Angela Carrillo  
Pelco Inc. A Delaware Corporation  
3500 Pelco Way  
Clovis, CA  93612-5999  

Re: Notice of Preliminary Decision - Authorities to Construct  
Facility Number: C-922  
Project Number: C-1142156  

Dear Ms. Carrillo:  

Enclosed for your review and comment is the District's analysis of Pelco Inc. A Delaware Corporation's application for two Authorities to Construct for the installation of two Tier 1 certified diesel-fired emergency standby engines, at 3500 Pelco Way.  

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 Authorities to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.  

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Sandra Lowe-Leseth of Permit Services at (559) 230- 5834.  

Sincerely,  

[signature]  

Arnaud Marjollet  
Director of Permit Services  

AM:slil  

Enclosures  

cc: Mike Tollstrup, CARB (w/ enclosures) via email
San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Diesel-Fired Emergency Standby IC Engine

Facility Name: Pelco Inc., a Delaware Corp.  
Mailing Address: 3500 Pelco Way  
                    Clovis, CA 93612  
Contact Person: Angela Carrillo  
Telephone: (559) 388-5318
Application #: C-922-18-0 and C-922-19-0  
Project #: C-1142156  
Complete: July 30, 2014

I. Proposal

Pelco, Inc. installed two diesel-fired emergency standby internal combustion (IC) engines powering electrical generators. The applicant did not apply for the required Authorities to Construct (ATCs) prior to installation of the engines. The operator was required to obtain permits at the time of construction; therefore, this action is subject to District Rule 2201 (New and Modified Source Review Rule).

Additionally, the applicant was able to show, through maintenance records, that the engines were installed by 2006, but was not able to provide documentation that the engines were installed at an earlier date. For purposes of determining BACT at time of installation, it will be assumed that the engines were installed in 2006, since that is the earliest record of the engines' existence at the facility. Maintenance records are attached as Appendix G.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
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 (8/18/11)
III. Project Location

The project is located at 3500 Pelco Way in Clovis, 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 engines power electrical generators. Other than emergency standby operation, the engines may each be operated up to a certain number of hours per year for maintenance and testing purposes. The ATCM for stationary compression-ignition engines limits the number of allowable hours depending on the certified PM$_{10}$ emission factor. Maintenance and testing for engine C-922-18 is limited to 30 hours per year and Engine C-922-19 is limited to 50 hours per year.

V. Equipment Listing

C-922-18-0: 382 BHP [INTERMITTENT] CATERPILLAR MODEL 3306BDITA S/N 9NR04846 TIER 1 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

C-922-19-0: 972 BHP [INTERMITTENT] CATERPILLAR MODEL 3412C TIER 1 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The engine is equipped with:

- [x] Turbocharger
- [x] Intercooler/aftercooler
- [ ] Injection timing retard (or equivalent per District Policy SSP-1805, dated 8/14/1996)
- [ ] Positive Crankcase Ventilation (PCV) or 90% efficient control device
- [ ] This engine is required to be, and is UL certified
Catalytic particulate filter
Low (0.05%) sulfur diesel
Very Low (0.0015%) sulfur diesel

The emission control devices/technologies and their effect on diesel engine emissions detailed below are from Non-catalytic NO\textsubscript{x} Control of Stationary Diesel Engines, by Don Koeberlein, CARB.

The turbocharger reduces the NO\textsubscript{x} emission rate from the engine by approximately 10% by increasing the efficiency and promoting more complete burning of the fuel.

The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the inlet air temperature, the peak combustion temperature is lowered, which reduces the formation of thermal NO\textsubscript{x}. NO\textsubscript{x} emissions are reduced by approximately 15% with this control technology.

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO\textsubscript{x} emissions by over 99% from standard diesel fuel.

II. General Calculations

A. Assumptions

Emergency operating schedule: 24 hours/day
Non-emergency operating schedule: 30 (Engine ‘-18) or 50 (Engine ‘-19) hours/year (ATCM requirements)
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\textsubscript{10} fraction of diesel exhaust: 0.96 (CARB, 1988)

B. Emission Factors

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (g/bhp-hr)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>5.2</td>
<td>ARB Executive Order U-R-1-114</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.0051</td>
<td>Mass Balance Equation Below</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.2</td>
<td>ARB Executive Order U-R-1-114</td>
</tr>
<tr>
<td>CO</td>
<td>1.4</td>
<td>ARB Executive Order U-R-1-114</td>
</tr>
<tr>
<td>VOC</td>
<td>0.2</td>
<td>ARB Executive Order U-R-1-114</td>
</tr>
</tbody>
</table>

Mass Balance Equation:

\[
\frac{0.000015 \text{ lb} - S}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb} - \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} - \text{SO}_2}{1 \text{ lb} - S} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp - hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{g - \text{SO}_2}{\text{bhp - hr}}
\]
Emission Factors For C-922-19-0

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (g/kW-hr)</th>
<th>Emission Factor (g/bhp-hr)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>8.0</td>
<td>6.0</td>
<td>ARB Executive Order U-R-001-0279</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>—</td>
<td>0.0051</td>
<td>Mass Balance Equation Below</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.16</td>
<td>0.12</td>
<td>ARB Executive Order U-R-001-0279</td>
</tr>
<tr>
<td>CO</td>
<td>1.0</td>
<td>0.75</td>
<td>ARB Executive Order U-R-001-0279</td>
</tr>
<tr>
<td>VOC</td>
<td>0.2</td>
<td>0.15</td>
<td>ARB Executive Order U-R-001-0279</td>
</tr>
</tbody>
</table>

Mass Balance Equation:

\[
\frac{0.000005 \text{ lb} - S \times 1.1 \text{ lb} - \text{fuel}}{1 \text{ lb} - \text{fuel} \times 1 \text{ gal}} \times \frac{2 \text{ lb} - \text{SO}_2}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{1 \text{ bhp} - \text{hr}} \times \frac{453.6 \text{ g}}{1 \text{ lb}} = 0.0051 \frac{g - \text{SO}_2}{\text{bhp} - \text{hr}}
\]

C. Calculations

1. Pre-Project Emissions (PE1)

Since each engine is a new emissions unit, PE1 = 0 for each engine.

2. Post-Project PE (PE2)

The daily and annual PEs are calculated as follows:

Daily PE2 (lb-pollutant/day) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/day) / 453.6 g/lb

Annual PE2 (lb-pollutant/yr) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/yr) / 453.6 g/lb

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions Factor (g/bhp-hr)</th>
<th>Rating (bhp)</th>
<th>Daily Hours of Operation (hrs/day)</th>
<th>Annual Hours of Operation (hrs/yr)</th>
<th>Daily PE2 (lb/day)</th>
<th>Annual PE2 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>5.2</td>
<td>382</td>
<td>24</td>
<td>30</td>
<td>105.1</td>
<td>131</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.0051</td>
<td>382</td>
<td>24</td>
<td>30</td>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.2</td>
<td>382</td>
<td>24</td>
<td>30</td>
<td>4.0</td>
<td>5</td>
</tr>
<tr>
<td>CO</td>
<td>1.4</td>
<td>382</td>
<td>24</td>
<td>30</td>
<td>28.3</td>
<td>35</td>
</tr>
<tr>
<td>VOC</td>
<td>0.2</td>
<td>382</td>
<td>24</td>
<td>30</td>
<td>4.0</td>
<td>5</td>
</tr>
</tbody>
</table>
### Project Emissions (PE2) C-922-19-0

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions Factor (g/bhp-hr)</th>
<th>Rating (bhp)</th>
<th>Daily Hours of Operation (hrs/day)</th>
<th>Annual Hours of Operation (hrs/yr)</th>
<th>Daily PE2 (lb/day)</th>
<th>Annual PE2 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>6.0</td>
<td>972</td>
<td>24</td>
<td>50</td>
<td>308.6</td>
<td>643</td>
</tr>
<tr>
<td>SO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>0.0051</td>
<td>972</td>
<td>24</td>
<td>50</td>
<td>0.3</td>
<td>1</td>
</tr>
<tr>
<td>PM&lt;sub&gt;10&lt;/sub&gt;</td>
<td>0.12</td>
<td>972</td>
<td>24</td>
<td>50</td>
<td>6.2</td>
<td>13</td>
</tr>
<tr>
<td>CO</td>
<td>0.75</td>
<td>972</td>
<td>24</td>
<td>50</td>
<td>38.6</td>
<td>80</td>
</tr>
<tr>
<td>VOC</td>
<td>0.15</td>
<td>972</td>
<td>24</td>
<td>50</td>
<td>7.7</td>
<td>16</td>
</tr>
</tbody>
</table>

#### 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.

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NO&lt;sub&gt;x&lt;/sub&gt; (lb/yr)</th>
<th>SO&lt;sub&gt;x&lt;/sub&gt; (lb/yr)</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt; (lb/yr)</th>
<th>CO (lb/yr)</th>
<th>VOC (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-922-1-4 *</td>
<td>0</td>
<td>0</td>
<td>70</td>
<td>0</td>
<td>276</td>
</tr>
<tr>
<td>C-922-3-0 *</td>
<td>3,760</td>
<td>0</td>
<td>0</td>
<td>767</td>
<td>3,833</td>
</tr>
<tr>
<td>C-922-4-0 *</td>
<td>840</td>
<td>0</td>
<td>0</td>
<td>183</td>
<td>37</td>
</tr>
<tr>
<td>C-922-5-0 *</td>
<td>1,497</td>
<td>0</td>
<td>511</td>
<td>730</td>
<td>0</td>
</tr>
<tr>
<td>C-922-7-0 *</td>
<td>0</td>
<td>0</td>
<td>730</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C-922-9-0 *</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C-922-10-0 *</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4,599</td>
</tr>
<tr>
<td>C-922-11-1 *</td>
<td>3,504</td>
<td>110</td>
<td>365</td>
<td>2,957</td>
<td>183</td>
</tr>
<tr>
<td><strong>SSPE1 Total</strong></td>
<td><strong>9,601</strong></td>
<td><strong>110</strong></td>
<td><strong>1,678</strong></td>
<td><strong>4,637</strong></td>
<td><strong>8,928</strong></td>
</tr>
</tbody>
</table>

* Emissions taken from project C-1111718.

#### 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 two emergency standby IC engines, permit units C-922-18 and C-922-19.

### Post-Project Stationary Source Potential to Emit [SSPE2] (lb/yr)

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NO(_X) (lb/yr)</th>
<th>SO(_X) (lb/yr)</th>
<th>PM(_{10}) (lb/yr)</th>
<th>CO (lb/yr)</th>
<th>VOC (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE1</td>
<td>9,601</td>
<td>110</td>
<td>1,678</td>
<td>4,637</td>
<td>8,928</td>
</tr>
<tr>
<td>C-922-18-0</td>
<td>131</td>
<td>0</td>
<td>5</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>C-922-19-0</td>
<td>643</td>
<td>1</td>
<td>13</td>
<td>80</td>
<td>16</td>
</tr>
<tr>
<td>SSPE2 Total</td>
<td>10,375</td>
<td>111</td>
<td>1,696</td>
<td>4,752</td>
<td>8,949</td>
</tr>
<tr>
<td>Offset Threshold</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offset Threshold Surpassed?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

#### 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, “for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) 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.”

This facility does not contain ERCs which have been banked at the source; therefore, no adjustment to SSPE2 is necessary.
As seen in the table on the preceding page, the facility is not an existing Major Source and also is not becoming a Major Source as a result of this project.

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 these engines are new emissions units, 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."

As discussed in Section VII.C.5 above, this facility is not a major source for any of the pollutants addressed in this project; therefore, the project does not constitute a 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_{10} (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

9. 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 installed two new emergency standby IC engines. 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:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions for unit -18-0 (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>105.1</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>SOx</td>
<td>0.1</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>4.0</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>28.3</td>
<td>&gt; 2.0 and SSPE2 ≥ 200,000 lb/yr</td>
<td>4,776</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>4.0</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As shown above, BACT will be triggered for NOx, PM10, and VOC emissions from engine C-922-18-0. Although daily CO emissions are greater than 2.0 lb-
CO/day, BACT is not triggered for CO because the facility's total CO emissions are less than 200,000 lb/yr.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions for unit -19-0 (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>308.6</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.3</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>6.2</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>38.6</td>
<td>&gt; 2.0 and SSPE2 ≥ 200,000 lb/yr</td>
<td>4,776</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>7.7</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As shown above, BACT will be triggered for NO\textsubscript{x}, PM\textsubscript{10}, and VOC emissions from engine C-922-19-0. Although daily CO emissions are greater than 2.0 lb-CO/day, BACT is not triggered for CO because the facility's total CO emissions are less than 200,000 lb/yr.

2. BACT Guideline

Per FYI 98, if equipment installed without an ATC triggers BACT requirements, the BACT guideline in place at the time of installation is applied. If it is determined that the equipment was installed with BACT at the time of installation, the current BACT analysis is limited to the types of controls that can be applied to the specific equipment that was already installed (i.e. add-on control devices). If the equipment was installed without BACT at the time of installation, the District shall perform a complete current BACT analysis as if the engine was a new as of today.

The 382 bhp diesel engine (permit unit C-922-18-0) was manufactured in 2001. However, the applicant was only able to provide proof of the engines' existence from 2006; therefore, the applicable BACT guideline for emergency standby engines rated at least 175 bhp and less than 400 bhp (BACT Guideline 3.1.2) in place at the time of installation is dated July 31, 2002.

The 972 bhp diesel engine (permit unit C-922-19-0) was installed in 2004. However, the applicant was only able to provide proof of the engines' existence from 2006; therefore, the applicable BACT guideline for emergency standby engines rated at least 175 bhp and less than 400 bhp (BACT Guideline 3.1.2) in place at the time of installation is dated July 31, 2002. The BACT guideline for emergency standby engines rated 400 bhp or greater (BACT Guideline 3.1.3) in place at the time of installation is dated June 30, 2001.
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."

C-922-18-0

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix B of this report, the engine met BACT requirements at the time of installation with the following:

- NO\textsubscript{X}: Certified emissions of 6.9 g/bhp-hr or less
- VOC: Certified emissions of 0.2 g/bhp-hr or less
- PM\textsubscript{10}: Certified emissions of 0.4 g/bhp-hr or less (T-BACT not triggered)

Therefore, any additional BACT requirements as of the date of this project will be limited to add-on control technologies for this class and category of operation. Pursuant to the requirements from current BACT guideline 3.1.1 (last updated 9/10/2013), there are no feasible add-on control technologies available for emergency diesel fired IC engines. Therefore, no additional control technologies will be required as a part of this project and all BACT requirements have been satisfied.

C-922-19-0

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix C of this report, the engine met BACT requirements at the time of installation with the following:

- NO\textsubscript{X}: Certified emissions of 6.9 g/bhp-hr or less
- VOC: Certified emissions of 0.12 g/bhp-hr or less
- PM\textsubscript{10}: Certified emissions of 0.4 g/bhp-hr or less (T-BACT not triggered)

Therefore, any additional BACT requirements as of the date of this project will be limited to add-on control technologies for this class and category of operation. Pursuant to the requirements from current BACT guideline 3.1.1, there are no feasible add-on control technologies available for emergency diesel fired IC engines. Therefore, no additional control technologies will be required as a part of this project and all BACT requirements have been satisfied.
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 these engines, and no offset calculations are required.

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, SB288 Major Modifications, 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 NOx are greater than 100 lb/day for each engine. Therefore, public notice is triggered for emissions greater than 100 lb/day.

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 engines are the only emissions source that will generate an increase in Potential to Emit. Since the proposed engines’ 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 because daily emissions greater than 100 lb/day for each engine.

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 ATCs to ensure compliance:

C-922-18-0

- {4259} Emissions from this IC engine shall not exceed any of the following limits: 5.2 g-NOx/bhp-hr, 1.4 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

- {4260} Emissions from this IC engine shall not exceed 0.2 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

C-922-19-0

- {4259} Emissions from this IC engine shall not exceed any of the following limits: 6.0 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

- {4260} Emissions from this IC engine shall not exceed 0.12 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 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 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 E of this document for the AAQA summary sheet.

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

The proposed location is in a non-attainment area for the state's PM\textsubscript{10} as well as federal and state PM\textsubscript{2.5} thresholds. As shown by the AAQA summary sheet in Appendix E, the proposed equipment will not cause a violation of an air quality standard for PM\textsubscript{10} and PM\textsubscript{2.5}.

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)

This rule incorporates NSPSs from the Code of Federal Regulations (CFR) Title 40 Part 60.

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 III requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

No other subparts of 40 CFR 60 are applicable.
Rule 4002 National Emission Standards for Hazardous Air Pollutants

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.


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.

No other subparts of 40 CFR 61 or 40 CFR 63 are applicable.

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.
### RMR Summary

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emergency Diesel ICE (Unit 18-0)</th>
<th>Emergency Diesel ICE (Unit 19-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.03</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>4.75E-07</td>
<td>1.13E-07</td>
<td>8.73E-07</td>
<td>1.87E-06</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Hazard Index was 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.

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

**C-922-18-0**

- {4260} The PM10 emissions rate shall not exceed 0.2 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
- {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]
- {4262} 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 30 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

**C-922-19-0**

- {4260} The PM10 emissions rate shall not exceed 0.12 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
- {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]
- {4262} 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 Rule 4702 and 17 CCR 93115]
Rule 4201 Particulate Matter Concentration

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

\[
\text{0.1 grain—PM/dscf} \times \frac{g}{15.43 \text{ grain}} \times \frac{1 \text{ Btu in}}{0.35 \text{ Btu out}} \times \frac{9.051 \text{ dscf}}{2.542.5 \text{ Btu}} \times \frac{2.542.5 \text{ Btu}}{1 \text{ bhp—hr}} \times \frac{0.96g—PM_{10}}{1 \text{ g—PM}} = \text{0.4 g—PM}_{10} \text{ bhp—hr}
\]

The new engines have a PM$_{10}$ emission factors 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 are also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent to, or more stringent than District Rule 4701 requirements, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines

The following table demonstrates how the proposed engines will comply with the requirements of District Rule 4702.

<table>
<thead>
<tr>
<th>District Rule 4702 Requirements</th>
<th>Proposed Method of Compliance with District Rule 4702 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Standby IC Engines</td>
<td>The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to (at most) 50 hours/year. Thus, compliance is expected.</td>
</tr>
<tr>
<td>Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.</td>
<td></td>
</tr>
</tbody>
</table>

This table continues on next page
<table>
<thead>
<tr>
<th>District Rule 4702 Requirements Emergency Standby IC Engines</th>
<th>Proposed Method of Compliance with District Rule 4702 Requirements</th>
</tr>
</thead>
</table>
| 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 permits:  
   - (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] |
| The owner/operator must operate and maintain the engines and any installed control devices according to the manufacturers written instructions. | A permit condition enforcing this requirement was shown earlier in the evaluation. |
| The owner/operator must 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 permits:  
   - (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] |

This table continues on next page
### District Rule 4702 Requirements

**Emergency Standby IC Engines**

- Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and 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.

### Proposed Method of Compliance with District Rule 4702 Requirements

- The following conditions will be included on the permits:
  - **(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, shall be readily available, and 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 SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

\[
\text{Volume SO}_2 = \frac{(n \times R \times T)}{P}
\]

- \( n \) = moles SO₂
- \( T \) (standard temperature) = 60 °F or 520 °R
- \( R \) (universal gas constant) = \( \frac{10.73 \text{psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \degree \text{R}} \)

\[
\text{Volume SO}_2 = \frac{0.000015 \text{lb} - S \times 7.1 \text{lb} \times 64 \text{ lb} - \text{SO}_2 \times 1 \text{ MMBtu} \times 1 \text{ gal}}{32 \text{ lb} - S \times 9.051 \text{ scf} \times 0.137 \text{ MMBtu} \times 64 \text{ lb} - \text{SO}_2 \times 1 \text{ lb} - \text{mol} \times 14.7 \text{ psi} \times 520^\circ \text{R} \times 1,000,000} = 1.0 \text{ ppmv}
\]
Since 1.0 ppmv is less than 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATCs to ensure compliance:

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

California Health & Safety Code 42301.6 (School Notice)

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

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

The following table demonstrates how the proposed engines will comply with the requirements of Title 17 CCR Section 93115.

<table>
<thead>
<tr>
<th>Title 17 CCR Section 93115 Requirements for In-Use Emergency IC Engines Powering Electrical Generators</th>
<th>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency engines must be fired on CARB diesel fuel, or an approved alternative diesel fuel.</td>
<td>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.</td>
</tr>
</tbody>
</table>
| If the certified PM emission factor is greater than 0.15 g/bhp-hr but less than or equal to 0.40 g/bhp-hr, the in-use engine may not be operated more than 30 hours per year for maintenance and testing purposes. | The certified PM10 emission factor for permit C-922-18-0 is between 0.15 g/bhp-hr and 0.40 g/bhp-hr; therefore the following condition will be placed on the permit:  
[4262] 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 30 hours per calendar year. [District Rule 4702 and 17 CCR 93115] |

This table continues on next page
<table>
<thead>
<tr>
<th>Title 17 CCR Section 93115 Requirements for In-Use Emergency IC Engines Powering Electrical Generators</th>
<th>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the certified PM emission factor is greater than 0.01 g/bhp-hr but less than or equal to 0.15 g/bhp-hr, the in-use engine may not be operated more than 50 hours per year for maintenance and testing purposes.</td>
<td>The certified PM10 emission factor for permit C-922-19-0 is between 0.01 g/bhp-hr and 0.15 g/bhp-hr; therefore the following condition will be placed on the permit:</td>
</tr>
<tr>
<td></td>
<td>• (4262) 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 Rule 4702 and 17 CCR 93115]</td>
</tr>
<tr>
<td>In-Use stationary emergency standby diesel-fueled CI engines (&gt; 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (Title 13, CCR, section 2423).</td>
<td>The applicant has installed engines that are certified to the latest EPA Tier Certification level for the applicable horsepower range that were available at the time of installation.</td>
</tr>
<tr>
<td>Engines with a PM&lt;sub&gt;10&lt;/sub&gt; 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.</td>
<td>The District has verified that the engines are not located within 500' of a school.</td>
</tr>
<tr>
<td>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.</td>
<td>Permit conditions enforcing these requirements were shown earlier in the evaluation.</td>
</tr>
</tbody>
</table>

**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.

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct C-922-18-0 and C-922-19-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix A.

**X. Billing Information**

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
<th>Fee Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-922-18-0</td>
<td>3020-10-C</td>
<td>382 bhp IC engine</td>
<td>$240.00</td>
</tr>
<tr>
<td>C-922-19-0</td>
<td>3020-10-E</td>
<td>972 bhp IC engine</td>
<td>$602.00</td>
</tr>
</tbody>
</table>

**Appendixes**

A. Draft ATCs
B. BACT Guideline and BACT Analysis for C-922-18-0
C. BACT Guideline and BACT Analysis for C-922-19-0
D. ARB Executive Orders
E. HRA Summary and AAQA
F. QNEC Calculations
G: Maintenance Records
Appendix A
Draft ATCs
AUTHORITY TO CONSTRUCT

PERMIT NO: C-922-18-0

LEGAL OWNER OR OPERATOR: PELCO INC A DELAWARE CORPORATION
MAILING ADDRESS: 3500 PELCO WAY
ATTN: FACILITY MANAGER
CLOVIS, CA 93612-5620

LOCATION:
3500 PELCO WAY
CLOVIS, CA 93612-5620

EQUIPMENT DESCRIPTION:
382 BHP [INTERMITTENT] CATERPILLAR MODEL 3306BDITA S/N 9NR04846 TIER 1 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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: 5.2 g-NOx/bhp-hr, 1.4 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201 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.

Seyed Sadredin, Executive Director of APCO

Arnaud Marjollet, Director of Permit Services

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061
8. Emissions from this IC engine shall not exceed 0.2 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

9. 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. 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. 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]

12. 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]

13. 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. 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 30 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]

15. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

16. 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]
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-922-19-0
LEGAL OWNER OR OPERATOR: PELCO INC A DELAWARE CORPORATION
MAILING ADDRESS: 3500 PELCO WAY
ATTN: FACILITY MANAGER
CLOVIS, CA 93612-5620

LOCATION: 3500 PELCO WAY
CLOVIS, CA 93612-5620

EQUIPMENT DESCRIPTION:
972 BHP [INTERMITTENT] CATERPILLAR MODEL 3412C TIER 1 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY
IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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: 6.0 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5650 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 Marjollar-Director of Permit Services
C-922-19-0: Apr 13 2015 11:01AM — LOWECES : Joint Inspection NOT Required
Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061
8. Emissions from this IC engine shall not exceed 0.12 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

9. 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. 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. 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]

12. 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]

13. 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. 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. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

16. 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]
### Emergency Diesel I.C. Engine (≥ 175 hp and < 400 hp)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>0.6 grams/bhp-hr</td>
<td>90% control (oxidation catalyst, or equal)</td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>Certified NOx emissions of 6.9 g/bhp-hr or less.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>0.1 grams/bhp-hr (if TBACT is triggered) 0.4 grams/bhp-hr (if TBACT is not triggered)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOx</td>
<td>Low-sulfur diesel fuel (500 ppmw sulfur or less) or Very Low-sulfur diesel fuel (15 ppmw sulfur or less), where available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>Positive crankcase ventilation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Any engine model included in the ARB or EPA diesel engine certification lists and identified as having a PM10 emission rate of 0.149 grams/bhp-hr or less, based on ISO 8178 test procedure, shall be deemed to meet the 0.1 grams/bhp-hr requirement. 2. A site-specific Health Risk Analysis is used to determine if TBACT is triggered. (Clarification added 05/07/01)

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.
BACT Analysis for NOx Emissions:

Oxides of nitrogen (NOx) are generated from the high temperature combustion of the diesel fuel. A majority of the NOx emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NOx emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

Step 1 – Identify all possible NOx control technologies

The SJVUAPCD BACT Clearinghouse Guideline 3.1.2 identifies achieved-in-practice BACT as certified NOx emissions of 6.9 g/hp-hr or less, or turbocharger and fuel injected timing retarded 4° relative to standard setting (or equivalent per District Policy SSPE 16-1). No technologically feasible alternatives are listed.

Step 2 – Eliminate technologically infeasible options

There are no technologically infeasible options.

Step 3 – Rank remaining control technologies by control effectiveness

Certified NOx emissions of 6.9 g/hp-hr or less, or turbocharger and fuel injected timing retarded 4° relative to standard setting (or equivalent per District Policy SSPE 16-1).

Step 4 – Cost effectiveness analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 – Select BACT

The applicant is proposing a diesel-fired IC engine with NOx emissions less than 10 gram/bhp-hr and a turbocharger with aftercooler. As the applicant is proposing the most effective control technology listed in Step 1 above, BACT requirements for NOx are met.
BACT Analysis for VOC Emissions

Volatile organic compounds are emitted from the crankcase of the engine as a result of piston ring blow-by.

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.2, identifies achieved in practice BACT for VOC emissions from emergency diesel IC engines ≥ 175 and less than 400 bhp as follows:

1) Positive crankcase ventilation

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

The District accepts controls proven to be equally or more effective than the control option listed.

2) Tier 1 CARB-certified IC engine (certified VOC emission rate of 0.2 g/bhp-hr).

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

% VOC controlled from PCV

Using AP-42 values to estimate the uncontrolled VOC emissions from a diesel-fired IC engine, (1.12 exhaust + 0.02 g/hp-hr crankcase emissions) = 1.14 g/hp-hr (AP-42 Table 3.3-1 Emissions Factors for Uncontrolled Gasoline and Diesel Industrial Engines)

\[
\text{PCV control efficiency} = \frac{[1.14 - (1.12 + 0.02 (.9))]}{1.14} \times 100
\] = 2%

% VOC controlled from Tier 1 certified diesel IC engine

As calculated in Section VII.B of this application review, the VOC emission factor from the Tier 1 certified IC engine proposed in this project is 0.2 g/bhp-hr.
An estimate of the VOC control efficiency can be calculated by comparing this value to the VOC emission factor of an uncontrolled diesel IC engine.

\[
\text{Proposed Engine VOC control efficiency} = \frac{(1.14 - 0.2)}{1.14} = 83\%
\]

Ranking the controls according to the above calculations:

1\textsuperscript{st} – Certified VOC emission rate of 0.2 g/bhp-hr (83%) 
2\textsuperscript{nd} – PCV (2%)

d. Step 4 - Cost effectiveness analysis

The highest ranked alternative from Step 3 has been proposed by the applicant. Therefore, per SJVUAPCD BACT policy, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions is a Tier 1 CARB-certified IC engine (certified VOC emission rate of 0.2 g/bhp-hr) (Achieved-in-Practice). The proposed engine is a Tier 1 CARB-certified engine (certified VOC emissions of 0.2 g/bhp-hr); therefore, BACT is satisfied.
BACT Analysis for PM$_{10}$ Emissions

Particulate Matter is emitted from the crankcase of the engine as a result of piston ring blow-by.

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 3.1.2 identifies PM$_{10}$ emissions of 0.4 grams/bhp-hr or less (if TBACT is not triggered) as achieved-in-practice BACT. There are no technologically feasible alternatives listed.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

0.4 grams/bhp-hr (if TBACT is not triggered)

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant is proposing the most effective control technology listed in Step 1 above, thus, BACT requirements for PM$_{10}$ are met.
Appendix C
BACT Guideline and BACT Analysis
For C-922-19-0
**Best Available Control Technology (BACT) Guideline 3.1.3**  
*Last Update: 6/30/2001*

**Emergency Diesel I.C. Engine = or > 400 hp**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>2.0 g/bhp-hr</td>
<td>= or &lt; 1.4 grams/bhp-hr</td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>Certified emissions of 6.9 g/bhp-hr or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>0.1 grams/bhp-hr (if TBACT is triggered)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOx</td>
<td>0.4 grams/bhp-hr (if TBACT is not triggered)</td>
<td></td>
<td>Low-sulfur diesel fuel (500 ppmw sulfur or less) or</td>
</tr>
<tr>
<td>VOC</td>
<td>Positive crankcase ventilation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. *Any engine model included in the ARB or EPA diesel engine certification lists and identified as having a PM10 emission rate of 0.149 grams/bhp-hr or less, based on ISO 8178 test procedure, shall be deemed to meet the 0.1 grams/bhp-hr requirement.*

2. *A site-specific Health Risk Analysis is used to determine if TBACT is triggered.*  
*(Clarification added 05/07/01)*
BACT Analysis for NOx Emissions

Oxides of nitrogen (NOx) are generated from the high temperature combustion of the diesel fuel. A majority of the NOx emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NOx emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

Step 1 — Identify all possible NOx control technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine at the time of installation as certified NOx emissions of 6.9 g/hp-hr or less. No technologically feasible alternatives are listed.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically feasible options listed.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Certified NOx emissions of 6.9 g/hp-hr or less.

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant is proposing the most effective control technology listed in Step 1 above, thus, BACT requirements for NOx are met.
BACT Analysis for VOC Emissions

Volatile organic compounds are emitted from the crankcase of the engine as a result of piston ring blow-by.

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.2, identifies achieved in practice BACT for VOC emissions from emergency diesel IC engines ≥ 400 bhp as follows:

1) Positive crankcase ventilation

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

The District accepts controls proven to be equally or more effective than the control option listed.

2) Tier 1 CARB-certified IC engine (certified VOC emissions of 0.12 g/bhp-hr)

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

% VOC controlled from PCV

Using AP-42 values to estimate the uncontrolled VOC emissions from a diesel-fired IC engine, \((1.12 \text{ exhaust} + 0.02 \text{ g/hp-hr crankcase emissions}) = 1.14 \text{ g/hp-hr}\) (AP-42 Table 3.3-1 Emissions Factors for Uncontrolled Gasoline and Diesel Industrial Engines)

\[
\text{PCV control efficiency} = \frac{[1.14 - (1.12 + 0.02 (.9))]}{1.14 \times 100} = 2% 
\]

% VOC controlled from Tier 1 certified diesel IC engine

As calculated in Section VII.B of this application review, the VOC emission factor from the Tier 1 CARB-certified IC engine proposed in this project is 0.12 g/bhp-hr.
An estimate of the VOC control efficiency can be calculated by comparing this value to the VOC emission factor of an uncontrolled diesel IC engine.

Proposed Engine VOC control efficiency = \( \frac{1.14 - 0.12}{1.14} = 89\% \)

Ranking the controls according to the above calculations:

1\textsuperscript{st} – VOC emission rate of 0.12 g/bhp-hr (89%)

2\textsuperscript{nd} – PCV (2%)

d. Step 4 - Cost effectiveness analysis

The highest ranked alternative from Step 3 has been proposed by the applicant. Therefore, per SJVUAPCD BACT policy, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions is a Tier 1 CARB-certified IC engine (VOC emission rate of 0.12 g/bhp-hr) (Achieved-in-Practice). The proposed engine is a Tier 1 CARB-certified IC engine; therefore, BACT is satisfied.
BACT Analysis for PM$_{10}$ Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine at the time of installation as certified PM$_{10}$ emissions of 0.4 g/hp-hr or less (T-BACT was not triggered per HRA Summary in Appendix E). No technologically feasible alternatives are listed.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Certified PM$_{10}$ emissions of 0.4 g/bhp-hr (T-BACT not triggered).

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant is proposing the most effective control technology listed in Step 1 above, thus, BACT requirements for PM$_{10}$ are met.
Appendix D
ARB Executive Orders
Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

IT IS ORDERED AND RESOLVED: That the following diesel engines and the exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Generator and Industrial equipment

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

Fuel Type: Diesel

<table>
<thead>
<tr>
<th>Engine Family</th>
<th>Displacement</th>
<th>Exhaust Emission Control Systems and Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>YCPXL10.5MRD</td>
<td>10.5</td>
<td>Smoke Puff Limiter Turbocharger Charge Air Cooler</td>
</tr>
</tbody>
</table>

The engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values in grams per brake horsepower-hour (g/hp-h) for total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak-values from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

<table>
<thead>
<tr>
<th>Exhaust Emissions (g/hp-h)</th>
<th>Smoke Opacity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>THC</td>
<td>1.0</td>
</tr>
<tr>
<td>CO</td>
<td>8.5</td>
</tr>
<tr>
<td>NOx</td>
<td>6.9</td>
</tr>
<tr>
<td>PM</td>
<td>0.4</td>
</tr>
<tr>
<td>Accel</td>
<td>20</td>
</tr>
<tr>
<td>Lug</td>
<td>15</td>
</tr>
<tr>
<td>Peak</td>
<td>50</td>
</tr>
<tr>
<td>Certification</td>
<td></td>
</tr>
<tr>
<td>THC</td>
<td>0.2</td>
</tr>
<tr>
<td>CO</td>
<td>1.4</td>
</tr>
<tr>
<td>NOx</td>
<td>5.2</td>
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<tr>
<td>PM</td>
<td>0.2</td>
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<tr>
<td>Accel</td>
<td>17</td>
</tr>
<tr>
<td>Lug</td>
<td>3</td>
</tr>
<tr>
<td>Peak</td>
<td>39</td>
</tr>
</tbody>
</table>
BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures—Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels—1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 7th day of December 1999.

[Signature]
R. B. Summerfield, Chief
Mobile Source Operations Division
# LARGE ENGINE MODEL SUMMARY

**Manufacturer:** CATERPILLAR INC.  
**Process Code:** New Submission  
**EPA Engine Family:** YCPXL10.5MRD

<table>
<thead>
<tr>
<th>Engine Code</th>
<th>Engine Model</th>
<th>3. BHP@RPM (SAE Gross)</th>
<th>4. Fuel Rate: mm/stoke @ peak HP (for diesel only)</th>
<th>5. Fuel Rate: (lbs/hr) @ peak HP (for diesels only)</th>
<th>6. Torque @ RPM (SEA Gross)</th>
<th>7. Fuel Rate: mm/stoke@peak torque</th>
<th>8. Fuel Rate: (lbs/hr)@peak torque</th>
<th>9. Emission Control Device Per SAE J1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Cert Engine</td>
<td>3306</td>
<td>397 @ 1800</td>
<td>243</td>
<td>147.0</td>
<td>1448 @ 1200</td>
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<td>136.0</td>
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<td>3306</td>
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<td>119.0</td>
<td>1248 @ 1200</td>
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<tr>
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<td>300 @ 2200</td>
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<td>108.0</td>
<td>874 @ 1400</td>
<td>187</td>
<td>88.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>9</td>
<td>3306</td>
<td>370 @ 2000</td>
<td>195</td>
<td>131.0</td>
<td>1244 @ 1400</td>
<td>238</td>
<td>112.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>10</td>
<td>3306</td>
<td>355 @ 2000</td>
<td>188</td>
<td>127.0</td>
<td>1184 @ 1400</td>
<td>225</td>
<td>106.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>11</td>
<td>3306</td>
<td>335 @ 2000</td>
<td>177</td>
<td>119.0</td>
<td>1100 @ 1400</td>
<td>210</td>
<td>99.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>12</td>
<td>3306</td>
<td>325 @ 2000</td>
<td>172</td>
<td>116.0</td>
<td>1058 @ 1400</td>
<td>200</td>
<td>94.0</td>
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</tr>
<tr>
<td>13</td>
<td>3306</td>
<td>305 @ 2000</td>
<td>161</td>
<td>108.0</td>
<td>977 @ 1400</td>
<td>187</td>
<td>88.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>14</td>
<td>3306</td>
<td>375 @ 1800</td>
<td>217</td>
<td>131.0</td>
<td>1444 @ 1350</td>
<td>244</td>
<td>111.0</td>
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</tr>
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<td>15</td>
<td>3306</td>
<td>360 @ 1800</td>
<td>210</td>
<td>127.0</td>
<td>1355 @ 1350</td>
<td>228</td>
<td>104.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>16</td>
<td>3306</td>
<td>335 @ 1800</td>
<td>187</td>
<td>119.0</td>
<td>1232 @ 1200</td>
<td>242</td>
<td>98.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>17</td>
<td>3306</td>
<td>320 @ 1800</td>
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<td>186</td>
<td>89.0</td>
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<tr>
<td>18</td>
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<td>174</td>
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<td>191</td>
<td>82.0</td>
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</tr>
<tr>
<td>19</td>
<td>3306</td>
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<td>163</td>
<td>109.4</td>
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<td>199</td>
<td>89.9</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>20</td>
<td>3306</td>
<td>306 @ 2000</td>
<td>168</td>
<td>113.1</td>
<td>1004 @ 1400</td>
<td>248</td>
<td>93.9</td>
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</tr>
<tr>
<td>21</td>
<td>3306</td>
<td>382 @ 1800</td>
<td>224</td>
<td>136.0</td>
<td>1303 @ 1400</td>
<td>248</td>
<td>117.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>22</td>
<td>3306</td>
<td>349 @ 1800</td>
<td>224</td>
<td>136.0</td>
<td>1303 @ 1400</td>
<td>248</td>
<td>117.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>23</td>
<td>3306</td>
<td>349 @ 1800</td>
<td>224</td>
<td>136.0</td>
<td>1303 @ 1400</td>
<td>248</td>
<td>117.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>24</td>
<td>3306</td>
<td>300 @ 1800</td>
<td>178</td>
<td>107.0</td>
<td>1016 @ 1200</td>
<td>198</td>
<td>80.0</td>
<td>EM, DCAC, SPL,</td>
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<td>25</td>
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<td>300 @ 2000</td>
<td>162</td>
<td>109.0</td>
<td>1006 @ 1400</td>
<td>190</td>
<td>90.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
<tr>
<td>26</td>
<td>3306</td>
<td>250 @ 1800</td>
<td>145</td>
<td>88.0</td>
<td>846 @ 1200</td>
<td>168</td>
<td>67.0</td>
<td>EM, DCAC, SPL,</td>
</tr>
</tbody>
</table>
Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>ENGINE FAMILY</th>
<th>DISPLACEMENT (liters)</th>
<th>FUEL TYPE</th>
<th>USEFUL LIFE (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>5CPXL27.0MRT</td>
<td>27.0</td>
<td>Diesel</td>
<td>8000</td>
</tr>
</tbody>
</table>

**SPECIAL FEATURES & EMISSION CONTROL SYSTEMS**

Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module

**TYPICAL EQUIPMENT APPLICATION**

Generator

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

<table>
<thead>
<tr>
<th>RATED POWER CLASS</th>
<th>EMISSION STANDARD CATEGORY</th>
<th>EXHAUST (g/kw-hr)</th>
<th>OPACITY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KW &gt; 560</td>
<td>Tier 1</td>
<td>STD</td>
<td>HC NOx NMHC+NOx CO PM ACCEL LUG PEAK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.2 1.3 N/A 11.4 0.54 N/A N/A N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CERT</td>
<td>0.2 8.0 — 1.0 0.16 — — —</td>
<td></td>
</tr>
</tbody>
</table>

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this day of December 2004.

Allen Lyons, Chief
Mobile Source Operations Division
<table>
<thead>
<tr>
<th>Engine Code</th>
<th>Engine Model</th>
<th>BHP@RPM (SAE Gross)</th>
<th>Fuel Rate: mm/stroke @ peak HP (for diesel only)</th>
<th>Fuel Rate: lbs/hr @ peak HP (for diesels only)</th>
<th>Torque @ RPM (SEA Gross)</th>
<th>Fuel Rate: mm/stroke@peak torque</th>
<th>Fuel Rate: lbs/hr@peak torque</th>
<th>Emission Control Device Per SAE J1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cert Engine</td>
<td>3412</td>
<td>1063@1800</td>
<td>307</td>
<td>371.6</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>3412</td>
<td>991@1800</td>
<td>274</td>
<td>332.0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Appendix E
HRA Summary and AAQA
A. RMR SUMMARY

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emergency Diesel ICE (Unit 18-0)</th>
<th>Emergency Diesel ICE (Unit 19-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>N/A¹</td>
<td>N/A¹</td>
<td>N/A¹</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>N/A²</td>
<td>N/A²</td>
<td>N/A²</td>
<td>0.03</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>4.75E-07</td>
<td>1.13E-07</td>
<td>5.88E-07</td>
<td>1.59E-06</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Hazard Index was 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 Conditions

To ensure that human health risks will not exceed District allowable levels, the following permit conditions must be included for:

Unit 18-0

1. The PM10 emissions rate shall not exceed 0.2 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
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. [District Rule 4102]
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 30 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
Unit 19-0

1. The PM10 emissions rate shall not exceed 0.12 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
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. [District Rule 4102]
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. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on September 23, 2014, to revise an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for two emergency diesel IC engines. Both engines were installed without ATC's. This revision will update the maximum annual hours of operation for unit 18-0. The maximum testing and maintenance hours will go from 50 hours/yr to 30 hours/yr.

II. Analysis

For the diesel engines, Technical Services used diesel exhaust emissions provided by the processing engineer. 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; therefore, a refined Health Risk Assessment was required and performed for the unit. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Fresno to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Carcinogenic Risk.

The following parameters were used for the reviews:

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 18-0</strong></td>
</tr>
<tr>
<td>Source Type</td>
</tr>
<tr>
<td>Stack Height (m)</td>
</tr>
<tr>
<td>Stack Diameter (m)</td>
</tr>
<tr>
<td>Stack Temp (K)</td>
</tr>
<tr>
<td>Stack Velocity (m/s)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Technical Services also performed modeling for criteria pollutants NOx, CO, SOx, PM10, and PM2.5. For Unit 18-0, the emission rates used for criteria pollutant modeling were 219 lb/yr NOx, 59 lb/yr CO, 0 lb/yr SOx, and 5 lb/yr PM10. For Unit 19-0, the emission rates used for criteria pollutant modeling were 643 lb/yr NOx, 80 lb/yr CO, 1 lb/yr SOx, and 13 lb/yr PM10.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

<table>
<thead>
<tr>
<th>Diesel ICEs</th>
<th>1 Hour</th>
<th>3 Hours</th>
<th>8 Hours</th>
<th>24 Hours</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>NA&quot;</td>
<td>X</td>
<td>NA&quot;</td>
<td>X</td>
<td>Pass</td>
</tr>
<tr>
<td>NOx</td>
<td>NA&quot;</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
</tr>
<tr>
<td>SOx</td>
<td>NA&quot;</td>
<td>NA&quot;</td>
<td>X</td>
<td>NA&quot;</td>
<td>Pass</td>
</tr>
<tr>
<td>PM10</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>NA&quot;</td>
<td>Pass</td>
</tr>
<tr>
<td>PM2.5</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>NA&quot;</td>
<td>Pass</td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet.
"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.
"The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusions

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

Unit 18-0

The cancer risk associated with the operation of the proposed diesel IC engine is 4.75E-07; which 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) for PM10.

Unit 19-0

The cancer risk associated with the operation of the proposed diesel IC engine is 1.13E-07; which 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) for PM10.
To ensure that human health risks will not exceed District allowable levels; the permit conditions 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.

IV. Attachments

A. RMR request from the project engineer  
B. Additional information from the applicant/project engineer  
C. Stack Parameter Worksheets  
D. DICE Screening Risk Tool  
E. Facility Summary  
F. AAQA Summary  
G. AAQA Parameters Summary
Appendix F
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:

\[
\text{QNEC} = \text{PE2} - \text{PE1},
\]

where:

- \(\text{QNEC}\) = Quarterly Net Emissions Change for each emissions unit, lb/qtr
- \(\text{PE2}\) = Post-Project Potential to Emit for each emissions unit, lb/qtr
- \(\text{PE1}\) = Pre-Project Potential to Emit for each emissions unit, lb/qtr

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

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

\[
\text{PE2}_{\text{quarterly}} = \frac{\text{PE2 (lb/yr)}}{4 \text{ quarters/year}} = \text{QNEC}
\]

### QNEC for C-922-18-0

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE2 Total (lb/yr)</th>
<th>Quarterly PE2 (lb/qtr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>151</td>
<td>37.8</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>5</td>
<td>1.3</td>
</tr>
<tr>
<td>CO</td>
<td>35</td>
<td>8.8</td>
</tr>
<tr>
<td>VOC</td>
<td>5</td>
<td>1.3</td>
</tr>
</tbody>
</table>

### QNEC for C-922-19-0

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE2 Total (lb/yr)</th>
<th>Quarterly PE2 (lb/qtr)</th>
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</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>643</td>
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<tr>
<td>SO\textsubscript{x}</td>
<td>1</td>
<td>0.3</td>
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<tr>
<td>PM\textsubscript{10}</td>
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<td>CO</td>
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<td>20.0</td>
</tr>
<tr>
<td>VOC</td>
<td>16</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Appendix G
Maintenance Records
REPAIR ENG JACKET WATER HEATER

MILEAGE
17.00

LABR
PELCO
196.00 *
29.75

TOTAL MISC CHGS
SEG. 01
29.75 *

SEGMENT 01 TOTAL
225.75 T

ENVIRONMENT S/CHG
STATE SALES TAX 7.25
FRESNO CO. TAX .725%
24.00 T
1.74 T
.17 T

MAY 14 2007

ENTERED

MAY 7 2007

WARRANTY PARTS, SIX MONTHS, LABOR, 90 DAYS UNLESS OTHERWISE STATED
ALL REPLACED PARTS ARE HELD 30 DAYS

TERMS ARE CASH UNLESS CREDIT IS APPROVED. WITH CREDIT APPROVAL, TERMS ARE NET BY
the 10th of the month following purchase. A FINANCE CHARGE of 1-12% per month (18% PER ANNUM)
will be charged on the outstanding balance. The past due balance represents all charges remaining unpaid on the closing day of the month following invoice date. In the event of default in the payment of any amount due, and if the account is placed in the hands of any agency or attorney for collection of legal action, the purchaser agrees to pay finance charges and charges equal to the cost of collection (as permitted by laws governing these transactions). Acceptance by customer of the parts, service or equipment, listed above is the customer's agreement to be bound by the credit and collection terms set forth above.
**DEPT. 9665**

**WORK ORDER INVOICE**

**PLEASE MAKE REMITTANCE TO:**

**QUINN COMPANY**

**DEPT. 9665**

**LOS ANGELES, CA 90034-4665**

---

**SOLD TO:**

PELCO

PO BOX 3075

3500 PELCO WAY

CLOVIS, CA 93612

---

**SHIP TO:**

PELCO

3500 PELCO WAY

CLOVIS, CA 93612

---

**LEVEL 1 PM ENGINE & GENERATOR**

<table>
<thead>
<tr>
<th>SEGMENT 01 TOTAL</th>
<th>305.00</th>
</tr>
</thead>
</table>

**ADDITIONAL PARTS PM 1**

<table>
<thead>
<tr>
<th>1 QLAB 01E</th>
<th>OIL/COOLANT SAMPLES</th>
<th>13.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 248-7518</td>
<td>15W/40 1 GAL</td>
<td>14.25</td>
</tr>
</tbody>
</table>

**TOTAL PARTS**

<table>
<thead>
<tr>
<th>SEG. 02</th>
<th>41.50</th>
</tr>
</thead>
</table>

**SEGMENT 02 TOTAL**

<table>
<thead>
<tr>
<th></th>
<th>41.50 T</th>
</tr>
</thead>
</table>

---

**ENVIRONMENT S/CHG**

<table>
<thead>
<tr>
<th>PELCO AF</th>
<th>STATE SALES TAX 7.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUG - 4 2000</td>
<td>FRESNO CO. TAX .725%</td>
</tr>
<tr>
<td>RECEIVED</td>
<td>CLOVIS CITY TAX .725%</td>
</tr>
</tbody>
</table>

**WARRANTY:** PARTS, SIX MONTHS; LABOR, 90 DAYS UNLESS OTHERWISE STATED. ALL REPLACED PARTS ARE HELD 30 DAYS.

---

**RECEIVED**

**AMOUNT**

| 377.10 |

---

**TERMS:** CASH UNLESS CREDIT IS APPROVED. WITH CREDIT APPROVAL, TERMS ARE: Net by the 10th of the month following purchase. A FINANCE CHARGE OF 1.5% PER MONTH (APR. PER ANNUM) will be charged on the past due balance. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the event of any amount due, and if the account is placed in the hands of any agency or attorney for collection or legal action, the purchaser agrees to pay finance charges and any collection fees incurred by Quinn Company. Acceptance by customer of the parts, service or equipment, listed above is the customer's agreement to be bound by the credit and collection terms set forth above.

---

**Customer Copy**
WORK ORDER INVOICE

PLEASE MAKE REMITTANCE TO:

QUINN COMPANY
DEPT. 960

LOS ANGELES, CA 90086-9663

SOLD TO:

PELLCO
PO BOX 3075
3500 PELCO WAY
CLOVIS, CA 93612

SHIP TO:

PELLCO
3500 PELCO WAY
CLOVIS, CA 93612

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE</th>
<th>EXTENDED PRICE</th>
</tr>
</thead>
<tbody>
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<td>1.00</td>
<td>51-582518 BATTERY</td>
<td>99.59</td>
<td>99.59</td>
</tr>
<tr>
<td></td>
<td>TOTAL MISC CHGS</td>
<td></td>
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7232 BATTERY

TOTAL MISC CHGS SEG. 03 SEGMENT 03 TOTAL

ENVIRONMENT S/CHG

MISC HARDWARE

STATE SALES TAX 7.25

FRESNO CO. TAX .725%

CLOVIS CITY TAX .30%

TAXAMOUNT 771.33

WARRANTY: PARTS, SIX MONTHS; LABOR, 90 DAYS UNLESS OTHERWISE STATED.

ALL REPLACED PARTS ARE HELD 30 DAYS.

TERMS ARE CASH UNLESS CREDIT IS APPROVED. WITH CREDIT APPROVAL, TERMS ARE NET BY

10% OF THE MONTH FOLLOWING PURCHASE. A FINANCE CHARGE OF 1-4% PER MONTH (12% PER ANNUUM) WILL BE CHARGED ON THE NET DUE BALANCE. THE NET DUE BALANCE REPRESENTS ALL CHARGES REMAINING UNPAID ON THE CLOSING DATE OF THE MONTH FOLLOWING INVOICE DATE. IN THE EVENT OF DEFAULT IN THE PAYMENT OF ANY AMOUNT DUE, AND IF THE ACCOUNT IS PLACED IN THE HANDS OF ANY AGENT OR ATTORNEY FOR COLLECTION OR LEGAL ACTION, THE PURCHASER AGREES TO PAY FINANCE CHARGES AND CHARGES EQUAL TO THE COST OF COLLECTION (AS PERMITTED BY LAW GOVERNING THESE TRANSACTIONS). ACCEPTANCE BY THE PURCHASER OF THE PARTS, SERVICE OR EQUIPMENT SCHEDULED ABOVE IS THE PURCHASER'S AGREEMENT TO BE BOUND BY THE CREDIT AND COLLECTION TERMS SET FORTH ABOVE.

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**State Sales Tax:** 7.25%
**Fresno Co. Tax:** 7.25%
**Clovis City Tax:** 3.30%

**Total:** 19.88 T
**Net:** 1.99 T
**Tax:** .62 T

**Amount:** 704.87

*Warranty: Parts, six months; labor, 90 days unless otherwise stated. All replaced parts are held 30 days.*