



APR 30 2010

Dennis Champion
Occidental of Elk Hills, Inc.
10800 Stockdale Highway
Bakersfield, CA 93311

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1101447

Dear Mr. Champion:

Enclosed for your review and comment is the District's analysis of Occidental of Elk Hills, Inc.'s application for an Authority to Construct for a 762 BHP diesel fired emergency engine powering an emergency generator, at the consolidated control facility located at Section 2, Township 31S, Range 23E.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Dan Klevann of Permit Services at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

DW: DK/cm

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
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APR 30 2010

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1101447

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Occidental of Elk Hills, Inc.'s application for an Authority to Construct for a 762 BHP diesel fired emergency engine powering an emergency generator, at the consolidated control facility located at Section 2, Township 31S, Range 23E.

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Bakersfield Californian

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Occidental of Elk Hills, Inc. for a 762 BHP diesel fired emergency engine powering an emergency generator, at the consolidated control facility located at Section 2, Township 31S, Range 23E.

The analysis of the regulatory basis for this proposed action, Project #S-1101447, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED 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**

Facility Name: Occidental of Elk Hills, Inc. (OEHI)	Date: April 13, 2010
Mailing Address: 10800 Stockdale Highway Bakersfield, CA 93311	Engineer/ Specialist: Dan Klevann
Contact Person: Dennis Champion	Lead Engineer: Rich Karrs
Telephone: 661-412-5214	<i>RWK 4/15/10</i>
Application #: S-2234-206-0	
Project #: S-1101447	
Complete: March 29, 2010	

I. Proposal

OEHI is proposing to install a 762 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

OEHI received their Title V Permit on April 30, 1999. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). But the facility has not requested that this project be processed in that manner; therefore, OEHI will be required to submit a Title V minor modification application prior to operating under the revised provisions of the ATC issued with this project.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)
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 – Phase 2 (1/18/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment

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 equipment will be located at the OEHI consolidated control facility, within Section 2, Township 31S, Range 23E.

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-2234-206-0: 762 BHP CATERPILLAR MODEL C15 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
 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%
 PM₁₀ fraction of diesel exhaust: 0.96 (CARB, 1988)

B. Emission Factors

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	4.5	Engine Manufacturer
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.15	ARB/EPA Certification
CO	2.6	ARB/EPA Certification
VOC	0.3	Engine Manufacturer

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

C. Calculations

1. Pre-Project Emissions (PE1)

Since 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	4.50	762	24	50	181.3	378
SO _x	0.0051	762	24	50	0.2	0
PM ₁₀	0.15	762	24	50	6.0	13
CO	2.60	762	24	50	104.7	218
VOC	0.30	762	24	50	12.1	25

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 criteria pollutant emissions; 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 VOC emissions; therefore, SSPE2 calculations are not necessary.

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 source is an existing Major Source for all criteria pollutant emissions and will remain a Major Source for all criteria pollutants.

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 3.22

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

7. Major Modification

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, the facility is an existing Major Source for all criteria pollutants; however, the project by itself would need to be a significant increase in order to trigger a Major Modification. The emissions unit within this project does not have a total potential to emit which is greater than Major Modification thresholds (see table below). Therefore, the project cannot be a significant increase and the project does not constitute a Major Modification.

Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO _x	377	50,000	No
SO _x	0	80,000	No
PM ₁₀	13	30,000	No
VOC	25	50,000	No

8. Federal Major Modification

As shown in the previous section, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

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 a Major Modification.

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

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

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

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -206-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	181.3	> 2.0	n/a	Yes
SO _x	0.2	> 2.0	n/a	No
PM ₁₀	6.0	> 2.0	n/a	Yes
CO	104.7	> 2.0 and SSPE2 ≥ 200,000 lb/yr	0	Yes
VOC	12.1	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x, PM10, CO, and VOC emissions from the engine for 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
- PM10: Latest EPA Tier Certification level for applicable horsepower range or 0.15 g/hp-hr

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. Any new Major Source, which is a new facility that is also a Major Source

As shown in Section VII.C.6, this facility is not a new Major Source.

- b. Major Modifications

As shown in Section VII.C.7, this project is not a Major Modification.

- c. Any new emissions unit with a Potential to Emit greater than 100 lb/day for any one pollutant

As calculated in Section VII.C.2, daily emissions for NO_x and CO are greater than 100 lb/day.

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

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

- e. Any project with an Stationary Source project Increase in Potential (SSIPE) Emissions 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(s) for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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: 4.5 g-NO_x/bhp-hr, 2.6 g-CO/bhp-hr, or 0.3 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart III]
- Emissions from this IC engine shall not exceed 0.15 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 III]
- 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 III]

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)

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis.

The proposed location is in an attainment area for NO_x, CO, PM₁₀, and SO_x. As shown by the AAQA summary sheet in Appendix D, the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, PM₁₀, or SO_x.

Therefore, this project is not expected to cause or make worse a violation of an air quality standard.

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 pursuant to Section 3.20 of this rule:

In accordance with Rule 2520, 3.20, 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 not applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with a minor modification, 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/minor modification application.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR 60 Subpart III – 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-2234-206-0	N/A	N/A	0.016 in a million	No

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

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]

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

Pursuant to Section 7.5.2.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to diesel-fired emergency standby or emergency IC engines.

Therefore, the proposed emergency internal combustion engine(s) will comply with the requirements of District Rule 4702 and no further discussion is required.

Rule 4702 Internal Combustion Engines – Phase 2

The following table demonstrates how the proposed engine(s) 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 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]
Records of the total hours of operation of	The following conditions will be included on the

<p>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>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

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

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

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

- 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.

<p>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</p>	<p>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</p>
<p>Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.</p>	<p>The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.</p>
<p>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).</p>	<p>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.</p>
<p>The engine may not be operated more than 50 hours per year for maintenance and testing purposes.</p>	<p>The following condition will be included on the permit:</p> <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 IIII]
<p>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).</p>	<p>The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range.</p>

<p>Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM</p>	<p>The District has verified that this engine is not located within 500' of a school.</p>
<p>An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.</p>	<p>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.

The basic purposes of CEQA are to:

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

Consistent with California Environmental Quality Act (CEQA) and CEQA Guidelines requirements, the San Joaquin Valley Air Pollution Control District (District) has adopted procedures and guidelines for implementing CEQA. The District's Environmental Review Guidelines (ERG) establishes procedures for avoiding unnecessary delay during the District's permitting process while ensuring that significant environmental

impacts are thoroughly and consistently addressed. The ERG includes policies and procedures to be followed when processing permits for projects that are exempt under CEQA.

The State Legislature granted a number of exemptions from CEQA, including projects that require only ministerial approval. Based upon analysis of its own laws and consideration of CEQA provisions, the District has identified a limited number of District permitting activities considered to be ministerial approvals. As set forth in §4.2.1 of the ERG, projects permitted consistent with the District's *Guidelines for Expedited Application Review* (GEAR) are standard application reviews in which little or no discretion is used in issuing Authority to Construct (ATC) documents.

For the proposed project, the District performed an Engineering Evaluation (this document) and determined that the project qualifies for processing under the procedures set forth in the District's Permit Services Procedures Manual in the *Guidelines for Expedited Application Review* (GEAR). Thus, as discussed above, this issuance of such ATC(s) is a ministerial approval for the District and is not subject to CEQA provisions.

On December 17, 2009, the District's Governing Board adopted the first comprehensive regional policy and guidance on addressing and mitigating GHG emission impacts caused by industrial, commercial, and residential development in the San Joaquin Valley. The adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* applies to projects for which the District has discretionary approval authority over the project and serves as the lead agency for CEQA purposes. The policy relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. However, consistent with the District's objective to achieve the GHG emission reduction targets established pursuant to AB 32, BPS will be incorporated into the District's GEAR application review process. In the interim, projects meeting the existing GEAR requirements will continue to be processed as ministerial approvals.

IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct S-2234-206-0 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-2234-206-0	3020-10-D	762 bhp IC engine	\$479.00

Appendixes

- A. Draft ATC
- B. BACT Guideline and BACT Analysis
- C. Emissions Data
- D. HRA Summary and AAQA
- E. QNEC Calculations

Appendix A

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-2234-206-0

LEGAL OWNER OR OPERATOR: OCCIDENTAL OF ELK HILLS INC
MAILING ADDRESS: 10800 STOCKDALE HWY
BAKERSFIELD, CA 93311

LOCATION: GAS PLANT
SECTION SE-35, T-30S, R-23E
TUPMAN, CA

SECTION: 2 TOWNSHIP: 31S RANGE: 23E

EQUIPMENT DESCRIPTION:

762 BHP CATERPILLAR MODEL C15 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE
POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
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. {4257} 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]
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, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]
7. Emissions from this IC engine shall not exceed any of the following limits: 4.5 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.3 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
8. Emissions from this IC engine shall not exceed 0.15 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]

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-2234-206-0; Apr 13 2010 4:27PM - KLEVA/AND : Joint Inspection NOT Required

9. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart IIII]
10. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
12. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
13. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]
14. {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, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

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)

1. BACT Analysis for NO_x, CO, PM10, and VOC Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.1 identifies achieved in practice BACT for emissions from emergency diesel IC engines as follows:

Pollutant	Achieved in Practice
CO, NO _x , VOC	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)

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

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

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

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option listed for each pollutant. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for CO, NO_x, VOC emissions from this emergency standby diesel IC engine is the latest EPA Tier Certification level for the applicable horsepower range. The applicant has proposed to install a Tier 2 certified 762 bhp emergency standby diesel IC engine, which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix.

BACT for PM10 is 0.15 g/hp-hr, or the latest EPA Tier Certification level for the applicable horsepower range, whichever is more stringent. The applicant is proposing an engine that meets this requirement.

Title 13 CCR 2423

(December 2005)

Tier Certification & Exhaust Emission Standards

(grams per brake horsepower-hour)

Power Rating (hp)	Tier	Model Year	NO _x	HC	NMHC + NO _x	CO	PM
50 ≤ hp < 75	1	1998 – 2003	6.9	-	-	-	-
	2	2004 - 2007	-		5.6	3.7	0.3
	3	2008 - 2011			3.5		
	4*	2008 – 2012 (Interim)			3.5		
75 ≤ hp < 100	1	1998 – 2003	6.9	-	-	-	-
	2	2004 – 2007	-		5.6	3.7	0.3
	3	2008 – 2011			3.5		
100 ≤ hp < 175	1	1997 – 2002	6.9	-	-	-	-
	2	2003 – 2006	-		4.9	3.7	0.22
	3	2007 – 2011			3.0		
175 ≤ hp < 300	1	1996 – 2002	6.9	1.0	-	8.5	0.4
	2	2003 – 2005	-	-	4.9	2.6	0.15
	3	2006 - 2010			3.0		
300 ≤ hp < 600	1	1996 – 2000	6.9	1.0	-	8.5	0.4
	2	2001 – 2005	-	-	4.8	2.6	0.15
	3	2006 – 2010			3.0		
600 ≤ hp ≤ 750	1	1996 – 2001	6.9	1.0	-	8.5	0.4
	2	2002 – 2005	-	-	4.8	2.6	0.15
	3	2006 – 2010			3.0		
> 750	1	2000 – 2005	6.9	1.0	-	8.5	0.4
	2	2006 – 2010	-	-	4.8	2.6	0.15

* Manufacturers may optionally certify engine families to the interim Tier 4 for this power category through 2012.

Appendix C

Emissions Data Sheet

 AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER U-R-001-0389 New Off-Road Compression-Ignition Engines
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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 December 15, 1998 Settlement Agreement between the Air Resources Board and the manufacturer, and any modifications thereof to the Settlement Agreement;

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.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2007	7CPXL15.2ESL	15.2	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module			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):

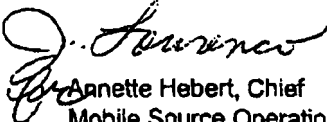
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
KW > 580	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		CERT	--	--	5.3	1.8	0.12	--	--	--

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 11th day of October 2006.


 Annette Hebert, Chief
 Mobile Source Operations Division

STANDBY 500 kW 625 kVA

60 Hz 1800 rpm 480 Volts



TECHNICAL DATA

Open Generator Set - - 1800 rpm/60 Hz/480 Volts	DM8155	
Tier 2 and Low Emissions		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	625 kVA	
Genset Power rating with fan	500 kW	
Fuel Consumption		
100% load with fan	138.5 L/hr	36.6 Gal/hr
75% load with fan	106.1 L/hr	28.0 Gal/hr
50% load with fan	88.1 L/hr	23.3 Gal/hr
Cooling System¹		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	822 m ³ /min	29029 cfm
Engine Coolant capacity with radiator/exp. tank	57.8 L	15.3 gal
Engine coolant capacity	20.8 L	5.5 gal
Radiator coolant capacity	37.0 L	9.8 gal
Inlet Air		
Combustion air inlet flow rate	39.5 m ³ /min	1394.9 cfm
Exhaust System		
Exhaust stack gas temperature	505.6 °C	942.1 °F
Exhaust gas flow rate	108.8 m ³ /min	3842.2 cfm
Exhaust flange size (internal diameter)	152.4 mm	6.0 in
Exhaust system backpressure (maximum allowable)	6.8 kPa	27.3 in. water
Heat Rejection		
Heat rejection to coolant (total)	189 kW	10748 Btu/min
Heat rejection to exhaust (total)	486 kW	27639 Btu/min
Heat rejection to atmosphere from engine	119 kW	6768 Btu/min
Heat rejection to atmosphere from generator	29.1 kW	1654.9 Btu/min
Alternator²		
Motor starting capability @ 30% voltage dip	1428 skVA	
Frame	LC6114F	
Temperature Rise	130 °C	234 °F
Emissions (Nominal)³		
NOx g/hp-hr	5.74 g/hp-hr	
CO g/hp-hr	.4 g/hp-hr	
HC g/hp-hr	.01 g/hp-hr	
PM g/hp-hr	.018 g/hp-hr	

¹ For ambient and altitude capabilities consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.

² Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32.

³ Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

Appendix D
HRA Summary and AAQA

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

**RECEIVED
APR 12 2010
SJVAPCD
Southern Region**

To: Dan Klevann – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: April 7, 2010
 Facility Name: Occidental of Elk Hills, Inc.
 Location: Section 2, T31S, R23E, Oilfield Location
 Application #(s): S-2234-206-0
 Project #: S-1101447

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 206-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	>1	>1
Acute Hazard Index	N/A ²	N/A	0.12
Chronic Hazard Index	N/A ²	N/A	0.04
Maximum Individual Cancer Risk	1.61E-08	1.61E-08	2.48E-06
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 prioritization scores 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 it has been determined to be insignificant for these types of units.

Proposed Permit Conditions

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

Unit #206-0

1. Modified {1901} The PM10 emissions rate shall not exceed 0.15 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
2. {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] N
3. Modified {1344} 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 NSR Rule and District Rule 4701] N

B. RMR REPORT

I. Project Description

Technical Services received a request on April 5, 2010, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for a 762 bhp emergency diesel IC engine powering a generator.

II. Analysis

Technical Services performed a screening level health risk assessment using the District's Diesel Exhaust Risk Screening spreadsheet.

The following parameters were used for the review:

Analysis Parameters						
Unit #	bhp-hr	PM ₁₀ g/hp-hr	Receptor (m)	Quad	Hours/Year	Load%
206-0	762	0.15	8687	2	50	100
Location Type			Rural	Receptor Type		Residence & Business

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, and PM₁₀; as well as the RMR. Emission rates used for criteria pollutant modeling were 4.36 lb/hr CO, 7.55 lb/hr NO_x, 0.008 lb/hr SO_x, and 0.25 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*
Values are in µg/m³

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass	Pass

*Results were taken from the attached PSD spreadsheets.

¹The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

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

The cancer risk associated with the operation of the proposed emergency diesel IC engine is **1.61E-08**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the engine is approved **without** Toxic Best Available Control Technology (T-BACT).

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 unit.

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

✓ **Ester Davila**

From: Dan Klevann
Sent: Monday, April 05, 2010 10:56 AM
To: Ester Davila
Subject: HRA and AAQA Request S-1101447.doc
Attachments: 2890_001.pdf, HRA Request 1101447.doc

Ester,

Attached is an HRA and AAQA request for a diesel engine powered emergency generator set. The supplemental application is also attached, If there are questions let me know.

Thanks,

Dan

4/7/2010

ENGINEERING HRA REVIEW & MODELING REQUEST

Facility Name: Occidental of Elk Hills, Inc.	Process Engineer: Dan Klevann
Mailing Address: 10800 Stockdale Hwy	Life Of Project: 70 yrs
Location: Sect 2, T31S, R23E oilfield location	Processing Staff:
Contact Name: Dennis Champion	Start Date:
Telephone: 661-412-5214	Completed Date:
Application #: S-2234-206-0	Reviewed By:
Project #: S-1101447	Date:

FAX OR MAIL TO TECHNICAL SERVICES SUPERVISOR

HRA Information Checklist	Yes	No
Is all of the following information provided (as applicable)? <input checked="" type="checkbox"/> Receptor distances <input checked="" type="checkbox"/> Emission/Usage Rates <input checked="" type="checkbox"/> Stack velocity (hour/annual) <input checked="" type="checkbox"/> Stack height <input checked="" type="checkbox"/> Hours of Operation <input checked="" type="checkbox"/> Stack temperature <input type="checkbox"/> MSDS <input type="checkbox"/> Other (for area sources)	<input checked="" type="checkbox"/>	<input type="checkbox"/> Incomplete (Otherwise, explain under Comments).
Supplemental Application Form attached (as applicable)? Include Screening HRA Request (page 2) either way.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is it obvious that notification is required (NSR, COC, or school)? <input checked="" type="checkbox"/> NSR (Public Notice): Distances to the fence line in all four directions are required <input type="checkbox"/> COC (EPA Notice) <input type="checkbox"/> School Notice	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the applicant requested reimbursable overtime processing?	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> • Get approval from your supervisor. • Send HRA request to Tech Services before deeming complete. 		
Supervisor's signature for expedited processing:		
Comments and References: new diesel engine generator set. emissions over 100 lb/day so a AAQA is required. from engine to property line: N-22,338 ft <u>6808.62 meters</u> E-44,352 ft <u>13518.49 meters</u> S-9,504 ft <u>2896.82 meters</u> W-10,966 ft <u>3342.44 meters</u>		

SCREENING HRA REQUEST

I. Project Description:

762 bhp emergency diesel engine powering a generator.

II Receptor Location(s):

Receptor Description (Units)	Distance From Source (Units)
Residence	28,500 ft
Business	28,500 ft

} 8687 meters

III. Process Rate Or Substances To Be Modeled:

Process Description	Process Rates (Hourly & Yearly)		Units
diesel	36.6 gal/hr	1830 gal/yr	

IV. Project Location (Select One): Urban (1) or Rural (2)
2. Rural - area of sparse population

V. Point Sources:

Stack Parameters:

Stack Height (Units)	Inside Diameter (Units)	Gas Exit Velocity (Units)	Gas Exit Temperature (Units)
12 ft	6 inches	3842 acfm	942 F

VI: Area Sources¹:

Area Parameters:

Release Height ² (Units)	Length Of Side (Units)

1. An area source is defined as in an area with four equal sides.
2. Release height is defined as the physical height of the source. For example, if a sump has a three meter brim surrounding it. The physical height of the sump is three meters. Height is measured from the ground to the top of the source.

**San Joaquin Valley Air Pollution Control District
Supplemental Application Form**

Emergency/Low-Use IC Engines for Non-Agricultural Operations

Please complete one form for each engine.

This form must be accompanied by a completed Application for Authority to Construct and Permit to Operate form

PERMIT TO BE ISSUED TO: Occidental of Elk Hills (OEHI)
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: Gas Proc. Stationary Source S-2234, Sec. 2 T31S/R23E, MDB&M (OEHI Consolidated Control Facility)

EQUIPMENT DESCRIPTION

Engine Details	Engine Manufacturer: Caterpillar		Number of Cylinders: 6
	Engine Model: C15		Engine Year of Manufacture: 2007
	Engine Serial Number:		Engine Tier Rating: Tier II
	Engine Certification Family Number: 7CPXL15.2ESL		
	Engine's Type of Combustion: <input type="checkbox"/> Rich-Burn <input type="checkbox"/> Lean-Burn <input checked="" type="checkbox"/> 4-Stroke <input type="checkbox"/> 2-Stroke		
	Engine Manufacturer's Maximum Rated Power Output (per the data plate): _____ bhp		
Engine's Rated Power Output for the Process the Engine Serves: 762 _____ bhp			
Process Data	Process the Engine Serves: Emergency Standby Generator		
	Electrical Power Generation Only	Generator Manufacturer: Caterpillar	Model: LC6114F
		Power Output: 500 _____ kW	
Will this equipment be used in an electric utility rate reduction program? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Fuel Data	Fuel Type: <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Natural Gas <input type="checkbox"/> LPG/Propane <input type="checkbox"/> Gasoline <input type="checkbox"/> Other: _____		
	For "Other" fuels only: Higher Heating Value: _____ Btu/scf, or _____ Btu/gal, For "Other" fuels only: An Ultimate Fuel Analysis or the combustion F-Factor _____ dscf/MMBtu		
	Sulfur Content: _____ gr/100 scf (gaseous fuel) or 0.05 _____ % by weight (liquid fuel)		
	Fuel Consumption at Maximum Rated Output: 36.6 _____ gal/hr, or _____ scf/hr		
Rule 4702 Type of Use	<input checked="" type="checkbox"/> Emergency Standby - Limited exclusively to power primary mechanical or an electrical generator during periods of unscheduled power outages beyond the control of the operator, and limited from 20 to 100 hrs/yr (depending on the engine's PM ₁₀ emission factor) for maintenance and testing purposes only.		
	<input type="checkbox"/> This engine is specifically used to power a pump for a municipal water supply.		
	<input type="checkbox"/> I request the higher opacity limit of 40% with the corresponding operational limits of 30 minutes per week and 2 hours per month for maintenance and testing. (CH&SC 41701.6)		
	<input type="checkbox"/> I request the lower opacity limit of 20%.		
	<input type="checkbox"/> This engine is specifically used to provide power at a health care facility. (CH&SC 1250)		
<input type="checkbox"/> This engine is subject to Office of Statewide Health Planning and Development (OSHPD) requirements.			
<input type="checkbox"/> Special Case Emergency - Limited exclusively to preserve or protect property, human life, or public health during a disaster or a state emergency (e.g. fire or flood) and limited to 20 to 100 hrs/yr (depending on the engine's PM ₁₀ emission factor) for maintenance and testing purposes only.			
<input type="checkbox"/> This engine is specifically used to power a direct-drive firewater pump.			
<input type="checkbox"/> This firewater pump engine is subject to National Fire Protection Association (NFPA) requirements.			
<input type="checkbox"/> Low Use - Limited to ≤ 200 hrs/yr of operation for <u>ALL</u> purposes combined, including maintenance and testing.			

Hour Meter	Note: All engines are required to have either a nonresettable elapsed time meter or an alternate device, method, or technique, approved by the APCO, for determining elapsed operating time.
	<input checked="" type="checkbox"/> Equipped with a Nonresettable Elapsed Operating Time Meter <input type="checkbox"/> Alternate Method (please provide details): _____

EMISSIONS CONTROL

Emissions Control Equipment (Check all that apply)	<input checked="" type="checkbox"/> Positive Crankcase Ventilation	<input type="checkbox"/> 90% Efficient crankcase emission control device
	<input checked="" type="checkbox"/> Turbocharger	<input checked="" type="checkbox"/> Intercooler/Aftercooler
	<input type="checkbox"/> Automatic Air/Fuel Ratio or O ₂ Controller - Manufacturer: _____	
	<input type="checkbox"/> Non-Selective Catalytic Reduction: Manufacturer: _____ Model: _____	
	Control Efficiencies: NO _x _____ %, SO _x _____ %, PM ₁₀ _____ %, CO _____ %, VOC _____ %	
	<input type="checkbox"/> Particulate Filter - Manufacturer: _____ Model: _____	Control Efficiency: _____ %
	<input type="checkbox"/> Other (please specify): _____	

EMISSIONS DATA

Note: See District BACT and District Rule 4702 requirements for applicability to proposed engine at http://www.valleyair.org/busind/air/bact/chapter3.pdf and http://www.valleyair.org/rules/currentrules/r4702.pdf				
Emissions Data	Pollutant	(g/bhp-hr)	(g/kW-hr)	(ppmvd)
	Nitrogen Oxides (NO _x)	4.5		
	Volatile Organic Compounds (VOC)	0.30		
	NO _x - NMHC	4.8		
	Particulate Matter (PM ₁₀)	0.15		
	Carbon Monoxide	2.6		
	% O ₂ , dry basis, if corrected to other than 15%: _____ %			
Source of Data	<input type="checkbox"/> Manufacturer's Specifications <input type="checkbox"/> Emissions Source Test <input checked="" type="checkbox"/> CARB/EPA Certification <input type="checkbox"/> Other _____ Note: please provide copies of all sources of emissions data.			

HEALTH RISK ASSESSMENT DATA

Operating Hours	Maximum Operating Schedule: _____ hours per day, and _____ hours per year		
Receptor Data	Distance to nearest _____	28500 feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest apartment, house, dormitory, etc.
	Direction to nearest _____	South	Direction from the stack to the receptor, i.e. Northeast or South.
	Distance to nearest Business _____	28500 feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest office building, factory, store, etc.
	Direction to nearest Business _____	South	Direction from the stack to the receptor, i.e. North or Southwest.
Stack Parameters	Release Height	12 feet above grade	
	Stack Diameter	6 inches at point of release	
	Rain Cap	<input checked="" type="checkbox"/> Flapper-type <input type="checkbox"/> Fixed-type <input type="checkbox"/> None <input type="checkbox"/> Other: _____	
	Direction of Flow	<input checked="" type="checkbox"/> Vertically Upward <input type="checkbox"/> Horizontal <input type="checkbox"/> Other: _____ ° from vert. or	
Exhaust Data	Flowrate: 3842 acfm	Temperature: 942 °F	
Transportable	Is this engine transportable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Note: This is used for health risk assessment purposes only.		
Facility Location	<input type="checkbox"/> Urban (area of dense population) <input checked="" type="checkbox"/> Rural (area of sparse population)		

Cheryl Lawler

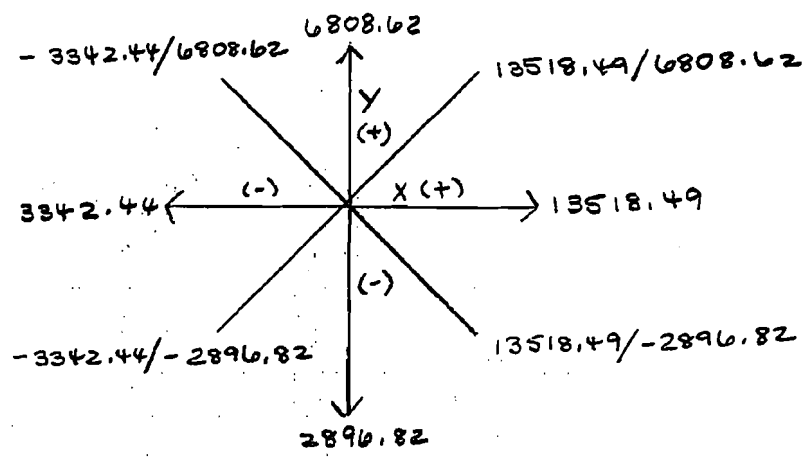
From: Dan Klevann
Sent: Wednesday, April 07, 2010 10:37 AM
To: Cheryl Lawler
Subject: s-2234 S-1101447 emissions

Cheryl,

Here is the emissions for the engine. If you need more let me know.

Dan

Project Emissions (PE2)							
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)	<i>lb/hr</i>
NO _x	4.50	762	24	50	181.3	378	7.55
SO _x	0.0051	762	24	50	0.2	0	0.008
PM ₁₀	0.15	762	24	50	6.0	13	0.25
CO	2.60	762	24	50	104.7	218	4.36
VOC	0.30	762	24	50	12.1	25	0.50



Diesel I.C. Engines (DICE) Screening Risk Tool

Project Information

Region Facility ID: Unit #:
 Project #:
 Date:

Met Station

District:
 Met Site:
 Model Type:
 Year:

Engine Data

BHP:	<input type="text" value="762"/>	Convert to G/BHP
% Load:	<input type="text" value="100"/>	
PM10 EF (g/BHP):	<input type="text" value="0.15"/>	Convert to G/KW
Hours / Yr:	<input type="text" value="50"/>	
Lbs / Yr:	<input type="text" value="12.60"/>	

Receptor Data

Quad:
 Distance(m):
 Miles: Feet:
 Yards: 10th Mi:

NW	N	NE
W	Quad 4	Quad 1
SW	Quad 3	Quad 2
S	S	SE

Cancer Risk

Resident Risk:	Maximum Res. Risk
In a Million: <input type="text" value="1.61E-02"/>	<input type="text" value="0.65"/>
Worker Adjustment Factor %:	<input type="text" value="37.91"/>
Worker Risk:	Maximum Worker Risk
In a Million: <input type="text" value="6.11E-03"/>	<input type="text" value="0.25"/>
<input type="button" value="Calculate Risk"/>	Quad: <input type="text" value="2"/>
<input type="button" value="Print Form"/>	Distance: <input type="text" value="100"/>

AAQA for Occidental of Elk Hills, Inc. (S-2234-206-0)

All Values are in ug/m³

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
ICE	1.549E+01	1.235E-03	1.192E+01	5.405E+00	2.188E-02	1.974E-02	5.627E-03	0.000E+00	1.758E-01	5.663E-05
Background	1.224E+02	3.252E+01	4.078E+03	2.563E+03	1.598E+02	1.332E+02	7.193E+01	2.664E+01	2.670E+02	8.300E+01
Facility Totals	1.379E+02	3.252E+01	4.089E+03	2.568E+03	1.599E+02	1.332E+02	7.194E+01	2.664E+01	2.672E+02	8.300E+01
AAQS	338	56	23000	10000	655	1300	105	80	50	30

Pass Pass Pass Pass Pass Pass Pass Pass ~~Fail~~ ~~Fail~~
 Both Pass EPA's Significance Level

EPA's Significance Level (ug/m³)

NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

AAQA Emission (g/sec)

<i>Device</i>	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
ICE	9.51E-01	5.44E-03	5.49E-01	5.49E-01	1.01E-03	1.01E-03	1.01E-03	0.00E+00	3.15E-02	1.87E-04

Project Summary

REGION S

FACID 2234

PROJECT 1101447

OCCIDENTAL OF ELK HILLS INC

Unit ID	MOD #	EQUIPMENT	Prioritization Scores			Risk Scores		
			CANCER	ACUTE	CHRONIC	CANCER	ACUTE	CHRONIC
206	0	762 BHP EMERGENCY DIESEL ICE	0.000	0.000	0.000	1.61E-08	0.00E+00	0.00E+00
Project Totals			0.00E+00	0.00E+00	0.00E+00	1.61E-08	0.00E+00	0.00E+00
Facility Totals			0.00E+00	0.00E+00	0.00E+00	1.61E-08	0.00E+00	0.00E+00

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	181.3	45.3
SO _x	0.2	0.1
PM ₁₀	6.0	1.5
CO	104.7	26.2
VOC	12.1	3.0