



MAR 18 2020

Mr. Ray Arthur  
Fresno/Clovis Regional WWTP  
5607 W Jensen Ave  
Fresno, CA 93706

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)**  
**Facility Number: C-535**  
**Project Number: C-1200846**

Dear Mr. Arthur:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The modification consists of the installation of a 247 horsepower Tier 3 certified diesel engine to provide emergency power in the event of an electrical outage.

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 and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

**Samir Sheikh**

Executive Director/Air Pollution Control Officer

**Northern Region**

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Mr. Ray Arthur  
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Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email  
cc: Gerardo C. Rios, EPA (w/enclosure) via EPS

**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Diesel-Fired Emergency Standby IC Engine

Facility Name:	Fresno/Clovis Regional WWTP	Date:	March 4, 2020
Mailing Address:	5607 W Jensen Ave Fresno, CA 93706	Engineer:	Manuel Salinas
Contact Person:	Ray Arthur	Lead Engineer:	Derek Fukuda
Telephone:	(559) 621-5266		
E-Mail:	Ray.arthur@fresno.gov		
Application #:	C-535-53-0		
Project #:	C-1200846		
Deemed Complete:	March 3, 2020		

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## **I. Proposal**

Fresno/Clovis Regional WWTP has requested an Authority to Construct (ATC) permit to install a 247 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator. The draft ATC is included in Appendix A.

Fresno/Clovis Regional WWTP received their Title V Permit on March 23, 2001. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Fresno/Clovis Regional WWTP must apply to administratively amend their Title V permit. The following conditions will be included on the ATC:

- {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Y
- {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Y

## **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 4301 Fuel Burning Equipment (12/17/92)  
Rule 4701 Internal Combustion Engines - Phase 1 (8/21/03)  
Rule 4702 Internal Combustion Engines (11/14/13)  
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 5607 W Jensen Ave in Fresno, 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**

C-535-53-0: 247 BHP (INTERMITTENT) CATERPILLAR (PERKINS) MODEL C7.1PGABR  
TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRICAL GENERATOR

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

The applicant has proposed to install a Tier 3 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel.

The proposed engine meets the latest Tier Certification requirements for emergency standby engines; therefore, the engine meets the latest EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix B for a copy of the EPA executive order).

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

Emission Factors			
Pollutant	Emission Factor (g/bhp-hr)	Emission Factor (g/kw-hr)	Source
NO <sub>x</sub>	2.61	3.50	Engine Manufacturer
SO <sub>x</sub>	0.0051	0.0068	Mass Balance Equation Below
PM <sub>10</sub>	0.10	0.13	Engine Manufacturer
CO	0.75	1.01	Engine Manufacturer
VOC	0.14	0.19	Engine Manufacturer

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

### 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:

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

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

Post Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/year)	Daily PE2 (lb/day)	Annual PE2 (lb/year)
NO <sub>x</sub>	2.61	247	24	50	34.1	71
SO <sub>x</sub>	0.0051	247	24	50	0.1	0
PM <sub>10</sub>	0.10	247	24	50	1.3	3
CO	0.75	247	24	50	9.8	20
VOC	0.14	247	24	50	1.8	4

## 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. This is an existing facility and emissions are were calculated in recent project C-1193231 and are summarized as SSPE1 for this project in the table below.

The SSPE1 can be calculated by adding the PE1 from all units with valid ATCs or PTOs and the sum of the ERCs that have been banked at the source and which have not been used on-site (Total<sub>ERC</sub>).

$$\text{SSPE1}_{\text{Total}} = \text{SSPE1}_{\text{Permit Unit}} + \text{Total}_{\text{ERC}}$$

SSPE1 (lb/year)					
Permit Unit	NOx	SOx	PM <sub>10</sub>	CO	VOC
C-535-6-17	1,609	3,804	702	8,924	805
C-535-9-15	19,272	15,786	1,577	91,980	913
C-535-24-4		0	459	1,811	724
C-535-44-0		2	0	26	56
C-535-10-3	1,188	1	24	289	12
C-535-11-3	37	0	1	3	0
C-535-12-3	37	0	1	3	0
C-535-13-6	0	0	0	0	2,902
C-535-17-3	113	0	4	30	6
C-535-26-6	3,921	12,416	1,046	13,070	5,489
C-535-28-1	0	0	1,050	0	0
C-535-48-0	0	0	14	0	510
C-535-49-0	71	0	3	20	4
SSPE2 <sub>Permit Unit</sub>	26,248	32,009	4,881	116,156	11,421
ERC C-1211-1	-	-	-	-	22
ERC C-1211-2	260	-	-	-	-
ERC C-1211-3	-	-	-	56	-
ERC C-1211-4	-	-	18	-	-
Total <sub>ERC</sub>	260	-	18	56	22
SSPE1	26,508	32,009	4,899	116,212	11,443

#### 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.

The SSPE2 can be calculated by adding the PE2 from all units with valid ATCs or PTOs and the sum of the ERCs that have been banked at the source and which have not been used on-site (Total<sub>ERC</sub>). For this project the change in emissions is due to the installation of the new emergency standby IC engine (unit -53-0). Thus SSPE2 is equal to previously shown SSPE1 plus the PE from the new unit, as shown in the table below.

$$SSPE2_{Total} = SSPE2_{Permit Unit} + Total_{ERC}$$

SSPE2 (lb/year)					
Permit Unit	NOx	SOx	PM <sub>10</sub>	CO	VOC
C-535-6-17	1,609	3,804	702	8,924	805
C-535-9-15	19,272	15,786	1,577	91,980	913
C-535-24-4		0	459	1,811	724
C-535-44-0		2	0	26	56
C-535-10-3	1,188	1	24	289	12
C-535-11-3	37	0	1	3	0
C-535-12-3	37	0	1	3	0
C-535-13-6	0	0	0	0	2,902
C-535-17-3	113	0	4	30	6
C-535-26-6	3,921	12,416	1,046	13,070	5,489
C-535-28-1	0	0	1,050	0	0
C-535-48-0	0	0	14	0	510
C-535-49-0	71	0	3	20	4
C-535-53-0	71	0	3	20	4
SSPE2 <sub>Permit Unit</sub>	26,319	32,009	4,884	116,176	11,425
ERC C-1211-1	-	-	-	-	22
ERC C-1211-2	260	-	-	-	-
ERC C-1211-3	-	-	-	56	-
ERC C-1211-4	-	-	18	-	-
Total <sub>ERC</sub>	260	-	18	56	22
SSPE2	26,579	32,009	4,902	116,232	11,447

## 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)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165



Rule 2201 Major Source Determination (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
SSPE1	26,248	32,009	4,881	4,881	116,156	11,421
SSPE2	26,319	32,009	4,884	4,884	116,176	11,425
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	Yes	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 an existing Major Source for NO<sub>x</sub> emissions; and is remaining a Major Source for NO<sub>x</sub> emissions as a result of this project.

**Rule 2410 Major Source Determination:**

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Estimated Facility PE before Project Increase	13.1	5.7	16.0	58.1	2.4	2.4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

**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 = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Since this is a new emission unit, BE will equal PE1 and will equal 0 for all criteria pollutants.

**7. SB 288 Major Modification**

SB 288 Major Modification is defined in 40 CFR Part 51.165 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 a major source for NOx, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO <sub>x</sub>	71	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

**8. 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. SB-288 Major Modifications are not Federal Major Modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase Exclusion" as defined in Section 3.18.1.

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in a project.

The engine's emissions are calculated in this document above. Per the District's draft policy titled *Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/2010) for SB288 and Federal Major Modifications*, a permitting action is a Federal Major Modification if it will result in an increase in emission in excess of the thresholds specified in section 3.18 of Rule 2201 (see table below). The draft policy further states that if the emission increases are less than or equal to 0.5 lb/day, on an average basis, then they are to be rounded to zero (consistent with District Policy APR-1130 Increases in Maximum Daily Permitted Emissions of Less than or Equal to 0.5 lb/day.)

As shown in section VII.C.2 of this document, the total annual potential to emit for NOx emissions for the emergency engine is 71 lb/year. Assuming that the engine would

operate an average of no more than 30 minutes per day, for testing and maintenance purposes, it could potentially operate 100 days per year. Therefore, the average daily emission rates can be determined using the annual potential to emit divided by a worst case operating scenario of 100 days per year. <sup>1</sup>

$$\text{Average Daily PE2} = \text{Annual PE} / 365 \text{ days/year}$$

Pollutant	Annual PE (lb/year)	Worst Case Operation (days/year)	Average Daily PE2 (lb/day)
NO <sub>x</sub>	71	100	0.71

The project's emission increases were calculated in Section VII.C and compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/year)	Thresholds (lb/year)	Federal Major Modification?
NO <sub>x</sub>	71	0	Yes

The Federal Major Modification Threshold for NO<sub>x</sub> is surpassed with this project and this project constitutes a Federal Major Modification.

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

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>

#### I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

<sup>1</sup> The engine is limited to operate no more than 50 hours per year for testing and maintenance purposes. 50 hr/year (permit limit) ÷ 0.5 hr/day = 100 days/year

<b>PSD Major Source Determination: Potential to Emit (tons/year)</b>						
	<b>NO<sub>2</sub></b>	<b>VOC</b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>PM</b>	<b>PM<sub>10</sub></b>
Total PE from New and Modified Units	0.04	0	0	0.01	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

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 F.

## VIII. Compliance Determination

### Rule 2201 New and Modified Stationary Source Review Rule

#### A. Best Available Control Technology (BACT)

##### 1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

**a. New emissions units – PE > 2 lb/day**

As seen in Section VII.C.2 above, the applicant is proposing to install a new diesel-fired IC engine with a PE greater than 2 lb/day for NO<sub>x</sub>, and CO. BACT is triggered for NO<sub>x</sub> only since the PEs is 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 in Section VII.C.5 above.

**b. Relocation of emissions units – PE > 2 lb/day**

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

**c. Modification of emissions units – AIPE > 2 lb/day**

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

**d. SB 288/Federal Major Modification**

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute an SB 288 and/or Federal Major Modification for NO<sub>x</sub> emissions. Therefore BACT is triggered for NO<sub>x</sub> for a Major Modification for NO<sub>x</sub> emissions.

**2. BACT Guideline**

BACT Guideline 3.1.1, which appears in Appendix C 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 D of this report, BACT is satisfied with:

NO<sub>x</sub>: Latest Available Tier Certification level for applicable horsepower

The facility has proposed to install a 247 bhp Tier 3 certified IC engine, and using very low sulfur diesel fuel. Therefore, BACT is satisfied for NO<sub>x</sub>.

**B. Offsets**

**1. Offset Applicability**

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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	26,579	32,009	4,902	116,232	11,447
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	No	No	No

**2. Quantity of Offsets Required**

As shown in the table above, offsets are triggered for NO<sub>x</sub> emissions since the NO<sub>x</sub> SSPE2 exceeds the offset trigger threshold; however, as previously discussed, 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:

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

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

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project is an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is required.

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

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not 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.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	26,508	26,579	20,000 lb/year	No
SO <sub>x</sub>	32,009	32,009	54,750 lb/year	No
PM <sub>10</sub>	4,899	4,902	29,200 lb/year	No
CO	116,212	116,232	200,000 lb/year	No
VOC	11,443	11,447	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.

<b>SSIPE Public Notice Thresholds</b>					
<b>Pollutant</b>	<b>SSPE2 (lb/year)</b>	<b>SSPE1 (lb/year)</b>	<b>SSIPE (lb/year)</b>	<b>SSIPE Public Notice Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	26,579	26,508	71	20,000 lb/year	No
SO <sub>x</sub>	32,009	32,009	0	20,000 lb/year	No
PM <sub>10</sub>	4,902	4,899	3	20,000 lb/year	No
CO	116,232	116,212	20	20,000 lb/year	No
VOC	11,447	11,443	4	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**

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for a Federal Major Modification and Title V significant modification. 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.

For this IC engine, the DELs are stated in the form of emission factors (g/hp-hr), the maximum engine horsepower rating, and the maximum operational time of 24 hours per day.

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

- Emissions from this IC engine shall not exceed any of the following limits: 2.61 g-NO<sub>x</sub>/bhp-hr, 0.75 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]



- Emissions from this IC engine shall not exceed 0.10 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 and 40 CFR Part 60 Subpart IIII]

## **E. Compliance Assurance**

### **1. Source Testing**

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

### **2. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

### **3. Recordkeeping**

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

### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

## **F. Ambient Air Quality Analysis (AAQA)**

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix E of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location is in a non-attainment area for the state's PM<sub>10</sub> as well as federal and state PM<sub>2.5</sub> thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM<sub>10</sub> and PM<sub>2.5</sub>.

## **G. Compliance Certification**

Section 4.15.2 of this rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. Fresno/Clovis Regional WWTP compliance certification is included in Appendix G.

## **H. Alternate Siting Analysis**

The current project occurs at an existing facility. The applicant proposes to install a diesel-fired emergency standby IC engine powering an electrical generator to provide power for the City of Fresno emergency operations center in the event of a power outage.

Since the project will provide electricity to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

## **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**

A minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project involves the installation of a new emission unit that is subject to an NSPS requirement, the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

As discussed above, the facility has applied for a Certificate of Conformity (COC) and the District will forward to EPA, for a 45-day review period, this application review which includes the proposed modified Title V permit [i.e. proposed ATC(s)] and the compliance certification form which demonstrates compliance with the minor permit modification requirements in Section 11.4. Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application.

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

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

#### §60.4200 - Applicability

This subpart is applicable to owners and operators of stationary compression ignited internal combustion engines that commence construction after July 11, 2005, where the engines are:

- 1) Manufactured after April 1, 2006, if not a fire pump engine.
- 2) Manufactured as a National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

Since the proposed engine will be installed after July 11, 2005 and will be manufactured after April 1, 2006, this subpart applies.

Sections 60.4201 through 60.4203 apply to engine manufacturers. Therefore, these sections will not be discussed unless they are referenced later by another section of this subpart.

#### §60.4204 – Emission Standards for Owners and Operators

Section 60.4205(b) states that owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in Section 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

Section 60.4202(a) states that Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

Section (a)(1) is not applicable as it applies to engines with a maximum engine power less than 37 KW (50 HP).

Section (a)(2) states for engines greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

The applicable standards from 40 CFR 89.112 are NMHC + NO<sub>x</sub> = 6.4 g/kw-hr, CO = 3.5 g/kw-hr, and PM = 0.20 g/kw-hr. As demonstrated in Section VII.B above, the emission standards of 40 CFR 89.112 are met. Therefore, the previously proposed conditions will ensure compliance with this requirement:

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- Emissions from this IC engine shall not exceed any of the following limits: 2.61 g-NO<sub>x</sub>/bhp-hr, 0.75 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115 and 40 CFR Part 60 Subpart III]
- Emissions from this IC engine shall not exceed 0.10 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 and 40 CFR Part 60 Subpart III]

The smoke emission standard in 40 CFR 89.113 applies to compression-ignition non-road engines. An emergency-standby IC engine is not a non-road engine as defined in 40 CFR 89 Subpart A, therefore section 40 CFR 89.113 does not apply.

Section 60.4206 states that owners or operators of CI engines must meet the applicable emission standards for the entire life of said engines. The Tier 3 level emissions for the proposed engine will be listed on the permit as emission factors, ensuring that the emission standards are met over the entire life of the engine.

Section 60.4207(b) states that beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. Section 80.510(b) states that beginning June 1, 2010, except as otherwise specifically provided in this subpart, the sulfur content for all non-road diesel fuel shall not exceed 15 ppm. The proposed engine will be required by the following permit condition to use CARB certified diesel fuel, which meets all of the fuel requirements listed in Subpart III.

- 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 and 40 CFR Part 60 Subpart III]

Section 60.4208 lists deadline dates for importing or installing stationary CI engines produced in the previous model year. None of the deadline dates affect the engine proposed in this project. Therefore, this section does not apply.

Section 60.4209 applies to emergency stationary CI engines that do not meet the applicable standards and stationary CI engines equipped with a diesel particulate filter. The proposed engine in this project does not fall under either of these two categories. Therefore, this section does not apply.

Section 60.4210 applies only to engine manufacturers. Therefore, this section will not be discussed unless it is referenced later by another section of this subpart.

Section 60.4211(a) states that owners or operators who comply with the emission standards specified in this subpart must operate and maintain the stationary CI engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. The following condition will be added to the ATC to ensure compliance:

- 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 and 40 CFR Part 60 Subpart IIII]

Section 60.4211(b) applies to pre-2007 model year engines. Therefore, this section does not apply.

Section 60.4211(c) states that if you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in Section 60.4204(b) or Section 60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in Section 60.4205(c), you must comply by purchasing an engine certified to the emission standards in Section 60.4204(b), or Section 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications. The applicant has proposed a Tier 3 emissions level engine in this project that complies with the emission standards in Section 60.4205(b) and will be installed according to the manufacturer's specifications. Therefore, this section is satisfied.

Section 60.4211(d) applies to owners or operators who must comply with the emission standards specified in Section 60.4204(c) or Section 60.4205(d). The proposed engine is not subject to the emission standards specified in Sections 60.4204(c) or 60.4205(d). Therefore, this section does not apply.

Section 60.4211(e) applies to owners or operators of modified or reconstructed stationary CI internal combustion engines. The engine in this project is new, therefore, this section does not apply.

Section 60.4211(f) applies to owners or operators of an emergency stationary ICE. This section states you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3). In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines. The following condition will be added to the ATC to ensure compliance:

- 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 and 40 CFR Part 60 Subpart IIII]

Section 60.4212 applies to owners or operators of a stationary CI engine with a displacement of less than 30 liters per cylinder and required to conduct performance tests pursuant to Section 60.4211(b). Section 60.4211(b) does not apply to this engine. Therefore, performance tests are not required and this section does not apply.

Section 60.4213 applies to owners or operators of CI engines with a displacement of greater than or equal to 30 liters per cylinder. The displacement is less than 30 liters per cylinder for this engine in this project, therefore, this section does not apply.

Section 60.4214(a) states owners and operators of non-emergency stationary CI engines that are greater than 3,000 hp, or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 175 hp and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section. The proposed engine is a post-2007 model year emergency engine rated less than 3,000 hp and has a displacement less than 10 liters per cylinder. Therefore, this section does not apply.

Section 60.4214(b) states that if the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. Since the engine in this project meets the applicable standards, this section does not apply.

Section 60.4214(c) applies to stationary CI engines equipped with a diesel particulate filter. The engine in this project does not have a diesel particulate filter, therefore, this section does not apply.

Sections 60.4215 and 60.4216 apply to engines operated outside the continental United States. Therefore, these sections do not apply.

Section 60.4217 applies to engines that use special fuels and cannot meet the emission limits that the engine was originally certified to. This section does not apply as the proposed engine is diesel-fired and meets the emission limits that the engine was originally certified to.

As demonstrated above, the proposed engine meets the requirements of this subpart.

## **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)**

In accordance with Section 63.6590(c) each engine in this project must meet the requirements of 40 CFR 63, Subpart ZZZZ, by meeting the requirements of 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. No further requirements apply.

As demonstrated above the proposed engine meets the requirements of 40 CFR 60 Subpart IIII. Therefore the engine meets the requirements of 40 CFR 63 Subpart ZZZZ.

### **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.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix E), 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 cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-535-53-0	0.052 per million	No

### 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.

The following conditions will be listed on the ATC as a mechanism to ensure compliance with the RMR:

- {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]
- Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
- 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 and 40 CFR Part 60 Subpart IIII]

### Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

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.

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

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, which requires 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 conditions will be included on the permit:

- 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 and 40 CFR Part 60 Subpart IIII]

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 5.9 are applicable to emergency standby engines

Section 5.9 requires the owner to:

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

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

*5.9.4 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:

- 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 and 40 CFR Part 60 Subpart IIII]

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

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

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

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:

- 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 and 40 CFR Part 60 Subpart III]

**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):

<p><b>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</b></p>	<p><b>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</b></p>
<p>Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.</p>	<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>• 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 and 40 CFR Part 60 Subpart III]</li> </ul>
<p>The engine(s) must meet the emission standards in Table 1 of the ATCM for the specific power rating and model year of the proposed engine.</p>	<p>The applicant has proposed the use of an engine that is certified to the latest EPA Tier Certification standards for 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.</p>
<p>The engine may not be operated more than 50 hours per year for maintenance and testing purposes unless the PM emissions are <math>\leq</math> 0.01 g/bhp-hr, then the engine is allowed 100 hours per year. Emissions from this engine are certified at 0.10 g/bhp-hr, therefore the engine is allowed 50 hours.</p>	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115 and 40 CFR Part 60 Subpart III]</li> <li>• 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 and 40 CFR Part 60 Subpart III]</li> </ul>

<p>Engines, with a PM10 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</p>	<p>The District has verified that this engine is not located within 500' of a school.</p>
<p>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>	<p>The following condition will be included on the permit:</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 36 months.</p>	<p>The following condition will be included on the permit:</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> </ul>

### 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 2005, *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. Pending a successful NSR Public Noticing period, issue ATC C-535-53-0 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>
C-535-53-0	3020-10-C	247 hp IC engine	\$290



## **Appendixes**

- A: Draft ATC
- B: EPA Certification
- C: BACT Guideline
- D: BACT Analysis
- E: HRA Summary and AAQA
- F: Quarterly Net Emissions Change
- G: Compliance Certification

**APPENDIX A**  
**Draft ATC**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**PERMIT NO:** C-535-53-0

**LEGAL OWNER OR OPERATOR:** FRESNO/CLOVIS REGIONAL WWTP  
**MAILING ADDRESS:** 5607 W JENSEN AVE  
FRESNO, CA 93706-9458

**LOCATION:** 5607 W JENSEN AVE  
FRESNO, CA 93706

**EQUIPMENT DESCRIPTION:**  
247 BHP (INTERMITTENT) CATERPILLAR (PERKINS) MODEL C7.1PGABR TIER 3 CERTIFIED DIESEL-FIRED  
EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]
7. {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]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Arnaud Marjollet, Director of Permit Services

C-535-53-0 : Mar 4 2020 9:11AM - SALINASM : Joint Inspection NOT Required

8. 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 and 40 CFR Part 60 Subpart III]
9. Emissions from this IC engine shall not exceed any of the following limits: 2.61 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115 and 40 CFR Part 60 Subpart III]
10. Emissions from this IC engine shall not exceed 0.10 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115 and 40 CFR Part 60 Subpart III]
11. 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 and 40 CFR Part 60 Subpart III]
12. {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]
13. {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]
14. {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]
15. {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]
16. 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 and 40 CFR Part 60 Subpart III]
17. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
18. {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**  
**EPA Certification**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
2019 MODEL YEAR  
CERTIFICATE OF CONFORMITY  
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION  
AND AIR QUALITY  
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Perkins Engines Co Ltd  
(U.S. Manufacturer or Importer)  
Certificate Number: KPKXL07.0PW1-008

Effective Date:  
07/24/2018  
Expiration Date:  
12/31/2019

  
Byron J. Bunker, Division Director  
Compliance Division

Issue Date:  
07/24/2018  
Revision Date:  
N/A

Model Year: 2019  
Manufacturer Type: Original Engine Manufacturer  
Engine Family: KPKXL07.0PW1

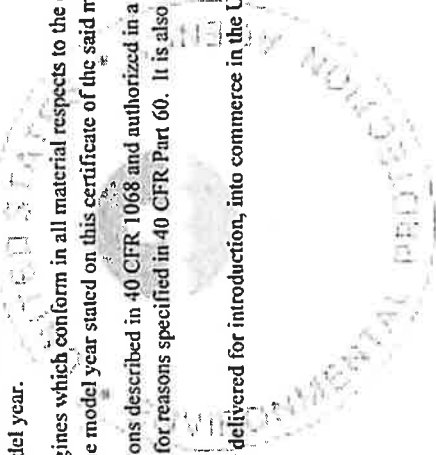
Mobile/Stationary Indicator: Stationary  
Emissions Power Category: 225<=kW<450  
Fuel Type: Diesel, Non-Standard Fuel  
After Treatment Devices: No After Treatment Devices Installed  
Non-after Treatment Devices: Electronic Control, Engine Design Modification

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.



**APPENDIX C**  
**BACT Guideline**

# San Joaquin Valley Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 3.1.1**  
**Last Update: 6/13/2019**  
**Emergency Diesel IC Engine**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Latest EPA Tier Certification level for applicable horsepower range		
NOX	Latest EPA Tier Certification level for applicable horsepower range		
PM10	0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
VOC	Latest EPA Tier Certification level for applicable horsepower range		

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.



**APPENDIX D**  
**BACT Analysis**

## Top Down BACT Analysis for the Emergency IC Engine

This application was deemed complete on March 3, 2020. Therefore, BACT Guideline 3.1.1 (June 13, 2019) 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> Emissions:

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

BACT Guideline 3.1.1 identifies only the following option:

- *Latest EPA Tier Certification level for applicable horsepower range*

*Please note that the latest EPA Tier Certification for the applicable horsepower range may be Tier 3 or Tier 4 depending the service of the IC engine*

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

##### Definitions of Engine types:

The first step in eliminating technologically infeasible options is to understand useful engine definitions.

Prime IC engines/generator sets (gensets) provide ongoing power and can accommodate varying loads on an unlimited basis throughout the year. However, the average load factor cannot exceed 70 percent of the prime rating. Prime power IC engine/gensets are best used in situations where a limited amount of power load fluctuation occurs.

Emergency Standby IC engines/gensets provide a short-term power when there is an unexpected loss of utility power. These IC engines/gensets are generally intended to operate at a maximum of 200 hours per year at with a low load. Additionally, the average power output should not exceed 70 percent in any 24-hour period.

There is a significant difference in standby vs. prime IC engine/gensets. Standby IC engine/gensets are intended to provide emergency power on a short-term basis, while prime IC engine/gensets can provide year round power. Typically, new emergency IC engine/gensets powering generators are limited to 50 hours per year for non-emergency use.

Since the proposed engine will be operated at a facility serving essential public-safety functions, such as providing power to equipment when failure to perform could result in loss of human life or serious injuries, it is critical that the engine is fully reliable and operating within the conditions under which it has been certified. EPA certifies IC engines operating under “prime” conditions, i.e. continuous use. The latest EPA Tier certification for a 247 bhp IC engine/genset, as proposed in this project, is Tier 4F. However, in this case, the proposed engine will be operated as an emergency standby unit.

#### Technology Used to Achieve Tier 4F Standards:

The second step in eliminating technologically infeasible options is to understand what controls engines need to meet Tier 4F certification emissions level.

To achieve Tier 4F NO<sub>x</sub> and PM<sub>10</sub> standards, manufacturers install diesel particulate filters (DPF), diesel oxidation catalysts (DOC), and selective catalytic reduction (SCR).

A DPF is a large, honeycombed, ceramic filter, coated with precious metal catalysts that trap PM in the exhaust stream. In normal DPF operating conditions, the exhaust temps are hot enough to incinerate most of the trapped PM<sub>10</sub>. But idling, cold starts and light load factors can accelerate PM accumulation. When a DPF becomes full enough to affect backpressure, the engine’s ECM injects a stream of diesel fuel into the DPF, raising temperatures and burning off the accumulated PM. This is called regeneration. Eventually ash, which won’t burn off, collects in the DPF, requiring it to be cleaned or exchanged. Diesel PM Burns in the DPF when exhaust temperature reaches 600 C (1112 F).

Diesel oxidation catalysts are filters with a catalytic coating on the filter media. The catalyst on a DOC chemically changes carbon monoxide, hydrocarbons, diesel particulates and other pollutants to carbon dioxide and water. Catalyst activity is temperature dependent with a minimum exhaust temperature of 200 C (392 F) with maximum efficiency occurring at about 400 C (752 F).

Selective Catalytic Reduction (SCR) is used to lower NO<sub>x</sub> levels after the exhaust passes through a DPF or DPF/DOC combination. Urea/water solution, commonly referred to as diesel exhaust fluid (DEF), is injected into the exhaust stream. The exhaust and DEF in the presence of the catalyst turns the NO<sub>x</sub> into mostly water and nitrogen.

SCR is also temperature dependent with the optimum temperatures between 250 C to 427 C (480 F to 800 F).

#### Tier 4F Engines installed within the District:

A survey of existing/operating Tier 4F emergency IC engine/gensets operating within the District was performed. The proposed engine in this project is rated at 247 bhp. Listed below are all the Tier 4F emergency engines between 100 and 300 bhp:

- C-9248-16-0 (125 BHP CUMMINS MODEL QSB5-G10 TIER 4F) – portable unit, SCR, but has stationary permit.

- C-8999-1-0 (241 BHP JOHN DEERE MODEL 6068HFGO8 TIER 4F) – portable unit, SCR, but has stationary permit.
- N-9242-1-0 (170.8 BHP ISUZU MODEL BR-4HK1X BHP TIER 4F) – portable unit, SCR, but has stationary permit

Portable engines are designed by the manufacturer to be stored at a location and then moved to a location and operated as a prime IC engine/genset for an extended time. They are not intended to be used as a short-term standby power solution when an expected loss of utility power occurs. The portable engines listed in the survey are permitted as emergency engines; however, these Tier 4F engines are actually operating outside their intended use and the Tier 4F certification conditions.

As indicated above, the proposed emergency standby engine will be operated at a facility serving essential functions, such as providing power to essential public-safety equipment. As such, it is critical that the engines is fully reliable and operating within the conditions under which it has been certified. In particular, stationary emergency engines served by an SCR have not been certified Tier 4F under these conditions and this can be considered as a serious concern when used as proposed at a public safety facility.

#### Seismic requirements IC engine/gensets:

The National Fire Protection Association (NFPA) Code Sec 110, 7.4.1 applies to the proposed IC engine/genset at Fresno-Clovis Regional Wastewater Reclamation facility for the City of Fresno Emergency Operations Center. This section requires that emergency IC engine/gensets be “installed on solid foundations to prohibit sagging of fuel, exhaust, or lubricating oil piping and damage to parts to parts resulting in leakage at joint.”

The operation of an emergency IC engine/genset at a facility that serves critical functions, such as providing power to essential public-safety equipment must meet strict operational conditions to ensure reliable operation during emergency events. As such, it is critical that the engine is fully reliable and operating within the conditions under which it has been certified.

While it is feasible to attach a portable IC engine/genset to a solid foundation, portable units being used for stationary emergency installations have not been evaluated and certified to meet the critical seismic requirements discussed above. Consequently, stationary emergency engines that have not been certified to meet the critical seismic requirements can be considered as a serious concern when used as proposed at a facility serving essential functions, such as providing power to essential public-safety equipment.

#### Technologically Feasible Determination:

Per the discussion above:

1. The control equipment needed to achieve the Tier 4F standard is temperature dependent (SCR Operation) and must reach temperatures exceeding 400 C for maximum efficiency. To reach these temperatures IC engines must be operated under load and for prolonged periods. With the minimum permitted operating time associated with emergency engines, the required temperatures may not be obtained long enough

to ensure proper operation resulting in minimal control effectiveness and possible failure. Therefore, the District considers that Tier 4F is not a not a technologically feasible option when evaluated under this specific criteria for use at a public safety facility where reliability is absolutely critical.

2. The Tier 4F emergency IC engines currently permitted within the District are operating outside of their intended use. While the District will allow the engines to operate in this fashion, the engine's ability to meet their Tier 4F certifications were not evaluated under these conditions and as such are not certified Tier 4F under the proposed conditions. Therefore, the District considers that Tier 4F is not a not a technologically feasible option under this specific criteria for use at a public safety facility where reliability is absolutely critical.
3. NFPA Code Sec 110 requires emergency engine/gensets to be mounted to a foundation as recommended by the manufacturer to meet seismic requirements for emergency IC engines powering public safety facilities. While these portable engines can be mounted to a solid foundation, these units have not been certified to meet the seismic requirements discussed above and have not been evaluated for operational reliability under these conditions, and therefore are not considered a technologically feasible option when used at a public safety facility where reliability is absolutely critical.

Therefore, a portable Tier 4F engine is NOT a technologically feasible option.

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

No ranking needs to be done because there is only one control option:

- Certified Tier 3 engine

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

The applicant has proposed the only control option remaining under consideration (Tier 3 engine). Therefore, a cost effectiveness analysis is not required.

**e. Step 5 - Select BACT**

BACT for NO<sub>x</sub> for an emergency IC engine/genset at a public safety facility will be the use of an EPA Tier 3 certified IC engine. The applicant is proposing such a unit. Therefore, BACT has been satisfied.

**APPENDIX E**  
**HRA Summary and AAQA**

# San Joaquin Valley Air Pollution Control District Risk Management Review and Ambient Air Quality Analysis

To: Manuel R Salinas – Permit Services  
 From: Matthew Cegielski – Technical Services  
 Date: March 03, 2020  
 Facility Name: Fresno Clovis Regional Wastewater Reclamation Facility  
 Location: 5607 West Jensen Ave, Fresno, CA  
 Application #(s): C-535-53-0  
 Project #: C-1200846

## 1. Summary

### 1.1 RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
Unit 53-0 (247 BHP DEICE)	N/A <sup>1</sup>	N/A <sup>2</sup>	0.00	5.15E-08	No	Yes
<b>Project Totals</b>	N/A <sup>1</sup>	N/A <sup>2</sup>	0.00	5.15E-08		
<b>Facility Totals</b>	>1	0.571	0.58	6.30E-06		

Notes:

- Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- Acute Hazard Index was not calculated 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 AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA		NA		
NO <sub>x</sub>	NA				Pass
SO <sub>x</sub>	NA	NA		NA	Pass
PM10				NA	Pass
PM2.5				NA	Pass
Ozone	NA		NA		

Notes:

- Results were taken from the attached AAQA Report.
- 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.
- <sup>2</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted.
- Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 1 µg/m<sup>3</sup> for the annual concentration.
- Modeled PM2.5 concentrations were below the District SIL for non-fugitive sources of 0.2 µg/m<sup>3</sup> for the annual concentration.

### 1.3 Proposed Permit Requirements

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

#### Unit # 53 - 0

1. The PM<sub>10</sub> emissions rate shall not exceed 0.10 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 on March 03, 2020 to perform a Risk Management Review (RMR) for the following:

- Unit -53-0: 247 BHP (INTERMITTENT) CATERPILLAR (PERKINS) MODEL C7.1PGABR TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE 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 unit(s) or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required

Toxic emissions for this project were calculated using the following methods:

- Diesel PM10 emissions were calculated and provided by the processing engineer.

If a refined assessment is greater than one in a million but less than 20 in one 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 unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

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 2013-2017 from Fresno (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:

<b>Source Process Rates</b>					
<b>Unit ID</b>	<b>Process ID</b>	<b>Process Material</b>	<b>Process Units</b>	<b>Hourly Process Rate</b>	<b>Annual Process Rate</b>
53	1	DPM	lb	0.054	3

<b>Point Source Parameters</b>						
<b>Unit ID</b>	<b>Unit Description</b>	<b>Release Height (m)</b>	<b>Temp. (°K)</b>	<b>Exit Velocity (m/sec)</b>	<b>Stack Diameter (m)</b>	<b>Vertical/Horizontal/Capped</b>
53	247 BHP DEICE	2.33	727	139.92	0.08	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	Clovis	Fresno	Clovis	2016
NOx	Clovis	Fresno	Clovis	2016
PM10	Clovis	Fresno	Clovis	2016
PM2.5	Clovis	Fresno	Clovis	2016
SOx	Fresno - Garland	Fresno	Fresno	2016

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
53	1	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>

1. 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.

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
53	1	71	000	20	3	3

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 2013-2017 from Fresno (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
53	247 BHP DEICE	2.33	727	139.92	0.08	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).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on page 1 of this report must be included for this proposed unit.

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. Files in Document Folder**

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Risk score
- D. AAQA Report
- E. Modeling Files
- F. Facility Summary

**APPENDIX F**  
**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.

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 3 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0.75 \text{ lb PM}_{10}\text{/qtr} \end{aligned}$$

$$\begin{aligned} \text{PE1}_{\text{quarterly}} &= \text{PE1}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb PM}_{10}\text{/qtr} \end{aligned}$$

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	17.75	0	17.75
SO <sub>x</sub>	0	0	0
PM <sub>10</sub>	0.75	0	0.75
CO	5	0	5
VOC	1	0	1

**APPENDIX G**  
**Compliance Certification**

City of



**Department of Public Utilities**

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Wastewater Management Division  
5607 West Jensen Avenue  
Fresno, California 93706-9458  
559-621-5100 – FAX 559-498-1700  
[www.fresno.gov/Wastewater](http://www.fresno.gov/Wastewater)

December 20, 2019

Andrea Ogden  
San Joaquin Valley APCD  
1990 E. Gettysburg Avenue  
Fresno, CA 93726

**RE: Project C-1193231  
Certification of Compliance**

Dear Ms. Ogden,

Pursuant to San Joaquin Valley APCD Rule 2201, Section 4.15.2, Compliance, the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) respectfully submits this *Letter of Certification* as it pertains to the City of Fresno, CA, a Major Source Facility.

I hereby certify that the RWRF in the State of California is in compliance, or is on a schedule for compliance, with all applicable emission limitations and standards. This certification shall speak as to its date of execution.

Thank you for your time and consideration regarding this certification. If you have any questions regarding this matter, please contact Ray Arthur, Air Resources Project Manager at 558-621-5266.

Sincerely

A handwritten signature in black ink, appearing to read "Rick Staggs".

Rick Staggs  
Wastewater Manager

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