

May 11, 2023

Nathan Coombs
WinCo Foods
PO Box 5756
Boise, ID 83705

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: C-5597
Project Number: C-1223482

Dear Mr. Coombs:

Enclosed for your review and comment is the District's analysis of WinCo Foods's application for an Authority to Construct for the installation of a 1,207 bhp Tier 4F compliant diesel-fired emergency standby internal combustion (IC) engine equipped with a Diesel Emissions Control System that includes a Selective Catalytic Reduction system, Diesel Particulate Filter, and Diesel Oxidation Catalyst powering an electrical generator, at 4488 W Shaw Avenue, Fresno, CA.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). 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. Anne Murphy of Permit Services at (209) 557-6191.

Sincerely,



Brian Clements
Director of Permit Services

BC:am

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95358-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1890 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34948 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: WinCo Foods

Date: May 11, 2022

Mailing Address: PO Box 5756
Boise, ID 83705

Engineer: Anne Murphy

Lead Engineer: Dustin Brown

Contact Person: Nathan Coombs

Telephone: (208) 345-1462

E-Mail: Nate_c@psarch.com

Application #(s): C-5597-2-0

Project #: C-1223482

Deemed Complete: September 16, 2022

I. Proposal

WinCo Foods is proposing to install a 1,207 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator. The proposed Tier 4 Final (Tier 4F) compliant engine will be equipped with a CARB certified NETT Technologies model BlueMAX NOVA 300 Diesel Emissions Control System that includes a Selective Catalytic Reduction (SCR) system, Diesel Particulate Filter (DPF), and MD300 Diesel Oxidation Catalyst (DOC) to comply with the Tier 4F emission requirements for emergency standby engines.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions 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	Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702	Internal Combustion Engines (8/19/21)
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

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

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

III. Project Location

The facility is located at 4488 W Shaw Avenue, Fresno, CA 93722. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

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

V. Equipment Listing

C-5597-2-0: 1,207 BHP (INTERMITTENT) MITSUBISHI MODEL S12A2-Y2PTAW-2 TIER 4F COMPLIANT DIESEL-FIRED EMERGENCY STANDBY IC ENGINE, RETROFITTED WITH A NETT TECHNOLOGIES MODEL BLUEMAX NOVA 300 DIESEL EMISSIONS CONTROL SYSTEM CONSISTING OF A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, A DIESEL PARTICULATE FILTER (DPF), AND A MD300 DIESEL OXIDATION CATALYST (DOC) 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.

The proposed Tier 2 engine will be equipped with a CARB certified NETT Technologies model BlueMAX NOVA 300 Diesel Emissions Control System that includes a Selective Catalytic Reduction (SCR) system, Diesel Particulate Filter (DPF), and MD300 Diesel Oxidation Catalyst (DOC). The control system will reduce the NOx, PM10 and VOC emission levels to comply with the Tier 4F requirements for emergency standby engines. Since this engine and control system have not been certified, the engine will be considered a Tier 4F compliant engine for the purposes of this project.

The main components of the BlueMAX™ system include the Selective Catalytic Reduction (SCR) catalytic converter, the computerized Urea Dosing System (UDS), and integrated housing including the mixing chamber and the urea tank. This SCR system is also equipped with a Diesel Oxidation Catalyst (DOC) and a Diesel Particulate Filter (DPF) as well.

An SCR System is an external control device in which exhaust gases and a reagent, in this case urea solution known as diesel emission fluid (DEF), passes through an appropriate catalyst. The urea solution will be injected upstream of the catalyst where it is converted to ammonia. The ammonia reduces NO_x over the catalyst bed forming elemental nitrogen, water vapor, and other by-products. SCR can reduce NO_x emissions by over 90%.

Diesel Particulate Filters significantly reduce emissions PM emissions. DPFs typically use a porous ceramic or cordierite substrate or metallic filter to physically trap PM and remove it from the exhaust stream. Trapped and collected PM is reduced to ash during filter regeneration, which occurs when the filter element reaches the temperature required for combustion of the PM.

Diesel Oxidation Catalysts reduce the amount of CO and VOC in the exhaust gas by oxidizing the pollutants to carbon dioxide and water at a high temperature. The catalysts consist of a monolith honeycomb substrate coated with platinum group metal catalyst, packaged in a stainless steel container (per manufacturer). The honeycomb structure presents a high catalytic contact area to exhaust gasses. As the hot gases contact the catalyst, CO and VOC are converted into carbon dioxide and water.

The proposed engine and emission control equipment described above will meet the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide for Tier 4F engines (see Appendix C for a copy of the emissions data sheet).

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

VII. General Calculations

A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM ₁₀ fraction of diesel exhaust:	0.96 (CARB, 1988)
Conversion factor:	1.34 bhp/kw

B. Emission Factors

The applicant has proposed to treat the Tier 2 engine with a NETT Technologies model BlueMAX NOVA 300 Diesel Emissions Control System that includes a Selective Catalytic Reduction (SCR) system; Diesel Particulate Filter (DPF), and MD300 Diesel Oxidation Catalyst (DOC). The after treatment system reduces emissions to make the engine Tier 4F NOx, CO, PM10, and VOC compliant.

Latest applicable off-road emissions standards from the California Air Resources Board (CARB) for Tier 4F engines with a rating range of $> 750 \leq 1,207$ bhp:

Off-Road Emissions Standards from CARB						
Power rating (bhp)	Tier	Model Year	NOx (g/bhp-hr)	HC (g/bhp-hr)	CO (g/bhp-hr)	PM (g/bhp-hr)
$> 750 \leq 1,207$ (Generators)	4F	2015+	0.5	0.14	2.6	0.02

The original Tier 2 engine emissions for this unit are as follows:

Unit -2 (Uncontrolled) Tier 2 Emission Factors			
Pollutant	Emission Factor (g/bhp-hr)	Emission Factor (g/kw-hr)	Source
NOx	4.00	5.36	ARB/EPA Certification
SOx	0.0051	0.0068	Mass Balance Equation Below
PM ₁₀	0.13	0.17	ARB/EPA Certification
CO	0.45	0.60	ARB/EPA Certification
VOC	0.42	0.56	ARB/EPA Certification

$$\frac{0.000015 lb - S}{lb - fuel} \times \frac{7.1 lb - fuel}{gallon} \times \frac{2 lb - SO_2}{1 lb - S} \times \frac{1 gal}{137,000 Btu} \times \frac{1 bhp input}{0.35 bhp out} \times \frac{2,542.5 Btu}{bhp - hr} \times \frac{453.6 g}{lb} = 0.0051 \frac{g - SO_x}{bhp - hr}$$

Per manufacturer, the BlueMAX NOVA 300 Diesel Emissions Control System reduces NOx emissions to <0.5 g/kw-hr and PM₁₀ emissions to <0.02 g/kw-hr. Additionally, the EPA has verified that the DOC reduces CO emissions by 90%, and VOC emissions by 80%. The final emission factors of the engine with after-market treatment (Tier 4F compliant) are listed below.

Unit -2 Controlled Tier 4F Compliant Emission Factors			
Pollutant	Emission Factor (g/bhp-hr)	Emission Factor (g/kw-hr)	Source
NOx	0.37	0.5	Engine Manufacturer
SOx	0.0051	0.0068	Mass Balance Equation Below ³
PM ₁₀	0.015	0.02	Engine Manufacturer
CO	0.04	0.06	Engine Manufacturer ₁
VOC	0.08	0.11	Engine Manufacturer ₂

1. Controlled CO EF = Uncontrolled CO EF x (1-CE) = $0.60 \frac{g}{kw\text{-}hr} \times (1 - 0.90) = 0.06 \frac{g}{kw\text{-}hr}$
2. Controlled VOC EF = Uncontrolled VOC EF x (1-CE) = $0.56 \frac{g}{kw\text{-}hr} \times (1 - 0.80) = 0.11 \frac{g}{kw\text{-}hr}$
- 3.

$$\frac{0.000015lb - S}{lb - fuel} \times \frac{7.1lb - fuel}{gallon} \times \frac{2lb - SO_2}{1lb - S} \times \frac{1gal}{137,000Btu} \times \frac{1bhp input}{0.35bhp out} \times \frac{2,542.5Btu}{bhp - hr} \times \frac{453.6g}{lb} = 0.0051 \frac{g - SO_x}{bhp - hr}$$

The District was not able to locate many diesel-fired emergency IC engine installations served by an after-market emission control system. Therefore, certified emission factor data for these types of installations is not readily available. Additionally, as shown above, the manufacturer of the emission control system was not able to provide emission factor guarantees for the proposed engine installation. The emission factors were estimated based on the expected control efficiency of the various emission control systems. Since there is some uncertainty involved with the retrofit control technology being proposed in this project, the applicant has requested to permit this engine utilizing emission factors equivalent to the California Air Resources Board (CARB) Tier 4F emission certification levels. Therefore, the latest applicable off-road emissions standards from the CARB for Tier 4F engines with a rating range of $> 750 \leq 1,207$ bhp will be used in this project.

Unit -2 Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NOx	0.5	Tier 4F CARB Emission Standard ¹
SOx	0.0051	Mass Balance Equation Below
PM ₁₀	0.02	Tier 4F CARB Emission Standard
CO	2.6	Tier 4F CARB Emission Standard
VOC	0.14	Tier 4F CARB Emission Standard

$$\frac{0.000015lb - S}{lb - fuel} \times \frac{7.1lb - fuel}{gallon} \times \frac{2lb - SO_2}{1lb - S} \times \frac{1gal}{137,000Btu} \times \frac{1bhp input}{0.35bhp out} \times \frac{2,542.5Btu}{bhp - hr} \times \frac{453.6g}{lb} = 0.0051 \frac{g - SO_x}{bhp - hr}$$

¹ <https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart>

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post-Project Potential to Emit (PE2)

The daily and annual PE2 are calculated as follows:

$$\text{Daily PE2 (lb-pollutant/day)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \\ \times \text{operation (hr/day)} / 453.6 \text{ g/lb}$$

$$\text{Annual PE2 (lb-pollutant/yr)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \\ \times \text{operation (hr/yr)} / 453.6 \text{ g/lb}$$

Post Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/year)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	0.5	1,207	24	50	31.9	67
SO _x	0.0051	1,207	24	50	0.3	1
PM ₁₀	0.02	1,207	24	50	1.3	3
CO	2.6	1,207	24	50	166.0	346
VOC	0.14	1,207	24	50	8.9	19

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATCs) or Permits to Operate (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 (AER) that have occurred at the source, and which have not been used on-site. SSPE1 emissions are from current PTO C-5597-1-0.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-5597-1-0	15	0	1	36	3
SSPE1	15	0	1	36	3

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

Pursuant to District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the 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 ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/year)					
Permit Unit	NO_x	SO_x	PM₁₀	CO	VOC
SSPE1	15	0	1	36	3
C-5597-2-0	67	1	3	346	19
SSPE2	82	1	4	382	22

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

Rule 2201 Major Source Determination (lb/year)						
	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
SSPE1	15	0	1	1	36	3
SSPE2	82	1	4	4	382	22
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

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

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)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 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 District Rule 2201.

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

7. SB 288 Major Modification

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

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification and no further discussion is required.

8. Federal Major Modification / New Major Source

Federal Major Modification

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

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is 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. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification and no further discussion is required.

New Major Source

As demonstrated above, this facility is not becoming a Major Source as a result of this project, therefore, this facility is not a New Major Source pursuant to 40 CFR 51.165 a(1)(iv)(A)(3).

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

The project potential to emit, by itself, will not exceed any PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- 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 Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 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 the new unit (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NOx	31.9	> 2.0	n/a	Yes
SOx	0.3	> 2.0	n/a	No
PM ₁₀	1.3	> 2.0	n/a	No
CO	166.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	41	No
VOC	8.9	> 2.0	n/a	Yes

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

2. BACT Guideline

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

3. Top-Down BACT Analysis

Per District Policy APR 1305, Section IX, “A top down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District’s NSR Rule for source categories or

classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

Pursuant to the attached top down BACT Analysis, which appears in Appendix B of this report, BACT is satisfied with:

- NOx: EPA Tier 4 Final certification level or equivalent for applicable horsepower range
- VOC: EPA Tier 4 Final certification level or equivalent for applicable horsepower range

The facility has proposed to install a 1,207 bhp Tier 4F compliant IC engine. Therefore, BACT is satisfied for NO_x and VOC.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.6.2 of this rule, offsets are not required for emergency IC engines. The engine in this project is an emergency IC engine; therefore, this exemption is applicable to this project.

However, even when there is an applicable exemption, the SSPE2 values are compared to the offset threshold to determine if offsets are triggered. In its PAS database, the District keeps track of facilities where offsets are triggered but an exemption applies. The SSPE2 values are compared to the offset trigger thresholds in the following table:

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	82	1	4	382	22
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

2. Quantity of District Offsets Required

As shown in the table above, no offset thresholds are exceeded with this project. Further, as previously stated, the offset exemption from Section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offset calculations are not necessary and offsets are not required.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, 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,
- d. Any project with an SSipe of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

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

As shown in Section VII.C.5 above, this existing minor source facility is not becoming a Major Source as a result of this project. Therefore, this facility is not a New Major Source and this project does not constitute an SB 288 or a Federal Major Modification. Consequently, public noticing for this project for New Major Source, Federal Major Modification, or SB 288 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?
NOx	31.9	100 lb/day	No
SOx	0.3	100 lb/day	No
PM ₁₀	1.3	100 lb/day	No
CO	166.0	100 lb/day	Yes
VOC	8.9	100 lb/day	No

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

c. Offset Threshold

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	15	82	20,000 lb/year	No
SO _x	0	1	54,750 lb/year	No
PM ₁₀	1	4	29,200 lb/year	No
CO	36	382	200,000 lb/year	No
VOC	3	22	20,000 lb/year	No

As demonstrated 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	82	15	67	20,000 lb/year	No
SO _x	1	0	1	20,000 lb/year	No
PM ₁₀	4	1	3	20,000 lb/year	No
CO	382	36	346	20,000 lb/year	No
VOC	22	3	19	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 discussed above, public noticing is required for this project for CO emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. 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.

Proposed Rule 2201 (DEL) Conditions:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 0.5 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} Emissions from this IC engine shall not exceed 0.02 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

The applicant has proposed emission factors that are new or are different from those typically used for similar sources. Per District Policy SSP 1835, Monitoring and Source Testing for Tier 4F Compliance Emergency IC Engines, initial source testing will be required to determine if the Third Party Retrofit Tier 4F Compliant Engine meets the requisite EPA Tier 4F emission requirements for the applicable horsepower range. The follow conditions will be included in the permit to operate:

- Source testing to measure NOx, CO, and VOC emissions from this engine shall be conducted within 60 days of initial start-up. [District Rule 2201]
- Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the emissions source testing to ensure the engine is operating at load conditions representative of normal operations. [District Rules 1081 and 2201]
- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. NOx, CO, and VOC emission concentrations shall be converted over to mass basis (g/bhp-hr) for demonstrating compliance with the limits specified in this permit. [District Rules 1081 and 2201]
- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to the source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
- {Modified 3210} The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 2201]

2. Monitoring

As mentioned above, the applicant has proposed emission factors that are new or are different from those typically used for similar sources. A monitoring schedule of 12 months using a portable analyzer will be used to monitor Third-Party Retrofit Tier 4F Compliant Engines. The follow conditions will be included in the permit to operate:

- The permittee shall monitor and record the stack concentration of NOx, CO, and O₂ at least once every 12 months using a portable emission monitor that meets District specifications. Monitoring shall be performed not less than once every month for 12 months if 2 consecutive exceedances of the emission

limit(s) are observed during monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last quarter if on a quarterly monitoring schedule. [District Rule 2201]

- The permittee shall demonstrate the operating horsepower at the source tested power level using any method approved by the APCO and EPA. The permittee shall document typical operating parameters, loading, and duty cycle during the initial source test and subsequent monitoring. [District Rule 2201]
- {Modified 2993} If either the NOx or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 2201]
- {Modified 2994} All portable analyzer emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the portable analyzer monitoring to ensure the engine is operating at load conditions representative of normal operations. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 2201]
- This engine shall be equipped with a CARB Level 3 certified diesel particulate filter (DPF). The DPF shall be operated and maintained according to the DPF manufacturer's specifications, procedures, and recommended inspection and cleaning frequencies. [District Rule 2201]

3. Recordkeeping

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

The follow conditions will be included in the permit to operate to comply with the source testing and monitoring requirements listed above:

- The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with the permit limits. [District Rules 1070 and 2201]
- The permittee shall maintain records of: (1) the date and time of NOx, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NOx and CO concentrations corrected to 15% O₂, (3) the stack volumetric flow rate, in standard cubic meter per hour, dry basis, (4) the emission rate of NOx and CO, converted to g/bhp-hr (5) make and model of exhaust gas analyzer, (6) exhaust gas analyzer calibration records, and (7) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201]
- The permittee shall maintain records of: (1) the date and time of DPF inspection, and (2) the date and time of DPF cleaning. [District Rules 1070 and 2201]

4. Reporting

No reporting is required to ensure compliance with District Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The 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 NOx, CO, and SOx. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NOx, CO, or SOx.

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

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

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 (NESHAPs)

40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (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 ATCs as a mechanism 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 ATCs as a mechanism 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* 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.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification of an existing source shall not result in an increase in cancer risk greater than the District's significance level (20 in a million) and shall not result in acute and/or chronic risk indices greater than 1.

According to the Technical Services Memo for this project, the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The resulting prioritization score, acute hazard index, chronic hazard index, and cancer risk for this project is shown below.

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
2	6.93	N/A ¹	0.00	6.28E-08	No	Yes
Project Totals	6.93	N/A¹	0.00	6.28E-08		
Facility Totals	>1	0.20	0.00	1.83E-07		

Notes:

1. Acute hazard index was not calculated for Unit 2 since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, 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.

In accordance with District policy APR 1905, no further analysis is required, and compliance with District Rule 4102 requirements is expected.

See Attachment D: Health Risk Assessment Summary

The following permit conditions are required to ensure compliance with the assumptions made for the risk management review:

- Emissions from this IC engine shall not exceed 0.02 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- {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]
- {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 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 ATCs as a mechanism 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

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

The proposed engine is 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 for emergency engines, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines

Emergency standby engines are subject to District Rule 4702 requirements. Emergency standby engines are defined in Section 3.0 of District Rule 4702 as follows:

3.15 Emergency Standby Engine: 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.

Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract. The following conditions will be included on the permits:

- {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 and 17 CCR 93115]

- {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 and 17 CCR 93115]

The 100 hour requirement is less stringent than the Air Toxic Control Measure operating limitations for emergency standby engines. Therefore, compliance with the applicable Air Toxic Control Measure requirements ensures compliance with the 100 hour requirement.

Operation of emergency standby engines are limited to 50 hours or less per calendar year for non-emergency purposes. The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine's maintenance and testing to 50 hours/year; therefore, compliance is expected. The following conditions will be included on the permits:

- {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

The following exemption in Section 4.2 of District Rule 4702 applies to emergency standby engines:

4.2 Except for the requirements of Section 5.9 and Section 6.2.3, the requirements of this rule shall not apply to:

4.2.1 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.

Pursuant to the exemption in Section 4.2, the following requirements of Section 5.9 are applicable to emergency standby engines

Section 5.9 requires the owner to:

5.9.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.4 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 Permit-Exempt 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.

Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permits:

- {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]

Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permits:

- {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]

Install and operate a nonresettable elapsed time meter. In lieu of installing a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA and is allowed by Permit-to-Operate condition. The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions. The following condition will be included on the permits:

- {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]

The exemption in Rule 4702 Section 4.2 for emergency standby engines requires the engines to comply with Section 6.2.3, shown below.

6.2.3 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 provided to the APCO upon request. The records shall include, but are not limited to, the following:

- 6.2.3.1 Total hours of operation,*
- 6.2.3.2 The type of fuel used,*
- 6.2.3.3 The purpose for operating the engine,*
- 6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and*
- 6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.*

Records of the total hours of operation, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and other support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The following conditions will be included on the permits:

- {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]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

Rule 4801 Sulfur Compounds

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

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

n = moles SO₂

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

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

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

Since 1.0 ppmv is \leq 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC as a mechanism 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, 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 17 California Code of Regulations (CCR), Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

The following requirements apply to new engines (those installed after 1/1/05):

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	<p>The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, is included on the permit.</p> <ul style="list-style-type: none"> • {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]
The engine(s) must meet the emission standards in Table 1 of the ATCM for the specific power rating and model year of the proposed engine.	<p>The applicant has proposed the use of an engine that is 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>
The engine may not be operated more than 50 hours per year for maintenance and testing purposes unless the PM emissions	<p>The following conditions will be included on the permit:</p>

<p>are \leq 0.01 g/bhp-hr, then the engine is allowed 100 hours per year. Emissions from this engine are certified at 0.015 g/bhp-hr, therefore the engine is allowed 50 hours.</p>	<ul style="list-style-type: none"> • {4772} Emissions from this IC engine shall not exceed 0.02 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115] • {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
<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>The following condition will be included on the permit:</p> <p>{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</p>

	for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 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.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC C-5597-2-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-5597-2-0	3020-10-F	1,207 bhp IC engine	\$900

Appendices

- A. Draft ATC
- B. BACT Guideline and BACT Analysis
- C. Emissions Data Sheets
- D. Tech Services Memo and Ambient Air Quality Analysis
- E. QNEC Calculations

Appendix A Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-5597-2-0

ISSUANCE DATE: 02/27/2023

LEGAL OWNER OR OPERATOR: WINCO FOODS

MAILING ADDRESS:
PO BOX 5756
ATTN; LICENSING
BOISE, ID 83705

LOCATION:
4488 W SHAW AVE
FRESNO, CA

EQUIPMENT DESCRIPTION:

1,207 BHP (INTERMITTENT) MITSUBISHI MODEL S12A2-Y2PTAW-2 TIER 4F COMPLIANT DIESEL-FIRED EMERGENCY STANDBY IC ENGINE, RETROFITTED WITH A NETT TECHNOLOGIES MODEL BLUEMAX NOVA 300 DIESEL EMISSIONS CONTROL SYSTEM CONSISTING OF A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, A DIESEL PARTICULATE FILTER (DPF), AND A MD300 DIESEL OXIDATION CATALYST (DOC) POWERING AN ELECTRICAL GENERATOR

DRAFT

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {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]
6. This engine shall be equipped with a CARB Level 3 certified diesel particulate filter (DPF). The DPF shall be operated and maintained according to the DPF manufacturer's specifications, procedures, and recommended inspection and cleaning frequencies. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

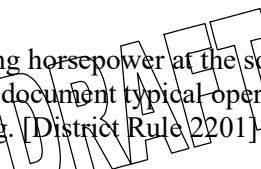
YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection 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.

Samir Sheikh, Executive Director / APCO

DRAFT

Brian Clements, Director of Permit Services
C-5597-2-0 : May 10 2023 2:23PM - MURPHYA : Joint Inspection NOT Required

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]
8. Emissions from this IC engine shall not exceed any of the following limits: 0.5 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
9. Emissions from this IC engine shall not exceed 0.02 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 and 17 CCR 93115]
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 and 17 CCR 93115]
14. {4920} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
15. Source testing to measure NOx, CO, and VOC emissions from this engine shall be conducted within 60 days of initial start-up. [District Rule 2201]
16. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the emissions source testing to ensure the engine is operating at load conditions representative of normal operations. [District Rules 1081 and 2201]
17. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. NOx, CO, and VOC emission concentrations shall be converted over to mass basis (g/bhp-hr) for demonstrating compliance with the limits specified in this permit [District Rules 1081 and 2201]
18. {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
19. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
20. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 2201]
21. The permittee shall monitor and record the stack concentration of NOx, CO, and O₂ at least once every 12 months using a portable emission monitor that meets District specifications. Monitoring shall be performed not less than once every month for 12 months if 2 consecutive exceedences of the emission limit(s) are observed during monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last quarter if on a quarterly monitoring schedule. [District Rule 2201]
22. The permittee shall demonstrate the operating horsepower at the source tested power level using any method approved by the APCO and EPA. The permittee shall document typical operating parameters, loading, and duty cycle during the initial source test and subsequent monitoring. [District Rule 2201]



CONDITIONS CONTINUE ON NEXT PAGE

23. If either the NOx or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 2201]
24. All portable analyzer emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. An appropriately-sized resistance load bank (or equivalent) shall be used during the portable analyzer monitoring to ensure the engine is operating at load conditions representative of normal operations. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 2201]
25. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with the permit limits. [District Rules 1070 and 2201]
26. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NOx and CO concentrations corrected to 15% O₂, (3) the stack volumetric flow rate, in standard cubic meter per hour, dry basis, (4) the emission rate of NOx and CO, converted to g/bhp-hr (5) make and model of exhaust gas analyzer, (6) exhaust gas analyzer calibration records, and (7) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201]
27. {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]
28. The permittee shall maintain records of: (1) the date and time of DPF inspection, and (2) the date and time of DPF cleaning. [District Rules 1070 and 2201]
29. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
30. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

Appendix B

BACT Guideline and BACT Analysis

San Joaquin Valley Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1

Last Update: 4/29/2022

Emergency Diesel IC Engine

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		
NOX	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		
PM10	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
VOC	EPA Tier 4 Final certification level or equivalent for applicable horsepower range**		

**The following emission levels are equivalent to the EPA Tier 4 Final certification levels: 50 - < 75 bhp: 3.5 g-(NOx + VOC)/bhp-hr, 0.02 g-PM/bhp-hr, 3.7 g-CO/bhp-hr 75 - < 175 bhp: 0.30 g-NOx/bhp-hr, 0.015 g-PM/bhp-hr, 3.7 g-CO/bhp-hr, 0.14 g-VOC/bhp-hr 175 - = 750 bhp: 0.30 g-NOx/bhp-hr, 0.015 g-PM/bhp-hr, 2.6 g-CO/bhp-hr, 0.14 g-VOC/bhp-hr > 750 bhp: 0.50 g-NOx/bhp-hr, 0.02 g-PM/bhp-hr, 2.6 g-CO/bhp-hr, 0.14 g-VOC/bhp-hr

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

This application was deemed complete on September 16, 2022. Therefore, BACT Guideline 3.1.1 (April 29, 2022) was in effect at the time the project was deemed complete and will be used for this emergency diesel IC engine. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. BACT Analysis for NOx and VOC Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *EPA Tier 4 Final certification level or equivalent for applicable horsepower range*

No technologically feasible controls or alternate basic equipment are identified in the BACT guideline listed above.

The latest applicable Tier certification level for the engine is Tier 4F, with an emission standard of 0.5 g-NO_x/bhp-hr and 0.14 g-VOC/bhp-hr. Since the proposed engine has an emission rate of 0.5 g-NO_x/bhp-hr and 0.14 g-VOC/bhp-hr with the add-on NETT Technologies model BlueMAX NOVA 300 Diesel Emissions Control System, NOx and VOC emissions from the proposed engines meet the latest tier certification standard Tier 4F emission levels.

Off-Road Emissions Standards from CARB						
Power rating (bhp)	Tier	Model Year	NOx (g/bhp-hr)	HC (g/bhp-hr)	CO (g/bhp-hr)	PM (g/bhp-hr)
750 ≤ 1,207 (Generators)	4F	2015+	0.5	0.14	2.6	0.02

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

Ranking is not necessary since 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 NOx and VOC will be the use of an EPA Tier 4 final compliant engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

Appendix C

Emissions Data Sheets

**750REOZMD****60 HZ. DIESEL INDUSTRIAL GENERATOR SET
EMISSION DATA SHEET****ENGINE INFORMATION**

Model:	Mitsubishi, S12A2-Y2PTAW-2	Bore:	150mm (5.91 in.)
Nameplate BPH @ 1800 RPM:	1207	Stroke:	160mm (6.30 in.)
Type:	4-Cycle, 12 V Cylinder	Displacement:	33.93 L (2071 cu. in.)
Aspiration:	Turbocharged	EPA Family:	NMVXL33.9BBA
Compression Ratio	15.3:1	EPA Certificate	NMVXL33.9BBA-002
Emission Control Device	Turbocharged and after cooled		

Table 1

1/4 Standby	1/2 Standby	3/4 Standby	Full Standby
225.00	450.00	675.00	900.00
251.00	223.00	218.00	240.00
			232.00
			473.00

PERFORMANCE DATA:

Engine bkW @ Stated Load

Fuel Consumption (g/kWh)

Exhaust Gas Flow (m³/s)

Exhaust Temperature (°C)

**Table 2
EPA CERTIFICATE DATA**

0.56
5.36
0.60
0.17

Values are in g/kWh unless otherwise noted.

TEST METHODS AND CONDITIONSData was recorded during steady-state rated engine speed (\pm 25 RPM) with full load (\pm 2%). Pressures,

temperatures, and emission rates were stabilized

Fuel Spec	Type 2-D and ASTM D975 No.2D
Fuel Temperature	37 \pm 10 °C
Intake Temperature	25 °C
Barometric Pressure	100 kPa (29.6 In Hg)
Relative Humidity	30 %
Standard	ISO 8178

The emission data here were taken from a single engine under the test condition shown above.
These data are subjected to instrumentation and engine to engine variability.

Data and specifications subject to change without notice.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, DC 20460

OFFICE OF
AIR AND RADIATION

JUN 12 2015

John Popik
President of Nett Technologies Inc.
2-6707 Goreway Drive
Mississauga, Ontario
Canada L4v 1P7

Dear Mr. Popik:

The U.S. Environmental Protection Agency (EPA) Technology Assessment Center has reviewed your request for verification of the MD300 diesel oxidation catalyst (DOC). Based on our evaluation of the verification application, the test data, and additional information provided, EPA hereby verifies that this technology reduces emissions of certain criteria pollutants by the percentages described in the table below.

The technology is approved for use on the following engines and/or vehicles provided all of the operating criteria are met as described below:

Technology	Engine Model/Application	Fuel, Max Sulfur (ppm)	Reductions (%)			
			PM	NO _x	HC	CO
Nett Technologies Inc. MD300 Diesel Oxidation Catalyst (DOC)	4-cycle, constant speed engines, rated at 100-750hp for NR and Stationary applications, certified to Tier 1, 2, or 3	15	20	0	80	90

The following criteria must be met in order for appropriately retrofitted engines to achieve the aforementioned emission reductions:

- 1) Baseline engine must be in a certified configuration and operating on fuel with less than 15 ppm sulfur.
- 2) The engine exhaust temperature must achieve at least 200°C at some point in the duty cycle.
- 3) The engine/equipment must not be equipped with a crankcase oil burning system.
- 4) The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.

- 5) The engine must ***not*** have been originally certified or equipped with a DOC or diesel particulate filter.
- 6) For constant speed engines in stationary applications, Nett Technology Inc. is responsible for working with end-users in determining the engine's eligibility and compliance with applicable federal, state, and/or local regulations.

EPA estimates that this device will incur no discernable fuel economy penalty when used in a compatible application.

If the MD300 DOC is modified from the application description provided to EPA and representative of products tested, you must notify EPA immediately. This verification does not automatically confer to modified devices or devices that are similar to this original verification.

Information on the MD300 DOC, percent reduction, and applicable engines will be posted on the EPA's Verified Technology List website at: <http://www.epa.gov/cleandiesel/verification/verif-list.htm>. As you know, Nett Technologies Inc. will be responsible for completing the required in-use testing program and for submitting all in-use testing data to EPA as outlined in EPAs in-use test methods. The in-use MD300 DOC must comply with all Clean Air Act and Greenhouse Gas regulations.

Thank you for participating in EPA's Technology Assessment Center Verification Program. If you have any questions or comments, please contact Julie Hawkins, of my staff, at (202) 343-9072.

Sincerely,



Karl Simon, Division Director
Transportation and Climate Division
Office of Transportation and Air Quality

Nett Technologies Proposal for Kohler 750 REOZMD

1.0 Project Summary

Nett Technologies is pleased to submit the following proposal for the BlueMAX, with Selective Catalytic Reduction Catalysts (SCRs), and Diesel Particulate Filters (DPFs) for the following engine:

Table 1 – Engine Information

Model Mitsubishi S12A2-Y2PTAW-2

Generator Power 750 kW

Engine Rated Power 1207 HP

Engine Family Number NMVXL33.9BBA

Designed to reduce NOx, CO emissions, and PM (Particulate Matter) to meet Tier 4 regulations and providing effective sound attenuation of 35 dBA – Hospital Grade Silencing

Table 2 - Emissions Data

Emissions	Engine Outlet (g/HP.H)	Required Emissions (g/HP.H)	Post BlueMAX (g/HP.H)
NOx	3.99	0.5	Under 0.5
PM	0.13	0.02	Under 0.02
CO	0.45	2.6	Under 2.6

Table 3 – SCR/DPF/DOC System Specifications

Exhaust Flow Rate CFM	7344
Pressure Loss - Clean	12" H2O
Sound Attenuation	Hospital 35 dBA
Total Approximate Wt.	9673 lbs
Minimum Regeneration Temp	230C
Reactant	Urea
Percent Concentration	32.50%
DEF Consumption	6.5 L/Hr per Engine
Dosing Capacity	up to 45L/hr

Appendix D

**Technical Services Memo and Ambient Air Quality
Analysis**

San Joaquin Valley Air Pollution Control District

Risk Management Review and Ambient Air Quality Analysis

To: Anne Murphy – Permit Services
From: Nicholas Yeung – Technical Services
Date: May 9, 2023
Facility Name: WINCO FOODS
Location: 4488 W SHAW AVE, FRESNO
Application #(s): C-5597-2-0
Project #: C-1223482

1. Summary

1.1 Risk Management Review (RMR)

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
2	6.93	N/A ¹	0.00	6.28E-08	No	Yes
Project Totals	6.93	N/A¹	0.00	6.28E-08		
Facility Totals	>1	0.20	0.00	1.83E-07		

Notes:

1. Acute hazard indices were not calculated for Unit 2 since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

1.2 Ambient Air Quality Analysis (AAQA)

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	N/A ²		N/A ²		
NO _x	N/A ²				Pass
SO _x	N/A ²	N/A ²		N/A ²	Pass
PM10				N/A ²	Pass ⁴
PM2.5				N/A ²	Pass ⁵
Ozone	N/A ²		N/A ²		

Notes:

1. Results were taken from the attached AAQA Report.
2. The 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.
3. ²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted.
4. Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 1 µg/m³ for the annual concentration.
5. Modeled PM2.5 concentrations were below the District SIL for non-fugitive sources of 0.2 µg/m³ for the annual concentration.

1.3 Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 2-0

1. The PM₁₀ emissions rate shall not exceed 0.015 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.
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.
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 50 hours per calendar year.

2. Project Description

Technical Services received a revised request to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -2-0: 1,207 BHP (INTERMITTENT) MITSUBISHI MODEL S12A2-Y2PTAW-2 TIER 2 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE EQUIPPED WITH A NETT TECHNOLOGIES MODEL BLUEMAX NOVA 300 DIESEL EMISSIONS CONTROL SYSTEM CONSISTING OF A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, A DIESEL PARTICULATE FILTER (DPF), AND A MD300 DIESEL OXIDATION CATALYST (DOC) (TIER 4F COMPLIANT) POWERING AN ELECTRICAL GENERATOR.

3. RMR Report

3.1 Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the units', the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required.

If a refined assessment is greater than one in a million but less than 20 in a million for carcinogenic impacts (cancer risk) and less than 1.0 for the acute and chronic hazard indices (non-carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For units that exceed a cancer risk of one in a million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Particulate matter (PM10) emissions for the proposed diesel internal combustion engine was provided by the Permit Engineer. Per OEHHA guidance, all diesel exhaust PM10 is evaluated as diesel particulate matter (CAS# 9901).

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2013-2017 from Fresno (urban dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
2	1	Diesel PM10	Lbs	0.05	3.00

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
2	1,207 BHP DICE	5.49	746	21.11	0.46	Vertical

4. AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO₂ standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	Station Name	County	City	Measurement Year
CO	Clovis-Villa	Fresno	Clovis	2021
NOx	Fresno-Sky Park	Fresno	Fresno	2021
PM10	Clovis-Villa	Fresno	Clovis	2021
PM2.5	Clovis-Villa	Fresno	Clovis	2021
SOx	Fresno - Garland	Fresno	Fresno	2021

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
2	1	N/A ¹				

Notes:

1. The 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.

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
2	1	67	1.00	346	3.00	3.00

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state or federal air quality standard. The parameters outlined below and meteorological data for 2013-2017 from Fresno (urban dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
2	1,207 BHP DICE	5.49	746	21.11	0.46	Vertical

5. Conclusion

5.1 RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. In addition, the cancer risk for each unit in this project 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).**

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

5.2 AAQA

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

6. Attachments

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary
- E. AAQA results

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:

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

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NOx	67	16.8
SOx	1	0.3
PM ₁₀	3	0.8
CO	346	86.5
VOC	19	4.8