and measured by the flame ionization detector (FID), followed by a back- flush of the chromatographic column to measure NMEOC. You cited the EPA's previous approval of alternative testing approaches (ALT-066, ALT-078, ALT-096 and ALT-097a) related to NMOC and methane measurement requirements under 40 CFR part 60, Subpart JJJJ, as having the same technological approach as your proposal. You are requesting that the specific vendor and model reference in ALT-096 be broadened to any GC/FID that operates in a similar capacity and meets the required quality control checks of Method 25A.

We have reviewed your request and the associated rule language, and we agree that an alternative testing approach using GC to separate and measure methane and ethane, followed by GC back-flush procedures to measure NMEOC in post-combustion emissions is acceptable. This approval is applicable to the measurement ofNMEOC from SI ICE exhaust emissions under 40 CFR part 60, Subpart JJJJ, with the following caveats for each test:

- You must use a direct interface and heated sampling line from the sampling point to the gas chromatographic injection valve. All sampling components leading to the analyzer must be heated to greater than 110°C (220°F) throughout the sampling period (unless safety reasons are present as described in Section 5.2 of Method 25A).

- You must calibrate the instrument with a mixture of ethane, propane and the required NMEOC hydrocarbon in Method 25A or the applicable rule if it is different from propane. This requirement assumes methane is separated from ethane and passes through the separator column prior to ethane. The ethane and propane are necessary in the mixture to confirm the separation of ethane from other NMEOC while not retaining additional NMEOC, which would bias the NMEOC results low. The ethane may be calibrated at a single high point on the calibration curve to demonstrate proper ethane to NMEOC separation. Linearity, calibration error, and calibration drift must be demonstrated using the NMEOC hydrocarbon

specified in the applicable rule or propane according to Method 25A.

- If you are required to measure and report methane, ethane, and NMEOC, you must calibrate the instrument with a mixture of methane, ethane, and propane (or the required NMEOC hydrocarbon in Method 25A or the applicable rule if it is different from propane). The methane and ethane in this calibration gas are necessary to generate quantitative concentrations for these components, as well as to confirm the separation of methane and ethane from other NMEOC while not retaining additional NMEOC, which would bias the NMEOC results low. If you are required to report all three components independently, you must cqeck linearity, calibration error, and calibration drift using methane, ethane, and the required NMOC hydrocarbon.

- You must collect the measurement data required in the bullets above for each test run at a minimum of one measurement every 15 minutes.

- You must also follow the appropriate procedures in Sections 8, 9, and 10 of Method 25A to ensure that linearity, calibration drift error, and drift are within the Method 25A limits.

- You must report calibration results for each organic compound required to demonstrate compliance. You must also report results demonstrating proper separation of methane or ethane from the required NMOC or NMEOC hydrocarbons.

This approval does not include using the GC to separate and measure methane, ethane, and NMEOC at inlet locations for the purpose of determining destruction efficiency. We will announce on the EPA's website (at http://www.epa.gov/ttn/emc/approalt.html) that our approval of this alternative is broadly applicable to testing of internal combustion engine emissions under 40 CFR part 60, Subpart JJJJ.

If you have questions or need any further assistance regarding this matter, please contact Ray Merrill of my staff at (919) 541-5225, or merrill.raymond@epa.gov.

Sincerely

Jodi Howard,
Acting Group Leader
Measurement Technology Group

cc: ***David Clark, Pennsylvania Department of Environmental Protection Zelma Maldonado, Region 3***

Appendix C

Engineering Evaluation Application 30091

ENGINEERING EVALUATION
San Jose-Santa Clara Regional Wastewater Facility
700 Los Esteros Road
Application: #30091
Plant: #778

BACKGROUND

San Jose-Santa Clara Regional Wastewater Facility (RWF) has applied to obtain a Permit to Operate to alter the following equipment:

S-110 Preliminary Treatment

Abated by the following new abatement device:

A-20 Biotower; 9,400 scfm

The RWF is planning to build a new headworks structure (Headworks 3) to replace the current headworks structure (Headworks 1). The headworks is the beginning of the wastewater treatment process at the RWF. Untreated wastewater is received through large pipe systems and combined into a single flow upstream of the headworks. The headworks, the wastewater passes through large screens which remove debris. The debris collected from the screens is removed by mechanical sluices and transferred to a bin for disposal at a landfill. The wastewater flows through the screens to a pumping station that pumps the wastewater through a degritting process and then in flows through pipes toward the primary treatment process (S-120).

The RWF currently has two parallel headworks operations. Headworks 1 operates continuously to process flows up to 240 million gallons a day. In times of high influent flows, the excess influent is diverted to the second headworks facility (Headworks 2). Headworks 2 works in parallel with Headworks 1 to accommodate larger wastewater flows into the RWF. The proposed project replaces existing Headworks 1 with a new, equivalent, process designated as Headworks 3. Headworks 3 will be the primary headworks facility while Headworks 2 remains available to accept wastewater during periods of high influent flows.

In an email dated January 9, 2020, the Air District proposed to conduct a voluntary risk screen on S-110. This was proposed to the facility as an opportunity to determine whether additional abatement should be considered during the construction phase to reduce toxic air contaminants (TAC) prior to conducting a facility-wide risk screen for Regulation 11-18 purposes. The majority of TAC emissions will be considered at S-110, the beginning of the process. Therefore, additional abatement at S-110 could greatly impact the results of the facility-wide risk screen. The facility declined the offer in a phone conversation on January 10, 2020.

EMISSIONS CALCULATIONS

In Headworks 1, currently in operation, all process units are open; therefore, any volatized compounds are emitted directly to the atmosphere. Headworks 3 will be covered with the headspace under negative pressure induced by a blower and air handling system. The blower will draw 9,400 scfm of air from the headworks process units and route it to a biotower. The biotower will be filled with a substrate where a biofilm of microbes will grow and metabolize organic compounds in the air stream. The biotower is primarily designed to remove odorous compounds such as H_2S. The vendor guarantees that the biotower will a achieve a maximum concentration of 1.5 ppmv H_2S at the stack outlet which would mean a control efficiency of 99% for H_2S.

The process of Headworks 3 will be functionally equivalent to Headworks 1 with screening, grit removal, and pumping. The composition of wastewater and total potential throughput will also remain the same. Therefore, emissions are expected to remain the same or decrease slightly with this alteration.

PLANT CUMULATIVE INCREASE

The cumulative emissions will not change because there will not be an increase in emissions.

Toxic Risk Screening

A health risk screening analysis is not required because no new toxic emissions will be emitted.

Best Available Control Technology

BACT is not triggered since there is no increase of emissions.

Offsets

Per Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Offsets are not required for this application.

Statement of Compliance

Regulation 2, Rule 1: California Environmental Quality Act (CEQA) Requirements

The City of San Jose Planning, Building and Code Enforcement Division (lead agency) prepared an addendum (File No. PP19-042) to the San Jose/Santa Clara Water Pollution Control Plant Master Plan Environmental Impact Report, certified on November 19, 2013. The addendum, approved December 9, 2019, concluded that the Project would not result in any new significant impacts not previously disclosed in the EIR.

Regulation 9, Rule 2: Inorganic Gaseous Pollutants: Hydrogen Sulfide

This rule limits ground level concentrations of H_2S to 0.06 ppm averaged over three consecutive minutes or 0.03 ppm averaged over any 60 consecutive minutes.

The District completed a hydrogen sulfide modeling analysis on January 23, 2020. The ground level H_2S concentrations were estimated in the model using the applicant's proposed stack parameters and at two different temperatures. The applicant provided a normal operating exhaust temperature range of 36-100 degrees F. The maximum modeled 1-hour H_2S concentration at an exhaust temperature of 36 degrees F was 0.0033 ppmv. At an exhaust temperature of 100 degrees F the 1-hour H_2S concentration was 0.0065 ppmv. Therefore, the analysis demonstrates that the H_2S emission from the Headworks 3 Biotower would comply with the District's Regulation 9, Rule 2-301.

This project is not within 1,000 feet of a school. Therefore, a public notice is not required.

NSPS, PSD, and NESHAPS are not triggered.

Permit Conditions

Under Application #27366, which is currently on Authority to Construct status, S-110 is limited by Permit Condition #26312. I recommend the following changes to the future Permit Condition.

COND# 27178 ----------

1. The owner/operator shall ensure that Headworks 3 of S-110, Preliminary Treatment, is enclosed and abated at all times by A-20, Biotower. (Basis: 2-1-403)

2. The owner/operator shall ensure that the H_2S emissions from the stack of A-20 do not exceed 1.5 ppm. (Basis: Regulation 9-2)

3. The owner/operator shall monitor the concentration of H_2S at A-20 with a portable H2S monitor on a weekly basis. (Basis: 2-1-403)

4. To determine compliance with Part 3, the owner/operator shall maintain all weekly H_2S readings on site for at least five years form the date of data entry and the records shall be made available to District staff upon inspection. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulation. (Basis: Recordkeeping)

Recommendation

I recommend issuing an Authority to Construct for the alteration to the following:

S-110 Preliminary Treatment

Abated by the following new abatement device:

A-20 Biotower; 9,400 scfm

By: Simrun Dhoot Date: 3/4/2020

Simrun Dhoot
Senior Air Quality Engineer

Appendix D

Engineering Evaluation for Application 699829

ENGINEERING EVALUATION

San Jose/Santa Clara Water Pollution Control
700 Los Esteros Road, San Jose, CA
Application: 696829
Plant: 778

1. BACKGROUND

San Jose/Santa Clara Water Pollution Control has applied for a change in conditions for the following sources:

S67 **Cogeneration System #1**, Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A10, and A11

S68 **Cogeneration System #2,** Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A12, and A13

S69 **Cogeneration System #3,** Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A14, A15

S70 **Cogeneration System #4,** Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A16, A17

abated by:

A9 **Gas Treatment System - Iron Sponge**, abating S67, S68, S69, and S70

A18 **Gas Treatment System - Activated Carbon**, abating S67, S68, S69, and S70

A10 **Selective Catalytic Reduction**, abating S67

A11 **Oxidation Catalyst**, abating S67

A12 **Selective Catalytic Reduction**, abating S68

A13 **Oxidation Catalyst**, abating S68

A14 **Selective Catalytic Reduction**, abating S69

A15 **Oxidation Catalyst**, abating S69

A16 **Selective Catalytic Reduction**, abating S70

A17 **Oxidation Catalyst**, abating S70

The applicant requested a change to Permit Condition 26639, part 15, which contains a precursor organic compound (POC) limit of 0.12 grams per bhp-hr expressed as non-methane organic compounds (NMOC).

The applicant submitted a request to omit ethane from the NMOC measurement and submit the results as POC as non-methane non-ethane organic compounds (NMEOC). EPA excludes ethane from the definition of VOC in 40 CFR 51.100, which is equivalent

to the Bay Area Air Quality Management District's (BAAQMD or Air District) definition of POC.

The Air District also excludes ethane from the definition of POC in BAAQMD Regulations 1-234 and 2-1-207.

Therefore, the Air District agrees that the POC limit in the condition can exclude ethane as well as methane.

EPA has set out a procedure to perform the analysis in their letter of June 6, 2014, from Jodi Howard, EPA, to Jordan Laster, Alliance Source Testing. The letter is attached to the application file.

The following describes the referenced EPA procedure: To measure POC and NMEOC, the source tester must use EPA Method 18 to determine the amount of methane and ethane, EPA Method 25A to determine the amount of total organic compounds, and then the source tester must subtract the methane and ethane from the total organic compounds. Parts 15, 18c, 18g, 18i, and 18j of Permit Condition 26639 will be amended to reflect the requirements in the letter. Part 18p has been added citing the EPA letter and mentioning the details of the procedure.

In addition, on February 23, 2015, EPA published a notice in the Federal Register, pages 80 FR 9457 through 9459, that includes the determination that the procedure outlined in EPA's letter of June 6, 2014, is a broadly applicable alternative test method for spark ignition internal combustion engines subject to 40 CFR part 60, subpart JJJJ. The Federal Register notice is included in the application file.

The conditions will also allow measurement as NMOC, which is an easier measurement. Our local natural gas contains 4-5% ethane. Digester gas does not. If an engine is fired mostly on digester gas, the facility may opt to measure NMOC instead of NMEOC. If so, the measurement must be taken during the periodic source test. The applicant does not have the option of re-doing the test as NMEOC if the test as NMOC fails.

2. EMISSIONS

The POC limit of 0.12 grams per bhp-hr is not changing, therefore this change in conditions is not considered to be an emissions increase. The permit has no limit on non-precursor organic compounds (NPOC).

3. PLANT CUMULATIVE INCREASE AND OFFSETS

There is no change to the cumulative increase and offsets because the POC limit will not change. To ensure that the cumulative increase for POC for the engines (S67, S68, S69, and S70) does not increase with the approval of this application, a permit condition

will be added to limit total POC from these engines to 5.604 tpy for each engine in Condition 26639, part 15.

4. TOXIC RISK SCREENING ANALYSIS

This alteration will not cause an increase in Toxic Air Contaminants. Therefore, it is not subject to BAAQMD Regulation 2, Rule 5, New Source Review for Toxic Air Contaminants.

5. BACT

In accordance with BAAQMD 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_x, CO, SO_2 or PM_{10}.

This change in conditions will not cause an increase in POC emissions, therefore it is not subject to BACT.

6. STATEMENT OF COMPLIANCE

BAAQMD Regulations

Regulation 8, Rule 2, Miscellaneous Operations

The engines are subject to BAAQMD Regulation 8, Rule 2, Miscellaneous Operations. The sources are expected to comply with the limit of 300 ppm as total carbon of precursor organic compounds found in Sections 8-2-101 and 8-2-301. Recent source tests have shown that the engines are in compliance with the 300 ppm limit.

Other BAAQMD Regulations

The engines are subject to the following other BAAQMD Regulations, which are listed in the Major Facility Review Permit. This permit can be found on the BAAQMD website.

- Regulation 6, Rule 1, Particulate Matter, General Provisions and Definitions
- Regulation 9, Rule 1, Sulfur Dioxide
- Regulation 9, Rule 2, Hydrogen Sulfide
- Regulation 9, Rule 8, Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Excluding ethane from the NMOC limit will not affect compliance with these regulations.

Title V, Major Facility Review

Plant 778 is a major facility because it emits more than 100 tpy of NOx, POC, and CO. Therefore, it is subject to Major Facility Review and has a Title V permit.

The change in conditions is a significant revision of the Title V permit because it is a significant change to monitoring (BAAQMD Regulation 2-6-226.3) and because it is the establishment of a case-by-case determination (BAAQMD Regulation 2-6-226.5).

The facility will not be able to implement the change until the significant revision goes through public notice and undergoes EPA review.

CEQA

The change in the conditioned limit and source test method does not authorize or result in any direct or reasonably foreseeable indirect physical or operational changes at the facility, air emissions, or impacts to the environment, so it is not a "project" pursuant to CEQA. Even if the change in conditions were a "project" pursuant to CEQA, the Air District's permit action is exempt because it only permits a condition change with no physical changes at an existing facility and does not authorize any expansion of the existing use (See CEQA Guidelines § 15301). In addition, the Air District has concluded with certainty, based on materials in the applicant's permit application including a CEQA Appendix H, that the change has no potential to result in any additional or different environmental impacts beyond what is already permitted in the applicant's existing use of the source. It can also be seen with certainty that the change will not have any environmental impacts because ethane is not a precursor organic compound. The action would therefore be exempt under the "common sense" exemption. (See CEQA Guidelines § 15061, subdivision (b)(3)).

Further, based on the review of the permit application materials, including Appendix H (environmental information form), the project will not result in any additional or different environmental impacts beyond what is already entailed in the applicant's existing use of the sources. In making the determination that this application is categorically exempt, the Air District reviewed the permit application materials, including a CEQA Appendix H, and concluded that: 1) there is no potential for any environmental impact from the project; 2) no formal health risk assessment was required by the Air District; and 3) that the project will not have a significant effect on the environment due to unusual circumstances or cumulative impacts from successive projects of the same type in the same place. The Air District will file a Notice of Exemption with the County Clerk and the State CEQA Clearinghouse.

PUBLIC NOTICE

The change in conditions will undergo public notice because it is a significant revision of the facility's Title V permit and is subject to BAAQMD Regulation 2, Rule 6, Major Facility Review, and Federal Regulation 40 CFR 70, State Operating Permit Programs. The public notice will be published in a local paper. Members of the public will have 30 days to comment.

This facility is not within 1,000 feet of a school and therefore is not subject to the public notification requirements of BAAQMD Regulation 2-1-412 due to proximity to a public

school. These notices are sent by mail to the families of the students and to members of the public near the school.

The facility is not in an over-burdened community and the change in conditions is not subject to a risk assessment. The change in conditions is not subject to the public notification requirements of BAAQMD Regulation 2-1-412 for this reason.

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

The change in conditions will not change compliance with 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The source tests show that the engines are in compliance with the following emission limits in Table 1 of Subpart JJJJ:

- Nitrogen oxides: 2.0 g/bhp-hr
- Carbon monoxide: 5.0 g/bhp-hr
- Volatile organic compounds: 1.0 g/bhp-hr

In addition, on February 23, 2015, EPA published a notice in the Federal Register, pages 80 FR 9457 through 9459, that includes the determination that the procedure outlined in EPA's letter of June 6, 2014, is a broadly applicable alternative test method for spark ignition internal combustion engines subject to 40 CFR part 60, subpart JJJJ. The Federal Register notice is included in the application file.

NESHAPS

The engines comply with 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, by complying with 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

PSD

PSD is not triggered.

PERMIT CONDITIONS

The citation for the CO limit in BAAQMD Regulation 9, Rule 8, in the basis for part 18 of ~~this~~ condition 26639 has been corrected.

Condition 26639
This permit condition, as originally adopted within New Source Review Application #28651 on April 3, 2018, is further amended within New Source Review Application #29724 on November 9, 2021, Application 31365 on May 5, 2022, and New Source Review Application #699829 on _____.Part 3 has been deleted because sources S36, S37, S38, and S54 have been removed. Part 22f was added in Application 29724. Part 22g was added in Application 31365.

The amendments to parts 15, 18c, 18g, 18i, 18j, and 18p of the permit condition will not be effective unless the final significant revision pursuant to Application 699830 is issued. The notes about this provision will be deleted from the District permit and the Major Facility Review permit if the significant revision is approved.

Equipment included in this permit condition:
~~S-~~S67 Cogeneration System #1
~~S-~~S68 Cogeneration System #2
~~S-~~S69 Cogeneration System #3
~~S-~~S70 Cogeneration System #4
~~S-~~S72 Dual Fueled Digester Gas/Natural Gas Boiler
~~S-~~S73 Dual Fueled Digester Gas/Natural Gas Boiler

~~A-~~A9 Gas Treatment System - Iron Sponge
~~A-~~A10 Selective Catalytic Reduction
~~A-~~A11 Oxidation Catalyst
~~A-~~A12 Selective Catalytic Reduction
~~A-~~A13 Oxidation Catalyst
~~A-~~A14 Selective Catalytic Reduction
~~A-~~A15 Oxidation Catalyst
~~A-~~A16 Selective Catalytic Reduction
~~A-~~A17 Oxidation Catalyst
~~A-~~A18 Gas Treatment System - Activated Carbon

1. The owner/operator shall fire S67, S68, S69, and S70 exclusively on digester gas from S210, Anaerobic Digesters, and/or pipeline quality natural gas. (basis: Cumulative Increase)

2. The owner/operator of S67, S68, S69, and S70, shall not allow the combined heat input to exceed 1,084,974 million BTU (HHV) during any consecutive 12-month period. (basis: Cumulative Increase)

3. ~~The owner/operator shall provide offsets by shutting down or curtailing S36, S37, S38, and S54 within 90-days of the need for offsets. (basis: Offsets)~~Deleted Application 699829

4. The owner/operator shall ensure that all digester gas combusted in S67, S68, S69, and S70 is treated by A9 and A18 prior to combustion. The owner/operator shall not allow the concentration of total sulfur in the gas exiting A18 to exceed 50 ppm. (basis: Cumulative Increase)

5. The owner/operator shall properly maintain and operate A9 through A18 in accordance to the manufacturers' specifications during all periods of operation of S67, S68, S69, and S70. The owner/operator shall not regenerate A9 and A18 media on site. (basis: Cumulative Increase)

6. The owner/operator shall abate NOx emissions from S67, S68, S69, and S70 by A10, A12, A14, and A16, respectively, at all times of operation except during startup and shutdown of S67, S68, S69, and S70. The owner/operator shall ensure that each SCR catalyst bed is equipped with a temperature monitor and continuous recorder that accurately measures and records the temperature of exhaust gas from the catalyst during all periods of operation. Except during periods of startup or shutdown, the owner/operator shall maintain the exhaust gas temperature within a range of 575 degrees Fahrenheit and 960 degrees Fahrenheit while the engine is in operation. (basis: Cumulative Increase)

7. The owner/operator shall properly maintain and operate A10, A12, A14, and A16 in accordance to manufacturer's specifications during all periods of operation of S67, S68, S69, and S70. (basis: BACT)

8. The owner/operator shall abate CO and organic compound emissions from S67, S68, S69, and S70 by A11, A13, A15, A17, respectively, at all times of operation except during startup and shutdown of S67, S68, S69, and S70. (basis: BACT, Regulation 2-5-302)

9. The owner/operator shall properly maintain and operate A11, A13, A15, and A17 in accordance to manufacturer's specifications during all periods of operation of S67, S68, S69, and S70. (basis: BACT)

10. The owner/operator shall not allow NOx emissions from each of S67, S68, S69, and S70 to exceed an emission rate of 0.124 grams of NOx (calculated as NO2) per brake-horsepower-hour, or the equivalent outlet concentration of 11 ppmv of NOx, corrected to 15% oxygen, dry basis, averaged over the test period. The owner/operator shall not allow total NOx emissions from all four engines to

exceed 23.15 tons per year. The concentration and grams per brake-horsepower-hour limits do not apply during periods of startup or shutdown. The startup period shall not exceed 2 hours and the shutdown period shall not exceed 1 hour. (basis: Cumulative Increase, BACT)

11. The owner/operator shall not allow CO emissions from each of S67, S68, S69, and S70 to exceed an emission rate of 0.89 grams of CO per brake-horsepower-hour, or the equivalent outlet concentration of 130 ppmv of CO, corrected to 15% oxygen, dry basis, averaged over the source test period. The owner/operator shall not allow total CO emissions from all four engines to exceed 166.17 tons per year. The concentration and grams per brake-horsepower-hour limits do not apply during periods of startup and shutdown. The startup period shall not exceed 2 hours and the shutdown period may not exceed 1 hour. (Basis: Cumulative Increase, BACT)

12. In order to demonstrate compliance with the limits in Parts 10 and 11, the owner/operator shall use a portable analyzer to take NOx and CO emission readings to verify compliance with Parts 10 and 11 at least once on each engine every 720 hours of engine operation. All emission readings shall be taken with the engine operating at conditions representative of normal operations. NOx emission readings shall be averaged over a consecutive 15-minute period. (Basis: BACT, Cumulative Increase, and Regulation 2-1-403 and 9-8-503)

13. The owner/operator shall not allow PM10 or PM2.5 emissions from each of S67, S68, S69, and S70 to exceed 0.07 grams of PM10 or PM2.5 per brake-horsepower-hour. The owner/operator shall not allow total PM10 or PM2.5 emissions from all four engines to exceed 13.07 tons per year. This includes condensable and filterable PM. (Basis: Cumulative Increase, BACT)

14. The owner/operator shall not allow a net increase of PM2.5 emissions to exceed 10 tons per year from this project. The project includes the shutdown of S5, S7, S36, S37, S38, and S54; construction of S67, S68, S69, S70, S72, S73, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, and four cooling towers; and may include the shutdown of S39. The following provides the net decrease for each source which is proposed to be shut down.

S5: 0.569 ton PM2.5/yr
S7: 0.890 ton PM2.5/yr
S36: 0.665 ton PM2.5/yr

S37: 1.001 ton PM2.5/yr
S38: 0.000 ton PM2.5/yr
S54: 0.635 ton PM2.5/yr
(Basis: Regulation 2-2-308)

15.The owner/operator shall not allow POC measured as NMOC or NMEOC emissions from each of S67, S68, S69, and S70 to exceed 0.12 grams of POC per brake-horsepower-hour, or the equivalent outlet concentration of 30.6 ppmv of POC (as methane), corrected to 15% oxygen, dry basis, averaged over the source test period. POC measured as NMOC or NMEOC emissions from ~~each of~~ S67, S68, S69, and S70 shall not exceed 5.604 tpy per source in any consecutive 12 months. The owner/operator may test POC as non-methane, non-ethane organic compounds (NMEOC). If the owner/operator chooses to measure POC as NMEOC, ~~In this case,~~ the test must be performed during the periodic source tests required by part 18 of this condition. Measurement as NMEOC will not be allowed unless the final significant revision pursuant to Application 699830 is issued. The owner/operator shall not allow formaldehyde emissions from each of ~~S-~~S67, ~~S-~~S68, ~~S-~~S69, and ~~S-~~S70 to exceed 0.41 pounds per hour.
(Basis: Cumulative Increase, BACT)

16.The owner/operator shall not allow the ammonia (NH3) concentration in the exhaust from each of S67, S68, S69, and S70 to exceed 10 ppmv, corrected to 15% oxygen, dry basis. (Basis: Regulation 2-5-302)

17.Sampling ports shall be installed in the exhaust stack for S67, S68, S69, and S70 after control in a straight section of piping with at least six (6) diameters clear downstream of any bends, inlets, constriction, flow altering device or change of area or geometry and two (2) diameters upstream of the stack exit or other flow disturbance. The sample ports shall be at least 6" in diameter. The number of sampling ports and platform specifications must be in accordance with BAAQMD document, "Guidelines for Construction of Particulate Sampling and Testing Facilities" The owner/operator must obtain approval from the District's Source Test Section prior to construction. (Basis: MOP Volume IV, Guidelines of Construction of Particulate Sampling and Testing Facilities)

18.In order to demonstrate compliance with Parts 10, 11, and 13 through 16 above and Regulations 9-1-302, 9-8-302.1, 9-8-302.3, the owner/operator shall ensure that a District approved source test is conducted in each engine after startup and once every 8,760 hours of operation or three years, whichever comes first. Each source test shall be conducted at the exhaust stack after control while the engine is operating under normal operating conditions while fired on digester gas or a

digester gas and natural gas blend and shall not include startup or shutdown periods. Each source test shall determine all items identified below. The Source Test Section of the District shall be contacted to obtain approval of source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. Source test reports for compliance testing shall be submitted to the Source Test Section within 60 days of the test date. (Basis: BACT, Cumulative Increase, and Regulations 2-5-302, 9-1-302, 9-8-302.1, and 9-81-302.3)

a. Actual gross electrical output (kW-hrs) from the tested engine(s) during the test period and the calculated power output (bhp) from each engine determined using the following equation: bhp = 1.34 * kW;
b. Total flow rate (standard cubic feet per minute, dry basis, or sdcfm) of all gaseous fuel to the tested engine(s);
c. Concentrations (percent by volume or ppmv, dry basis) of carbon dioxide (CO2), nitrogen (N2), oxygen (O2), methane (CH4), total non-methane organic compounds (NMOC) or total non-methane non-ethane organic compounds (NMEOC), and total sulfur compounds (TS) in the gaseous fuel burned in the tested engine(s) (Measurement of POC as NMEOC will not be allowed unless the final significant revision pursuant to Application 699830 is issued.);
d. Higher heating value (BTU/scf) for the biogas;
e. Heat input rate (BTU/hour) to the tested engine(s) averaged over the test period;
f. Exhaust gas flow rate (sdcfm) from the tested engine(s) based on EPA Method 2 or Method 19;
g. Concentrations (ppmv or percent by volume, dry basis) of NOx, CO, CH4, NMOC or NMEOC, SO2, NH3, formaldehyde, and O2 in the exhaust gas from the tested engine(s) (Measurement of POC as NMEOC will not be allowed unless the final significant revision pursuant to Application 699830 is issued.);
h. Corrected concentrations (ppmv, corrected to 15% O2, dry basis) of CO, NOx, SO2, CH4, and NH3 in the exhaust gas from the tested engine(s);
i. Corrected concentration (ppmv, dry basis) of NMOC or NMEOC in the fuel to the tested engine(s) (Measurement of POC as NMEOC will not be allowed unless the final significant revision pursuant to Application 699830 is issued.);
j. NMOC or NMEOC destruction efficiency (weight percent) achieved by the tested engine(s) (Measurement of POC as NMEOC will not be allowed unless the final significant revision pursuant to Application 699830 is issued.);
k. Emission rates (grams/bhp-hour) of NOx, CO, and PM10 from each engine;
l. Emissions (pounds/hour) of PM10 from each engine and the PM10 grain loading rate (grains/dscf) from the tested engine(s). This includes filterable and

condensable particulate.
m. Emission rate (pounds/hour) of formaldehyde from the tested engine(s);
n. Average temperature of the SCR catalyst exhaust gas temperature for the tested engine(s) during the test period.
o. During the source test, the owner/operator shall also measure concentrations of NOx, CO, and O2 (ppmv) in the exhaust from the tested engine(s) using the portable analyzer procedures described in Part 12. The portable analyzer measurements of corrected NOx and CO concentrations shall be compared to the values measured pursuant to Part 18h.
p. If the owner/operator chooses to measure POC as NMEOC, the owner/operator shall follow the procedures stated in EPA letter dated June 6, 2014 from Jodi Howard, EPA, to Jordan Laster, Alliance Source Testing, regarding Method 18 and Method 25A to subtract methane and ethane from the total organics, including the sampling line requirements, the calibration requirements, the requirement for a measurement every 15 minutes, the procedures regarding linearity, calibration drift error, and drift in Method 25A, and calibration results for methane and ethane. The NMEOC test must be performed during the periodic source tests required by part 18 of this condition. (Measurement of POC as NMEOC will not be allowed unless the final significant revision pursuant to Application 699830 is issued.)

19. The owner/operator shall measure and record the flowrate of the biogas and natural gas supplied to the engines on a continuous basis (at least one measurement every 15-minutes) using a District approved method. The flow meters and recorder shall be installed and properly calibrated prior to any engine operation; this equipment shall be maintained in good working condition. (Basis: Cumulative Increase)

20. To demonstrate compliance with the limit in Part 4, the owner/operator shall monitor and record the sulfur content of the treated digester gas at least once each month. (Basis: Cumulative Increase)

21. The owner/operator shall monitor and record the heat content of the digester gas at least once each month. (Basis: Cumulative Increase)

22. The owner/operator shall maintain the following plans and records on-site for a minimum of 5 years from the date of entry. The plans and records shall be made available to District staff upon request. (Basis: Cumulative Increase, BACT, Regulations 2-1-403, 9-8-503, offsets)

a. Records of heat input to each engine for each calendar month and for each rolling 12-month period. Heat input shall be calculated using District approved procedures based on measured biogas flow

rate data and measured biogas methane concentration data. The calculated heat input rates shall be recorded in a data acquisition system or electronic spreadsheet.

b. Records of all monitoring or source testing conducted to demonstrate compliance with this permit condition and District rules.

c. An engine maintenance plan.

d. Records of all maintenance conducted on each engine.

e. Records of start-ups, shut-downs, and malfunctions for each engine. For any malfunction, the records shall include the cause of the malfunction, the actions taken to correct the malfunction, the date and time that the malfunction was corrected, and the actions taken to prevent such malfunctions in the future.

f. Records and calculations demonstrating compliance with the PM2.5 limitation of Part 14 of this condition.

g. Records of hours of operation for each engine

RECOMMENDATION

Issue a change in Conditions to the following sources that will not be effective unless the Major Facility Review (Title V) significant revision pursuant to this application (#699829) is issued:

- **S67** **Cogeneration System #1**, Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A10, and A11
- **S68** **Cogeneration System #2,** Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A12, and A13
- **S69** **Cogeneration System #3,** Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A14, A15
- **S70** **Cogeneration System #4,** Caterpillar CG260-16, 4,834 bhp, 31 MM Btu/hr, 4-stroke, lean-burn; fired on treated digester gas and/or natural gas; abated by A9, A18, A16, A17

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Brenda Cabral

Supervising Air Quality Engineer