



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

OCT 08 2013

Mr. Raymond Rodrigez
Occidental of Elk Hills
10800 Stockdale Highway
Bakersfield, CA 93311

**Re: Notice of Preliminary Decision – ATC / Certificate of Conformity
District Facility # S-382
Project # S-1133502**

Dear Mr. Rodrigez:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project consists of Occidental of Elk Hills proposing to install a 755 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

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

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW:SD/al

Enclosures

cc: Mike Tollstrup, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED MINOR MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Occidental of Elk Hills at Occidental's office complex at the Elk Hills Oil Field, within the SE/4 of Section 11, Township 31S, Range 24E, California. The project consists of Occidental of Elk Hills proposing to install a 755 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

The District's analysis of the legal and factual basis for this proposed action, project #S-1133502, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. For additional information, please contact the District at (661) 392-5500. Written comments on the proposed initial permit must be submitted by November, 12, 2013 to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.

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

Occidental of Elk Occidental of Elk Hills

Date: September 23, 2013

Mailing Address: 10800 Stockdale Highway
Bakersfield, CA 93311

Engineer: Steve Davidson

Lead Engineer: Allan Phillips

Contact Person: Raymond Rodriguez

Telephone: (661) 412-5263

Application #: S-382-847-0

Project #: S-1133502

Complete: August 28, 2013

I. Proposal

Occidental of Elk Hills is proposing to install a 755 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

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 2410 Prevention of Significant Deterioration (6/16/11)

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)

Rule 4801 Sulfur Compounds (12/17/92)

CH&SC 41700 Health Risk Assessment

CH&SC 42301.6 School Notice

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

California Environmental Quality Act (CEQA)

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)

California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:

CEQA Guidelines

III. Project Location

The project is located at Occidental's office complex at the Elk Hills Oil Field, within the SE/4 of Section 11, Township 31S, Range 24E.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

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

V. Equipment Listing

S-382-847-0: 755 BHP CUMMINS MODEL QSX15-G9 NR 2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The applicant has proposed to install a Tier 2 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

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

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO_x emissions by over 99% from standard diesel fuel.

VII. General Calculations

A. Assumptions

| | |
|--|--------------------|
| Emergency operating schedule: | 24 hours/day |
| Non-emergency operating schedule: | 50 hours/year |
| Density of diesel fuel: | 7.1 lb/gal |
| 9.96 kg CO ₂ e/gallon-diesel fuel | |
| Fuel Consumption: | 34.7 gal/hr |
| 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 \approx 35%
PM₁₀ fraction of diesel exhaust: 0.96 (CARB, 1988)

B. Emission Factors

| Emission Factors | | |
|------------------|----------------------------------|-----------------------------|
| Pollutant | Emission Factor (g/bhp-hr) | Source |
| NO _x | 4.85 | Engine Manufacturer |
| SO _x | 0.0051 | Mass Balance Equation Below |
| PM ₁₀ | 0.05 | ARB/EPA Certification |
| CO | 0.31 | ARB/EPA Certification |
| VOC | 0.11 | Engine Manufacturer |
| CO _{2e} | 9.96 kg-CO _{2e} /gallon | CARB |

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

C. Calculations

1. Pre-Project Emissions (PE1)

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

2. Post-Project PE (PE2)

The daily and annual PE are calculated as follows:

| Pollutant | Emissions Factor (g/bhp-hr) | Rating (bhp) | Daily Hours of Operation (hrs/day) | Annual Hours of Operation (hrs/yr) | Daily PE2 (lb/day) | Annual PE2 (lb/yr) |
|------------------|-----------------------------|--------------|------------------------------------|------------------------------------|--------------------|--------------------|
| NO _x | 4.85 | 755 | 24 | 50 | 193.7 | 404 |
| SO _x | 0.0051 | 755 | 24 | 50 | 0.2 | 0 |
| PM ₁₀ | 0.05 | 755 | 24 | 50 | 2.0 | 4 |
| CO | 0.31 | 755 | 24 | 50 | 12.4 | 26 |
| VOC | 0.11 | 755 | 24 | 50 | 4.4 | 9 |

CO2e

$(34.7 \text{ gal/hr})(9.96 \text{ kg CO}_2\text{e/gallon})(50 \text{ hr/yr})(\text{lb}/0.4536 \text{ kg})(\text{ton}/2000 \text{ lb}) = 19.0 \text{ ton-CO}_2\text{e/yr}$

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.

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE1 calculations are not necessary.

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.

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 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 source is an existing Major Source for all pollutants and will remain so. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

| PSD Major Source Determination (tons/year) | | | | | | | |
|---|-----|-----|-----|-----|-----|------|----------|
| | NO2 | VOC | SO2 | CO | PM | PM10 | CO2e |
| Estimated Facility PE before Project Increase | XX | XX | XX | XX | XXX | XX | >100,000 |
| PSD Major Source Thresholds | 250 | 250 | 250 | 250 | 250 | 250 | 100,000 |
| PSD Major Source ? (Y/N) | | | | | | | Y |

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

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

7. SB 288 Major Modification

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

Since this facility is a major source for all pollutants, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

| SB 288 Major Modification Thresholds | | | |
|--------------------------------------|-----------------------|---------------------|---|
| Pollutant | Project PE2 (lb/year) | Threshold (lb/year) | SB 288 Major Modification Calculation Required? |
| NO _x | 404 | 50,000 | No |
| SO _x | 0 | 80,000 | No |
| PM ₁₀ | 4 | 30,000 | No |
| VOC | 9 | 50,000 | No |

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

8. Federal Major Modification

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

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

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

The project's combined total emission increases are compared to the Federal Major Modification Thresholds in the following table.

| Federal Major Modification Thresholds for Emission Increases | | | |
|--|-----------------------------------|--------------------|-----------------------------|
| Pollutant | Total Emissions Increases (lb/yr) | Thresholds (lb/yr) | Federal Major Modification? |
| NO _x | 404 | 0 | Yes |
| VOC | 9 | 0 | Yes |
| PM ₁₀ | 4 | 30,000 | No |
| PM _{2.5} | 4 | 20,000 | No |
| SO _x | 0 | 80,000 | No |

Since there is an increase in NO_x and VOC emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

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

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, CH₄, HFCs, PFCs, and SF₆

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

| PSD Significant Emission Increase Determination: Potential to Emit(tons/year) | | | | | | |
|--|------------|------------|-----------|-----------|-------------|-------------|
| | NO2 | SO2 | CO | PM | PM10 | CO2e |
| Total PE from New and Modified Units | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 19.0 |
| PSD Significant Emission Increase Thresholds | 40 | 40 | 100 | 25 | 15 | 75,000 |
| PSD Significant Emission Increase? | No | No | No | No | No | No |

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. The daily emissions from the new engine are compared to the BACT threshold levels in the following table:

| New Emissions Unit BACT Applicability | | | | |
|---------------------------------------|---|---------------------------------|-----------------|-----------------|
| Pollutant | Daily Emissions for unit 874-0 (lb/day) | BACT Threshold (lb/day) | SSPE2 (lb/yr) | BACT Triggered? |
| NO _x | 193.7 | > 2.0 | n/a | Yes |
| SO _x | 0.2 | > 2.0 | n/a | No |
| PM ₁₀ | 2.0 | > 2.0 | n/a | No |
| CO | 12.4 | > 2.0 and SSPE2 ≥ 200,000 lb/yr | ≥ 200,000 lb/yr | Yes |
| VOC | 4.4 | > 2.0 | n/a | yes |

As shown above, BACT will be triggered for NO_x, CO, and VOC emissions from the engine for this project.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 above, this project does not constitute an SB 288 Major Modification for any criteria pollutant. Therefore, BACT for SB 288 Major Modification purpose is not triggered for any pollutant.

As discussed in Sections VII.C.8 above, this project constitutes a Federal Major Modification for NO_x and VOC emissions. Therefore, BACT is triggered for NO_x and VOC for the engine in this project.

2. BACT Guideline

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

3. Top Down BACT Analysis

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

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

NO_x: Latest EPA Tier Certification level for applicable horsepower range
VOC: Latest EPA Tier Certification level for applicable horsepower range
CO: Latest EPA Tier Certification level for applicable horsepower range

B. Offsets

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

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

As demonstrated in Section VII.C.7, this project does not constitute an SB 288; therefore, public noticing for SB 288 Major Modification purposes is not required.

As demonstrated in Section VII.C.8, this project does constitute a Federal Major Modification; therefore, public noticing for Federal Major Modification purposes is required.

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

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

| PE > 100 lb/day Public Notice Thresholds | | | |
|--|-------------------------|------------------------------------|-------------------------------------|
| Pollutant | PE2 (lb/day) | Public Notice Threshold | Public Notice Triggered? |
| NO _x | 193.7 | 100 lb/day | Yes |
| SO _x | 0.2 | 100 lb/day | No |
| PM ₁₀ | 2.0 | 100 lb/day | No |
| CO | 12.4 | 100 lb/day | No |
| VOC | 4.4 | 100 lb/day | No |

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

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

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

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

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

2. Public Notice Action

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

D. Daily Emissions Limits

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

- Emissions from this IC engine shall not exceed any of the following limits: 4.85 g-NO_x/bhp-hr, 0.31 g-CO/bhp-hr, or 0.11 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- Emissions from this IC engine shall not exceed 0.05 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]
- 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 D** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the

proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The following table demonstrates how the proposed engine(s) will comply with the requirements of 40 CFR Part 60 Subpart IIII.

| 40 CFR 60 Subpart IIII Requirements for New Emergency IC Engines Powering Generators (2007 and Later Model Year) | Proposed Method of Compliance with 40 CFR 60 Subpart IIII Requirements |
|--|---|
| Engine(s) must meet the appropriate Subpart IIII emission standards for new engines, based on the model year, size, and number of liters per cylinder. | The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII. |
| Engine(s) must be fired on 500 ppm sulfur content fuel or less, and fuel with a minimum centane index of 40 or a maximum aromatic content of 35 percent by volume. Starting in October 1, 2010, the maximum allowable sulfur fuel content will be lowered to 15 ppm. | The applicant has proposed the use of CARB certified diesel fuel, which meets all of the fuel requirements listed in Subpart IIII. A permit condition enforcing this requirement was included earlier in this evaluation. |
| The operator/owner must install a non-resettable hour meter prior to startup of the engine(s). | The applicant has proposed to install a non-resettable hour meter. The following condition will be included on the permit: <ul style="list-style-type: none"> This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII] |
| Emergency engine(s) may be operated for the purpose of maintenance and testing up to 100 hours per year. There is no limit on emergency use. | The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected. |
| The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions. | The following condition will be included on the permit: <ul style="list-style-type: none"> This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart IIII] |

Rule 4002 National Emission Standards for Hazardous Air Pollutants

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

Emergency engines are subject to this subpart if they are operated at a major or area source of Hazardous Air Pollutant (HAP) emissions. A major source of HAP emissions is a facility that has the potential to emit any single HAP at a rate of 10 tons/year or greater or any combinations of HAPs at a rate of 25 tons/year or greater. An area source of HAPs is a facility is not a major source of HAPs. The

proposed engine(s) are new stationary RICE located at an area source of HAP emissions; therefore, these engines are subject to this Subpart.

40 CFR 63 Subpart ZZZZ requires the following engines to comply with 40 CFR 60 Subpart IIII:

1. New emergency engines located at area sources of HAPs
2. Emergency engines rated less than or equal to 500 bhp and located at major sources of HAPs

The proposed engine(s) will be in compliance with 40 CFR 60 Subpart IIII.

Additionally, 40 CFR 63 Subpart ZZZZ requires engines rated greater 500 bhp and located at major sources of HAPs to meet the notification requirements of §63.6645(h); however, that section only applies if an initial performance test is required. Since an initial performance test is not required for emergency engines, the notification requirement is not applicable.

The proposed engines are expected to be in compliance with 40 CFR 63 Subpart ZZZZ.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC 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 Results | | | | |
|-------------|--------------------|----------------------|-------------------|------------------|
| Unit | Acute Hazard Index | Chronic Hazard Index | Cancer Risk | T-BACT Required? |
| S-382-847-0 | N/A | N/A | 0.02 in a million | No |

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

- The PM10 emissions rate shall not exceed 0.05 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
- The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per year. [District Rules 2201, and 4702 and 17 CCR 93115] N

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 PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

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

The new engine has a PM₁₀ emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

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

Rule 4701 Internal Combustion Engines – Phase 1

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

The proposed engine(s) are also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent or more stringent than District Rule 4701 requirements, 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 engine will comply with the requirements of District Rule 4702.

| District Rule 4702 Requirements Emergency Standby IC Engines | Proposed Method of Compliance with District Rule 4702 Requirements |
|---|---|
| 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. | The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected. |
| Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract. | The following conditions will be included on the permit: <ul style="list-style-type: none"> • {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 engine(s) 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 permit: <ul style="list-style-type: none"> • {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as |

| | |
|---|--|
| | <p>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]</p> |
| <p>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.</p> | <p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> • {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] • The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115] • {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115] |

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

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

n = moles SO₂

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

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

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

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

- 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]

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 engine(s) will comply with the requirements of Title 17 CCR Section 93115.

| Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators | Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements |
|---|---|
| Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel. | The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation. |
| The engine(s) must emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr or must meet the diesel PM standard, as specified in the Off-road compression ignition standards for off-road engines with the same maximum rated power (Title 13 CCR, Section 2423). | The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr. |
| The engine may not be operated more than 50 hours per year for maintenance and testing purposes. | The following condition will be included on the permit: <ul style="list-style-type: none"> • 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, 17 CCR 93115 and 40 CFR Part 60 Subpart III] |
| New stationary emergency standby diesel-fueled CI engines (> 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). | The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range. |
| Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM | The District has verified that this engine is not located within 500' of a school. |
| 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. | Permit conditions enforcing these requirements were shown earlier in the evaluation. |

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

Pending a successful NSR Public Noticing period and EPA COC review, issue Authority to Construct S-382-847-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix A.

X. Billing Information

| Billing Schedule | | | |
|-------------------------|---------------------|------------------------|-------------------|
| Permit Number | Fee Schedule | Fee Description | Fee Amount |
| S-382-847-0 | 3020-10-D | 755 bhp IC engine | \$479.00 |

Appendixes

- A. Draft ATC and Emissions Profile
- B. BACT Guideline and BACT Analysis
- C. Emissions Data Sheet
- D. HRA Summary and AAQA
- E. QNEC Calculations
- F. Compliance Certification Form

Appendix A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-382-847-0

LEGAL OWNER OR OPERATOR: OCCIDENTAL OF ELK HILLS INC
MAILING ADDRESS: ATTN: DENNIS CHAMPION
PO BOX 1001
TUPMAN, CA 93276

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: SE 11 TOWNSHIP: 31S RANGE: 24E

EQUIPMENT DESCRIPTION:

755 BHP CUMMINS MODEL QSX15-G9 NR 2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE
POWERING AN ELECTRICAL GENERATOR

CONDITIONS

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

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services
S-382-847-0 : Sep 23 2013 3:52PM - DAVIDSDS : Joint Inspection NOT Required

7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart III] Federally Enforceable Through Title V Permit
8. 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, 40 CFR Part 60 Subpart III] Federally Enforceable Through Title V Permit
9. Emissions from this IC engine shall not exceed any of the following limits: 4.85 g-NOx/bhp-hr, 0.31 g-CO/bhp-hr, or 0.11 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III] Federally Enforceable Through Title V Permit
10. Emissions from this IC engine shall not exceed 0.05 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
11. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart III] Federally Enforceable Through Title V Permit
12. 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] Federally Enforceable Through Title V Permit
13. 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] Federally Enforceable Through Title V Permit
14. 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] Federally Enforceable Through Title V Permit
15. 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 4102, 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart III] Federally Enforceable Through Title V Permit
16. 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] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
18. 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] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-7009-1-0

EXPIRATION DATE: 03/31/2017

EQUIPMENT DESCRIPTION:

COMMERCIAL CHARBROILER: 0.096 MMBTU/HR NIECO MODEL 1424G NATURAL GAS-FIRED CHAIN-DRIVEN CHARBROILER SERVED BY ENGLEHARD MODEL CHARCAT 910 CATALYTIC OXIDIZER

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No visible emissions shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 4101]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The catalytic oxidizer shall be maintained in good operating condition, in accordance with manufacturer's specifications. [District Rule 4692]
5. The catalytic oxidizer shall be cleaned, with materials that do not damage the catalytic coating, at least once per month, when the charbroiler is not operating. Such cleaning shall be performed in accordance with instructions in a maintenance manual, bulletin, or memo prepared by the manufacturer or distributor of the catalyst or catalytic oxidizer. A copy of the cleaning instructions must be maintained on site. [District Rule 2201]
6. Emissions from this unit shall not exceed either of the following limits: 0.32 lb-VOC per 1,000 lb-meat cooked or 1.26 lb-PM10 per 1,000 lb-meat cooked. [District Rule 2201]
7. Emissions from this unit shall not exceed any of the following limits: 0.094 lb-NOx/MMBtu, 0.021 lb-CO/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
8. The maximum amount of meat cooked shall not exceed 1,000 lbs/day. [District Rule 2201]
9. Daily records shall be maintained of the amount of meat cooked. Monthly records shall be maintained of the amount of meat purchased. Also, records shall be maintained of the date of installation or changing of any catalyst, and date and time of cleaning or replacement of, and maintenance performed on, the catalyst. These records shall be retained on the restaurant premises for a period of at least five years and made available to the District upon request. [District Rules 2201 and 4692]

These terms and conditions are part of the Facility-wide Permit to Operate.

Appendix B
BACT Guideline and BACT Analysis

San Joaquin Valley Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1
Last Update: 7/10/2009
Emergency Diesel IC Engine

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

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

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

BACT Guideline 3.1.1 (July 10, 2009) applies to emergency diesel IC engines. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. BACT Analysis for NO_x, VOC, and CO Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

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

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

- 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
- 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
- Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not directly apply because the proposed emergency engine(s) do not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 and 40 CFR Part 60 Subpart IIII apply directly to the proposed emergency engine(s).

Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below). Please note that these levels are at least as stringent or more stringent than the emission levels in 40 CFR Subpart IIII.

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

Additionally, 40 CFR Subpart IIII establishes emission standards for emergency diesel IC engines. These emission standards are the same as those specified in the CARB ATCM, except for engines rated greater than or equal to 50 and less than 75 hp. For such IC engines, the CARB ATCM is more stringent.

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

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

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

The proposed engine(s) is/are rated at 755 hp. Therefore, the applicable control technology option is EPA Tier 2 certification.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for NO_x, VOC, and CO will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

Appendix C
Emissions Data Sheet



**Power
Generation**

**2013 EPA Tier 2 Exhaust Emission
Compliance Statement
500DFEK
Stationary Emergency
60 Hz Diesel Generator Set**

Compliance Information:

The engine used in this generator set complies with Tier 2 emissions limit of U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII when tested per ISO8178 D2.

| | |
|---|---------------------|
| Engine Manufacturer: | Cummins Inc |
| EPA Certificate Number: | DCEXL015.AAJ-014 |
| Effective Date: | 05/01/2012 |
| Date Issued: | 05/01/2012 |
| EPA Engine Family (Cummins Emissions Family): | DCEXL015.AAJ (J103) |

Engine Information:

| | | | |
|--------------------------|-------------------------------------|-------------------------|---------------------------|
| Model: | QSX / QSX15 / QSX15-G / QSX15-G9 | Bore: | 5.39 in. (137 mm) |
| Engine Nameplate HP: | 755 | Stroke: | 6.65 in. (169 mm) |
| Type: | 4 Cycle, In-line, 6 Cylinder Diesel | Displacement: | 912 cu. in. (15 liters) |
| Aspiration: | Turbocharged and CAC | Compression Ratio: | 17.0:1 |
| Emission Control Device: | Electronic Control | Exhaust Stack Diameter: | 8 in. |

Diesel Fuel Emission Limits

D2 Cycle Exhaust Emissions

| | Grams per BHP-hr | | | Grams per kWm-hr | | |
|--|-------------------|-----------|-----------|-------------------|-----------|-----------|
| | <u>NOx + NMHC</u> | <u>CO</u> | <u>PM</u> | <u>NOx + NMHC</u> | <u>CO</u> | <u>PM</u> |
| Test Results - Diesel Fuel (300-4000 ppm Sulfur) | 4.3 | 0.4 | 0.10 | 5.7 | 0.6 | 0.13 |
| EPA Emissions Limit | 4.8 | 2.6 | 0.15 | 6.4 | 3.5 | 0.20 |
| Test Results - CARB Diesel Fuel (<15 ppm Sulfur) | 3.9 | 0.4 | 0.08 | 5.2 | 0.6 | 0.11 |
| CARB Emissions Limit | 4.8 | 2.6 | 0.15 | 6.4 | 3.5 | 0.20 |

The CARB emission values are based on CARB approved calculations for converting EPA (500 ppm) fuel to CARB (15 ppm) fuel.

Test Methods: EPA/CARB Nonroad emissions recorded per 40CFR89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant Speed Engines (ref. ISO8178-4, D2)

Diesel Fuel Specifications: Cetane Number: 40-48. Reference: ASTM D975 No. 2-D.

Reference Conditions: Air Inlet Temperature: 25°C (77°F), Fuel Inlet Temperature: 40°C (104°F), Barometric Pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H2O/lb) of dry air; required for NOx correction, Restrictions: Intake Restriction set to a maximum allowable limit for clean filter; Exhaust Back Pressure set to a maximum allowable limit.

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results.

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.



**Power
Generation**

Exhaust Emission Data Sheet 500DFEK

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

Engine Information:

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

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

All values are Grams per HP-Hour

TEST METHODS AND CONDITIONS

Test Methods:

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

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

Reference Conditions:

25 °C (77 °F) Air Inlet Temperature, 40 °C (104 °F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H₂O/lb) of dry air Humidity (required for NOx correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit.

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

Data Subject to Change Without Notice.

Appendix D
HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Steve Davidson, AQE - Permit Services
From: Kou Thao, AQS - Permit Services
Date: September 19, 2013
Facility Name: Occidental Of Elk Hills Inc.
Location: Light Oil Western Stationary Source, Kern County, CA
Application #(s): S-382-847
Project #: S-1133502

A. RMR SUMMARY

| RMR Summary | | | |
|--|--------------------------------------|-------------------|--------------------|
| Categories | Diesel-Fired IC Engine (Unit 847) | Project Totals | Facility Totals |
| Prioritization Score | N/A ¹ | N/A ¹ | >1.0 |
| Acute Hazard Index | N/A ² | N/A ² | 7.21E-04 |
| Chronic Hazard Index | N/A ² | N/A ² | 2.43E-05 |
| Maximum Individual Cancer Risk (10 ⁻⁶) | 0.02 | 0.02 | 9.71E-08 |
| T-BACT Required? | No | | |
| Special Permit Conditions? | Yes | | |

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

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

Unit # 847-0.

1. The PM10 emissions rate shall not exceed 0.05 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain-cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and

required regulatory purposes shall not exceed 50 hours per year. [District Rules 2201, and 4702 and 17 CCR 93115] N

B. RMR REPORT

I. Project Description

Technical Services received a request on September 19, 2013, to perform a Risk Management Review for a proposed installation of a 755 bhp diesel-fired emergency IC engine powering an electrical generator.

II. Analysis

Technical Services performed a screening level health risk assessment using the District developed DICE database.

The following parameters were used for the review:

| Analysis Parameters Unit 847 | | | |
|---------------------------------|-------|--------------------------|----------|
| Source Type | Point | Location Type | Rural |
| BHP | 755 | PM ₁₀ g/hp-hr | 0.05 |
| Closest Receptor (m) | 1010 | Quad | Quad 2 |
| Max Hours per Year | 50 | Type of Receptor | Resident |

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀; as well as a RMR. The emission rates used for criteria pollutant modeling were 0.50 lb/hr CO, 7.72lb/hr NO_x, 0.008 lb/hr SO_x, and 0.08 lb/hr PM₁₀. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

| Diesel ICE | 1 Hour | 3 Hours | 8 Hours. | 24 Hours | Annual |
|-------------------|--------|---------|----------|----------|--------|
| CO | NA | X | NA | X | X |
| NO _x | NA | X | X | X | Pass |
| SO _x | NA | NA | X | NA | Pass |
| PM ₁₀ | X | X | X | NA | Pass |
| PM _{2.5} | X | X | X | NA | Pass |

*Results were taken from the attached PSD spreadsheet.

¹The 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.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The cancer risk associated with the operation of the proposed diesel IC engine 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 this proposed unit .

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

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.

Appendix E

QNEC Calculations

Quarterly Net Emissions Change (QNEC)

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

$QNEC = PE2 - PE1$, where:

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

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

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

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

| QNEC | | |
|------------------|-------------------|------------------------|
| Pollutant | PE2 Total (lb/yr) | Quarterly PE2 (lb/qtr) |
| NO _x | 404 | 101 |
| SO _x | 0 | 0 |
| PM ₁₀ | 4 | 1 |
| CO | 26 | 7 |
| VOC | 9 | 2 |

Appendix F
Compliance Certification Form

**San Joaquin Valley
Unified Air Pollution Control District**

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE
 MINOR PERMIT MODIFICATION AMENDMENT

| | |
|--|----------------------|
| COMPANY NAME: Occidental of Elk Hills, Inc. | FACILITY ID: S - 382 |
| 1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility | |
| 2. Owner's Name: Occidental of Elk Hills, Inc. | |
| 3. Agent to the Owner: Occidental of Elk Hills, Inc. (OEHI) | |

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Armando Gonzalez
Signature of Responsible Official

08-22-13
Date

Armando Gonzalez
Name of Responsible Official (please print)
Health, Safety and Environmental Manager
Title of Responsible Official (please print)