

September 6, 2023

Thomas Elliot  
ProActive Consulting Group LLC  
15235 Springdale St  
Huntington Beach, CA 92649

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Facility Number: S-10023**  
**Project Number: S-1232288**

Dear Mr. Elliot:

Enclosed for your review and comment is the District's analysis of an Authority to Construct application that you have submitted on behalf of CanAm Visalia I, LLC for the installation of a 1,214 bph Caterpillar Model C27 Tier 4F compliant diesel-fired emergency standby IC engine equipped with a Safety Power Model EcoCube Series 3 diesel emissions control system consisting of a Selective Catalyst Reduction (SCR) system, a Diesel Particulate Filter (DPF), and a Diesel Oxidation Catalyst (DOC) powering an electrical generator, at 2045 North Plaza Dr, Visalia, CA.

The notice of preliminary decision for this project has been posted on the District's website ([www.valleyair.org](http://www.valleyair.org)). After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Marycarmen Morales of Permit Services at (559) 230-5998.

Sincerely,



Brian Clements  
Director of Permit Services

BC:mm

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

**Samir Sheikh**  
Executive Director/Air Pollution Control Officer

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# San Joaquin Valley Air Pollution Control District

## Authority to Construct Application Review

### Diesel Fired-Emergency Standby IC Engine

Facility Name: CanAm Visalia I, LLC  
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Contact Person: Thomas Elliott  
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E-Mail: [elliott@proehs.com](mailto:elliott@proehs.com)  
Application #(s): S-10023-3-5  
Project #: S-1232288  
Deemed Complete: June 12, 2023

Date: September 6, 2023  
Engineer: Marycarmen Morales  
Lead Engineer: Brain Clerico

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## I. Proposal

CanAm Visalia I, LLC has requested an Authority to Construct (ATC) permit for the installation of a 1,214 bhp standby internal combustion (IC) engine powering an electrical generator. The proposed Tier 4 Final compliant engine will be equipped with a Safety Power Inc ecoCUBE Series 3 emissions control system consisting of a Selective Catalyst Reduction (SCR) system, a Diesel Particulate Filter (DPF), and a Diesel Oxidation Catalyst (DOC) to comply with the Tier 4F emission requirements for emergency standby engines.

The draft ATC is included in Appendix A.

## II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4701	Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702	Internal Combustion Engines (8/19/21)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Title 17 CCR, Section 93115	Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### **III. Project Location**

The facility is located at 2045 North Plaza Dr in Visalia, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### **IV. Process Description**

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

### **V. Equipment Listing**

S-10023-5-0: 1,214 BHP (INTERMITTENT) CATERPILLAR MODEL C27 TIER 4F COMPLIANT DIESEL-FIRED EMERGENCY STANDBY IC ENGINE EQUIPPED WITH A SAFETY POWER MODEL ECOCUBE SERIES 3 EMISSIONS CONTROL SYSTEM CONSISTING OF A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, A DIESEL PARTICULATE FILTER (DPF), AND A DIESEL OXIDATION CATALYST (DOC) POWERING AN ELECTRICAL GENERATOR

### **VI. Emission Control Technology Evaluation**

The applicant has proposed to install a Tier 4F compliant diesel-fired IC engine fired on very low-sulfur diesel fuel.

The engine will be equipped with a Safety Power ecoCube series 3 for emissions control, reducing NO<sub>x</sub>, PM<sub>10</sub>, CO and VOC emission levels to comply with Tier 4F requirements for emergency standby engines. The Diesel Reduction System (DERS) consists of a Selective Catalytic Reduction (SCR) system, a Diesel Particulate Filter (DPF) and a Diesel Oxidation Catalyst (DOC). Since this engine and control system have not been certified, the engine will be considered a Tier 4F compliant engine for the purpose of this project.

The DERS is an external device through which exhaust emissions from the internal-combustion engine pass through in order to reduce harmful emissions. The DPF is passively regenerated using an upstream DOC for effective regeneration. The DPF collects and oxidizes carbon to remove particulate matter, typically using a porous ceramic or cordierite substrate or metallic filter to physically trap PM and remove it from the exhaust stream. Trapped and collected PM is reduced to ash during filter regeneration, which occurs when the filter element reaches the temperature required for combustion of the PM. DOCs generally consist of a precious metal coated flow-through honeycomb structure contained in a stainless steel housing. As hot diesel exhaust flows through the honeycomb structure, the precious metal coating causes a catalytic reaction that breaks down pollutants into less harmful components.

After collecting the particles from the gases in the DOC and DPF, there is still nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) left in the exhaust. The SCR is injected upstream with a Diesel Exhaust Fluid, in this case a urea solution, which passes through the SCR converting into ammonia. The ammonia reduces NO<sub>x</sub> over the catalyst bed forming elemental nitrogen, water vapor and other byproducts. The system can reduce NO<sub>x</sub> emissions by 98%.

The use of CARB certified diesel fuel (0.0015% by weight sulfur maximum) reduces SO<sub>x</sub> emissions by over 99% from standard diesel fuel.

## VII. General Calculations

### A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM <sub>10</sub> fraction of diesel exhaust:	0.96 (CARB, 1988)
Conversion factor:	1.34 bhp/kw

To streamline emission calculations, PM<sub>2.5</sub> emissions are assumed to be equal to PM<sub>10</sub> emissions. Only if needed to determine if a project is a Federal major modification for PM<sub>2.5</sub> will specific PM<sub>2.5</sub> emission calculations be performed.

### B. Emission Factors

The applicable off-road emissions standards from the California Air Resources Board (CARB) (as codified in the California Code of Regulations (CCR)) for Tier 4F diesel IC engines with a rating of > 1,207 bhp are as follows:

CARB Off-Road Emissions Standards (title 13, CCR, section 2423(b)(1)(B), Table 1b),						
Power rating (bhp)	Tier	Model Year	NO <sub>x</sub> (g/bhp-hr)	HC (g/bhp-hr)	CO (g/bhp-hr)	PM (g/bhp-hr)
> 1,207 (Generators)	4F	2015+	0.50	0.14	2.6	0.02

The emissions factors of this Tier 2 engine without the emissions control system are as follows:

<b>(Uncontrolled) Tier 2 Emission Factors for the Proposed Base Engine</b>		
<b>Pollutant</b>	<b>g/hp-hr</b>	<b>Source</b>
NO <sub>x</sub>	3.95	EPA Certification
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.10	EPA Certification
CO	0.97	EPA Certification
VOC*	0.07	EPA Certification

\*VOC emission factor was not available; therefore, the total hydrocarbon value is used to be conservative.

$$\frac{0.000015 \text{ lb} \cdot \text{S}}{\text{lb} \cdot \text{fuel}} \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{1 \text{ lb} \cdot \text{S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ hp input}}{0.35 \text{ hp out}} \times \frac{2,542.5 \text{ Btu}}{\text{hp} \cdot \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} \cdot \text{SO}_x}{\text{hp} \cdot \text{hr}}$$

Per the manufacturer, the emission factors for the engine with the aftermarket emissions control device installed are as follows:

<b>(Controlled) Emission Factors Proposed by Emission Control System Manufacturer</b>		
<b>Pollutant</b>	<b>g/hp-hr</b>	<b>Source</b>
NO <sub>x</sub>	0.50	Emissions Control Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.02	Emissions Control Manufacturer
CO	0.24	Emissions Control Manufacturer
VOC*	0.03	Emissions Control Manufacturer

\*VOC emission factor was not available; therefore, the total hydrocarbon value is used to be conservative.

$$\frac{0.000015 \text{ lb} \cdot \text{S}}{\text{lb} \cdot \text{fuel}} \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{1 \text{ lb} \cdot \text{S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ hp input}}{0.35 \text{ hp out}} \times \frac{2,542.5 \text{ Btu}}{\text{hp} \cdot \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} \cdot \text{SO}_x}{\text{hp} \cdot \text{hr}}$$

Controlled emission factors for the engine given by manufacturer of the emissions control device are not certified, therefore, to ensure an adequate margin of compliance, the applicant has requested to permit this engine utilizing emission factors equivalent to the California Air Resources Board (CARB) Tier 4F emission certification levels. Thus, the latest applicable off-road emissions standards from the CARB for Tier 4F engines with a rating of > 1,207 bhp will be used in this project.

Tier 4F Compliant Emission Factors		
Pollutant	(g/bhp-hr)	Source
NO <sub>x</sub>	0.50	Tier 4F CARB Emission Standard <sup>1</sup>
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.02	Tier 4F CARB Emission Standard
CO	2.6	Tier 4F CARB Emission Standard
VOC	0.14	Tier 4F CARB Emission Standard

$$\frac{0.000015 \text{ lb} \cdot \text{S}}{\text{lb} \cdot \text{fuel}} \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{1 \text{ lb} \cdot \text{S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ hp input}}{0.35 \text{ hp out}} \times \frac{2,542.5 \text{ Btu}}{\text{hp} \cdot \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} \cdot \text{SO}_x}{\text{hp} \cdot \text{hr}}$$

## C. Calculations

### 1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

### 2. Post-Project Potential to Emit (PE2)

The daily and annual PE2 are calculated as follows:

$$\text{Daily PE2 (lb-pollutant/day)} = \frac{\text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)}}{\text{x operation (hr/day)} / 453.6 \text{ g/lb}}$$

$$\text{Annual PE2 (lb-pollutant/yr)} = \frac{\text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)}}{\text{x operation (hr/yr)} / 453.6 \text{ g/lb}}$$

For those pollutants that require BACT, the District will require initial source testing of the emergency diesel IC engine to ensure it meets Tier 4F emission standards. If the add-on emission controls are the reason that the IC engine is below the BACT threshold for a given pollutant, then testing for that pollutant may also be required. Thus, the potential to emit for the base IC engine without the third-party emission control system is calculated in the table below for the purpose of determining which pollutants may require initial source testing.

<sup>1</sup> <https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart>

<b>Uncontrolled Potential to Emit</b>						
<b>Pollutant</b>	<b>Emissions Factor (g/bhp-hr)</b>	<b>Rating (bhp)</b>	<b>Daily Hours of Operation (hr/day)</b>	<b>Annual Hours of Operation (hr/year)</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/yr)</b>
NO <sub>x</sub>	3.95	1,214	24	50	<b>253.7</b>	<b>529</b>
SO <sub>x</sub>	0.0051	1,214	24	50	<b>0.3</b>	<b>1</b>
PM <sub>10</sub>	0.10	1,214	24	50	<b>6.4</b>	<b>13</b>
CO	0.97	1,214	24	50	<b>62.3</b>	<b>130</b>
VOC	0.07	1,214	24	50	<b>4.5</b>	<b>9</b>

<b>Controlled Post-Project Potential to Emit (PE2)</b>						
<b>Pollutant</b>	<b>Emissions Factor (g/bhp-hr)</b>	<b>Rating (bhp)</b>	<b>Daily Hours of Operation (hr/day)</b>	<b>Annual Hours of Operation (hr/year)</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/yr)</b>
NO <sub>x</sub>	0.5	1,214	24	50	<b>32.1</b>	<b>67</b>
SO <sub>x</sub>	0.0051	1,214	24	50	<b>0.3</b>	<b>1</b>
PM <sub>10</sub>	0.02	1,214	24	50	<b>1.3</b>	<b>3</b>
CO	2.6	1,214	24	50	<b>167.0</b>	<b>348</b>
VOC	0.14	1,214	24	50	<b>9.0</b>	<b>19</b>

### 3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

SSPE1 values were obtained from recently finalized District Project S-1221482 and are summarized in the following table.

<b>SSPE1 (lb/year)</b>					
<b>Permit Unit</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
S-10023-1-0	374	1	5	60	8
S-10023-2-0	374	1	5	60	8
S-10023-3-0	374	1	5	60	8
S-10023-4-0	374	1	5	60	8
<b>SSPE1</b>	<b>1,496</b>	<b>4</b>	<b>20</b>	<b>240</b>	<b>32</b>

**4. Post-Project Stationary Source Potential to Emit (SSPE2)**

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine. Thus:

<b>SSPE2 (lb/year)</b>					
<b>Permit Unit</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
SSPE1	1,496	4	20	240	32
S-10023-5-0	67	1	3	348	19
<b>SSPE2</b>	<b>1,563</b>	<b>5</b>	<b>23</b>	<b>588</b>	<b>51</b>

**5. Major Source Determination****Rule 2201 Major Source Determination:**

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- Any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

<b>Rule 2201 Major Source Determination (lb/year)</b>						
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>CO</b>	<b>VOC</b>
SSPE1	1,496	4	20	20	240	32
SSPE2	1,563	5	23	23	588	51
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM<sub>2.5</sub> assumed to be equal to PM<sub>10</sub>



As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

#### **Rule 2410 Major Source Determination:**

The facility is not an existing Major Source for PSD for at least one pollutant. Therefore the facility is not an existing Major Source for PSD.

### **6. Baseline Emissions (BE)**

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201,  $BE = PE1$  for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

$BE = \text{Historic Actual Emissions (HAE)}$ , calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore  $BE = PE1 = 0$ .

### **7. SB 288 Major Modification**

40 CFR Part 51.165 defines a SB 288 Major Modification as any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification and no further discussion is required.

### **8. Federal Major Modification / New Major Source**

#### **Federal Major Modification**

District Rule 2201 states that a Federal Major Modification is the same as a “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA.

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification and no further discussion is required.

### **New Major Source**

As demonstrated above, this facility is not becoming a Major Source as a result of this project, therefore, this facility is not a New Major Source pursuant to 40 CFR 51.165 a(1)(iv)(A)(3).

### **9. Rule 2410 - Prevention of Significant Deterioration (PSD) Applicability Determination**

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore, Rule 2410 is not applicable and no further analysis is required.

### **10. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix E.

### **11. PM<sub>2.5</sub> Federal Offset Sanctions**

As of June 27, 2023, the District is in nonattainment new source review (NNSR) offset sanctions pursuant to CAA 179(a) for PM<sub>2.5</sub>. Therefore, any New Major Source or Federal Major Modification for PM<sub>2.5</sub> (including increases of its precursors NO<sub>x</sub>, VOC, and SO<sub>x</sub>), must supply any required federal offsets at a 2:1 ratio.

For the purposes of determining major source status the following shall not be included:

- Any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

<b>New Emissions Unit BACT Applicability</b>				
<b>Pollutant</b>	<b>Daily PE2 (lb/day)</b>	<b>BACT Threshold (lb/day)</b>	<b>SSPE2 (lb/yr)</b>	<b>BACT Triggered?</b>
NO <sub>x</sub>	<b>32.1</b>	> 2.0	n/a	Yes
SO <sub>x</sub>	<b>0.3</b>	> 2.0	n/a	No
PM <sub>10</sub>	<b>1.3</b>	> 2.0	n/a	No
CO	<b>167.0</b>	> 2.0 and SSPE2 ≥ 200,000 lb/yr	588	No
VOC	<b>9.0</b>	> 2.0	n/a	Yes

BACT is triggered for NO<sub>x</sub> and VOC only since the PEs are greater than 2 lb/day. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated above.

## **2. BACT Guideline**

BACT Guideline 3.1.1, which appears in Appendix B of this report, covers diesel-fired emergency IC engines.

## **3. Top-Down BACT Analysis**

Per District Policy APR 1305, Section IX, “A top down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District’s NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis.”

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix B of this report, BACT is satisfied with:

- NO<sub>x</sub>: EPA Tier 4 Final certification level or equivalent for applicable horsepower range
- VOC: EPA Tier 4 Final certification level or equivalent for applicable horsepower range

The facility has proposed to install a 1,214 bhp Tier 4F compliant IC engine. Therefore, BACT is satisfied for NO<sub>x</sub> and VOC.

## **B. Offsets**

### **1. Offset Applicability**

Pursuant to Section 4.6.2 of this rule, offsets are not required for emergency IC engines. The engine in this project is an emergency IC engine; therefore, this exemption is applicable to this project.

However, even when there is an applicable exemption, the SSPE2 values are compared to the offset threshold to determine if offsets are triggered. In its PAS database, the District keeps track of facilities where offsets are triggered but an exemption applies. The SSPE2 values are compared to the offset trigger thresholds in the following table:

<b>Offset Determination (lb/year)</b>					
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
SSPE2	1,563	5	23	588	51
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

## **2. Quantity of District Offsets Required**

As shown in the table above, no offset thresholds are exceeded with this project. Further, as previously stated, the offset exemption from Section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offset calculations are not necessary and offsets are not required.

## **C. Public Notification**

### **1. Applicability**

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

- New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- Any project which results in the offset thresholds being surpassed,
- Any project with an SSPE of greater than 20,000 lb/year for any pollutant, and/or
- Any project which results in a Title V significant permit modification

#### **a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications**

As shown in Section VII.C.5 above, this existing minor source facility is not becoming a Major Source as a result of this project. Therefore, this facility is not a New Major Source and this project does not constitute an SB 288 or a Federal Major Modification. Consequently, public noticing for this project for New Major Source, Federal Major Modification, or SB 288 Major Modification purposes is not required.

**b. PE > 100 lb/day**

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

<b>PE &gt; 100 lb/day Public Notice Thresholds</b>			
<b>Pollutant</b>	<b>PE2 (lb/day)</b>	<b>Public Notice Threshold</b>	<b>Public Notice Triggered?</b>
NO <sub>x</sub>	<b>32.1</b>	100 lb/day	No
SO <sub>x</sub>	<b>0.3</b>	100 lb/day	No
PM <sub>10</sub>	<b>1.3</b>	100 lb/day	No
CO	<b>167.0</b>	100 lb/day	Yes
VOC	<b>9.0</b>	100 lb/day	No

Therefore, public noticing for PE > 100 lb/day purposes is required.

**c. Offset Threshold**

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<b>Offset Thresholds</b>				
<b>Pollutant</b>	<b>SSPE1 (lb/year)</b>	<b>SSPE2 (lb/year)</b>	<b>Offset Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	1,496	1,563	20,000 lb/year	No
SO <sub>x</sub>	4	5	54,750 lb/year	No
PM <sub>10</sub>	20	23	29,200 lb/year	No
CO	240	588	200,000 lb/year	No
VOC	32	51	20,000 lb/year	No

As demonstrated above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

**d. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	1,563	1,496	67	20,000 lb/year	No
SO <sub>x</sub>	5	4	1	20,000 lb/year	No
PM <sub>10</sub>	23	20	3	20,000 lb/year	No
CO	588	240	348	20,000 lb/year	No
VOC	51	32	19	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

#### e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant modification, and therefore public noticing is not required.

## 2. Public Notice Action

As discussed above, public noticing is required for this project for CO emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

## D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

### **Proposed Rule 2201 (DEL) Conditions:**

- {modified 4771} Emissions from this IC engine shall not exceed any of the following limits: 0.50 g-NO<sub>x</sub>/bhp-hr, 2.6 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {modified 4772} Emissions from this IC engine shall not exceed 0.02 g-PM<sub>10</sub>/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

## E. Compliance Assurance

### 1. Source Testing

Per District Policy SSP 1835, *Monitoring and Source Testing for Tier 4F Compliant Emergency IC Engines*, since the proposed Tier 4F compliant diesel IC engine in this project is not certified to Tier 4F emission standards, initial source testing will be required to verify the proposed add-on controls will comply with Tier 4F emissions standards for NOx, CO, VOC, and PM10. Only initial source testing will be required due to the relatively low operating hours expected from an emergency IC engine. Since the Tier 4F emission standards are a BACT requirement and not a Rule 4702 requirement, District Rule 2201 will be cited as the basis for the initial source test condition listed on the ATC. The following conditions will be included in the permit to operate:

- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to the source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
- Initial source testing of the engine shall be conducted within 60 days of initial start-up of the engine to demonstrate compliance with the NOx, CO, VOC and PM10 emissions limits. [District Rule 2201]
- Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the emissions source testing to ensure the engine is operating at load conditions representative of normal operations. [District Rules 1081 and 2201]
- The percent load, engine output, and stack gas volumetric flow rate shall be used to convert engine emissions to a mass basis (g/bhp-hr). [District Rules 1081 and 2201]
- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. NOx, CO, PM10, and VOC concentrations shall be reported in g/bhp-hr. [District Rules 1081 and 2201]
- {Modified 3210} The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) -

EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 2201]

- Source testing to measure PM<sub>10</sub> shall be conducted using EPA Method 5 (front half) (gr/dscf) or EPA Method 201A/202 (gr/dscf). Should it be determined that another set of test methods is more appropriate for use in demonstrating compliance with the minimum control efficiency requirements, such test methods shall be approved by the District prior to initial source testing. [District Rule 1081]

## 2. Monitoring

As mentioned above, the applicant has proposed emission factors that are new or are different from those typically used for similar sources. A monitoring schedule of 12 months using a portable analyzer will be used to monitor Third-Party Retrofit Tier 4F Compliant Engines. The follow conditions will be included in the permit to operate:

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every 12 months using a portable emission monitor that meets District specification. Monitoring shall be performed not less than once every month for 12 months if 2 consecutive exceedances of the emission limit(s) are observed during monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed with in the last month is on a monthly monitoring schedule. [District Rule 2201]
- The permittee shall demonstrate the operating horsepower at the source tested power level using any method approved by the APCO and EPA. The permittee shall document typical operating parameters, loading, and duty cycle during the initial source test and subsequent monitoring. [District Rule 2201]
- {Modified 2993} If either the NO<sub>x</sub> or CO concentrations corrected to 15% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 2201]
- {Modified 2994} All portable analyzer emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the portable analyzer monitoring to ensure the



engine is operating at load conditions representative of normal operations. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 2201]

- The diesel particulate filter (DPF) shall be operated and maintained according to the DPF manufacturer's specifications, procedures, and recommended inspection and cleaning frequencies. [District Rule 2201]

### **3. Recordkeeping**

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, District Rule 4702, of this evaluation.

The follow conditions will be included in the permit to operate to comply with the source testing and monitoring requirements listed above:

- The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with the permit limits. [District Rules 1070 and 2201]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 15% O<sub>2</sub>, (3) the stack volumetric flow rate, in standard cubic meter per hour, dry basis, (4) the emission rate of NO<sub>x</sub> and CO, converted to g/bhp-hr (5) make and model of exhaust gas analyzer, (6) exhaust gas analyzer calibration records, and (7) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201]
- The permittee shall maintain records of: (1) the date and time of DPF inspection, and (2) the date and time of DPF cleaning. [District Rules 1070 and 2201]
- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

## **Rule 2410 Prevention of Significant Deterioration**

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

## **Rule 2520 Federally Mandated Operating Permits**

Since this facility's potential emissions do not exceed any Major Source thresholds of Rule 2201, this facility is not a Major Source, and Rule 2520 does not apply.

## **Rule 4001 New Source Performance Standards (NSPS)**

### **40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

The District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

## **Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)**

### **40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)**

The District has not been delegated the authority to implement NESHAP regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

## **Rule 4101 Visible Emissions**

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

## **Rule 4102 Nuisance**

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

## California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification of an existing source shall not result in an increase in cancer risk greater than the District's significance level (20 in a million) and shall not result in acute and/or chronic risk indices greater than 1.

According to the Technical Services Memo for this project, the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The resulting prioritization score, acute hazard index, chronic hazard index, and cancer risk for this project is shown below.

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
5	1.73	N/A <sup>1</sup>	0.00	5.05E-08	No	Yes
<b>Project Totals</b>	1.73	N/A <sup>1</sup>	0.00	5.05E-08		
<b>Facility Totals</b>	>1	0.00	0.00	4.34E-07		

Notes:

1. Acute hazard index were not calculated for unit 5 since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

## Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

In accordance with District policy APR 1905, no further analysis is required, and compliance with District Rule 4102 requirements is expected.

See Appendix D: Health Risk Assessment Summary

The following permit conditions are required to ensure compliance with the assumptions made for the risk management review:

- {modified 4772} Emissions from this IC engine shall not exceed 0.02 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- {modified 4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

## Rule 4201 Particulate Matter Concentration

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf, which, as calculated below, is equivalent to a PM<sub>10</sub> emission factor of 0.4 g-PM<sub>10</sub>/bhp-hr.

$$0.1 \frac{\text{grain} - \text{PM}}{\text{dscf}} \times \frac{\text{g}}{15.43 \text{ grain}} \times \frac{1 \text{ Btu}_{in}}{0.35 \text{ Btu}_{out}} \times \frac{9,051 \text{ dscf}}{10^6 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{1 \text{ bhp} - \text{hr}} \times \frac{0.96 \text{ g} - \text{PM}_{10}}{1 \text{ g} - \text{PM}} = 0.4 \frac{\text{g} - \text{PM}_{10}}{\text{bhp} - \text{hr}}$$

The new engine has a PM<sub>10</sub> emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

## Rule 4701 Internal Combustion Engines - Phase 1

The purpose of this rule is to limit the emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp, that require a PTO.

The proposed engine is also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent or more stringent than District Rule 4701 requirements for emergency engines, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

## Rule 4702 Internal Combustion Engines

Emergency standby engines are subject to District Rule 4702 requirements. Emergency standby engines are defined in Section 3.0 of District Rule 4702 as follows:

*3.15 Emergency Standby Engine: an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the*

*following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.*

Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract. The following conditions will be included on the permit:

- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]
- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]

The 100 hour requirement is less stringent than the Air Toxic Control Measure operating limitations for emergency standby engines. Therefore, compliance with the applicable Air Toxic Control Measure requirements ensures compliance with the 100 hour requirement.

Operation of emergency standby engines are limited to 100 hours or less per calendar year for non-emergency purposes. The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine's maintenance and testing to 50 hours/year; therefore, compliance is expected. The following condition will be included on the permit:

- {modified 4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

The following exemption in Section 4.2 of District Rule 4702 applies to emergency standby engines:

*4.2 Except for the requirements of Section 5.9 and Section 6.2.3, the requirements of this rule shall not apply to:*

*4.2.1 An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an*

*alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.*

Pursuant to the exemption in Section 4.2, the following requirements of Section 5.10 are applicable to emergency standby engines

Section 5.10 requires the owner to:

*5.10.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.*

*5.10.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.*

*5.10.4 Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.*

Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

Install and operate a nonresettable elapsed time meter. In lieu of installing a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA and is allowed by Permit-to-Operate condition. The operator shall properly maintain and operate the

nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions. The following condition will be included on the permit:

- {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]

The exemption in Rule 4702 Section 4.2 for emergency standby engines requires the engines to comply with Section 6.2.3, shown below.

*6.2.3 An owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:*

- 6.2.3.1 Total hours of operation,*
- 6.2.3.2 The type of fuel used,*
- 6.2.3.3 The purpose for operating the engine,*
- 6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and*
- 6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.*

Records of the total hours of operation, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and other support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The following conditions will be included on the permit:

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

## Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = (n \times R \times T) \div P$$

n = moles SO<sub>2</sub>

T (standard temperature) = 60 °F or 520 °R

$$R (\text{universal gas constant}) = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}}$$

$$\frac{0.000015 \text{ lb} - \text{S}}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb}}{\text{gal}} \times \frac{64 \text{ lb} - \text{SO}_2}{32 \text{ lb} - \text{S}} \times \frac{1 \text{ MMBtu}}{9,051 \text{ scf}} \times \frac{1 \text{ gal}}{0.137 \text{ MMBtu}} \times \frac{\text{lb} - \text{mol}}{64 \text{ lb} - \text{SO}_2} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} - \text{mol} \cdot ^\circ\text{R}} \times \frac{520^\circ\text{R}}{14.7 \text{ psi}} \times 1,000,000 = 1.0 \text{ ppmv}$$

Since 1.0 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC as a mechanism to ensure compliance:

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

## California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

## Title 17 California Code of Regulations (CCR), Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

The following requirements apply to new engines (those installed after 1/1/05):

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	<p>The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, is included on the permit.</p> <ul style="list-style-type: none"> <li>• {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115]</li> </ul>
The engine(s) must meet the emission standards in Table 1 of the ATCM for the	The applicant has proposed the use of an engine that is certified to the latest EPA Tier Certification standards for



specific power rating and model year of the proposed engine.	the applicable horsepower range, guaranteeing compliance with the emission standards of the ATCM. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes unless the PM emissions are $\leq 0.01$ g/bhp-hr, then the engine is allowed 100 hours per year. Emissions from this engine is 0.02 g/bhp-hr, therefore the engine is allowed 50 hours.	<p>The following conditions will be included on the permits:</p> <ul style="list-style-type: none"> <li>• {modified 4772} Emissions from this IC engine shall not exceed 0.02 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]</li> <li>• {modified 4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours. [District Rules 2201, 4102, and 4702, 17 CCR 93115]</li> </ul>
Engines, with a PM <sub>10</sub> emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM	The District has verified that this engine is not located within 500' of a school.
A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2005, on all engines subject to all or part of the requirements of sections 93115.6, 93115.7, or 93115.8(a) unless the District determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.	<p>The following condition will be included on the permits:</p> <ul style="list-style-type: none"> <li>• {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]</li> </ul>

<p>An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 60 months.</p>	<p>The following conditions will be included on the permits:</p> <ul style="list-style-type: none"> <li>• {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]</li> <li>• {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]</li> </ul>
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## California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

## Greenhouse Gas (GHG) Significance Determination

District is a Lead Agency & GHG emissions increases are from the combustion of fossil fuel other than jet fuels

It is determined that no other agency has prepared or will prepare an environmental review document for the project. Thus, the District is the Lead Agency for this project.

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*, for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, *CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation*, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

The GHG emissions increases associated with this project result from the combustion of fossil fuel(s), other than jet fuel, delivered from suppliers subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

### **District CEQA Findings**

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing or former use. Furthermore, the District determined that the activity will not have a significant effect on the environment. Therefore, the District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the common sense exemption

that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

### **Indemnification Agreement/Letter of Credit Determination**

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

### **IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Issue ATC S-10023-5-0 subject to the permit conditions on the attached draft ATC in Appendix A.

### **X. Billing Information**

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
S-10023-5-0	3020-10-F	1,214 bhp IC engine	\$900

### **Appendixes**

- A: Draft ATC
- B: BACT Guideline and BACT Analysis
- C: EPA Emission Factors
- D: Health Risk Assessment Summary
- E: QNEC Calculations

## **APPENDIX A**

### **Draft ATC**

San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-10023-5-0

**ISSUANCE DATE:** DRAFT

**LEGAL OWNER OR OPERATOR:** CANAM VISALIA I, LLC  
**MAILING ADDRESS:** 9830 COLONNADE BLVD, STE 600  
SAN ANTONIO, TX 78230

**LOCATION:** 2045 NORTH PLAZA DRIVE  
VISALIA, CA 93291

**EQUIPMENT DESCRIPTION:**

1,214 BHP (INTERMITTENT) CATERPILLAR MODEL C27 TIER 4F COMPLIANT DIESEL-FIRED EMERGENCY STANDBY IC ENGINE EQUIPPED WITH A SAFETY POWER MODEL ECOCUBE SERIES 3 EMISSIONS CONTROL SYSTEM CONSISTING OF A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, A DIESEL PARTICULATE FILTER (DPF), AND A DIESEL OXIDATION CATALYST (DOC) POWERING AN ELECTRICAL GENERATOR

## CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 0.50 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

S-10023-5-0 : Sep 5 2023 4:51PM -- MORALESM : Joint Inspection NOT Required

8. Emissions from this IC engine shall not exceed 0.02 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
9. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
10. The diesel particulate filter (DPF) shall be operated and maintained according to the DPF manufacturer's specifications, procedures, and recommended inspection and cleaning frequencies. [District Rule 2201]
11. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
12. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]
13. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]
14. {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
15. Initial source testing of the engine shall be conducted within 60 days of initial start-up of the engine to demonstrate compliance with the NOx, CO, VOC and PM10 emissions limits. [District Rule 2201]
16. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the emissions source testing to ensure the engine is operating at load conditions representative of normal operations. [District Rules 1081 and 2201]
17. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. NOx, CO, PM10, and VOC concentrations shall be reported in g/bhp-hr. [District Rules 1081 and 2201]
18. {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
19. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
20. The percent load, engine output, and stack gas volumetric flow rate shall be used to convert engine emissions to a mass basis (g/bhp-hr). [District Rules 1081 and 2201]
21. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 2201]
22. Source testing to measure PM10 shall be conducted using EPA Method 5 (front half) (gr/dscf) or EPA Method 201A/202 (gr/dscf). Should it be determined that another set of test methods is more appropriate for use in demonstrating compliance with the minimum control efficiency requirements, such test methods shall be approved by the District prior to initial source testing. [District Rule 1081]
23. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every 12 months using a portable emission monitor that meets District specification. Monitoring shall be performed not less than once every month for 12 months if 2 consecutive exceedances of the emission limit(s) are observed during monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month is on a monthly monitoring schedule. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

24. The permittee shall demonstrate the operating horsepower at the source tested power level using any method approved by the APCO and EPA. The permittee shall document typical operating parameters, loading, and duty cycle during the initial source test and subsequent monitoring. [District Rule 2201]
25. If either the NO<sub>x</sub> or CO concentrations corrected to 15% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 2201]
26. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201]
27. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with the permit limits. [District Rules 1070 and 2201]
28. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 15% O<sub>2</sub>, (3) the stack volumetric flow rate, in standard cubic meter per hour, dry basis, (4) the emission rate of NO<sub>x</sub> and CO, converted to g/bhp-hr (5) make and model of exhaust gas analyzer, (6) exhaust gas analyzer calibration records, and (7) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201]
29. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
30. The permittee shall maintain records of: (1) the date and time of DPF inspection, and (2) the date and time of DPF cleaning. [District Rules 1070 and 2201]
31. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
32. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT



## **APPENDIX B**

### **BACT Guideline and BACT Analysis**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 3.1.1\***

Last Update: 4/29/2022

**Emergency Diesel-Fired IC Engine > 50 bhp Powering an Electrical Generator**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		
SOx	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
PM10	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		
NOx	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		
CO	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		

\*\*The following emission levels are equivalent to the EPA Tier 4 Final certification levels:

50 - < 75 bhp: 3.5 g-(NOx + VOC)/bhp-hr, 0.02 g-PM/bhp-hr, 3.7 g-CO/bhp-hr

75 - < 175 bhp: 0.30 g-NOx/bhp-hr, 0.015 g-PM/bhp-hr, 3.7 g-CO/bhp-hr, 0.14 g-VOC/bhp-hr

175 - ≤ 750 bhp: 0.30 g-NOx/bhp-hr, 0.015 g-PM/bhp-hr, 2.6 g-CO/bhp-hr, 0.14 g-VOC/bhp-hr

> 750 bhp: 0.50 g-NOx/bhp-hr, 0.02 g-PM/bhp-hr, 2.6 g-CO/bhp-hr, 0.14 g-VOC/bhp-hr

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a State Implementation Plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

**\*This is a Summary Page for this Class of Source**

## Top-Down BACT Analysis for the Emergency IC Engine

This application was deemed complete on June 12, 2023. Therefore, BACT Guideline 3.1.1 (April 29, 2022) was in effect at the time the project was deemed complete and will be used for this emergency diesel IC engine. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

### 1. BACT Analysis for NO<sub>x</sub> and VOC Emissions:

#### a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *EPA Tier 4 Final certification level or equivalent for applicable horsepower range*

No technologically feasible controls or alternate basic equipment are identified in the BACT guideline listed above.

The latest applicable Tier certification level for the engine is Tier 4F, with an emission standard of 0.5 g-NO<sub>x</sub>/bhp-hr, 0.02 g-PM/bhp-hr, and 0.14 g-VOC/bhp-hr. Since the proposed engine has an emission rate of 0.5 g-NO<sub>x</sub>/bhp-hr, 0.02 g-PM/bhp-hr, and 0.14 g-VOC/bhp-hr with the add-on Safety Power Inc ecoCube Series 3 emissions control system, NO<sub>x</sub>, PM, and VOC emissions from the proposed engine meet the latest tier certification standard Tier 4F emission levels.

Off-Road Emissions Standards from CARB						
Power rating (bhp)	Tier	Model Year	NO <sub>x</sub> (g/bhp-hr)	HC (g/bhp-hr)	CO (g/bhp-hr)	PM (g/bhp-hr)
> 1,207 (Generators)	4F	2015+	0.50	0.14	2.6	0.02

#### b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

#### c. Step 3 - Rank remaining options by control effectiveness

Ranking is not necessary since there is only one control option listed in Step 1.

#### d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

#### e. Step 5 - Select BACT

BACT for NO<sub>x</sub>, PM, and VOC will be the use of an EPA Tier 4 final compliant engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

## **APPENDIX C**

### **EPA Emission Factors**

**Caterpillar Emergency Engines  
SCAQMD CEP List  
January 11, 2023**

			EPA Engine Certification (2023) (g/bhp-hr)						TMI Reference Data (g/bhp-hr)	SCAQMD BACT Guidelines (2016) (g/bhp-hr)				
Model	Generator kW	HP	Family Name	HC	NOx	NMHC + NOx	CO	PM	TMI Reference	HC	NOx	NMHC + NOx	CO	PM
C4.4 (4506)	40	96	PPKXL04.4NP1	0.19	3.11	3.28	1.04	0.13	P4506A			3.5	3.7	0.15
C4.4 (4506)	50	96	PPKXL04.4NP1	0.19	3.11	3.28	1.04	0.13	P4506A			3.5	3.7	0.15
C4.4 (4506)	60	96	PPKXL04.4NP1	0.19	3.11	3.28	1.04	0.13	P4506A			3.5	3.7	0.15
C4.4 (4510)	80	132	PPKXL04.4NR1	0.12	2.69	2.81	0.60	0.08	P4510A			3.0	3.7	0.15
C7.1 (4392)	125	229	PPKXL07.0PW1	0.14	2.53	2.68	0.90	0.09	P4392A			3.0	2.6	0.15
C7.1 (4390)	150	247	PPKXL07.0PW1	0.14	2.53	2.68	0.90	0.09	P4390A			3.0	2.6	0.15
C7.1 (4378)	175	280	PPKXL07.0PW1	0.14	2.53	2.68	0.90	0.09	P4378A			3.0	2.6	0.15
C7.1 (4364)	200	315	PPKXL07.0PW1	0.14	2.53	2.68	0.90	0.09	P4364A-00			3.0	2.6	0.15
C9	250	398	PCPXL08.8NZS	0.18	2.55	2.76	0.97	0.10	DM8501-03			3.0	2.6	0.15
C9	300	480	PCPXL08.8NZS	0.18	2.55	2.76	0.97	0.10	DM8168-03			3.0	2.6	0.15
C13	350	539	PCPXL12.5NYS	0.14	2.65	2.76	2.01	0.12	EM1692			3.0	2.6	0.15
C13	400	609	PCPXL12.5NYS	0.14	2.65	2.76	2.01	0.12	EM1694			3.0	2.6	0.15
C15	450	689	PCPXL15.2NYS	0.16	2.60	2.76	2.16	0.07	DM8153-03			3.0	2.6	0.15
C15	500	762	PCPXL15.2NZS	0.07	4.01	4.10	1.19	0.07	DM8155-03			4.8	2.6	0.15
C15	550	839	PCPXL15.2NZS	0.07	4.01	4.10	1.19	0.07	DM8157-03			4.8	2.6	0.15
C18	550	839	PCPXL18.1NYS	0.08	3.77	3.88	0.60	0.05	DM8517-04			4.8	2.6	0.15
C18	600	900	PCPXL18.1NYS	0.08	3.77	3.88	0.60	0.05	DM8518-04			4.8	2.6	0.15
C18	750	1112	PCPXL18.1NYS	0.08	3.77	3.88	0.60	0.05	EM3842			4.8	2.6	0.15
C27	650	998	PCPXL27.0NZS	0.07	3.95	4.02	0.97	0.10	DM9079-01			4.8	2.6	0.15
C27	700	1069	PCPXL27.0NZS	0.07	3.95	4.02	0.97	0.10	DM9075-03			4.8	2.6	0.15
C27	750	1141	PCPXL27.0NZS	0.07	3.95	4.02	0.97	0.10	DM9071-02			4.8	2.6	0.15
C27	800	1214	PCPXL27.0NZS	0.07	3.95	4.02	0.97	0.10	DM7696-02			4.8	2.6	0.15
C32	900	1357	PCPXL32.0NZS	0.07	3.74	3.80	0.52	0.04	DM8140-02			4.8	2.6	0.15
C32	1000	1474	PCPXL32.0NZS	0.07	3.74	3.80	0.52	0.04	DM9933			4.8	2.6	0.15
C32	1250	1829	PCPXL32.0NZS	0.07	3.74	3.80	0.52	0.04	EM2324-09			4.8	2.6	0.15
3512C	1500	2206	PCPXL78.1NZS	0.19	3.78	3.95	0.67	0.09	DM8260-04			4.8	2.6	0.15
3512C	1750	2584	PCPXL78.1NZS	0.19	3.78	3.95	0.67	0.09	EM1787-02			4.8	2.6	0.15
3516C	2000	2937	PCPXL78.1NZS	0.19	3.78	3.95	0.67	0.09	DM8263-03			4.8	2.6	0.15
3516C	2500	3634	PCPXL78.1NZS	0.19	3.78	3.95	0.67	0.09	DM8266-04			4.8	2.6	0.15
3516E	2750	4043	PCPXL78.1NZS	0.13	3.98	4.11	1.12	0.10	EM1787-02			4.8	2.6	0.15
C175	3000	4423	PCPXL106.NZS	0.16	4.17	4.33	1.27	0.07	DM8448-07			4.8	2.6	0.15

## **APPENDIX D**

### **Health Risk Assessment Summary**

# San Joaquin Valley Air Pollution Control District

## Risk Management Review and Ambient Air Quality Analysis

To: Marycarmen Morales – Permit Services  
From: Trevor S Joy – Technical Services  
Date: July 24, 2023  
Facility Name: CANAM VISALIA I, LLC  
Location: 2045 NORTH PLAZA DRIVE, VISALIA  
Application #(s): S-10023-5-0  
Project #: S-1232288

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### 1. Summary

#### 1.1 Risk Management Review (RMR)

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
5	1.73	N/A <sup>1</sup>	0.00	5.05E-08	No	Yes
<b>Project Totals</b>	1.73	N/A <sup>1</sup>	0.00	5.05E-08		
<b>Facility Totals</b>	>1	0.00	0.00	4.34E-07		

Notes:

1. Acute hazard index were not calculated for unit 5 since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

#### 1.2 Ambient Air Quality Analysis (AAQA)

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
<b>CO</b>	N/A <sup>2</sup>		N/A <sup>2</sup>		
<b>NO<sub>x</sub></b>	N/A <sup>2</sup>				Pass
<b>SO<sub>x</sub></b>	N/A <sup>2</sup>	N/A <sup>2</sup>		N/A <sup>2</sup>	Pass
<b>PM<sub>10</sub></b>				N/A <sup>2</sup>	Pass
<b>PM<sub>2.5</sub></b>				N/A <sup>2</sup>	Pass

Notes:

1. Results were taken from the attached AAQA Report.
2. The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

#### Unit # 5-0

1. The PM<sub>10</sub> emissions rate shall not exceed 0.02 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.

2. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.
3. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year.

## **2. Project Description**

Technical Services received a request to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -5-0: 1,214 BHP (INTERMITTENT) CATERPILLAR MODEL C27 TIER 4F COMPLIANT DIESEL-FIRED EMERGENCY STANDBY IC ENGINE WITH EQUIPPED WITH A SAFETY POWER INC MODEL ECOCUBE SERIES 3 EMISSIONS CONTROL SYSTEM CONSISTING OF A SELECTIVE CATALYST REDUCTION (SCR) SYSTEM, A DIESEL PARTICULATE FILTER (DPF), AND A DIESEL OXIDATION CATALYST (DOC) POWERING AN ELECTRICAL GENERATOR.

## **3. RMR Report**

### **3.1 Analysis**

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the units', the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required.

If a refined assessment is greater than one in a million but less than 20 in a million for carcinogenic impacts (cancer risk) and less than 1.0 for the acute and chronic hazard indices (non-carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For units that exceed a cancer risk of one in a million, Toxic Best Available Control Technology (TBACT) must be implemented.

Air toxics emissions for this project were calculated using the following methods:

- Particulate matter (PM10) emissions for the proposed diesel internal combustion engine was provided by the Permit Engineer. Per OEHHA guidance, all diesel exhaust PM10 is evaluated as diesel particulate matter (CAS# 9901).

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks



from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2010 from Visalia (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
5	1	Diesel PM10	Lbs	0.05	3

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/ Horizontal/ Capped
5	1214 BHP DICE	5.58	784	38.88	0.30	Vertical

#### 4. AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO<sub>2</sub> standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	Station Name	County	City	Measurement Year
CO	Fresno - Garland	Fresno	Fresno	2021
NOx	Visalia - N. Church	Tulare	Visalia	2021
PM10	Visalia - N. Church	Tulare	Visalia	2021
PM2.5	Visalia - N. Church	Tulare	Visalia	2021
SOx	Fresno - Garland	Fresno	Fresno	2021

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
5	1	1.30	0.01	7.00	0.05	0.05

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
5	1	67	1.00	348	3.00	3.00

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and meteorological data for 2007-2010 from Visalia (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/ Horizontal/ Capped
5	1,214 BHP DICE	5.58	784	38.88	0.31	Vertical

## 5. Conclusion

### 5.1 RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. In addition, the cancer risk for each unit in this project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

### 5.2 AAQA

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

**6. Attachments**

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary
- E. AAQA results

## **APPENDIX E**

### **Quarterly Net Emissions Change (QNEC)**

### Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

$QNEC = PE2 - PE1$ , where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Since this is a new unit,  $PE1 = 0$  for all pollutants. Thus,  $QNEC = PE2$  (lb/qtr).

Using the PE2 (lb/yr) values calculated in Section VII.C.2, Quarterly PE2 is calculated as follows:

$$PE2_{\text{quarterly}} = PE2 \text{ (lb/yr)} \div 4 \text{ quarters/year} = QNEC$$

QNEC		
Pollutant	PE2 (lb/yr)	QNEC (lb/qtr)
NO <sub>x</sub>	67	16.75
SO <sub>x</sub>	1	0.25
PM <sub>10</sub>	3	0.75
CO	348	87
VOC	19	4.75