



JAN 25 2010

Kevin Abernathy
Antonio Azevedo Dairy
2025 W El Nido
El Nido, CA 95317

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1094345

Dear Mr. Abernathy:

Enclosed for your review and comment is the District's analysis of Antonio Azevedo Dairy's application for an Authority to Construct for a 483 bhp John Deere model 6125HF070L tier 2 certified diesel-fired internal combustion engine powering an electrical generator, at 2025 W El Nido, El Nido, CA.

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. Juscelino Siongco of Permit Services at (559) 230-5891.

Sincerely,

David Warner
Director of Permit Services

DW:jms

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

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JAN 25 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-1094345

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Antonio Azevedo Dairy's application for an Authority to Construct for a 483 bhp John Deere model 6125HF070L tier 2 certified diesel-fired internal combustion engine powering an electrical generator, at 2025 W El Nido, El Nido, CA.

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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 Antonio Azevedo Dairy for a 483 bhp John Deere model 6125HF070L tier 2 certified diesel-fired internal combustion engine powering an electrical generator, at 2025 W El Nido, El Nido, CA.

The analysis of the regulatory basis for this proposed action, Project #N-1094345, 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, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

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

Facility Name:	Antonio Azevedo Dairy	Date:	January 19, 2010
Mailing Address:	2025 W El Nido El Nido, CA 95317	Engineer:	Juscelino Siongco
Contact Person:	Kevin Abernathy	Lead Engineer:	Martin Keast
Telephone:	(209) 678-0666		
Application #:	N-6096-7-0		
Project #:	N-1094345		
Complete:	November 30, 2009		

I. Proposal

Antonio Azevedo Dairy is proposing to install a 483 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator. This engine was installed on October 11, 2006. Best Available Control Technology (BACT) requirement is the latest certified engine (Tier 2) plus any add-on controls that have been deemed cost effective.

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 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
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 project is located at 2025 W. El Nido in El Nido, CA. The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

N-6096-7-0: 483 BHP JOHN DEERE MODEL 6125H SERIAL NO
RG6125HO56430 TIER 2 DIESEL-FIRED IC ENGINE POWERING
AN ELECTRICAL GENERATOR

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 PCV system reduces crankcase VOC and PM₁₀ emissions by at least 90% over an uncontrolled crankcase vent.

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:	100 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM ₁₀ fraction of diesel exhaust:	0.96 (CARB, 1988)

B. Emission Factors

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	4.46	Engine Manufacturer
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.095	Engine Manufacturer
CO	0.51	Engine Manufacturer
VOC	0.16	Engine Manufacturer

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

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:

Daily Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO _x	4.46	483	24	453.6	114.0
SO _x	0.0051	483	24	453.6	0.1
PM ₁₀	0.095	483	24	453.6	2.4
CO	0.51	483	24	453.6	13.0
VOC	0.16	483	24	453.6	4.1

Annual Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE2 Total (lb/yr)
NO _x	4.46	483	100	453.6	475
SO _x	0.0051	483	100	453.6	1
PM ₁₀	0.095	483	100	453.6	10
CO	0.51	483	100	453.6	54
VOC	0.16	483	100	453.6	17

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 an existing facility, SSPE1 is equal to the PE_{1 Total Pre-Project} from all units for all criteria pollutants.

SSPE1					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
N-6096-1-1	0	0	0	0	2,233
N-6096-2-1	0	0	27,412	0	53,728
N-6096-3-1	0	0	0	0	31,390
N-6096-4-1	0	0	0	0	0
N-6096-5-1	0	0	0	0	0
N-6096-6-0	0	0	0	0	47
SSPE1 Total	0	0	27,412	0	87,398

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.

Since this is a modification to an existing facility, SSPE2 is equal to the PE_{2Total Post Project} from all units for all criteria pollutants.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine, permit unit -7-0. Thus:

SSPE2					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
N-6096-1-1	0	0	0	0	2,233
N-6096-2-1	0	0	27,412	0	53,728
N-6096-3-1	0	0	0	0	31,390
N-6096-4-1	0	0	0	0	0
N-6096-5-1	0	0	0	0	0
N-6096-6-0	0	0	0	0	47
ATC #N-6096-7-0	475	1	10	54	17
SSPE2 Total	475	1	27,422	54	87,415

5. Major Source Determination

Pursuant to Section 3.25 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 threshold values. In determining whether a facility is a major source, fugitive emissions are not counted unless the facility belongs to certain specified source categories. 40 CFR 71.2 (Definitions, Major Source (2)) states the following:

(2) A major stationary source of air pollutants or any group of stationary sources as defined in section 302 of the Act, that directly emits, or has the potential to emit, 100 tpy or more of any air pollutant (including any major source of fugitive emissions of any such pollutant, as determined by rule by the Administrator). The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of section 302(j) of the Act, unless the source belongs to one of the following categories of stationary source: (i) Coal cleaning plants (with thermal dryers); (ii) Kraft pulp mills; (iii)

Portland cement plants; (iv) Primary zinc smelters; (v) Iron and steel mills; (vi) Primary aluminum ore reduction plants; (vii) Primary copper smelters; (viii) Municipal incinerators capable of charging more than 250 tons of refuse per day; (ix) Hydrofluoric, sulfuric, or nitric acid plants; (x) Petroleum refineries; (xi) Lime plants; (xii) Phosphate rock processing plants; (xiii) Coke oven batteries; (xiv) Sulfur recovery plants; (xv) Carbon black plants (furnace process); (xvi) Primary lead smelters; (xvii) Fuel conversion plants; (xviii) Sintering plants; (xix) Secondary metal production plants; (xx) Chemical process plants; (xxi) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input; (xxii) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels; (xxiii) Taconite ore processing plants; (xxiv) Glass fiber processing plants; (xxv) Charcoal production plants; (xxvi) Fossil-fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input; or (xxvii) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

Because agricultural operations do not fall under any of the specific source categories listed above, fugitive emissions are not counted when determining if an agricultural operation is a major source. 40 CFR 71.2 defines fugitive emissions as “those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.”

Since emissions at the dairy are not actually collected, a determination of whether emissions could be reasonably collected must be made by the permitting authority. The California Air Pollution Control Association (CAPCOA) prepared guidance in 2005 for estimating potential to emit of Volatile Organic Compounds from dairy farms. The guidance states that “VOC emissions from the milking centers, cow housing areas, corrals, common manure storage areas, and land application of manure are not physically contained and could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening. No collection technologies currently exist for VOC emissions from these emissions units. Therefore, the VOC emissions from these sources are considered fugitive.” The guidance also concludes that, because VOC collection technologies do exist for liquid waste systems at dairies, “... the VOC emissions from waste lagoons and storage ponds are considered non-fugitive.” The District has researched this issue and concurs with the CAPCOA assessment, as discussed in more detail below.

Milking Center

The mechanical system for the milking parlors can be utilized to capture the gases emitted from the milking parlors, however in order to capture all of the gases, and to keep an appropriate negative pressure throughout the system, the holding area would also need to be entirely enclosed. No facility currently encloses the holding area since cows are continuously going in and out of the barn throughout the day. The capital required to enclose this large area would

also be significant. Since the holding area is primarily kept open, the District cannot reasonably demonstrate that emissions can pass through a stack, chimney, vent, or other functionally equivalent opening.

Cow Housing

Although there are smaller dairy farms that have enclosed freestall barns, these barns are not fully enclosed and none of the barns have been found to vent the exhaust through a collection device. The airflow requirements through dairy barns are extremely high, primarily for herd health purposes. The airflow requirements will be even higher in the San Joaquin valley, where temperatures reach in excess of 110 degrees in the dry summer. Collection and control of the exhaust including the large amounts of airflow have not yet been achieved by any facility. Due to this difficulty, the District cannot reasonably demonstrate that emissions can pass through a stack, chimney, vent, or other functionally equivalent opening.

Manure storage Areas

Many dairies have been found to cover dry manure piles. Covering dry manure piles is also a mitigation measure included in District Rule 4570. However, the District was not able to find any facility, which currently captures the emissions from the storage or handling of manure piles. Although many of these piles are covered, the emissions cannot easily be captured. Therefore, the District cannot reasonably demonstrate that these emissions can pass through a stack, chimney, vent, or other functionally equivalent opening. In addition, emissions from manure piles have been shown to be insignificant from recent studies.

Land Application

Emissions generated from the application of manure on land cannot reasonably be captured due to the extremely large areas, in some cases thousands of acres, of cropland at dairies. Therefore, the District cannot reasonably demonstrate that these emissions can pass through a stack, chimney, vent, or other functionally equivalent opening.

Feed Handling and Storage

The majority of dairies store the silage piles underneath a tarp or in an agbag. The entire pile is covered except for the face of the pile. The face of the pile is kept open due to the continual need to extract the silage for feed purposes. The silage pile is disturbed 2-3 times per day. Because of the ongoing disturbance to these piles, it makes it extremely difficult to design a system to capture the emissions from these piles. In fact, as far as the District is aware, no system has been designed to successfully extract the gases from the face of the pile to capture them, and, as important, no study has assessed the potential impacts on silage quality of a continuous air flow across the silage pile, as would be required by such a collection system. Therefore, the District cannot demonstrate that these emissions can be reasonably expected to pass through a stack, chimney, vent, or other functionally equivalent opening.

Therefore, the VOC emissions from these sources are considered fugitive. The District has determined that control technology to capture emissions from lagoons (biogas collection systems, for instance) is in use and these emissions can be reasonably collected and are not fugitive. Therefore, only emissions from the lagoons, storage ponds, IC engine, and gasoline tank will be used to determine if this facility is a major source.

The post-project emissions from the lagoons/storage ponds at this dairy were calculated in Project #N-1094218. The following table shows the non-fugitive Post-Project Stationary Source Potential to Emit for the dairy.

Non-Fugitive Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
N-6096-3-1 (Lagoon/Storage Pond)	0	0	0	0	11,826
N-6096-4-1	0	0	0	0	0
N-6096-5-1	0	0	0	0	0
N-6096-6-0	0	0	0	0	47
ATC #N-6096-7-0	475	1	10	54	17
Non Fugitive SSPE	475	1	10	54	11,890

Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	475	1	10	54	11,890
Major Source Threshold	50,000	140,000	140,000	200,000	50,000
Major Source?	No	No	No	No	No

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

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

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

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 previously, 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 C.

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 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 -7-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	114.0	> 2.0	n/a	Yes
SO _x	0.1	> 2.0	n/a	No
PM ₁₀	2.4	> 2.0	n/a	Yes
CO	13.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	27	No
VOC	4.1	> 2.0	n/a	Yes

Thus BACT will be triggered for NO_x, PM₁₀, and VOC emissions from the engine for this project.

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

As discussed previously in Section I, 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 lb/day.

Emissions (AIPE) > 2 lb/day

As discussed previously in Section I, 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 lb/day.

d. Major Modification

As discussed previously in Section VII.C.7, 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, which appears in Appendix A 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 A 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
- PM₁₀: 0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

The following condition will be listed on the ATC to ensure compliance with the PM₁₀ BACT emissions limit:

- Emissions from this IC engine shall not exceed 0.095 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]

B. Offsets

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

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, 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 is also a major source. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Major Modification

As demonstrated previously in Section VII.C.7, 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 -7-0 (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO _x	114.0	100	Yes
SO _x	0.1	100	No
PM ₁₀	2.4	100	No
CO	13.0	100	No
VOC	4.1	100	No

As detailed in the preceding table, the NO_x 100 lb/day threshold was surpassed with 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 in order 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	475	20,000	No
SO _x	0	1	54,750	No
PM ₁₀	27,412	27,422	29,200	No
CO	0	54	200,000	No
VOC	87,398	87,415	20,000	No

As detailed in the preceding table, there were no offset thresholds 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	475	0	475	20,000	No
SO _x	1	0	1	20,000	No
PM ₁₀	27,422	27,412	10	20,000	No
CO	54	0	54	20,000	No
VOC	87,415	87,398	17	20,000	No

As detailed in the preceding table, there were no SSIPE thresholds 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 for surpassing the PE > 100 lb/day threshold for a new emissions unit for NO_x emissions. 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:

- Emissions from this IC engine shall not exceed any of the following limits: 4.46 g-NO_x/bhp-hr, 0.51 g-CO/bhp-hr, or 0.16 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.095 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]

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 and 17 CCR 93115]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping 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

No reporting is 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 in Section VIII.C this project requires that 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 B of this document for the AAQA summary and the PM₁₀ 24 hour and annual emissions contribution levels for this project.

AAQA Results Summary					
Pollutant	1 hr Average	3 hr Average	8 hr Average	24 hr Average	Annual Average
CO	Pass	N/A	Pass	N/A	N/A
NO _x	Pass	N/A	N/A	N/A	Pass
SO _x	Pass	Pass	N/A	Pass	Pass
PM ₁₀	N/A	N/A	N/A	Pass ¹	Pass ¹

The proposed location of installation of the diesel-fired IC engine is in an attainment area for NO_x, CO, and SO_x. As shown by the preceding table of AAQA results the proposed installation of the diesel-fired IC engine will not cause a violation of a State or National ambient air quality standard for NO_x, CO, or SO_x. The proposed location for installation of the diesel-fired IC engine is in a non-attainment area for PM₁₀ (this is because the ambient concentration of PM₁₀ exceeds the National ambient air quality standard). Therefore, the increase in the ambient PM₁₀ concentration due to the installation of the proposed equipment will be compared to the EPA PM₁₀ level of significance, from 40 CFR Part 51.165 (b)(2). This comparison is presented in the following table.

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

EPA PM ₁₀ Significance Level and the Calculated Contribution for this Project					
	Calculated Contributions (µg/m ³)				
	1 hr Average	3 hr Average	8 hr Average	24 hr Average	Annual Average
EPA PM ₁₀ Significance Level	N/A	N/A	N/A	5.0	1.0
Project Total PM ₁₀ Concentration	N/A	N/A	N/A	0.2462	0.0004
Does this project exceed the EPA PM ₁₀ significance level?	N/A	N/A	N/A	No	No

As shown in the preceding table, the calculated contribution of PM₁₀ from the proposed installation of the diesel-fired IC engine will not exceed the EPA PM₁₀ significance level.

Rule 2520 Federally Mandated Operating Permits

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

Rule 4001 New Source Performance Standards (NSPS)

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

§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 will be installed after July 11, 2005 and will be 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 B):

HRA Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
N-6096-7-0	N/A	N/A	0.028 in a million	No

As demonstrated previously, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-

BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix B of this report, the emissions increases for this project was determined to be less than significant.

- 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]
- Emissions from this IC engine shall not exceed 0.095 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]

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:

$$0.095 \frac{g - PM_{10}}{bhp - hr} \times \frac{1 g - PM}{0.96 g - PM_{10}} \times \frac{1 bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{9,051 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.0244 \frac{grain - PM}{dscf}$$

Since 0.0244 grain-PM/dscf is \leq 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 and 17 CCR 93115]
- {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]
- {3809} 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 100 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 (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

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

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

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 and 17 CCR 93115]

California Health & Safety Code 42301.6 (School Notice)

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

Title 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 2001 - 2005 model year engines with maximum power ratings of 301.7 - 603.4 bhp (equivalent to bhp 225 - 450 kW). The PM standards given in Title 13 CCR, Section 2423 are less stringent than the PM standards given in Title 17 CCR, Section 93115 (ATCM), 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 2005 model engine. The following table compares the requirements of Title 13 CCR, Section 2423 to the emissions factors for the 483 bhp John Deere model 6125HF070 diesel-fired emergency standby IC engine as given by the manufacturer.

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	301.7 – 603.4 bhp (225 - 450 kW)	1996-2001 (Tier 1)	6.9 g/bhp-hr (9.2 g/kW-hr)	1.0 g/bhp-hr (1.3 g/kW-hr)	--	8.5 g/bhp-hr (11.4 g/kW-hr)	0.40 g/bhp-hr (0.54 g/kW-hr)
Title 13 CCR, §2423	301.7 – 603.4 bhp (225 - 450 kW)	2001-2005 (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)
Title 13 CCR, §2423	301.7 – 603.4 bhp (225 - 450 kW)	2006 and later (Tier 3)	--	--	3.0 g/bhp-hr (4.0 g/kW-hr)	2.6 g/bhp-hr (3.5 g/kW-hr)	0.15 g/bhp-hr (0.20 g/kW-hr)
John Deere Model 6125HF070	483 bhp	2005	4.46 g/bhp-hr	0.16 g/bhp-hr	X.X g/bhp-hr (X.X g/kW-hr)	0.51 g/bhp-hr	0.095 g/bhp-hr
Meets Standard?			Yes	Yes	N/A	Yes	Yes

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

The engine manufacturer's data and/or CARB/EPA engine certification for this engine lists a NO_x emissions factor of 4.46 g/bhp-hr, a VOC emissions factor of 0.16 g/bhp-hr, a CO emission factor of 0.51 g/bhp-hr, and a PM₁₀ emissions factor of 0.095 g/bhp-hr, all of which satisfy the requirements of 13 CCR, Section 2423. Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 4.46 g-NO_x/bhp-hr, 0.51 g-CO/bhp-hr, or 0.16 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.095 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]

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 and 17 CCR 93115]

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 a.m. and 3:30 p.m. 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 (5) 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 Located at an "Agricultural Operation":

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 at an "Agricultural Operation" unless it meets all of the following applicable emission standards and operating requirements.

1. Emits diesel PM at a rate 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

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 0.095 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]
- {3809} 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 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
- {4002} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [17 CCR 93115]

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, issue Authority to Construct N-6096-7-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix D.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
N-6096-7-0	3020-10-D	483 bhp IC engine	\$479.00

Appendixes

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

Appendix A

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

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

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

- 1) Latest EPA Tier Certification level for applicable horsepower range

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. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for NO_x 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 483 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; therefore BACT for NO_x emissions is satisfied.

2. BACT Analysis for PM₁₀ Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.1 identifies achieved in practice BACT for PM₁₀ emissions from emergency diesel IC engines as follows:

- 1) 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. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM₁₀ emissions from this emergency standby diesel IC engine is having PM₁₀ emissions of 0.15 g/hp-hr, or the latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. The applicant has proposed to install a Tier 2 certified 483 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; therefore BACT for PM₁₀ emissions is satisfied.

BACT Analysis for VOC Emissions:

3. BACT Analysis for VOC Emissions:

a. Step 1 - Identify all control technologies

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

- 1) EPA Tier Certification level for applicable horsepower range

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. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for 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 483 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; therefore BACT for VOC emissions is satisfied.

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	2008 - 2011			3.5		
	4*	2008 – 2012 (Interim)			3.5	3.7	0.22
75 ≤ hp < 100	1	1998 – 2003	6.9	-	-	-	-
	2	2004 – 2007	-		5.6		
	3	2008 – 2011			3.5		
100 ≤ hp < 175	1	1997 – 2002	6.9	-	-	-	-
	2	2003 – 2006	-		4.9		
	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 B HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Joe Siongco – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: January 13, 2010
 Facility Name: Antonio Azevedo Dairy
 Location: 2025 W. El Nido, El Nido
 Application #(s): N-6096-7-0
 Project #: N-1094345

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 7-0)	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	2.79E-08	2.79E-08	2.79E-08
T-BACT Required?	No		
Special Permit Conditions?	Yes		

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in 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 #7-0

1. Modified {1901} The PM10 emissions rate shall not exceed **0.095** 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 January 6, 2010, to perform a Risk Management Review and Ambient Air Quality Analysis for a 483 bhp emergency diesel IC engine powering an electrical 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%
7-0	483	0.095	1609.34	2	50	100
Location Type			Rural	Receptor Type		Business

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, and PM₁₀; as well as the RMR. The emission rates used for criteria pollutant modeling were 0.54 lb/hr CO, 4.75 lb/hr NO_x, 0.004 lb/hr SO_x, and 0.1 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 **2.79E-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.

Appendix C 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 values in Sections VII.C.2 and VII.C.6 in the evaluation above, $PE2_{quarterly}$ and $BE_{quarterly}$ can be calculated as follows:

Quarterly Post Project Emissions		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	475	118.8
SO _x	1	0.3
PM ₁₀	10	2.5
CO	54	13.5
VOC	17	4.3

$$\begin{aligned} BE_{quarterly} &= BE_{annual} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb/qtr (for all criteria pollutants)} \end{aligned}$$

Appendix D

Draft ATC and Emissions Profile

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-6096-7-0

LEGAL OWNER OR OPERATOR: ANTONIO AZEVEDO DAIRY

MAILING ADDRESS: 2025 W EL NIDO
EL NIDO, CA 95317

LOCATION: 2025 W EL NIDO
EL NIDO, CA 95317

EQUIPMENT DESCRIPTION:

483 BHP JOHN DEERE MODEL 6125H SERIAL NO RG6125HO56430 TIER 2 DIESEL-FIRED IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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. {3395} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]
5. {3403} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93115]
6. {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]
7. {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]
8. {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]

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

DRAFT

DAVID WARNER, Director of Permit Services

N-6096-7-0 : Jan 19 2010 2:49PM - SIONGCOJ : Joint Inspection NOT Required

9. {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]
10. {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]
11. {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]
12. {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]
13. {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]
14. {3809} 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 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
15. Emissions from this IC engine shall not exceed any of the following limits: 4.46 g-NO_x/bhp-hr, 0.51 g-CO/bhp-hr, or 0.16 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]
16. Emissions from this IC engine shall not exceed 0.095 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]
17. {4002} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [17 CCR 93115]

DRAFT