



MAR 15 2010

Kenneth Overton
City of Los Banos
1015 F Street
Los Banos, CA 93635

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1094234

Dear Mr. Overton:

Enclosed for your review and comment is the District's analysis of City of Los Banos's application for an Authority to Construct for the permitting of a 755 bhp diesel fired emergency engine powering an electrical generator, located at Badger Flat storm pond, Los Banos.

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. Fred Cruz of Permit Services at (209) 557-6456.

Sincerely,

David Warner
Director of Permit Services

DW: FJC/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
Tel: 661-392-5500 FAX: 661-392-5585



MAR 15 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: N-1094234**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of City of Los Banos's application for an Authority to Construct for the permitting of a 755 bhp diesel fired emergency engine powering an electrical generator, at Badger Flat storm pond, Los Banos.

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. Fred Cruz of Permit Services at (209) 557-6456.

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Merced Sun-Star
Merced Sun-Star

**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 City of Los Banos for the permitting of a 755 bhp diesel fired emergency engine powering an electrical generator, at Badger Flat storm pond, Los Banos.

The analysis of the regulatory basis for this proposed action, Project #N-1094234, 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, 4800 ENTERPRISE WAY, MODESTO, CA 95356.**

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

Facility Name:	City of Los Banos	Date:	February 9, 2010
Mailing Address:	1015 F Street Los Banos, CA 93635	Engineer:	Fred Cruz
Contact Person:	Kenneth J. Overton	Lead Engineer:	James Harader
Telephone:	(209) 827-7044		
FAX:	(209) 826-6233		
Application No:	N-8106-1-0		
Project No:	N-1094234		
Complete:	January 25, 2010		

I. PROPOSAL:

The City of Los Banos submitted an Authority to Construct application to permit an existing a 755 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator (storm water pump). Per the applicant, this emergency IC engine was installed in 2007 without first obtaining an ATC permit.

II. APPLICABLE RULES:

Rule 2201 New and Modified Stationary Source Review Rule (9/21/2006)
Rule 2520 Federally Mandated Operating Permits (6/21/2001)
Rule 4001 New Source Performance Standards (4/14/1999)
Rule 4101 Visible Emissions (2/17/2005)
Rule 4102 Nuisance (12/17/1992)
Rule 4201 Particulate Matter Concentration (12/17/1992)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/2003)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (1/18/2007)
Rule 4801 Sulfur Compounds (12/17/1992)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment
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 facility is located at the Badger Flat storm pond, Los Banos, CA. The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project. See attached site map.

IV. PROCESS DESCRIPTION:

The emergency standby engine powers a storm water pump. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. EQUIPMENT LISTING:

N-8106-1-0: 755 BHP CUMMINS MODEL QSX15-G9 (TIER 2 CERTIFIED) DIESEL-FIRED EMERGENCY ENGINE POWERING AN ELECTRICAL GENERATOR (STORM WATER PUMP).

VI. EMISSION CONTROL TECHNOLOGY EVALUATION:

The engine is equipped with:

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

The emission control devices/technologies and their effect on diesel engine emissions detailed below are from *Non-catalytic NO_x Control of Stationary Diesel Engines*, by Don Koeberlein, CARB.

The turbocharger reduces the NO_x emission rate from the engine by approximately 10% by increasing the efficiency and promoting more complete burning of the fuel.

The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the inlet air temperature, the peak combustion temperature is lowered, which reduces the formation of thermal NO_x. NO_x emissions are reduced by approximately 15% with this control technology.

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO_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
 Fuel rate: 24.1 gal/hr @ 100% load (engine data sheet)
 PM₁₀ fraction of diesel exhaust is 96% (CARB manual, 1988)

B. Emission Factors:

The engine manufacturer provided the emission factors for NO_x, CO, VOC and PM₁₀ emissions. Emission factor for SO_x is calculated below. The District and CARB require the use of ultra-low sulfur diesel fuel.

NO_x: 4.35 g/bhp-hr
 CO: 0.54 g/bhp-hr
 VOC: 0.06 g/bhp-hr
 PM₁₀: 0.05 g/bhp-hr
 SO_x: 0.005 g/bhp-hr

The emission factor for SO_x may be calculated based on the current CARB standard for diesel sulfur content, which is 15 ppm by weight.

$$\frac{0.000015 \text{ lb-S}}{\text{lb-fuel}} \times \frac{7.1 \text{ lb-fuel}}{\text{gallon}} \times \frac{2 \text{ lb-SO}_2}{1 \text{ lb-S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp-hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.005 \frac{\text{g-SO}_x}{\text{bhp-hr}}$$

C. Calculations:

1. Pre-Project Emissions (PE1)

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

2. Post Project PE (PE2)

The potential to emit for this emergency IC engine is based on the maximum operating capacity of the engine for 24 hours per day. The following calculation for NO_x emissions is representative of emission calculations for all pollutants. Annual emissions are based on 50 hours per year for non-emergency operation.

NO_x: 4.35 g/hp-hr × 755 hp × lb/453.6 g
 NO_x: 7.24 lb/hr, 173.8 lb/day, 362 lb/yr

CO: 0.90 lb/hr, 21.6 lb/day, 45 lb/yr
 VOC: 0.10 lb/hr, 2.4 lb/day, 5 lb/yr
 PM₁₀: 0.08 lb/hr, 2.0 lb/day, 4 lb/yr
 SO_x: 0.01 lb/hr, 0.2 lb/day, 0.4 lb/yr¹

	NO _x	CO	VOC	PM ₁₀	SO _x
Daily PE	173.8	21.6	2.4	2.0	0.2
Annual PE	362	45	5	4	0

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. Since this is a new emissions unit at a new facility, SSPE1 is equal to zero for all pollutants.

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.

SSPE2 (lb/yr)					
Permit Number	NO_x	VOC	CO	PM₁₀	SO_x
N-8106-1-0	362	5	45	4	0
Total	362	5	45	4	0
Major Source Thresholds	50,000	50,000	200,000	140,000	140,000
Existing Major Source?	No	No	No	No	No

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

¹ Per District Policy APR 1105, Use of Significant Figures, annual emissions less than 0.5 are set to zero.

determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site." This facility does not contain ERCs which have been banked at the source; therefore, SSPE2 does not have to be adjusted.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Becoming a Major Source?
NO _x	0	362	50,000	No	No
SO _x	0	0	140,000	No	No
PM ₁₀	0	4	140,000	No	No
CO	0	45	200,000	No	No
VOC	0	5	50,000	No	No

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

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

Otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

As shown above, the facility is not a Major Source for any criteria pollutant.

Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

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 previously discussed, the facility is not a Major Source for any criteria pollutant; therefore, the project does not constitute a Major Modification.

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 B.

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.

a. New emissions units – PE > 2.0 lb/day

Since this engine is a new emissions unit, the daily emissions are compared to the BACT thresholds in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -1-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	173.8	> 2.0	N/A	Yes
SO _x	0.2	> 2.0	N/A	No
PM ₁₀	2.0	> 2.0	N/A	No
CO	21.6	> 2.0 and SSPE2 ≥ 200,000 lb/yr	45	No
VOC	2.4	> 2.0	N/A	Yes

Thus BACT will be triggered for NO_x and VOC emissions from the engine for this project.

b. Relocation of emissions units – PE > 2.0 lb/day

This engine is not being relocated from one stationary source to another as a result of this project. Therefore, BACT is not triggered for the relocation of emissions units with a PE > 2.0 lb/day.

c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2.0 lb/day

This engine is not being modified as a result of this project. Therefore, BACT is not triggered for the modification of emissions units with an AIPE > 2.0 lb/day.

d. Major Modification

As discussed previously, this project does not constitute a Major Modification. Therefore, BACT is not triggered for a Major Modification.

2. BACT Guideline

BACT Guideline 3.1.1, 4th quarter 2009, which appears in Appendix C of this report, covers diesel-fired emergency IC engines. Since the applicant has a Tier 2 certified emergency engine, this current BACT guideline will be referenced.

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 C of this report, BACT is satisfied with:

- NO_x: Use of latest EPA Tier Certified level engine for the applicable horsepower rating
VOC: Use of latest EPA Tier Certified level engine for the applicable horsepower rating

Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {edited 3485} Emissions from this IC engine shall not exceed any of the following limits: 4.35 g-NO_x/bhp-hr, 0.54 g-CO/bhp-hr, or 0.06 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]
- {edited 3486} 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]

This emergency engine meets the District’s BACT requirements at the time of installation and the District’s current BACT requirements.

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 offset calculations are not required.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

A New Major Source is a new facility, which also becomes a major source. As previously calculated, this facility does not become a Major Source for any pollutant. Therefore, public noticing is not required for this project for New Major Source purposes.

b. Major Modification

As demonstrated previously, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c. PE > 100 lb/day

The Daily PE for this new emissions unit is compared to the daily PE Public Notice Thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	Daily PE for unit -1-0 (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO _x	173.8	100	Yes
SO _x	0.2	100	No
PM ₁₀	2.0	100	No
CO	21.6	100	No
VOC	2.4	100	No

As detailed in the preceding table, NO_x emissions exceed the 100 lb/day threshold for this project. Therefore, public noticing is required for daily emissions greater than 100 lb/day for a new emissions unit.

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 to the offset thresholds to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Offset Threshold (lb/yr)	Public Notice Required?
NO _x	0	362	20,000	No
SO _x	0	0	54,750	No
PM ₁₀	0	4	29,200	No
CO	0	45	200,000	No
VOC	0	5	20,000	No

As detailed in the preceding table, there are no offset thresholds that are surpassed with this project. Therefore, public noticing is not required for this project for surpassing the SSPE2 offset thresholds.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSIPE = SSPE2 - SSPE1$. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

SSIPE Public Notice Threshold					
Pollutant	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSIPE (lb/yr)	SSIPE Threshold (lb/yr)	Public Notice Required?
NO _x	362	0	362	20,000	No
SO _x	0	0	0	20,000	No
PM ₁₀	4	0	4	20,000	No
CO	45	0	45	20,000	No
VOC	5	0	5	20,000	No

As detailed in the preceding table, none of the SSIPE thresholds are surpassed with this project. Therefore, public noticing is not required for exceeding the SSIPE thresholds.

2. Public Notice Action

As discussed above, public noticing is required for this project since the PE for NO_x emissions exceeds the 100 lb/day threshold for a new emissions unit. 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 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. DELs are also required to enforce the applicability of BACT. For this emergency standby IC engine, the DELs are stated in the form of emission factors, the maximum engine horsepower rating, and the maximum operational time of 24 hours per day. Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {edited 3485} Emissions from this IC engine shall not exceed any of the following limits: 4.35 g-NO_x/bhp-hr, 0.54 g-CO/bhp-hr, or 0.06 g-VOC/bhp-hr. [District Rule 2201, 13 CCR 2423, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
- {edited 3486} 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, 13 CCR 2423, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]

In addition, the DEL for SO_x is established by the sulfur content of the fuel being combusted in the engine. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {3395} 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

Additional monitoring is not required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. As required by District Rule 4702, *Stationary Internal Combustion Engines - Phase 2*, this IC engine is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

4. Reporting

Additional reporting is not required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis

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 a State or National ambient air quality standard. An AAQA is required to be performed for all New Source Review (NSR) public notice projects. As previously discussed, this project requires a public notice be performed before issuance of the ATC for this project. Therefore, the District is required to perform an AAQA for this project.

The Technical Services Division of the SJVAPCD conducted the required AAQA for this project. The results of the AAQA are presented in the following two tables. Refer to Appendix D of this document for the AAQA summary and the PM₁₀ 24 hour and annual emissions contribution levels for this project.

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 ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheets.

¹ The NO_x 1-Hour passed after using the Ozone Limiting Model (OLM).

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

The criteria modeling runs for this project indicate that the emissions from the proposed diesel-fired emergency engine will not cause or significantly contribute to a violation of a State or National AAQS.

Rule 2520 Federally Mandated Operating Permits

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

Rule 4001 New Source Performance Standards (NSPS)

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

§60.4200 - Applicability

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

- 1) Manufactured after April 1, 2006, if not a fire pump engine.

- 2) Manufactured as a National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

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

All of the applicable standards of this subpart are less restrictive than current District requirements. This engine will comply with all current District standards so no further discussion is required.

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 pursuant to the policy, a risk management review has been performed for this project to analyze the impact of toxic emissions. For projects where the increase in cancer risk is greater than one per million, Toxic Best Available Control Technology (T-BACT) is required.

The HRA results for this project are shown below (see the HRA Summary in Appendix D):

RMR Summary			
Categories	Emergency Diesel ICE (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	>1	>1
Acute Hazard Index	N/A ²	N/A	N/A
Chronic Hazard Index	N/A ²	N/A	N/A
Maximum Individual Cancer Risk	1.3E-07	1.3E-07	1.3E-07
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.

The cancer risk associated with the operation of the proposed emergency diesel IC engine is 1.3E-07, 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).

Therefore, the following conditions will be listed on the ATC to ensure compliance:

1. The PM10 emissions rate shall not exceed 0.05 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
2. 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]
4. 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]

Rule 4201 Particulate Matter Concentration

Particulate matter emissions from the engine will be less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions as shown by the following:

$$0.05 \frac{g - PM_{10}}{bhp - hr} \times \frac{1g - PM}{0.96g - PM_{10}} \times \frac{1bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{9,051 dscf} \times \frac{0.35 Btu out}{1 Btu in} \times \frac{15.43 grain}{g} = 0.01 \frac{grain - PM}{dscf}$$

Since 0.01 grain-PM/dscf is ≤ to 0.1 grain per dscf, compliance with Rule 4201 is expected.

Therefore, the following condition will be listed on the ATC to ensure compliance:

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

Rule 4701 Internal Combustion Engines – Phase 1

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, this diesel-fired emergency IC engine will comply with the requirements of District Rule 4702 and no further discussion is required.

Rule 4702 Internal Combustion Engines – Phase 2

The purpose of this rule is to limit the emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

Pursuant to Section 4.2, except for the requirements of Sections 5.7 and 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following condition:

- 1) An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Section 3.15 defines an "Emergency Standby Engine" as an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

Therefore, the emergency standby IC engine involved with this project will only have to meet the requirements of Sections 5.7 and 6.2.3 of this Rule.

Section 5.7 of this Rule requires that the owner of an emergency standby engine shall comply with the requirements specified in Section 5.7.2 through Section 5.7.5 below:

- 1) Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.
- 2) Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.
- 3) Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Stationary Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3405} 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]
- {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]
- {3403} 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 Part 60 Subpart IIII]
- {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]
- {3810} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation

of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

Section 6.2.3 requires that an owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3479} 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]
- {3475} All records shall be maintained and retained on-site for a minimum of five 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 (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3395} 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]

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 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment (Required by Title 17 CCR, Section 93115 for New Emergency Standby Diesel IC Engines)

Particulate Matter and VOC + NO_x, and CO Exhaust Emissions Standards:

This regulation stipulates that off-road compression-ignition engines shall not exceed the following applicable emissions standards.

Title 13 CCR, Section 2423 lists a diesel particulate emission standard of 0.15 g/bhp-hr (with 1.341 bhp/kW, equivalent to 0.20 g/kW-hr) for 2006 and later model year engines with maximum power ratings of ≥ 751.1 bhp (equivalent to ≥ 560 kW). Therefore, the PM standards given in Title 13 CCR, Section 2423 are less stringent than ATCM, and thus the ATCM standards are the required standards and will be discussed in the following section.

Title 17 CCR, Section 93115, (e)(2)(A)(3)(b) stipulates that new stationary emergency standby diesel-fueled CI engines (> 50 bhp) must meet the VOC + NO_x, and CO 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) or the Tier 1 standards for an off-road engine if no standards have been established for an off-road engine of the same model year and maximum rated power.

The engine involved with this project is a certified 2007 model engine. The following table compares the requirements of Title 13 CCR, Section 2423 to the emissions factors for the 755 bhp Cummins Model QSX15-G9 diesel-fired emergency standby IC engine as provided by the engine manufacturer (for NO_x + VOC and PM emissions).

Requirements of Title 13 CCR, Section 2423							
Source	Maximum Rated Power	Model Year	NO _x	VOC	NO _x + VOC	CO	PM
Title 13 CCR, §2423	≥ 751.0 bhp (≥ 560 kW)	2006 and later (Tier 2)	--	--	4.8 g/bhp-hr (6.4 g/kW-hr)	2.6 g/bhp-hr (3.5 g/kW-hr)	0.15 g/bhp-hr (0.20 g/kW-hr)
Cummins Model QSX15-G9	755 bhp	2007	--	--	4.4 g/bhp-hr (5.8 g/kW-hr)	0.5 g/bhp-hr (0.7 g/kW-hr)	0.05 g/bhp-hr (0.07 g/kW-hr)
Meets Standard?			N/A	N/A	Yes	Yes	Yes

As presented in the table above, the proposed engine will satisfy the requirements of this section and compliance is expected.

Right of the District to Establish More Stringent Standards:

This regulation also stipulates that the District:

1. May establish more stringent diesel PM, NO_x + VOC, VOC, NO_x, and CO emission rate standards; and
2. May establish more stringent limits on hours of maintenance and testing on a site-specific basis; and
3. Shall determine an appropriate limit on the number of hours of operation for demonstrating compliance with other District rules and initial start-up testing

The District has not established more stringent standards at this time. Therefore, the standards previously established in this section will be utilized.

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

Emergency Operating Requirements:

This regulation stipulates that no owner or operator shall operate any new or in-use stationary diesel-fueled compression ignition (CI) emergency standby engine, in response to the notification of an impending rotating outage, unless specific criteria are met.

This section applies to emergency standby IC engines that are permitted to operate during non-emergency conditions for the purpose of providing electrical power. However, District Rule 4702 states that emergency standby IC engines may only be operated during non-emergency conditions for the purposes of maintenance and testing. Therefore, this section does not apply and no further discussion is required.

Fuel and Fuel Additive Requirements:

This regulation also stipulates that as of January 1, 2006 an owner or operator of a new or in-use stationary diesel-fueled CI emergency standby engine shall fuel the engine with CARB Diesel Fuel.

Since the engine involved with this project is a new or in-use stationary diesel-fueled CI emergency standby engine, these fuel requirements are applicable. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3395} 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]

At-School and Near-School Provisions:

This regulation stipulates that no owner or operator shall operate a new stationary emergency standby diesel-fueled CI engine, with a PM₁₀ emissions factor > than 0.01 g/bhp-hr, for non-emergency use, including maintenance and testing, during the following periods:

1. Whenever there is a school sponsored activity, if the engine is located on school grounds, and
2. Between 7:30 AM and 3:30 PM on days when school is in session, if the engine is located within 500 feet of school grounds.

The District has verified that the engine is not located within 500 feet of a K-12 school. Therefore, conditions prohibiting non-emergency usage of the engine during school hours will not be placed on the permit.

Recordkeeping Requirements:

This regulation stipulates that as of January 1, 2005, each owner or operator of an emergency standby diesel-fueled CI engine shall keep a monthly log of usage that shall list and document the nature of use for each of the following:

- a. Emergency use hours of operation;
- b. Maintenance and testing hours of operation;
- c. Hours of operation for emission testing;
- d. Initial start-up hours; and
- e. If applicable, hours of operation to comply with the testing requirements of National Fire Protection Association (NFPA) 25 — “Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems,” 1998 edition;
- f. Hours of operation for all uses other than those specified in sections ‘a’ through ‘d’ above; and
- g. For in-use emergency standby diesel-fueled engines, the fuel used. The owner or operator shall document fuel use through the retention of fuel purchase records that account for all fuel used in the engine and all fuel purchased for use in the engine, and, at a minimum, contain the following information for each individual fuel purchase transaction:
 - I. Identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure, or an alternative fuel, or CARB Diesel fuel used with additives that meet the requirements of the Verification Procedure, or any combination of the above;
 - II. Amount of fuel purchased;
 - III. Date when the fuel was purchased;
 - IV. Signature of owner or operator or representative of owner or operator who received the fuel; and
 - V. Signature of fuel provider indicating fuel was delivered.

The engine associated with this project is a new emergency standby engine powering an electrical generator. Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3479} 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]
- {3475} All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

PM Emissions and Hours of Operation Requirements for New Diesel Engines:

This regulation stipulates that as of January 1, 2005, no person shall operate any new stationary emergency standby diesel-fueled CI engine that has a rated brake horsepower greater than 50, unless it meets all of the following applicable emission standards and operating requirements.

1. Emits diesel PM at a rate greater than 0.01 g/bhp-hr or less than or equal to 0.15 g/bhp-hr; or
2. Meets the current model year diesel PM standard specified in the Off-Road Compression Ignition Engine Standards for off-road engines with the same maximum rated power (Title 13 CCR, Section 2423), whichever is more stringent; and
3. Does not operate more than 50 hours per year for maintenance and testing purposes. Engine operation is not limited during emergency use and during emissions source testing to show compliance with the ATCM.

Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {edited 3486} 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, 13 CCR 2423, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
- {3810} 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]

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, the air district will issue Authority to Construct N-8106-1-0 permit subject to the permit conditions on the attached Authority to Construct in Appendix A.

X. BILLING INFORMATION:

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
N-8106-1-0	3020-10-F	755 bhp IC engine	\$749.00

Appendices

- A. Authority to Construct permit
- B. QNEC Calculations
- C. BACT Guideline and Top-down analysis
- D. HRA Summary and AAQA

Appendix A

Authority to Construct permit N-8106-1-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-8106-1-0

LEGAL OWNER OR OPERATOR: CITY OF LOS BANOS
MAILING ADDRESS: 1015 F ST
LOS BANOS, CA 93635

LOCATION: BADGER FLAT STORM POND
LOS BANOS, CA 93635

EQUIPMENT DESCRIPTION:
755 BHP CUMMINS MODEL QSX15-G9 (TIER 2 CERTIFIED) DIESEL-FIRED EMERGENCY ENGINE POWERING AN ELECTRICAL GENERATOR (STORM WATER PUMP).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {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]
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. 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]
6. 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 Part 60 Subpart IIII]
7. {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
8. Emissions from this IC engine shall not exceed any of the following limits: 4.35 g-NOx/bhp-hr, 0.54 g-CO/bhp-hr, or 0.06 g-VOC/bhp-hr. [District Rule 2201, 13 CCR 2423, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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
N-8106-1-0, Feb 11 2010 9:30AM - CRUZ : Joint Inspection NOT Required

9. 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, 13 CCR 2423, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
10. {3405} 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]
11. {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]
12. 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]
13. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
14. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
15. 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, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]
16. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

Appendix B

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 - BE, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Using the emission calculations in this evaluation, PE2_{quarterly} and BE_{quarterly} can be calculated as follows:

This calculation is required for application emission profile purposes. It is assumed that each unit's annual emissions are evenly distributed throughout the year as follows: ΔPE (lb/qtr) = PE (lb/yr) \div 4 qtr/yr

N-8106-1-0:

ΔPE_{NOx}	= 362 lb-NOx/year – 0 lb-NOx/year	= 362 lb/year
ΔPE_{CO}	= 45 lb-CO/year – 0 lb-CO/year	= 45 lb/year
ΔPE_{VOC}	= 5 lb-VOC/year – 0 lb-VOC/year	= 5 lb/year
ΔPE_{PM10}	= 4 lb-PM10/year – 0 lb-PM10/year	= 4 lb/year
ΔPE_{SOx}	= 0 lb-SOx/year – 0 lb-SOx/year	= 0 lb/year

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
NOx	90	90	91	91
CO	11	11	11	12
VOC	1	1	1	2
PM₁₀	1	1	1	1
SOx	0	0	0	0

Appendix C

BACT Guideline and BACT Analysis

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

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

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

The SJVAPCD BACT Clearinghouse guideline 3.1.1, 4th quarter 2009, identifies achieved in practice BACT for NO_x emissions from emergency diesel IC engines powering an electrical generator as follows:

- 1) Use of latest EPA Tier Certified level engine for the applicable horsepower rating

There are no technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category.

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

Ranking is not necessary since the applicant has proposed the achieved in practice control technology.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control achieved in practice in the ranking list from Step 3. Therefore, per SJVAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for NO_x emissions from this emergency standby diesel IC engine (> 400 bhp) is the use of a diesel-fired emergency engine with certified NO_x emissions of 6.9 g-NO_x/bhp-hr or less. The applicant has proposed to install a 755 bhp emergency standby diesel IC engine with certified emissions of 6.9 g-NO_x/bhp-hr or less. Therefore, BACT for NO_x emissions is satisfied

BACT Analysis for VOC Emissions:

2. BACT Analysis for VOC Emissions:

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

a. Step 1 - Identify all control technologies

The SJVAPCD BACT Clearinghouse guideline 3.1.1, 4th quarter 2009, identifies achieved in practice BACT for VOC emissions from emergency diesel IC engines (> 400 bhp) as follows:

- 1) Use of latest EPA Tier Certified level engine for the applicable horsepower rating

There are no technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category.

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

Ranking is not necessary since the applicant has proposed the achieved in practice option.

d. Step 4 - Cost effectiveness analysis

The applicant has proposed the only control achieved in practice in the ranking list from Step 3. Therefore, per SJVAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions from this emergency standby diesel IC engine (> 400 bhp) is the use of a positive crankcase ventilation (or 90% efficient control device). The applicant has proposed to install a 755 bhp emergency standby diesel IC engine with positive crankcase ventilation (or 90% efficient control device). Therefore BACT for VOC emissions is satisfied.

Appendix D

HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Fred Cruz – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: February 8, 2010
 Facility Name: City of Los Banos
 Location: Badger Flat Storm Pond, Los Banos
 Application #(s): N-8106-1-0
 Project #: N-1094234

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	>1	>1
Acute Hazard Index	N/A ²	N/A	N/A
Chronic Hazard Index	N/A ²	N/A	N/A
Maximum Individual Cancer Risk	1.3E-07	1.3E-07	1.3E-07
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 #1-0

- Modified {1901} The PM10 emissions rate shall not exceed **0.05** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N
- 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 January 21, 2010, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for a 755 bhp emergency diesel IC engine powering a storm drain pump.

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%
1-0	755	0.05	259.08	2	50	100
Location Type		Urban		Receptor Type		Residence

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 0.9 lb/hr CO, 7.24 lb/hr NO_x, 0.01 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*

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 ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheets.

¹ The NO_x 1-Hour passed after using the Ozone Limiting Model (OLM).

² The 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 **1.3E-07**, 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.

AAQA for City of Los Banos (N-8106-1-0)

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	5.396E+02	4.147E-01	8.944E+01	8.016E+01	9.938E-01	9.742E-01	5.945E-01	6.109E-04	4.756E+00	6.109E-03
Background	1.071E+02	2.678E+01	3.612E+03	2.680E+03	3.464E+02	1.998E+02	8.260E+01	1.865E+01	7.800E+01	4.000E+01
Facility Totals	6.468E+02	2.719E+01	3.701E+03	2.760E+03	3.474E+02	2.008E+02	8.319E+01	1.865E+01	8.276E+01	4.001E+01
AAQS	338	56	23000	10000	655	1300	105	80	50	30
	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail

EPA's Significatance 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	9.12E-01	5.21E-03	1.13E-01	1.13E-01	1.26E-03	1.26E-03	1.26E-03	5.75E-06	1.01E-02	5.75E-05



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