

## DRAFT ENGINEERING EVALUATION

Facility ID 202823

GOP5

475 Eccles Ave, South San Francisco, CA 94080

Application No. 666748

### Background

ProActive Consulting., on behalf of BioMed Realty (GOP5), is applying for an Authority to Construct for the following equipment:

- S-1 Emergency Standby Diesel Engine (B5N)**  
**Make: Cummins, Model: QSK50-G4 NR2, Model Year: 2023**  
**2,220 bhp, 14.22 MMBTU/hr**  
**Permit Condition No. 100072, 100073, and 27784**  
**Abated by A-1 and A-2**
  
- A-1 Diesel Particulate Filter (B5N)**  
**Cummins CA452 T4F Aftertreatment**
  
- A-2 Selective Catalytic Reduction (B5N)**  
**Cummins CA452 T4F Aftertreatment**
  
- S-2 Emergency Standby Diesel Engine (B5S)**  
**Make: Cummins, Model: QSK50-G4 NR2, Model Year: 2023**  
**2,220 bhp, 14.22 MMBTU/hr**  
**Permit Condition No. 100072, 100073, and 27782**  
**Abated by A-3 and A-4**
  
- A-3 Diesel Particulate Filter (B5S)**  
**Cummins CA452 T4F Aftertreatment**
  
- A-4 Selective Catalytic Reduction (B5S)**  
**Cummins CA452 T4F Aftertreatment**

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-1 and S-2 meet the Environmental Protection Agency and California Air Resources Board (EPA/CARB) Tier 2 Off-road standard and will be operated with a Diesel Particulate Filter (DPF) and Selective Catalytic Reduction (SCR) to meet the EPA/CARB Tier 4 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.

This evaluation report will discuss compliance of the proposed project with all applicable rules and regulations.

**Emissions**

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

<b>Pollutant</b>	<b>Unabated Emission Factor (g/bhp-hr)</b>	<b>Abated Emission Factor<sup>3,4,5</sup> (g/bhp-hr)</b>	<b>Max Daily Emissions (lb/day)</b>	<b>Annual Emissions (lb/yr)</b>	<b>Annual Emissions (tons/yr)</b>
NOx	4.46	0.50	58.68	122.25	0.061
POC	0.14	0.14	16.63	34.65	0.017
CO	1.34	1.34	157.59	328.31	0.164
PM <sub>10</sub> /PM <sub>2.5</sub> <sup>1</sup>	0.06	0.02	2.33	4.87	0.002
SO <sub>2</sub>	N/A <sup>2</sup>	N/A <sup>2</sup>	0.64	1.34	6.72E-04

Basis:

- Annual emissions: Reliability-related activity 50 hours for S-1
- Max daily emissions: 24-hour operation
- Emissions from EPA Engine Family PCEXL050.AAD for S-1
- <sup>1</sup> Conservative Assumption: All PM emissions are PM2.5
- <sup>2</sup> SO<sub>2</sub> emission factor from AP-42 Table 3.4-1, SO<sub>2</sub> (15 ppm) = 0.00809\*0.0015 lb SO<sub>2</sub>/bhp-hr
- <sup>3</sup> Used Tier 4 limit as abated emission factor for NOx
- <sup>4</sup> Assuming no abatement of POC and CO, the EPA certified unabated emission factors were used as the abated emission factors
- <sup>5</sup> Abated emission factor for PM is assumed to be the TBACT/Tier 4 limit of 0.02 g/bhp-hr

**Table 2. Annual and Daily Emissions from EPA/CARB Certified Data from S-2**

<b>Pollutant</b>	<b>Unabated Emission Factor (g/bhp-hr)</b>	<b>Abated Emission Factor<sup>3,4,5</sup> (g/bhp-hr)</b>	<b>Max Daily Emissions (lb/day)</b>	<b>Annual Emissions (lb/yr)</b>	<b>Annual Emissions (tons/yr)</b>
NOx	4.46	0.50	58.68	122.25	0.061
POC	0.14	0.14	16.63	34.65	0.017
CO	1.34	1.34	157.59	328.31	0.164
PM <sub>10</sub> /PM <sub>2.5</sub> <sup>1</sup>	0.06	0.02	2.33	4.87	0.002
SO <sub>2</sub>	N/A <sup>2</sup>	N/A <sup>2</sup>	0.64	1.34	6.72E-04

Basis:

- Annual emissions: Reliability-related activity 50 hours for S-2
- Max daily emissions: 24-hour operation
- Emissions from EPA Engine Family PCEXL050.AAD for S-2
- <sup>1</sup> Conservative Assumption: All PM emissions are PM2.5

- <sup>2</sup> SO<sub>2</sub> emission factor from AP-42 Table 3.4-1, SO<sub>2</sub> (15 ppm) = 0.00809\*0.0015 lb SO<sub>2</sub>/bhp-hr
- <sup>3</sup> Used Tier 4 limit as abated emission factor for NO<sub>x</sub>
- <sup>4</sup> Assuming no abatement of POC and CO, the EPA certified unabated emission factors were used as the abated emission factors
- <sup>5</sup> Abated emission factor for PM is assumed to be the TBACT/Tier 4 limit of 0.02 g/bhp-hr

### Ammonia Slip

Both S-1 and S-2 will have an SCR installed (A-2 & A-4), which will control emissions with ammonia via catalytic reactions. However, there will be a small amount of ammonia that will not react and will slip through the SCR. Below are estimated Ammonia emissions from this project.

**Table 3. Emissions from Ammonia Slip**

Source #	Ammonia Slip Conc. (ppmv @ 15% O <sub>2</sub> )	Ammonia Slip Conc. (ppmv @ 0% O <sub>2</sub> )	Actual Temp. (°F)	Actual Exhaust Flow Rate (acfm)	Dry Standard Exhaust Flow Rate (dscfm)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
S-1	10	35.42	915	12,065	2,121.4	1.99E-01	9.96E+00
S-2	10	35.42	915	12,065	2,121.4	1.99E-01	9.96E+00
Project						3.99E-01	1.99E+01

Basis:

- Annual emissions: Reliability-related activity 50 hours for S-1 and 50 hours for S-2
- It is assumed that the exhaust water content is 12.5% by weight
- It is assumed that the exhaust is at standard pressure
- Volumetric concentrations were corrected to 0% O<sub>2</sub> from 15% O<sub>2</sub>
- The exhaust flow rates were corrected to 0% O<sub>2</sub> from 10% O<sub>2</sub>

### Plant Cumulative Increase

Table 4 summarizes the cumulative increase in criteria pollutant emissions that will result from this application.

**Table 4. Plant Cumulative Emissions Increase, Post 4/5/91**

<b>Pollutant</b>	<b>Existing Emissions Post 4/5/91 (tons/yr)</b>	<b>Application Emissions (tons/yr)</b>	<b>Cumulative Emissions (tons/yr)</b>
NO <sub>x</sub>	0.000	0.122	0.122
POC	0.000	0.035	0.035
CO	0.000	0.328	0.328
PM <sub>10</sub> /PM <sub>2.5</sub>	0.000	0.005	0.005
SO <sub>2</sub>	0.000	0.001	0.001

**Health Risk Assessment (HRA)**

HRA was required. The diesel particulate emissions from the project are greater than the toxic trigger level of 0.26 lb/year. All PM<sub>10</sub> emissions are considered diesel particulate emissions. There were no other related projects permitted in the last five years. This application did not qualify for HRA streamlining due to PM emission levels and proximity to the nearest sensitive receptor. Because the addition of SCRs to the engines invalidates the CARB verification of the DPFs, the HRA was run at the unabated Diesel PM emission rates to determine the applicability of Best Available Control Technology for Toxics (TBACT). The unabated Diesel PM emission rates for S-1 and S-2 are summarized in Table 5 below.

**Table 5. Unabated PM Emission Rates from S-1 & S-2**

<b>Source ID</b>	<b>Non-Emergency Operating (hours/year)</b>	<b>Unabated Annual Diesel PM Emission Rate (lbs/year)</b>
S-1	50	14.6
S-2	50	14.6
Project	100	29.2

Ammonia emissions are not expected to exceed Regulation 2-5 acute and chronic toxic trigger level of 7.1 lbs/hr and 7,700 lbs/year, respectively. However, ammonia emissions were included in the HRA. The HRA results are summarized below.

**Table 6. Individual Source HRA Results for S-1 & S-2**

<b>Source ID</b>	<b>Cancer Risk (Worker)</b>	<b>Cancer Risk (Resident)</b>
S-1	1.28 in a million	0.14 in a million
S-2	0.35 in a million	0.15 in a million

**Table 7. Project HRA Results**

<b>Receptor</b>	<b>Cancer Risk</b>	<b>Chronic Non-Cancer Hazard Index</b>	<b>Acute Hazard Index</b>
Resident	0.29 in a million	0.000079	N/A
Worker	1.6 in a million	0.0013	N/A
PMI (1-hour)	N/A	N/A	0.0036

The results from the health risk screening analysis indicate that the maximum project cancer risk (worker) is estimated at 1.6 in a million, the maximum project chronic hazard index (worker) is estimated at 0.0013, and the maximum project acute hazard index (PMI) is 0.0036.

The HRA results deem that the project is in compliance with the project risk limitation of 6 in a million for sources located within an overburdened community, limiting reliability-related activity hours by permit condition to 50 hours per year. In accordance with the District's Regulation 2, Rule 5, this risk level is considered acceptable. See HRA report.

Because the individual cancer risk from S-1 exceeds 1.0 in a million, the facility will be conditioned to perform source testing for PM to ensure that S-1 can meet the TBACT standard. S-2 will not require source testing for PM because the individual cancer risk is below 1.0 in a million. Operating the engines with the DPFs will lower the PM emission rates from both engines. Therefore, the actual cancer risk is expected to be lower than the values summarized above.

**TBACT**

In accordance with the District's Regulation 2-5-301, S-1 requires TBACT because the estimated source cancer risk is greater than 1.0 in a million. BACT and TBACT determinations for compression ignition engines with a rated capacity greater than or equal to 1000 bhp are described in BAAQMD BACT/TBACT Workbook for IC Engines – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, Document #96.1.5, Revision 0, dated 12/22/2020 (see Attachment 1). S-1 will be conditioned to require a source test for PM to verify compliance with the TBACT limit of 0.02 g/bhp-hr.

S-2 does not require TBACT because the individual cancer risk is less than 1.0 in a million.

**Project Risk Limits**

The proposed engines, operating at 50 hours/year for reliability related testing, will require source testing to verify compliance with TBACT, and the estimated project cancer risk does not exceed 6 in a million and the chronic hazard index does not exceed 1.0. This project is expected to comply with the District's Regulation 2-5-302 project risk requirements.

### **Best Available Control Technology (BACT)**

In accordance with Regulation 2-2-301, 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 for these sources is presented in the current BAAQMD BACT/TBACT Workbook for IC Engine – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, Document #96.1.5, Revision 0. dated 12/22/2020. For NO<sub>x</sub>, CO, POC and PM<sub>10</sub>, BACT(2) is the CARB ATCM standard for the respective pollutant at the applicable horsepower rating. For SO<sub>2</sub>, BACT(2) is using fuel with sulfur content not to exceed 0.0015%, or 15 ppm. The more restrictive BACT(1) standards are not applicable to this engine because it will be limited to operation as an emergency standby engine.

The POC and CO emission factors are EPA certified values for the engine family. The abated NO<sub>x</sub> emission factor is not EPA certified and will therefore be assumed to be the BACT (2) limit. The owner/operator of S-1 and S-2 will need to verify compliance with the NO<sub>x</sub> BACT (2) standard through performance of a source test. Subsequently, the owner/operator will also need to perform a source test for CO to verify compliance with the CO BACT (2) standard.

S-1 and S-2 satisfy the current BACT(2) standards for the following pollutants which exceed 10 lb/day in Tables 1 and 2:

<b>Pollutant</b>	<b>Emission Factor</b>	<b>BACT(2) Standard</b>
NO <sub>x</sub>	0.50 g/bhp-hr	0.50 g/bhp-hr
POC	0.14 g/bhp-hr	0.14 g/bhp-hr
CO	1.34 g/bhp-hr	2.60 g/bhp-hr

### **Offsets**

Per Regulation 2-2-302, offsets must be provided if, after a new or modified source is constructed, a facility that has the potential to emit (PTE) more than 10 tons/yr of POC or NO<sub>x</sub>. The PTE for emergency-use engines will include the hours allowed for test and maintenance, as well as an assumed 100 hours per year for emergencies. Based on the emission calculations in Table 8, offsets are not required for this application.

**Table 8. Potential to Emit for Facility ID 202823**

<b>Pollutant</b>	<b>Existing Annual PTE Emissions (ton/yr)</b>	<b>Application Annual PTE (ton/yr)</b>	<b>Facility Annual PTE (ton/yr)</b>	<b>Offset Requirement (ton/yr)</b>	<b>Offset Required?</b>
POC	0.000	0.104	0.104	10	N
NOx	0.000	0.367	0.367	10	N
PM <sub>10</sub> /PM <sub>2.5</sub>	0.000	0.015	0.015	100	N
SO <sub>2</sub>	0.000	0.004	0.004	100	N
CO	0.000	0.985	0.985	-	N

Since the facility permitted levels are below the offset trigger levels specified in Regulation 2-2, offsets are not required.

**Statement of Compliance**

The owner/operator is expected to comply with all applicable requirements. Key requirements are listed below:

**Airborne Toxic Control Measure for Stationary Compression Ignition Engines**  
 ATCM, 5/19/2011, section 93115, title 17, CA Code of Regulations

**District Rules**

- Regulation 6-1-303 (*Ringelmann No. 2 Limitation*)
- Regulation 9-1-301 (*Limitations on Ground Level Concentrations of SO<sub>2</sub>*)
- Regulation 9-8 (*NO<sub>x</sub> and CO from Stationary Internal Combustion Engines*)
  - Section 9-8-110.5 – Limited exemption for emergency standby engines
  - Section 9-8-330 – Hours of operation for emergency standby engines
  - Section 9-8-502 – Recordkeeping

**California Environmental Quality Act (CEQA)**

This project is ministerial under the District Regulation 2-1-311 (Permit Handbook Chapter 2.3) and is therefore not subject to CEQA review.

**New Source Performance Standards (NSPS)**

40 CFR 60, Subpart IIII (*Stationary Compression Ignition Internal Combustion Engines*)

**National Emissions Standards for Hazardous Air Pollutants (NESHAP)**

40 CFR 63, Subpart ZZZZ (*Stationary Reciprocating Internal Combustion Engines (RICE)*)

**Prevention of Significant Deterioration (PSD)**

This application is not part of a PSD project as defined in Regulation 2-2.

**Public Notification (Regulation 2-1-412)**

This project is not located within 1,000 feet of the nearest K-12 school, but it is located in an overburdened community (OBC) and did require an HRA. This project is therefore subject to a public notice. A public notice will be sent to all residents and businesses within 1,000 feet of the facility and there will be a 30-day public comment period.

**Permit Conditions**

**Permit Condition #100072 Applies to S-1 & S-2**

1. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited.  
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
2. 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: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
3. 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: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
4. 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: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

### **Permit Condition #100073 Applies to S-1 & S-2**

The owner/operator shall not exceed the following limits per year per engine for reliability-related activities:

50 Hours of Diesel fuel (Diesel fuel)

[Basis: Cumulative Increase; Regulation 2-5; Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

### **Permit Condition #27784 Applies to S-1**

Tier 2 Engines, equipped with add-on SCR and DPF; ST for NO<sub>x</sub>/CO & PM.

1. The owner/operator shall ensure the engine is abated at all times of operation by an approved Selective Catalytic Reduction (SCR) System and Diesel Particulate Filter (DPF) equipped with a backpressure monitor or other approved Diesel Exhaust Particulate Matter Abatement System. The engine, SCR System, and DPF with backpressure monitor or other approved system shall be installed, maintained, and operated in accordance with the manufacturer specifications and/or best modern practices. [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR1039.101, BACT, TBACT]
2. The owner/operator shall take all corrective actions recommended by the manufacturer in response to backpressure monitor notifications.

[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]

3. The owner/operator shall ensure urea injection commences as soon as the SCR catalyst bed reaches minimum operating temperature as specified by the manufacturer. [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]
4. The owner/operator shall ensure engine emissions do not exceed an ammonia (NH<sub>3</sub>) slip of 10 ppmv, dry @ 15% O<sub>2</sub> from the SCR system. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require A source test to determine compliance with this emission limit.  
[Basis: Regulation 2, Rule 5]
5. The owner/operator shall ensure engine emissions do not exceed the following limits:  
NO<sub>x</sub>: 0.50 g/bhp-hour  
PM: 0.02 g/bhp-hour  
CO: 2.60 g/bhp-hour  
[Basis: BACT and Cumulative Increase]
6. To demonstrate compliance with Part 5, the owner/operator shall conduct an initial Air District-approved source test on the engine within 60 days of startup and once every three years thereafter at the normal or expected load during emergency operation using Air District approved source test methods. The owner/operator shall document urea usage (gallon per minute) and average kW during all tests, preferable as digital records. The owner/operator shall submit the source test results to the Air District's Source Test Section no later than 60 days after source test completion.  
[Basis: BACT and Cumulative Increase]
7. The owner/operator shall comply with all applicable testing, sampling port location and safe access requirements as specified in Volume

IV of the Air District's Manual of Procedures. The owner/operator shall notify the Air District's Source Test Section, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing. The following test methods shall be used for each pollutant:

PM (filterable) EPA Method 5 or Air District-approved equivalent

NOx EPA Method 7E or Air District-approved Equivalent

CO EPA Method 10 or Air District-approved equivalent

[Basis: Regulation 2-1-403]

8. To determine compliance with the above conditions, the owner/operator shall maintain the following records in a Air District-approved log and shall make these records available to Air District staff upon request. All records shall be retained 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 Synthetic Minor Operating Permit). These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable Air District or state regulations.
    - a. Source Test Notifications
    - b. All source test reports
    - c. Engine serial number and source number for each source test
    - d. Engine load percentage
    - e. Engine, SCR, and DPF maintenance records
    - f. SCR system owner's manual or manufacturer's specifications
    - g. DPF owner's manual or manufacturer's specifications
    - h. All backpressure monitor notifications and corrective actions
    - i. SCR urea injection rate (gpm)
- [Basis: BACT, Cumulative Increase, Recordkeeping]

## Permit Condition #27782 Applies to S-2

Tier 2 Engines, equipped with add-on SCR and DPF;  
ST for NO<sub>x</sub>/CO

1. The owner/operator shall ensure the engine is abated at all times of operation by an approved Selective Catalytic Reduction (SCR) System and Diesel Particulate Filter (DPF) equipped with a backpressure monitor or other approved Diesel Exhaust Particulate Matter Abatement System. The engine, SCR System, and DPF with backpressure monitor, or other approved system shall be installed, maintained, and operated in accordance with the manufacturer specifications and/or best modern practices.  
[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]
2. The owner/operator shall take all corrective actions recommended by the manufacturer in response to backpressure monitor notifications.  
[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]
3. The owner/operator shall ensure urea injection commences as soon as the SCR catalyst bed reaches the minimum operating temperature as specified by the manufacturer.  
[Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]
4. The owner/operator shall ensure engine emissions do not exceed an ammonia (NH<sub>3</sub>) slip of 10 ppmv, dry @ 15% O<sub>2</sub> from the SCR system. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require a source test to determine compliance with this emission limit.  
[Basis: Regulation 2, Rule 5]
5. The owner/operator shall ensure engine emissions do not exceed the following limit:

NOx: 0.50 g/bhp-hour  
CO: 2.60 g/bhp-hour  
[Basis: BACT and Cumulative Increase]

6. To demonstrate compliance with Part 5, the owner/operator shall conduct an initial Air District-approved source test on the engine within 60 days of startup and once every three years thereafter at the normal or expected load during emergency operation using Air District approved source test methods. The owner/operator shall document urea usage (gallons per minute) and average kW during all tests, preferable as digital records. The owner/operator shall submit the source test results to the Air District's Source Test Section no later than 60 days after source test completion.

[Basis: BACT and Cumulative Increase]

7. The owner/operator shall comply with all applicable testing, sampling port location and safe access requirements as specified in Volume IV of the Air District's Manual of Procedures. The owner/operator shall notify the Air District's Source Test Section, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing. The following test methods shall be used for each pollutant:

NOx EPA Method 7E or Air District-approved equivalent

CO EPA Method 10 or Air District-approved equivalent

[Basis: Regulation 2-1-403]

8. To determine compliance with the above parts, the owner/operator shall maintain the following records in a Air District-approved log and shall make these records available to Air District staff upon request. All records shall be retained 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 Synthetic Minor Operating Permit).

These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District or state regulations.

- a. Source Test Notifications
- b. All source test reports
- c. Engine serial number and source number for each source test
- d. Engine load percentage
- e. Engine, SCR, and DPF maintenance records
- f. SCR system owner's manual or manufacturer's specifications
- g. DPF owner's manual or manufacturer's specifications
- h. All backpressure monitor notifications and corrective actions
- i. SCR urea injection rate (gpm)  
[Basis: BACT, Cumulative Increase, Recordkeeping]

*End of Conditions*

**Recommendation**

The District has reviewed the material contained in the permit application for the project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source will be located in an overburdened community (OBC), which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and taken into consideration, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following sources:

- S-1 Emergency Standby Diesel Engine (B5N)**  
**Make: Cummins, Model: QSK50-G4 NR2, Model Year: 2023**  
**2,220 bhp, 14.22 MMBTU/hr**  
**Permit Condition No. 100072, 100073, and 27784**  
**Abated by A-1 and A-2**
- A-1 Diesel Particulate Filter (B5N)**  
**Cummins CA452 T4F Aftertreatment**

- A-2 Selective Catalytic Reduction (B5N)  
Cummins CA452 T4F Aftertreatment**
  
- S-2 Emergency Standby Diesel Engine (B5S)  
Make: Cummins, Model: QSK50-G4 NR2, Model Year: 2023  
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- A-4 Selective Catalytic Reduction (B5S)  
Cummins CA452 T4F Aftertreatment**

Prepared by: Cameron Fee, Air Quality Engineer I

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

**Source Category**

<b>Source:</b>	IC Engine-Compression Ignition: Stationary Emergency, non- Agricultural, non-direct drive fire pump	<b>Revision:</b>	0
		<b>Document #:</b>	96.1.5
<b>Class:</b>	≥ 1000 BHP Output	<b>Date:</b>	12/22/2020*

**Determination**

<b>Pollutant</b>	<b>BACT</b> 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	<b>TYPICAL TECHNOLOGY</b>
<b>POC (NMHC)</b>	1. n/s <sup>a</sup> 2. 0.14 g/bhp-hr <sup>b</sup>	1. n/s <sup>a</sup> 2. Any engine certified or verified to achieve the applicable standard
<b>NOx</b>	1. n/s <sup>a</sup> 2. 0.5 g/bhp-hr <sup>b</sup>	1. n/s <sup>a</sup> 2. Any engine certified or verified to achieve the applicable standard
<b>SO<sub>2</sub></b>	1. n/s <sup>a</sup> 2. Fuel sulfur content not to exceed 0.0015% (wt) or 15 ppm (wt)	1. n/s <sup>a</sup> 2. CARB Diesel Fuel (Ultra Low Sulfur Diesel)
<b>CO</b>	1. n/s <sup>a</sup> 2. 2.6 g/bhp-hr <sup>b</sup>	1. n/s <sup>a</sup> 2. Any engine certified or verified to achieve the applicable standard
<b>PM<sub>10</sub></b>	1. n/s <sup>a</sup> 2. 0.02 g/bhp-hr <sup>b</sup>  3. 0.02 g/bhp-hr	1. n/s <sup>a</sup> 2. Any engine or technology demonstrated, certified or verified to achieve the applicable standard 3. Any engine or technology demonstrated, certified or verified to achieve the applicable standard
<b>NPOC</b>	1. n/s 2. n/s	1. n/s 2. n/s