

SEP 07 2016

James Flad  
Kern County Sheriff's Dept.  
1350 Norris Road  
Bakersfield, CA 93308

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Facility Number: S-1458**  
**Project Number: S-1162704**

Dear Mr. Flad:

Enclosed for your review and comment is the District's analysis of Kern County Sheriff's Dept.'s application for Authority to Construct for three new diesel I.C. engines powering emergency electrical generators, at the Lerdo Correctional Facility in Bakersfield, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Stephen Leonard of Permit Services at (661) 392-5605.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

AM:spl

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

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**Northern Region**  
4800 Enterprise Way  
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**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct**  
**Application Review**  
Diesel-Fired Emergency Standby IC Engine

Facility Name:	Kern County Sheriff's Dept, Lerdo	Date:	August 17, 2016
Mailing Address:	1350 Norris Road Bakersfield, CA 93308	Engineer:	Steve Leonard
Contact Person:	James Flad	Lead Engineer:	Rich Karrs
Telephone:	661-391-7977		<i>AUG 26 2016</i>
Application #:	S-1458-10-0, '-11-0, '-12-0		
Project #:	S-1162704		
Complete:	August 2, 2016		

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**I. Proposal**

Kern County Sheriff's Dept, Lerdo (KCSD) is proposing to install three (3) new diesel-fired emergency standby internal combustion (IC) engines powering electrical generators at three separate sites within the Lerdo Correctional facility compound property. One backup generator is located at the fresh water well, one backup generator is at the onsite wastewater treatment plant, and one backup generator is at the domestic drinking water plant. KCSD has requested additional Authority to Construct (ATC) to install a 2,206 bhp diesel fired electrical generator to provide electrical power to a new housing compound under District Project S-1162577.

**II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)  
Rule 2520 Federally Mandated Operating Permits (6/21/01)  
Rule 4001 New Source Performance Standards (4/14/99)  
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)  
Rule 4101 Visible Emissions (2/17/05)  
Rule 4102 Nuisance (12/17/92)  
Rule 4201 Particulate Matter Concentration (12/17/92)  
Rule 4701 Stationary Internal Combustion Engines - Phase 1 (8/21/03)  
Rule 4702 Stationary 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  
California Environmental Quality Act (CEQA)  
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 project is located at the Lerdo Correctional Facility, 17635 Industrial Farm Road in Bakersfield, CA.

The District has verified that 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 power electrical generators. Other than emergency standby operation, the engines may be operated up to 50 hours per year for maintenance and testing purposes.

### V. Equipment Listing

**S-1458-10-0:** 464 BHP (INTERMITTENT) CUMMINS MODEL QSL0-G7 NR3 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (EG-WELL 4)

**S-1458-11-0:** 755 BHP (INTERMITTENT) CUMMINS MODEL QSX15-G9 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (EG-WWTP)

**S-1458-12-0:** 1,490 BHP (INTERMITTENT) CUMMINS MODEL QST30-G5 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (EG-DWP)

### VI. Emission Control Technology Evaluation

The applicant has proposed to install two (2) Tier 2, and one (1) Tier 3 certified diesel-fired IC engines that will be fired on very low-sulfur diesel fuel.

The proposed engines meet the latest Tier Certification requirements; therefore, the engines meet the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix C for a copy of the emissions data sheet and/or the ARB/EPA executive order).

The use of very low-sulfur 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)

The engines have certified NO<sub>x</sub> + VOC emission factors given, which vary by engine. It will be assumed the NO<sub>x</sub> + VOC emission factor is split 95% NO<sub>x</sub> and 5% VOC (per the Carl Moyer program).

### B. Emission Factors

Emission Factors S-1458-10-0		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	2.48	Engine Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.07	ARB/EPA Certification
CO	1.72	ARB/EPA Certification
VOC	0.13	Engine Manufacturer

Emission Factors S-1458-11-0		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	3.68	Engine Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.08	ARB/EPA Certification
CO	0.48	ARB/EPA Certification
VOC	0.19	Engine Manufacturer

Emission Factors S-1458-12-0		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	3.83	Engine Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.08	ARB/EPA Certification
CO	0.52	ARB/EPA Certification
VOC	0.20	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 Emissions (PE1)

Since these are new emissions units, PE1 = 0.

#### 2. Post-Project PE (PE2)

The daily and annual PE are calculated as follows:

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

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

S-1458-10-0

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO <sub>x</sub>	2.48	464	24	50	60.9	127
SO <sub>x</sub>	0.0051	464	24	50	0.1	0
PM <sub>10</sub>	0.07	464	24	50	1.7	4
CO	1.72	464	24	50	42.2	88
VOC	0.13	464	24	50	3.2	7

S-1458-11-0

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO <sub>x</sub>	3.68	755	24	50	147.0	306
SO <sub>x</sub>	0.0051	755	24	50	0.2	0
PM <sub>10</sub>	0.08	755	24	50	3.2	7
CO	0.48	755	24	50	19.2	40
VOC	0.19	755	24	50	7.6	16

S-1458-12-0

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO <sub>x</sub>	3.83	1,490	24	50	301.9	629
SO <sub>x</sub>	0.0051	1,490	24	50	0.4	1
PM <sub>10</sub>	0.08	1,490	24	50	6.3	13
CO	0.52	1,490	24	50	41.0	85
VOC	0.20	1,490	24	50	15.8	33

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

SSPE1 is summarized in the following table. See Appendix F for detailed SSPE calculations.

SSPE1					
	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
<b>SSPE1 Total</b>	<b>1,062</b>	<b>0</b>	<b>1,973</b>	<b>14</b>	<b>19,836</b>

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

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

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

SSPE2					
Permit Unit	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
SSPE1	1,062	0	1,973	14	19,836
S-1458-10-0	127	0	4	88	7
S-1458-11-0	306	0	7	40	16
S-1458-12-0	629	1	13	85	33
<b>SSPE2 Total</b>	<b>2,124</b>	<b>1</b>	<b>1,997</b>	<b>227</b>	<b>19,892</b>
<b>Offset Threshold</b>	<b>20,000</b>	<b>54,750</b>	<b>29,200</b>	<b>200,000</b>	<b>20,000</b>
<b>Offset Threshold Surpassed?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

#### 5. Major Source Determination

##### Rule 2201 Major Source Determination:

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

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)

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

<b>Rule 2201 Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Facility emissions pre-project	1,062	0	1,973	14	19,836
Facility emissions post-project	2,124	1	1,997	227	19,892
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

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

**Rule 2410 Major Source Determination:**

The facility is not an existing major source for PSD for at least one pollutant. Therefore the facility is not an existing major source for PSD.

**6. Baseline Emissions (BE)**

BE = Pre-project Potential to Emit 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 Section 3.23

Since this is a new emissions unit, BE = PE1 = 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 not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.



## **8. Federal Major Modification**

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM<sub>10</sub> (140,000 lb/year), it is not a major source for PM<sub>2.5</sub> (200,000 lb/year).

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

The project potential to emit, by itself, will not exceed any PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

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

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

## **VIII. Compliance**

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

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

##### **1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- 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 AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 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.

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as determined in Sections VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification, respectively. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from the new engine are compared to the BACT threshold levels in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -10-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	60.9	> 2.0	n/a	Yes
SO <sub>x</sub>	0.1	> 2.0	n/a	No
PM <sub>10</sub>	1.7	> 2.0	n/a	No
CO	42.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	227	No
VOC	3.2	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO<sub>x</sub> and VOC emissions from this engine.

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -11-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	147.0	> 2.0	n/a	Yes
SO <sub>x</sub>	0.2	> 2.0	n/a	No
PM <sub>10</sub>	3.2	> 2.0	n/a	Yes
CO	19.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	227	No
VOC	7.6	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions from this engine.

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -12-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	301.9	> 2.0	n/a	Yes
SO <sub>x</sub>	0.4	> 2.0	n/a	No
PM <sub>10</sub>	6.4	> 2.0	n/a	Yes
CO	41.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	227	No
VOC	15.8	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions from this engine.

## 2. BACT Guideline

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

## 3. Top Down BACT Analysis

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

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

NO<sub>x</sub>: Latest Available Tier Certification level for applicable horsepower\*  
VOC: Latest Available Tier Certification level for applicable horsepower\*  
PM<sub>10</sub>: 0.15 g/bhp-hr

\*Note: The certification requirements for emergency engines are as follows: 50 ≤ bhp < 75 – Tier 4I; 75 ≤ bhp < 750 – Tier 3; ≥ 750 bhp – Tier 2.

## B. Offsets

Since emergency IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2, offsets are not required for this engine, and no offset calculations are required.

## C. Public Notification

### 1. Applicability

Public noticing is required for:

#### a. New Major Sources, SB288 Major Modifications, and Federal Major Modifications

As shown in Sections VII.C.5, VII.C.7, and VII.C.8, this facility is not a new Major Source, not an SB 288 Major Modification, and not a Federal Major Modification, respectively.

#### b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant

As calculated in Section VII.C.2, daily emissions for NO<sub>x</sub> are greater than 100 lb/day for two of the engines.

c. Any project which results in the offset thresholds being surpassed

As shown in Section VII.C.4, an offset threshold will not be surpassed.

d. Any project with a Stationary Source Project Increase in Permitted Emissions (SSIPE) greater than 20,000 lb/year for any pollutant.

For this project, the proposed engine is the only emissions source that will generate an increase in Potential to Emit. Since the proposed engine emissions are well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

**2. Public Notice Action**

As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATCs for this equipment.

**D. Daily Emissions Limits**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, 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. Therefore, the following conditions will be listed on the ATC to ensure compliance:

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- {4771} Emissions from this IC engine shall not exceed any of the following limits: 2.48 g-NOx/bhp-hr, 1.72 g-CO/bhp-hr, or 0.13 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} Emissions from this IC engine shall not exceed 0.07 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

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- {4771} Emissions from this IC engine shall not exceed any of the following limits: 3.68 g-NOx/bhp-hr, 0.48 g-CO/bhp-hr, or 0.19 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed 0.08 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

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- {4771} Emissions from this IC engine shall not exceed any of the following limits: 3.83 g-NOx/bhp-hr, 0.52 g-CO/bhp-hr, or 0.20 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} Emissions from this IC engine shall not exceed 0.08 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

**E. Compliance Assurance**

**1. Source Testing**

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 ensure compliance with Rule 2201.

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

An AAQA shall 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 D 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>.

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

Since this facility's potential to emit does not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

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

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

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

#### **Rule 4002 National Emission Standards for Hazardous Air Pollutants**

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

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

#### **Rule 4101 Visible Emissions**

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC 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 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 (dated 3/2/01) 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. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

<b>RMR Results</b>				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
S-1458-10-0	N/A	N/A	0.02 in a million	No
S-1458-11-0	N/A	N/A	0.3 in a million	No
S-1458-12-0	N/A	N/A	0.9 in a million	No

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

**ALL**

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

**S-1458-10-0**

- The PM10 emissions rate shall not exceed 0.07 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.

S-1458-11-0

- The PM10 emissions rate shall not exceed 0.08 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.

S-1458-12-0

- The PM10 emissions rate shall not exceed 0.08 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.

**Rule 4201 Particulate Matter Concentration**

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

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

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:

- {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 (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp, that requires a PTO.

The proposed engine(s) are 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**

The following summarizes District Rule 4702 Requirements for emergency standby IC engines:

1. Operation of emergency standby engines is 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 maintenance and testing to 50 hours/year; therefore, compliance is expected. The following condition will be included on the permit:



- {4777} 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 and 4702, and 17 CCR 93115]
2. Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:
    - {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
  3. 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]
  4. 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 shall be used:

- {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]
5. 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]

- {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]
6. 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

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

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

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 to ensure compliance:

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

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

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

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

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

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.
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.	The applicant has proposed the use of engine(s) that are 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.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes.	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {4777} 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 and 4702, and 17 CCR 93115]</li> </ul>

<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>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

**California Environmental Quality Act (CEQA)**

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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.
- 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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts

from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

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 are 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.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

**IX. Recommendation**

Pending a successful NSR Public Noticing period, issue Authority to Construct documents S-1458-10-0, '-11-0, & '-12-0 subject to the permit conditions on the attached draft Authority to Construct documents in Appendix A.

**X. Billing Information**

<b>Billing Schedule</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Fee Amount</b>
S-1458-10-0	3020-10-D	464 bhp IC engine	\$525
S-1458-11-0	3020-10-D	755 bhp IC engine	\$525
S-1458-12-0	3020-10-F	1,490 bhp IC engine	\$820

**Appendixes**

- A. Draft ATCs S-1458-10-0, '-11-0, & '-12-0
- B. BACT Guideline and BACT Analysis
- C. Emissions Data Sheet
- D. RMR Summary and AAQA
- E. QNEC Calculations
- F. SSPE1 Calculations

Appendix A  
Draft ATCs S-1458-10-0, '-11-0, & '-12-0

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-1458-10-0

LEGAL OWNER OR OPERATOR: KERN COUNTY SHERIFF DEPT LERDO  
MAILING ADDRESS: ATTN: ACCOUNTS PAYABLE  
1350 NORRIS RD  
BAKERSFIELD, CA 93308

LOCATION: 17635 INDUSTRIAL FARM RD  
BAKERSFIELD, CA 93308

**EQUIPMENT DESCRIPTION:**

464 BHP (INTERMITTENT) CUMMINS MODEL QSL0-G7 NR3 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY  
STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (EG-WELL 4)

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 2.48 g-NO<sub>x</sub>/bhp-hr, 1.72 g-CO/bhp-hr, or 0.13 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

**Arnaud Marjollet, Director of Permit Services**

8-1458-10-0 Aug 17 2016 4:26PM - LEONARDS Joint Inspection NOT Required

8. Emissions from this IC engine shall not exceed 0.07 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
9. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
10. {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]
11. {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]
12. {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]
13. {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]
14. {4777} 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 and 4702, and 17 CCR 93115]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {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



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-1458-11-0

LEGAL OWNER OR OPERATOR: KERN COUNTY SHERIFF DEPT LERDO  
MAILING ADDRESS: ATTN: ACCOUNTS PAYABLE  
1350 NORRIS RD  
BAKERSFIELD, CA 93308

LOCATION: 17635 INDUSTRIAL FARM RD  
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:  
755 BHP (INTERMITTENT) CUMMINS MODEL QSX15-G9 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY  
STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (EG-VVWTP)

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.68 g-NOx/bhp-hr, 0.48 g-CO/bhp-hr, or 0.19 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

**DRAFT**

Arnaud Marjolle, Director of Permit Services  
S-1458-11-0 Aug 17 2016 4 26PM -- LEONARDS Joint Inspection NOT Required

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-1458-12-0

LEGAL OWNER OR OPERATOR: KERN COUNTY SHERIFF DEPT LERDO  
MAILING ADDRESS: ATTN: ACCOUNTS PAYABLE  
1350 NORRIS RD  
BAKERSFIELD, CA 93308

LOCATION: 17635 INDUSTRIAL FARM RD  
BAKERSFIELD, CA 93308

**EQUIPMENT DESCRIPTION:**

1,490 BHP (INTERMITTENT) CUMMINS MODEL QST30-G5 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY  
STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (EG-DWP)

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.83 g-NOx/bhp-hr, 0.52 g-CO/bhp-hr, or 0.20 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

**DRAFT**  
Arnaud Marjolle, Director of Permit Services  
S-1458-12-0 Aug 17 2018 4:26PM - LEONARDS Joint Inspection NOT Required

8. Emissions from this IC engine shall not exceed 0.08 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
9. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
10. {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]
11. {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]
12. {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]
13. {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]
14. {4777} 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 and 4702, and 17 CCR 93115]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {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]

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**Appendix B**  
**BACT Guideline and BACT Analysis**

# San Joaquin Valley Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 3.1.1**  
**Last Update: 7/10/2009**  
**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		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
VOC	Latest EPA Tier Certification level for applicable horsepower range*		

\*Note: The certification requirements are as follows: for emergency engines  $50 \leq \text{bhp} < 75$  - Tier 4 Interim; for emergency engines  $75 \leq \text{bhp} < 750$  - Tier 3; for emergency engines  $\geq 750$  bhp - Tier 2.

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.

## Top Down BACT Analysis for the Emergency IC Engine(s)

BACT Guideline 3.1.1 (September 10, 2013) applies to emergency diesel IC engines. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

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

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

BACT Guideline 3.1.1 identifies only the following option:

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

To determine the latest applicable Tier level, the following EPA and state regulations were consulted:

- 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
- 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
- Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not directly apply because the proposed emergency engine(s) do not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 applies directly to the proposed emergency engine(s).

Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below).

Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)					
Maximum Engine Power	Tier	Model Year(s)	PM	NMHC+NOx	CO
50 ≤ HP < 75 (37 ≤ kW < 56)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	4i	2008+			
75 ≤ HP < 100 (56 ≤ kW < 75)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	3	2008+			
100 ≤ HP < 175 (75 ≤ kW < 130)	3	2007	0.15 (0.20)	3.0 (4.0)	3.7 (5.0)
		2008+			
175 ≤ HP < 300 (130 ≤ kW < 225)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
300 ≤ HP < 600 (225 ≤ kW < 450)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
600 ≤ HP ≤ 750 (450 ≤ kW ≤ 560)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
HP > 750 (kW > 560)	2	2007	0.15 (0.20)	4.8 (6.4)	2.6 (3.5)
		2008+			

Therefore, the most stringent applicable emission standards are those listed in the CARB ATCM (Table 1).

For IC engines rated greater than or equal to 50 hp and less than 75 hp, the highest Tier required is Tier 4i. For IC engines rated greater than or equal to 75 hp and less than 750 hp, the highest Tier required is Tier 3. For engines rated equal to or greater than 750 hp, the highest Tier required is Tier 2.

Also, please note that neither the state ATCM nor the Code of Federal Regulations require the installation of IC engines meeting a higher Tier standard than those listed above for emergency applications, due to concerns regarding the effectiveness of the exhaust emissions controls during periods of short-term operation (such as testing operational readiness of an emergency engine).

The proposed engine identified as "EG-Well 4" is rated at 464 bhp. Therefore, the applicable control technology option is EPA Tier 3 certification.

The proposed engines identified as "EG-WWTP" and "EG-DWP" are rated at 755 bhp and 1,490 bhp, respectively. Therefore, the applicable control technology option is EPA Tier 2 certification.

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

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

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

No ranking needs to be done because there is only one control option listed in Step 1.

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

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

**e. Step 5 - Select BACT**

BACT for NOx and VOC will be the use of an EPA Tier 3 ('-10-0) and Tier 2 ('-11-0, '-12-0) certified engine. The applicant is proposing such units. Therefore, BACT will be satisfied.

**3. BACT Analysis for PM<sub>10</sub> Emissions:**

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

BACT Guideline 3.1.1 identifies only the following option:

- *0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)*

The latest EPA Tier Certification level for engines of the proposed model year and horsepower rating is Tier 2/3. Refer to the Top-Down BACT analysis for NOx for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier 2, 3, or 4i IC engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

Therefore, a PM/PM10 emission standard of 0.15 g/hp-hr is required as BACT.

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

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

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

No ranking needs to be done because there is only one control option listed in Step 1.

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

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



Appendix C  
Emissions Data Sheet

**TELSTAR** ★  
INSTRUMENTS

ELECTRICAL CONTRACTING, INSTRUMENTATION SALES & SERVICE  
Electronic • Pneumatic • Chemical • Telemetry • Analytical • Computer Systems

**TAB – 1**

**EG-Well 4  
300 kW**

4017 Vista Park Ct. • Sacramento, California 95834 • 916-646-1999 • FAX 916-646-1096  
1717 Solano Way, Unit 34 • Concord, CA 94520 • 925-671-2888 • Fax 925-671-9507  
202 South Douty Street • Hanford, CA 93230 • 559-584-7116 • Fax 559-584-8028



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 2016 MODEL YEAR  
 CERTIFICATE OF CONFORMITY  
 WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION  
 AND AIR QUALITY  
 ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Cummins Inc.  
 (U.S. Manufacturer or Importer)  
 Certificate Number: GCEXL0540AAB-039

Effective Date:  
 12/03/2015  
Expiration Date:  
 12/31/2016

*Byron J. Bunker*  
 Byron J. Bunker, Division Director  
 Compliance Division

Issue Date:  
 12/03/2015  
Revision Date:  
 N/A

Model Year: 2016  
 Manufacturer Type: Original Engine Manufacturer  
 Engine Family: GCEXL0540AAB

Mobile/Stationary Indicator: Stationary  
 Emissions Power Category: 225<=kW<450  
 Fuel Type: Diesel  
 After Treatment Devices: No After Treatment Devices Installed  
 Non-after Treatment Devices: No Non-After Treatment Devices Installed

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.



**Power  
Generation**

**Exhaust Emission Data Sheet  
300DQDAC  
60 Hz Diesel Generator Set  
EPA NSPS Stationary Emergency**

**Engine Information:**

Model:	Cummins Inc. QSL9-G7 NR3	Bore:	4.49 in. (114 mm)
Type:	4 Cycle, In-line, 6 Cylinder Diesel	Stroke:	5.69 in. (145 mm)
Aspiration:	Turbocharged and CAC	Displacement:	543 cu. in. (8.9 liters)
Compression Ratio:	16.1:1		
Emission Control Device:	Turbocharger and CAC		

	1/4	1/2	3/4	Full	Full
PERFORMANCE DATA	Standby	Standby	Standby	Standby	Prime
Engine HP @ Stated Load (1800 RPM)	113.75	227.5	341.25	455	407
Fuel Consumption (gal/hr)	6.82	12.23	17.65	23.07	20.78
Exhaust Gas Flow (CFM)	1099.6	1714.8	2118.6	2279.4	N/A
Exhaust Gas Temperature (°F)	678	785	915	990	945
EXHAUST EMISSION DATA					
HC (Total Unburned Hydrocarbons)	0.25	0.129	0.052	0.046	0.042
NOx (Oxides of Nitrogen as NO2)	1.60	1.70	2.65	5.25	3.98
CO (Carbon Monoxide)	3.20	3.17	0.73	0.30	N/A
PM (particular Matter)	0.20	0.14	0.04	0.03	N/A
SO2 (Sulfur Dioxide)	0.14	0.13	0.12	0.11	0.119
Smoke (Bosch)	0.396	0.462	0.299	0.399	0.160

All values are Grams per HP-Hour

**TEST CONDITIONS**

Data was recorded during steady-state rated engine speed ( $\pm 25$  RPM) with full load ( $\pm 2\%$ ). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification: 46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40 CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.  
 Fuel Temperature: 99  $\pm$  9 °F (at fuel pump inlet)  
 Intake Air Temperature: 77  $\pm$  9 °F  
 Barometric Pressure: 29.6  $\pm$  1 in. Hg  
 Humidity: NOx measurement corrected to 75 grains H2O/lb dry air  
 Reference Standard: ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

**TELSTAR** ★  
INSTRUMENTS

ELECTRICAL CONTRACTING, INSTRUMENTATION SALES & SERVICE  
Electronic • Pneumatic • Chemical • Telemetry • Analytical • Computer Systems

**TAB - 2**

**EG-WWTP  
500 kW**

4017 Vista Park Ct. • Sacramento, California 95834 • 916-646-1999 • FAX 916-646-1096  
1717 Solano Way, Unit 34 • Concord, CA 94520 • 925-671-2888 • Fax 925-671-9507  
202 South Douty Street • Hanford, CA 93230 • 559-584-7116 • Fax 559-584-8028



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
2016 MODEL YEAR  
CERTIFICATE OF CONFORMITY  
WITH THE CLEAN AIR ACT**

**OFFICE OF TRANSPORTATION  
AND AIR QUALITY  
ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Cummins Inc.  
(U.S. Manufacturer or Importer)  
Certificate Number: GCEXL015.AAJ-022

Effective Date:  
11/04/2015  
Expiration Date:  
12/31/2016

Byron J. Bunker, Division Director  
Compliance Division

Issue Date:  
11/04/2015  
Revision Date:  
N/A

Model Year: 2016  
Manufacturer Type: Original Engine Manufacturer  
Engine Family: GCEXL015.AAJ

Mobile/Stationary Indicator: Stationary  
Emissions Power Category: 560<kW<-2237  
Fuel Type: Diesel  
After Treatment Devices: No After Treatment Devices Installed  
Non-after Treatment Devices: Electronic Control

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.



**Power  
Generation**

# Exhaust Emission Data Sheet 500DFEK

**60 Hz Diesel Generator Set  
EPA NSPS Stationary Emergency**

### Engine Information:

Model:	Cummins Inc. QSX15-G9 NR 2	Bore:	5.39 in. (137 mm)
Nameplate BHP @ 1800 RPM:	755	Stroke:	6.65 in. (169 mm)
Type:	4 Cycle, In-Line, 6 Cylinder Diesel	Displacement:	912 cu. in. (14.9 liters)
Aspiration:	Turbo-charged with air-to-air charge air cooling		
Compression Ratio:	17:1		
Emission Control Device:	Turbocharged and Charge Air Cooled		

	<u>1/4</u>	<u>1/2</u>	<u>3/4</u>	<u>Full</u>	<u>Full</u>
<b>PERFORMANCE DATA</b>	<b>Standby</b>	<b>Standby</b>	<b>Standby</b>	<b>Standby</b>	<b>Prime</b>
Engine HP @ Stated Load (1800 RPM)	202	379	555	732	668
Fuel Consumption (gal/hr)	11.3	18.7	25.8	34.7	30.6
Exhaust Gas Flow (CFM)	1400	2150	2730	3625	3160
Exhaust Temperature (°F)	745	830	820	900	880
<b>EXHAUST EMISSION DATA</b>					
HC (Total Unburned Hydrocarbons)	0.18	0.07	0.06	0.11	0.08
NOx (Oxides of Nitrogen as NO2)	2.85	3.60	4.60	4.85	5.15
CO (Carbon Monoxide)	0.45	0.33	0.47	0.31	0.41
PM (particular Matter)	0.08	0.05	0.05	0.05	0.02
Smoke (Pierburg)	0.52	0.55	0.61	0.31	0.38

All values are Grams per HP-Hour

### TEST METHODS AND CONDITIONS

#### Test Methods:

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rated stabilized.

**Fuel Specification:** 40-48 Cetane Number, 0.05 Wt.% max. Sulfur; Reference ISO8178-5, 40CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.

#### Reference Conditions:

25 °C (77 °F) Air Inlet Temperature, 40 °C (104 °F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H<sub>2</sub>O/lb) of dry air Humidity (required for NOx correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit.

Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subjected to instrumentation and engine-to-engine variability. Tests conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results.

Data Subject to Change Without Notice.

**TELSTAR** ★  
INSTRUMENTS

ELECTRICAL CONTRACTING, INSTRUMENTATION SALES & SERVICE  
Electronic • Pneumatic • Chemical • Telemetry • Analytical • Computer Systems

**TAB – 3**

**EG-DWP  
1000 kW**

**4017 Vista Park Ct. • Sacramento, California 95834 • 916-646-1999 • FAX 916-646-1096  
1717 Solano Way, Unit 34 • Concord, CA 94520 • 925-671-2888 • Fax 925-671-9507  
202 South Douty Street • Hanford, CA 93230 • 559-584-7116 • Fax 559-584-8028**



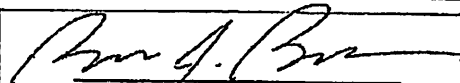


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
2016 MODEL YEAR  
CERTIFICATE OF CONFORMITY  
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION  
AND AIR QUALITY  
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Cummins Inc.  
(U.S. Manufacturer or Importer)  
Certificate Number: GCEXL030.AAD-006

Effective Date:  
07/31/2015  
Expiration Date:  
12/31/2016

  
Byron J. Bunker, Division Director  
Compliance Division

Issue Date:  
07/31/2015  
Revision Date:  
N/A

Model Year: 2016  
Manufacturer Type: Original Engine Manufacturer  
Engine Family: GCEXL030.AAD

Mobile/Stationary Indicator: Stationary  
Emissions Power Category: 560-KW<=2237  
Fuel Type: Diesel  
After Treatment Devices: No After Treatment Devices Installed  
Non-after Treatment Devices: Electronic Control

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.

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**Power  
Generation**

# Exhaust Emission Data Sheet

## 1000DQFAD

### 60 Hz Diesel Generator Set

Engine Information:					
Model:	Cummins Inc. QST30-G5 NR2	Bore:	5.51 in. (139 mm)		
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Stroke:	6.5 in. (165 mm)		
Aspiration:	Turbocharged and Low Temperature aftercooled	Displacement:	1860 cu. in. (30.4 liters)		
Compression Ratio:	14.7:1				
Emission Control Device:	Aftercooled (Air-to-Air)				

	1/4	1/2	3/4	Full	Full
PERFORMANCE DATA	Standby	Standby	Standby	Standby	Prime
BHP @ 1800 RPM (60 Hz)	371	741	1112	1482	1322
Fuel Consumption (gal/Hr)	19.1	35.8	54.1	72.2	63.9
Exhaust Gas Flow (CFM)	2780	4500	6370	7540	6950
Exhaust Gas Temperature (°F)	620	760	814	890	873
EXHAUST EMISSION DATA					
HC (Total Unburned Hydrocarbons)	0.12	0.10	0.08	0.07	0.08
NOx (Oxides of Nitrogen as NO2)	4.17	5.20	3.87	3.95	4.00
CO (carbon Monoxide)	0.66	0.36	0.48	0.66	0.58
PM (Particular Matter)	0.19	0.15	0.12	0.11	0.11
SO2 (Sulfur Dioxide)	0.11	0.10	0.10	0.11	0.10
Smoke (Bosch)	0.88	0.80	0.79	0.73	0.75

All Values are Grams/HP-Hour, Smoke is Bosch #

### TEST CONDITIONS

Data was recorded during steady-state rated engine speed ( $\pm 25$  RPM) with full load ( $\pm 2\%$ ). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel Temperature:	99 $\pm$ 9 °F (at fuel pump inlet)
Intake Air Temperature:	77 $\pm$ 9 °F
Barometric Pressure:	29.6 $\pm$ 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference Standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

Appendix D  
HRA Summary and AAQA

## San Joaquin Valley Air Pollution Control District Risk Management Review

To: Steve Leonard - Permit Services  
 From: Cheryl Lawler - Permit Services  
 Date: August 16, 2016  
 Facility Name: Kern County Sheriff Department Lerdo  
 Location: 17635 Industrial Farm Road, Bakersfield  
 Application #(s): S-1458-10-0, 11-0, 12-0  
 Project #: S-1162704

### A. RMR SUMMARY

RMR Summary					
Categories	Emergency Diesel IC Engine (Unit 10-0)	Emergency Diesel IC Engine (Unit 11-0)	Emergency Diesel IC Engine (Unit 12-0)	Project Totals	Facility Totals
Prioritization Score	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	>1	>1
Acute Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	0.00
Chronic Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A <sup>2</sup>	0.00
Maximum Individual Cancer Risk	1.56E-08	2.91E-07	9.45E-07	1.25E-06	5.23E-06
T-BACT Required?	No	No	No		
Special Permit Requirements?	Yes	Yes	Yes		

- 1 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.
- 2 Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

### Proposed Permit Requirements

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

#### Unit 10-0

1. The PM10 emissions rate shall not exceed 0.07 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.

### **Unit 11-0**

1. The PM10 emissions rate shall not exceed 0.08 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.

### **Unit 12-0**

1. The PM10 emissions rate shall not exceed 0.08 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.

## **B. RMR REPORT**

### **I. Project Description**

Technical Services received a request on August 15, 2016, to perform an Ambient Air Quality Analysis and a Risk Management Review for the proposed installation of three new emergency Diesel IC engines to power electrical generators for a correctional facility.

### **II. Analysis**

Diesel exhaust emissions for the proposed engines were calculated and provided by the processing engineer, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). A refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 from Bakersfield 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:

Analysis Parameters Unit 10-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	2.82	Closest Receptor (m)	213
Stack Diameter (m)	0.15	Type of Receptor	Resident
Stack Exit Velocity (m/s)	58.97	Max Hours per Year	50
Stack Exit Temp. (°K)	805	Fuel Type	Diesel
		Diesel Exhaust Rate (lbs/yr)	4

Analysis Parameters Unit 11-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	2.99	Closest Receptor (m)	290
Stack Diameter (m)	0.2	Type of Receptor	Resident
Stack Exit Velocity (m/s)	52.76	Max Hours per Year	50
Stack Exit Temp. (°K)	805	Fuel Type	Diesel
		Diesel Exhaust Rate (lbs/yr)	7

Analysis Parameters Unit 12-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	3.63	Closest Receptor (m)	55
Stack Diameter (m)	0.2	Type of Receptor	Resident
Stack Exit Velocity (m/s)	101.14	Max Hours per Year	50
Stack Exit Temp. (°K)	740	Fuel Type	Diesel
		Diesel Exhaust Rate (lbs/yr)	13

In addition, Technical Services performed modeling for criteria pollutants NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid.

The same Analysis Parameters that are listed above for all three units were used for the Ambient Air Quality Analysis. Listed below are the Criteria Pollutant emission rates used.

Unit #	NO <sub>x</sub> (Lbs.)		SO <sub>x</sub> (Lbs.)		CO (Lbs.)		PM <sub>10</sub> (Lbs.)	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
10-0	0	127	0	0	0	N/A	0	4
11-0	0	306	0	0	0	N/A	0	7
12-0	0	629	0	1	0	N/A	0	13

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***

Three Diesel ICEs	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA <sup>1</sup>	X	NA <sup>1</sup>	X	X
NO <sub>x</sub>	NA <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	NA <sup>1</sup>	NA <sup>1</sup>	X	NA <sup>1</sup>	Pass
PM <sub>10</sub>	X	X	X	NA <sup>1</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	NA <sup>1</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>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).

**III. Conclusion**

The Cancer Risks associated with the operation of the proposed Diesel IC engines are 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) for PM10.

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 the proposed units.

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.

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

**IV. Attachments**

- A. RMR Request Form & Attachments
- B. Project Emails
- C. Convert Stack Parameters Calculations
- D. Facility Summary
- E. AAQA Summary
- F. AERMOD Non-Default Option Checklist

## Appendix E QNEC Calculations



### Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr
- PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr

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

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

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

QNEC S-1458-10-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	127	31.8
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	4	1.0
CO	88	22.0
VOC	7	1.8

QNEC S-1458-11-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	306	76.5
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	7	1.8
CO	40	10.0
VOC	16	4.0

QNEC S-1458-12-0		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	629	157.3
SO <sub>x</sub>	1	0.3
PM <sub>10</sub>	13	3.3
CO	85	21.3
VOC	33	8.3

## Appendix F SSPE1 Calculations

## Detailed SSPE Report

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1458	0	0						0
S	1458	1	2	0	0	0	0	698	0
S	1458	2	0	88				24	0
S	1458	3	2	0	0	1971	0	19075	0
S	1458	4	0	285				2	0
S	1458	5	0	235				0	0
S	1458	6	0	423				35	0
S	1458	8	0	31	0	2	14	2	0
<b>SSPE (lbs)</b>				1062	0	1973	14	19836	

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**Notes:**

**Blank values for a particular permit unit do not necessarily reflect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.**

**For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.**

**ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.**

**ERC's for onsite reductions must be added in separately per Rule 2201 as well.**