



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

JAN 05 2015

Mike Valadao
Valadao Dairy
17293 9-1/2 Avenue
Hanford, CA 93230

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: C-5470
Project Number: C-1142245

Dear Mr. Valadao:

Enclosed for your review and comment is the District's analysis of Valadao Dairy's application for an Authority to Construct for replacing the existing 350 bhp emergency standby diesel IC engine (unit C-5470-8-0) with a 752 bhp diesel-fired emergency standby IC engine, at 17293 9-1/2 Avenue in Hanford, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

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

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:sl

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

cc: Blythe Romo via email bromo@innovativeag.net

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
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

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

Facility Name: Valadao Dairy
Mailing Address: 17293 Avenue 9 1/2
Hanford, CA 93230

Date: January 2, 2015
Engineer: Sandra Lowe-Leseth
Lead Engineer: Dustin Brown

Contact Person: Mike Valadao
Telephone: 559 584 0860
Application #: C-5470-9-0
Project #: C-1142245
Complete: November 18, 2014

I. Proposal

Valadao Dairy is proposing to install a 752 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator. This engine replaces existing permit unit C-5470-8-0, which is a 350 bhp (intermittent) diesel-fired emergency standby IC engine powering an electrical generator.

Existing Engine			Replacement Engine		
PTO #	Make/Model	Max Power Rating (bhp)	ATC #	Make/Model	Max Power Rating (bhp)
C-5470-8-0	Cummins NTC855G	350	C-5470-9-0	MTU 10V1600G805	752

The following condition will be placed on the new engine's permit to ensure that the corresponding existing engine is removed from service:

- Within 90 days of the startup of the equipment authorized by this Authority to Construct (ATC), Permit to Operate C-5470-8-0 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]

The current Permit to Operate (PTO) is attached as Appendix A.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)

Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines (8/18/11)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary
Compression-Ignition (CI) Engines
California Environmental Quality Act (CEQA)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location

The project is located at 17293 Avenue 9-1/2 in Hanford, 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

Existing Engine:

C-5470-8-0: 350 BHP CUMMINS MODEL NTC855G DIESEL-FIRED
EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL
GENERATOR

Replacement Engine:

C-5470-9-0: 752 BHP (INTERMITTENT) MTU MODEL 10V1600G805 TIER 2
CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE
POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

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

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

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 (current PTO)
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

Existing Engine C-5470-8-0:

EFs for Existing Engine C-5470-8-0		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	10.0	Project C-1093611
SO _x	0.0051	
PM ₁₀	0.475	
CO	3.04	
VOC	1.14	

Replacement Engine C-5470-9-0:

EFs for Replacement Engine C-5470-9-0			
Pollutant	EF (g/kW-hr)	EF (g/bhp-hr)	Source
NO _x	5.82	4.34	EPA Certificate of Conformity EMDDL21.0ZWR-004
SO _x	—	0.0051	Ultra-Low Sulfur Fuel ¹
PM ₁₀	0.19	0.14	EPA Certificate of Conformity EMDDL21.0ZWR-004
CO	1.2	0.90	EPA Certificate of Conformity EMDDL21.0ZWR-004
VOC	0.28	0.21	EPA Certificate of Conformity EMDDL21.0ZWR-004

¹ This EF is based on the use of ultra-low sulfur diesel fuel with 0.0015% sulfur by weight

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

C. Calculations

1. Pre-Project Emissions (PE1)

Existing Engine C-5470-8-0:

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	10	350	24	100	185.2	772
SO _x	0.0051	350	24	100	0.1	0
PM ₁₀	0.475	350	24	100	8.8	37
CO	3.04	350	24	100	56.3	235
VOC	1.14	350	24	100	21.1	88

Replacement Engine C-5470-9-0:

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

2. Post-Project PE (PE2)

Existing Engine C-5470-8-0:

This engine will be removed from service when the new engine is started up; therefore PE2 = 0 for this engine.

Replacement Engine C-5470-9-0:

The daily and annual PE are calculated as follows:

Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	4.34	752	24	100	172.7	720
SO _x	0.0051	752	24	100	0.2	1
PM ₁₀	0.14	752	24	100	5.6	23
CO	0.9	752	24	100	35.8	149
VOC	0.21	752	24	100	8.4	35

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. SSPE1 is summarized in the following table.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-5470-1-2 through -4-2 and -6-1 *	0	0	32,887	0	145,913
C-5470-5-0 *	0	0	0	0	59
C-5470-8-0 *	772	0	37	235	88
Facility C-8115 *	0	0	49,540	0	101,481
Stationary Source Potential to Emit	772	0	82,464	235	247,541

* Emissions taken from project C-1110910

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine, permit unit C-5740-9-0, and the removal of the existing engine permit unit C-5740-8-0. Thus:

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-5470-1-2 through -4-2 and -6-1 *	0	0	32,887	0	145,913
C-5470-5-0 *	0	0	0	0	59
C-5470-8-0 Removed from service	0	0	0	0	0
Facility C-8115 *	0	0	49,540	0	101,481
C-5740-9-0	720	1	23	149	35
Stationary Source Potential to Emit	720	1	82,450	149	247,488
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offset Threshold Surpassed?	No	No	No	No	No

* Emissions taken from project C-1110910

5. Major Source Determination

Rule 2201 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 following threshold values. However, Section 3.25.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Since emissions at a 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 partially 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 hot 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.

It must also be noted that EPA has determined that emissions from open-air cattle feedlots are fugitive in nature.¹ In the District's judgment, this determination for emissions from open feedlots necessitates a similar

¹ Letter from William Wehrum, EPA Acting Administrator, to Terry Stokes, Chief Executive Officer – National Cattlemen's Beef Association (November 2, 2006)
(<http://www.epa.gov/Region7/programs/artd/air/nsr/nsrmemos/cowdust.pdf>)

determination for the open-sided freestalls (usually with open access to corrals or pens and free movement of cattle in and out of the covered area) typical of the San Joaquin Valley since the typical open freestall barn in the San Joaquin Valley bears a far greater resemblance to an extensive shade structure located in a large open lot than an actual enclosed building. Therefore, emissions from open freestall barns are most appropriately treated as fugitive.

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 some of these piles are covered, the emissions cannot reasonably 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 in 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 Ag-bag. 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.

As discussed above, the VOC emissions from the milking center, cows housing, manure storage areas, land application of manure and feed handling and storage are considered fugitive. The District has determined that control technology to capture emissions from lagoons (biogas collection systems, for instance) is in use; therefore, these emissions can be reasonably collected and are not fugitive. Therefore, only emissions from the non-fugitive sources, such as lagoons, storage ponds, IC engines, and gasoline tanks, will be used to determine if dairies are major sources.

The emissions are calculated as follows:

Lagoon Emissions (Flushed Freestalls & Flushed Corrals)				
Daily Potential to Emit				
Type of Cow	Number of Cows		lb-VOC/hd-yr	lbs-VOC/yr
Milking Cow	2,976	x	1.17	3,482
Dry Cow	348	x	0.64	223
Support Stock	1,397	x	0.49	685
Total				4,390

Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
C-5470-1-2 through -4-2 and -6-1 *	0	0	0	0	4,390
C-5470-5-0 *	0	0	0	0	59
C-5470-9-0	720	1	23	149	35
Facility C-8115 *	0	0	0	0	0
Stationary Source Potential to Emit	720	1	23	149	4,484
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

* Major Source emissions taken from project C-1110910.

As seen in the table above, the facility is **not** a Major Source.

Rule 2410 Major Source Determination:

The facility is not an existing major source for PSD for at least one pollutant.
Therefore the facility is not an existing major source for PSD.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

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

Since the proposed engine is a new emission unit, $BE = PE1 = 0$ for all criteria pollutants.

7. SB 288 Major Modification

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

As discussed in Section VII.C.5 above, this facility is not a major source for any of the pollutants addressed in this project; therefore, the project does not constitute a SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM_{10} (140,000 lb/year), it is not a major source for $PM_{2.5}$ (200,000 lb/year).

9. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as determined in Sections VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification, respectively. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

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

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -9-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	172.7	> 2.0	n/a	Yes
SO _x	0.2	> 2.0	n/a	No
PM ₁₀	5.6	> 2.0	n/a	Yes
CO	35.8	> 2.0 and SSPE2 ≥ 200,000 lb/yr	75	No
VOC	8.4	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x, PM₁₀, and VOC emissions from the engine for this project. Although CO emissions are greater than 2.0

lb/day, the facility's total CO emissions are less than 200,000 lb/yr; therefore, BACT is not triggered for CO emissions.

2. BACT Guideline

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

3. Top Down BACT Analysis

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

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

NO_x: Latest EPA Tier Certification level for applicable horsepower range
VOC: Latest EPA Tier Certification level for applicable horsepower range
PM₁₀: 0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

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, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIP of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

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

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	172.7	100 lb/day	Yes
SO _x	0.2	100 lb/day	No
PM ₁₀	5.6	100 lb/day	No
CO	35.8	100 lb/day	No
VOC	8.4	100 lb/day	No

PE2 for NO_x is greater than 100 lb/day; therefore, public noticing for PE greater than 100 lb/day purposes is required.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	772	720	20,000 lb/year	No
SO _x	0	1	54,750 lb/year	No
PM ₁₀	82,464	82,450	29,200 lb/year	No
CO	235	149	200,000 lb/year	No
VOC	247,541	247,488	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPe > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPe of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPe = SSPE2 – SSPE1. The SSIPe is compared to the SSIPe Public Notice thresholds in the following table.

SSIPe Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPe (lb/year)	SSIPe Public Notice Threshold	Public Notice Required?
NO _x	720	772	-52	20,000 lb/year	No
SO _x	1	0	1	20,000 lb/year	No
PM ₁₀	82,450	82,464	-14	20,000 lb/year	No
CO	149	235	-86	20,000 lb/year	No
VOC	247,488	247,541	-53	20,000 lb/year	No

As demonstrated above, the SSIPes for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPe purposes is not required.

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

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

D. Daily Emissions Limits

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

- {4259} Emissions from this IC engine shall not exceed any of the following limits: 4.34 g-NO_x/bhp-hr, 0.9 g-CO/bhp-hr, or 0.21 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4260} Emissions from this IC engine shall not exceed 0.14 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix D of this document for the AAQA summary sheet.

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

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}. The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results for unit C-5740-9-0					
Pollutant	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

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

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

The District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

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

The District has not been delegated the authority to implement NESHAP regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

RMR Summary			
Categories	Emergency Diesel ICE (Unit 9-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	>1
Acute Hazard Index	N/A ²	N/A ²	N/A
Chronic Hazard Index	N/A ²	N/A ²	N/A
Maximum Individual Cancer Risk	1.1E-07	1.1E-07	1.1E-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 a prioritization score greater than 1.0.

2 Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

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

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- {4260} Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
- {edited 4777} 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]

Rule 4201 Particulate Matter Concentration

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf, which, as calculated below, is equivalent to a PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

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

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

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

Rule 4701 Internal Combustion Engines – Phase 1

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

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

Rule 4702 Internal Combustion Engines

The 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 5.9 and 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following condition:

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 5.9 and 6.2.3 of this Rule.

Section 5.9 of this Rule requires that the owner of an emergency standby engine shall comply with the requirements specified in section 5.9.2 through section 5.9.5 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 permit 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] N
- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
- {3495} This engine shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per year. [District Rule 4702]
- {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] N
- {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] N

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 condition will be listed on the permit to ensure compliance:

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.), and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]
- {3497} 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]

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:

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

n = moles SO₂

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

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

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

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

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart 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 17 California Code of Regulations (CCR), Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

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

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation. This table continues on next page.

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
<p>The engine must meet the emission standards in Table 1 of the ATCM for the specific power rating and model year of the proposed engine.</p>	<p>The applicant has proposed the use of an engine that are certified to the latest EPA Tier Certification standards for the applicable horsepower range, guaranteeing compliance with the emission standards of the ATCM. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.</p>
<p>Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM</p>	<p>The District has verified that this engine is not located within 500' of a school.</p>
<p>A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2005, on all engines subject to all or part of the requirements of sections 93115.6, 93115.7, or 93115.8(a) unless the District determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.</p>	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> • {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
<p>An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.</p>	<p>Permit conditions enforcing these requirements were shown earlier in the evaluation.</p>

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the

CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

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

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 C-5740-9-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix A.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
C-5740-9-0	3020-10-D	752 bhp IC engine	\$479.00

Appendixes

- A. Draft ATC and Emissions Profile
- B. BACT Guideline and BACT Analysis
- C. EPA Certificate of Conformity
- D. HRA Summary and AAQA
- E. QNEC Calculations

Appendix A
Draft ATC and Emissions Profile

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-5470-9-0

LEGAL OWNER OR OPERATOR: VALADAO DAIRY
MAILING ADDRESS: 17293 9 1/2 AVENUE
HANFORD, CA 93230

LOCATION: 17293 9 1/2 AVENUE
HANFORD, CA 93230

EQUIPMENT DESCRIPTION:

752 BHP (INTERMITTENT) MTU MODEL 10V1600G805 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. Within 90 days of the startup of the equipment authorized by this Authority to Construct (ATC), Permit to Operate C-5470-8-0 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
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. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. {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]
6. {4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
7. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

C-5470-9-0: Nov 26 2014 3:18PM - LOWELES Joint Inspection NOT Required

8. Emissions from this IC engine shall not exceed any of the following limits: 4.34 g-NOx/bhp-hr, 0.9 g-CO/bhp-hr, or 0.21 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
9. Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
10. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
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. {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]
13. {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]
14. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
15. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]
16. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

Permit #: C-5470-9-0	Last Updated
Facility: VALADAO DAIRY	11/26/2014 LOWELES

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	720.0	1.0	23.0	149.0	35.0
Daily Emis. Limit (lb/Day)	172.7	0.2	5.6	35.8	8.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	180.0	0.0	5.0	37.0	8.0
Q2:	180.0	0.0	6.0	37.0	9.0
Q3:	180.0	0.0	6.0	37.0	9.0
Q4:	180.0	1.0	6.0	38.0	9.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Appendix B

BACT Guideline and BACT Analysis

San Joaquin Valley Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1

Last Update: 9/10/2013

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/bhp-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*		

**Note: for emergency engines $50 \leq \text{bhp} < 75$, Tier 4 Interim certification is the requirement; for emergency engines $75 \leq \text{bhp} < 750$, Tier 3 certification is the requirement; for emergency engines ≥ 750 bhp, Tier 2 certification is the requirement.*

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

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

BACT Guideline 3.1.1 (09/10/13) applies to emergency diesel IC engines. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. BACT Analysis for NO_x, and VOC Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

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

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

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

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

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

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

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

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

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

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

The proposed engine is rated at 752 hp. Therefore, the applicable control technology option is EPA Tier 2 certification.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

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

2. BACT Analysis for PM₁₀ Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)*

The latest EPA Tier Certification level for an engine of the proposed model year and horsepower rating is Tier 2. Refer to the Top-Down BACT analysis for NO_x for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier 2 IC engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

Therefore, a PM/PM₁₀ emission standard of 0.15 g/hp-hr is required as BACT.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for PM₁₀ is emissions of 0.15 g/hp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.

Appendix C
EPA Certificate of Conformity



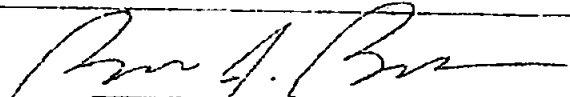
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2014 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Tognum America, Inc.
(U.S. Manufacturer or Importer)
Certificate Number: EMDDL210ZWR-004

Effective Date:
12/19/2013

Expiration Date:
12/31/2014


Byron J. Bonker, Division Director
Compliance Division

Issue Date:
12/19/2013

Revision Date:
N/A

Model Year: 2014
Manufacturer Type: Original Engine Manufacturer
Engine Family: EMDDL210ZWR

Mobile/Stationary Indicator: Stationary
Emissions Power Category: 560<kW<=2237
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

CALIFORNIA PROPOSITION 65 WARNING

DIESEL ENGINE EXHAUST GAS AND SOME OF ITS CONSTITUENTS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, AND OTHER REPRODUCTIVE HARM.



66.14 MMH 425

EMISSION CONTROL INFORMATION

FOR STATIONARY EMERGENCY USE ONLY. MEETS ALL EMISSION STANDARDS FOR EMERGENCY ENGINES IN 40 CFR §60.4202. DOES NOT MEET EMISSION STANDARDS FOR NON-EMERGENCY ENGINES IN 40 CFR §60.4201. ULTRA LOW SULFUR FUEL ONLY.

ENGINE FAMILY: EMDL21.0ZWR

MAXIMUM POWER: 661 KW

POWER CATEGORY: 661 - 1500 KW

DISP.: 17.5 L

MFG. DATE: 03/201

UNIT: 16601002801



THIS ENGINE IS EXEMPTED FROM THE REQUIREMENT OF 40 CFR PARTS 89, 1039 AND 13 CCR CH9, ARTICLE 4 AS A "STATIONARY ENGINE". INSTALLING OR USING THIS ENGINE IN ANY OTHER APPLICATION MAY BE A VIOLATION OF FEDERAL AND CALIFORNIA LAW SUBJECT TO CIVIL PENALTY. THIS ENGINE COMPLIES WITH U.S. EPA REGULATIONS FOR 2014 STATIONARY DIESEL ENGINES.

MTU America Inc.

66.14 MMH 425

Appendix D
HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Sandra Lowe-Leseth - Permit Services
From: Kyle Melching - Permit Services
Date: November 26, 2014
Facility Name: Valadao Dairy
Location: 17293 9 ½ Ave., Hanford
Application #(s): C-5470-9-0
Project #: C-1142245

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Units 9-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	>1
Acute Hazard Index	N/A ²	N/A ²	N/A
Chronic Hazard Index	N/A ²	N/A ²	N/A
Maximum Individual Cancer Risk	1.1E-07	1.1E-07	1.1E-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 a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

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

Units 1-0 & 2-0

1. The PM10 emissions rate shall not exceed 0.14 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
3. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on November 20, 2014, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for a 752 bhp emergency diesel IC engines powering electrical generators. This engine will replace the existing 350 bhp emergency diesel engine.

II. Analysis

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

The following parameters were used for the review:

Analysis Parameters Unit 9-0			
Source Type	Point	Location Type	Rural
BHP	752	Type of Closest Receptor	Residence
Stack Height (m)	3.72	Closest Receptor (m)	225
Stack Diameter (m)	0.18	Quad	4
Stack Temp (K)	68.9	PM ₁₀ g/hp-hr	0.14
Stack Velocity (m/s)	736	Max Hours per Year	100

Technical Services also performed modeling for criteria pollutants NO_x, SO_x, CO and PM₁₀. The emission rates used for criteria pollutant modeling were 720 lb/yr NO_x, 1 lb/yr SO_x, 149 lb/yr CO, and 23 lb/yr PM₁₀.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Unit 9-0	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

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

III. Conclusions

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

The cancer risk associated with the operation of each proposed diesel IC engine is 1.1E-07; which is less than 1.0 in a million. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT) for PM₁₀.

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for the proposed 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.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Stack Parameter Worksheet
- D. DICE Screening Risk Tool
- E. Facility Summary
- F. AAQA Summary

Appendix E

QNEC Calculations

Quarterly Net Emissions Change (QNEC)

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

$QNEC = PE2 - PE1$, where:

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

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

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr

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

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

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

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	720	180.0
SO _x	1	0.3
PM ₁₀	23	5.8
CO	149	37.3
VOC	35	8.8