



APR 19 2012

Mr. Mark De Castro
Madera Power, LLC
P.O. Box 305
Firebaugh, CA 93622

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-799
Project # C-1111164**

Dear Mr. De Castro:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant proposes to install one 980 bhp Komatsu Model SAA6D170E2-3 Tier 2 certified transportable diesel-fired IC engine powering various equipment at the facility.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with Certificates of Conformity. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

c: Stanley Tom, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

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



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



APR 19 2012

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-799
Project # C-1111164**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Madera Power, LLC 11427 Firebaugh Blvd, Firebaugh, which has been issued a Title V permit. Madera Power, LLC is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The applicant proposes to install one 980 bhp Komatsu Model SAA6D170E2-3 Tier 2 certified transportable diesel-fired IC engine powering various equipment at the facility.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authorities to Construct # ATC # C-799-1-10, '3-17, '6-5, '7-3, '8-3, '9-0 with Certificates of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
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APR 19 2012

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-799
Project # C-1111164**

Dear Mr. Tollstrup:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant proposes to install one 980 bhp Komatsu Model SAA6D170E2-3 Tier 2 certified transportable diesel-fired IC engine powering various equipment at the facility.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authorities to Construct # ATC # C-799-1-10, '3-17, '6-5, '7-3, '8-3, '9-0 with Certificates of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 30-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

c: Stanley Tom, Permit Services

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**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed modification of Madera Power, LLC for its power generation facility 11427 Firebaugh Blvd, Firebaugh, California. The applicant proposes to install one 980 bhp Komatsu Model SAA6D170E2-3 Tier 2 certified transportable diesel-fired IC engine powering various equipment at the facility.

The District's analysis of the legal and factual basis for this proposed action, project #C-1111164, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested by the public, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.

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

Facility Name:	Madera Power, LLC	Date:	April 17, 2012
Mailing Address:	P.O. Box 305 Firebaugh, CA 93622	Engineer:	Stanley Tom
Contact Person:	Mark De Castro	Lead Engineer:	Joven Refuerzo
Telephone:	(559) 659-4791		
FAX:	(559) 659-4793		
Application No:	C-799-1-10, '3-17, '6-5, '7-3, '8-3, '9-0		
Project No:	C-1111164		
Deemed Complete:	May 16, 2011		

I. PROPOSAL

Madera Power, LLC has requested an Authority to Construct (ATC) to install one 980 bhp Komatsu Model SAA6D170E2-3 Tier 2 transportable diesel-fired IC engine, or equivalent, powering various equipment at the facility.

The applicant has proposed to limit the engine operation to 16 hours per day and 440 hours per year for scheduled, non-intermittent events to pass the Ambient Air Quality Analysis for this project and stay below the Greenhouse Gas significance threshold.

In order to avoid offsetting requirements, Madera Power LLC is proposing to add this new unit to the existing Specific Limiting Condition (SLC). Therefore the following condition will be placed on the ATC in this project:

- Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NOx/year, 54,000 lb-SOx/year, 83,520 lb-PM10/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District Rule 2201]

ATC applications will be required for permit units C-799-3, '6, '7, '8 to add permit unit '9 to the SLC. However, permit units C-799-3, '6, '7, '8 will not undergo a NSR modification.

Madera Power, LLC received their Title V Permit on July 10, 1998. This modification can be classified as a Title V significant modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Madera Power, LLC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/2005)
Rule 4102 Nuisance (12/17/1992)
Rule 4201 Particulate Matter Concentration (12/17/1992)
Rule 4701 Internal Combustion Engines (8/21/2003)
Rule 4702 Internal Combustion Engines – Phase 2 (1/18/2007)
Rule 4801 Sulfur Compounds (12/17/1992)
California Health & Safety Code 41700
40 CFR Part 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants: Stationary Reciprocating Internal Combustion Engines)
40 CFR Part 89 (Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines)
Title 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment
Title 17 CCR, Section 93116 - Airborne Toxic Control Measure (ATCM) for Portable Engines rated at 50 horsepower and greater
California Health & Safety Code 42310.6 (School Notice)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

II. Project location

The facility is located at 11427 Firebaugh Blvd. near Firebaugh, CA. 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.

III. Process Description

Madera Power LLC operates a power generating facility at this location. Agricultural waste products, saw mill residues, forest residues, orchard and vineyard prunings, etc. are used as fuel for the existing fluidized bed boiler. The boiler generates steam that is used to power the steam turbine. The steam turbine drives the electric generator to generate electricity. The electricity generated by this facility is released on the power grid for use by the general public.

The transportable IC engine is used to power various equipment around the facility including, but not limited to, portable generators, air compressors, grinders, hydroblasters, and vacuum trailers.

V. Equipment Listing

C-799-1-10: MODIFICATION OF FUEL STORAGE AND FEED SYSTEM CONSISTING OF: TRUCK WEIGH SCALE, FUEL STORAGE BLDG., TRUCK TIPPER, 2 RECLAIM CONVEYORS (RC1A, RC2A), FUEL RECLAIM, COLLECTION, AND TRANSFER CONVEYORS WITH A DUST COLLECTION SYSTEM INCLUDING FOUR PICKUP POINTS SERVED BY A BAGHOUSE: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

C-799-3-17: MODIFICATION OF 28.5 MW RESOURCE RECOVERY FACILITY BOILER/GENERATOR INCLUDING: 460 MMBTU/HR ATMOSPHERIC FLUIDIZED BED BOILER, MULTICLONE, BAGHOUSE, REAGENT INJECTION SYSTEM, AMMONIA INJECTION SYSTEM, PROPANE OR NATURAL GAS-FIRED START-UP PREHEATER, WITH CONTINUOUS EMISSION MONITORS: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

C-799-6-5: MODIFICATION OF MODIFICATION OF WOOD WASTE FUEL SCREENING AND HANDLING OPERATION WITH WET SUPPRESSION SYSTEM CONSISTING OF FEED HOPPER, TAKE AWAY CONVEYOR, DESTONER, ROCKS CONVEYOR, SEPARATOR CONVEYOR, DISCHARGE CONVEYOR, TWO PICKUP HOODS FEEDING TWO PLASTIC COLLECTION BOXES, ONE MANUAL PICKING STATION, AND ONE DOPPSTADT ROTATING DRUM SCREEN POWERED BY A 465 BHP DAIMLER CHRYSLER TIER 3 TRANSPORTABLE DIESEL-FIRED IC ENGINE: REMOVE FEED HOPPER AND FEED CONVEYOR, RELOCATE DOPPSTADT ROTATING SCREEN TO FEED HOPPER LOCATION, RELOCATE BLOWER #3 DISCHARGE FROM PLASTIC COLLECTION BOX #1 TO PLASTIC COLLECTION BOX #2, MAINTAIN BLOWER #4 DISCHARGE TO PLASTIC COLLECTION BOX #2, AND INSTALL ONE PICKUP HOOD AND BLOWER #5 AND RELOCATE PLASTIC COLLECTION BOX CONNECTED TO BLOWER #5 DISCHARGE: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

C-799-7-3: MODIFICATION OF TRANSPORTABLE PETERSON POWER CORP MODEL 4710 SERIAL NO 29B-56-1404 WOOD WASTE FUEL GRINDING AND HANDLING OPERATION WITH PERMIT EXEMPT ENGINE (PER RULE 2020, SECTION 4.3, DEFINED AS MOTOR VEHICLE): ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

C-799-8-3: MODIFICATION OF TRANSPORTABLE 315 BHP JOHN DEERE MODEL 6068HF485T S/N PE6068L001281X TIER 3 DIESEL-FIRED IC ENGINE POWERING SCREENING OPERATIONS LISTED IN PERMITS C-799-6 OR S-285-10: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

C-799-9-0: TRANSPORTABLE 980 BHP KOMATSU MODEL SAA6D170E2-3 TIER 2 CERTIFIED DIESEL-FIRED IC ENGINE POWERING VARIOUS EQUIPMENT AT THE FACILITY

VI. Emission Control Technology Evaluation

The engine is equipped with:

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

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

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

VII. General Calculations

As discussed in the Proposal Section above, permit units C-799-1, '3, '6, '7, '8 will not undergo a NSR modification in this project. Therefore, calculations are not necessary.

A. Assumptions

Daily Operating schedule: 16 hr/day (per applicant, to pass Ambient Air Quality Analysis)

Annual Operating schedule: 440 hr/year (per applicant, to pass Ambient Air Quality Analysis and stay below Greenhouse Gas significance threshold)

Density of diesel fuel: 7.1 lb/gal

EPA F-factor (adjusted to 60 °F): 9,051 dscf/MMBtu
 Fuel heating value: 137,000 Btu/gal
 BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr
 Thermal efficiency of engine: commonly ≈ 35%
 PM₁₀ fraction of diesel exhaust: 0.96 (CARB, 1988)

Tier 2 has certified NO_x + VOC emissions of 4.4 g/bhp-hr. It will be assumed the NO_x + VOC emission factor is split 95% NO_x and 5% VOC (per the District's Carl Moyer program).

B. Emission Factors

	g/hp-hr	Source
NO _x	4.18	Tier 2 ARB/EPA Certification
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.10	Tier 2 ARB/EPA Certification
CO	0.60	Tier 2 ARB/EPA Certification
VOC	0.22	Tier 2 ARB/EPA Certification

$$0.0015 \% S \times \frac{7.1\text{lb} \cdot \text{fuel}}{\text{gallon}} \times \frac{2\text{lb} \cdot \text{SO}_2}{1\text{lb} \cdot \text{S}} \times \frac{1\text{gal}}{137,000 \text{Btu}} \times \frac{1\text{hp input}}{0.35 \text{hp out}} \times \frac{2,542.5 \text{Btu}}{\text{hp} \cdot \text{hr}} \times \frac{453.6 \text{g}}{\text{lb}} = 0.0051 \frac{\text{g} \cdot \text{SO}_x}{\text{hp} \cdot \text{hr}}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project PE (PE2)

Daily Post-Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO _x	4.18	980	16	453.6	144.5
SO _x	0.0051	980	16	453.6	0.2
PM ₁₀	0.10	980	16	453.6	3.5
CO	0.60	980	16	453.6	20.7
VOC	0.22	980	16	453.6	7.6

Annual Post-Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/year)	Conversion (g/lb)	PE2 Total (lb/year)
NO _x	4.18	980	440	453.6	3,974
SO _x	0.0051	800	440	453.6	4
PM ₁₀	0.10	800	440	453.6	78
CO	0.60	800	440	453.6	466
VOC	0.22	800	440	453.6	171

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-799-2-3	0	0	130	0	0
C-799-1-7	417,600	54,000	83,520	501,120	200,448
C-799-3-15					
C-799-6-2					
C-799-7-1					
C-799-8-1	0	0	0	0	0
C-799-4-2					
Pre-Project SSPE (SSPE1)	417,600	54,000	83,650	501,120	200,448

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-799-2-3	0	0	130	0	0
C-799-1-7	417,600	54,000	83,520	501,120	200,448
C-799-3-15					
C-799-6-2					
C-799-7-1					
C-799-8-1					
C-799-9-0	0	0	0	0	0
C-799-4-2					
Post-Project SSPE (SSPE2)	417,600	54,000	83,650	501,120	200,448

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post-Project SSPE (SSPE2)	417,600	54,000	83,650	501,120	200,448
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	Yes	Yes

6. Baseline Emissions (BE)

The BE calculation (in lbs/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 Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

Offset calculations will be required for all of the units within the SLC; therefore, Baseline Emissions will be calculated for all units within the SLC.

All emissions from this facility have been offset by burning creditable agricultural wastes, as indicated by conditions 15 through 23 on current permit C-799-3-13. The facility is required to quantify the total amount of stack emissions and offset with creditable biomass from open burning on an ongoing annual basis. Therefore, all units within this SLC at this facility qualify as fully-offset emissions units and BE = PE1 for this project.

7. SB 288 Major Modification

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

As discussed in Section VII.C.5 above, the facility is not a Major Source for SO_x or PM₁₀; therefore, the project does not constitute a SB 288 Major Modification for SO_x or PM₁₀.

As discussed in Section VII.C.5 above, the facility is an existing Major Source for NO_x and VOC; however, the project by itself would need to be a significant increase in order to trigger a SB 288 Major Modification. The emissions unit within this project does not have a total potential to emit which is greater than SB 288 Major Modification thresholds (see table below). Therefore, the project cannot be a significant increase and the project does not constitute a SB 288 Major Modification.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	SB 288 Major Modification?
NO _x	3,974	50,000	No
VOC	171	50,000	No

8. Federal Major Modification

As discussed in Section VII.C.5 above, the facility is not a Major Source for SO_x or PM₁₀ emissions; therefore, the project does not constitute a Federal Major Modification for SO_x or PM₁₀ emissions.

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of the “Less-Than-Significant Emissions Increase” exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
NO _x	0
VOC	0

The Net Emissions Increases (NEI) for purposes of determination of a “Less-Than-Significant Emissions Increase” exclusion will be calculated below to determine if this project qualifies for such an exclusion.

Net Emission Increase for New Units (NEI_N)

Per 40 CFR 51.165 (a)(2)(ii)(D) for new emissions units in this project,

$$NEI_N = PE2_N - BAE$$

$$BAE = 0 \text{ for the new unit therefore } NEI_N = PE2_N$$

$$NEI_N (NO_x) = 3,974 \text{ lb/year}$$

$$NEI_N (VOC) = 171 \text{ lb/year}$$

$$NEI (NO_x) = 3,974 \text{ lb/year}$$

$$NEI (VOC) = 171 \text{ lb/year}$$

The NEI for this project will be greater than the federal Major Modification threshold of 0 lb/year for NO_x and VOC. Therefore, this project does not qualify for a “Less-Than-Significant Emissions Increase” exclusion and is thus determined to be a Federal Major Modification for NO_x and VOC.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install a diesel-fired IC engine with a PE2 greater than 2 lb/day for NO_x, PM₁₀, CO and VOC. BACT is triggered for NO_x, PM₁₀, CO, and VOC since the PE2 is greater than 2 lb/day.

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

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project; therefore BACT is not triggered.

d. Major Modification

As discussed in Section VII.C.7 above, this project does constitute a Federal Major Modification for NO_x and VOC; therefore BACT is triggered.

2. BACT Guideline

BACT determination Guideline 3.2.11, applies to Transportable Compression – Ignited IC Engines (Non-Agricultural, Non-Electric Generation) (See Attachment A).

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, 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.

Pursuant to the attached Top-Down BACT Analysis (Attachment A), BACT has been satisfied with the following:

Diesel-fired IC Engine

NO_x, PM₁₀, CO, and VOC: TIER 2 EPA Certified Non-Road Transportable Engine

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	417,600	54,000	83,650	501,120	200,448
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_x, CO and VOC and the SSPE2 is greater than the offset thresholds for NO_x, PM₁₀, CO and VOC; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for NO_x, PM₁₀, CO and VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = $(\sum[PE2 - BE]_{SLC} + ICCE) \times DOR$, for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

As calculated in Section VII.C.6 above, the Baseline Emissions (BE) of the SLC are equal to the Pre-Project Potential to Emit (PE1). Therefore:

NO_x: Offsets Required (lb/yr) = $[PE2 - BE]_{SLC} = [417,600 - 417,600] = 0$

PM₁₀: Offsets Required (lb/yr) = $[PE2 - BE]_{SLC} = [83,650 - 83,650] = 0$

CO: Offsets Required (lb/yr) = $[PE2 - BE]_{SLC} = [501,120 - 501,120] = 0$

VOC: Offsets Required (lb/yr) = $[PE2 - BE]_{SLC} = [200,448 - 200,448] = 0$

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,

- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications

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

As demonstrated in VII.C.7, this project is a Federal Major Modification for NO_x and VOC; therefore, public noticing for SB 288 or Federal Major Modification purposes is 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 (Diesel IC Engine)			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	144.5	100 lb/day	Yes
SO _x	0.2	100 lb/day	No
PM ₁₀	3.5	100 lb/day	No
CO	20.7	100 lb/day	No
VOC	7.6	100 lb/day	No

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

c. Offset Threshold

The following table compares pollutant will trigger public noticing requirements. As seen the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	417,600	417,600	20,000 lb/year	No
SO _x	54,000	54,000	54,750 lb/year	No
PM ₁₀	83,650	83,650	29,200 lb/year	No
CO	501,120	501,120	200,000 lb/year	No
VOC	200,448	200,448	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	417,600	417,600	0	20,000 lb/year	No
SO _x	54,000	54,000	0	20,000 lb/year	No
PM ₁₀	83,650	83,650	0	20,000 lb/year	No
CO	501,120	501,120	0	20,000 lb/year	No
VOC	200,448	200,448	0	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.

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering Federal Major Modification for NO_x and VOC emissions and for NO_x emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the U.S. Environmental Protection Agency (USEPA) California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT; therefore, the following conditions will be added to the permit to ensure compliance:

- Emissions from the IC engine shall not exceed any of the following limits: 4.18 g-NOx/bhp-hr, 0.60 g-CO/bhp-hr, or 0.22 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93116]
- The PM10 emissions rate from the engine shall not exceed 0.10 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801]
- Operation of this permit unit shall not exceed 440 hours per year, as determined by an operational nonresettable elapsed operating time meter or other APCO approved alternative. These records shall be updated at least monthly. [District Rules 2201 and 4702]
- Any engine utilized by this permit shall not operated more than 16 hours within any rolling 24 hour period when operating for a scheduled, non-intermittent event. [District Rules 2201 and 4102] Y

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition will appear on the permit to operate:

- 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, amount and type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 2201 and 4702]
- For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule]

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

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

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

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

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

The proposed location is in a non-attainment area for PM₁₀ and PM_{2.5}. The increase in the ambient PM₁₀ concentration due to the proposed equipment is shown on the table titled Calculated Contribution. The levels of significance, from 40 CFR Part 51.165 (b)(2), are shown on the table titled Significance Levels.

Significance Levels					
Pollutant	Significance Levels (µg/m ³) - 40 CFR Part 51.165 (b)(2)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM ₁₀	1.0	5	N/A	N/A	N/A
PM _{2.5}	0.3	1.2	N/A	N/A	N/A

Calculated Contribution					
Pollutant	Calculated Contributions (µg/m ³)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM ₁₀	0.008	1.1	N/A	N/A	N/A
PM _{2.5}	0.008	1.1	N/A	N/A	N/A

As shown, the calculated contribution of PM₁₀ or PM_{2.5} will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a

and VIII-Rule 2201-C.1.b, this source is undergoing a Federal Major Modification, therefore this requirement is applicable. Included in Attachment B is Madera Power LLC's compliance certification.

H. Alternative Siting Analysis

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

The operation of a biomass power plant requires a large number support equipment, services and structures such as raw material receiving stations, fuel reclaimers, conveyors, screens, ash handling equipment, warehouses, and administration buildings.

Since the current project involves no change in the amount of biomass processed at the facility and no change to any other facets of the operation, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC) (see Attachment C); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to transportable, non-emergency compression ignited IC engines.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to this IC engine.

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.

Based on experience with similar operations, compliance with visible emission limits is expected under normal operating conditions and the following condition will be added to the permit to ensure compliance:

- 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

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations provided the equipment is well maintained. Therefore, compliance with this rule is expected and the following condition will be added to the permit 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.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Attachment D), the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-799-9-0	0.22 per million	No

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.

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

The following special conditions are required:

- {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]
- The PM10 emissions rate from the engine shall not exceed 0.10 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]
- Any engine utilized by this permit shall not operate within 5,000 feet of the nearest receptor. [District Rule 4102]
- Any engine utilized by this permit shall have an exhaust stack height of at least 20 feet above grade. [District Rule 4102]
- Any engine utilized by this permit shall have an exhaust velocity of at least 289 feet per second. [District Rule 4102]
- Any engine utilized by this permit shall have an exhaust temperature of at least 952 degrees F. [District Rule 4102]
- The diameter of the exhaust stack for any engine utilized by this permit shall be no greater than 0.62 feet wide. [District Rule 4102]
- Any engine utilized by this permit shall not operate within 500 feet of the facility boundary when operating for a scheduled, non-intermittent event. [District Rule 4102]
- Any engine utilized by this permit shall not operated more than 16 hours within any rolling 24 hour period when operating for a scheduled, non-intermittent event. [District Rules 2201 and 4102]

Rule 4201 Particulate Matter Concentration

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

$$0.10 \frac{g - PM_{10}}{bhp - hr} \times \frac{1 g - PM}{0.96 g - PM_{10}} \times \frac{1 bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{9,051 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.024 \frac{grain - PM}{dscf}$$

Since 0.024 grain-PM/dscf is \leq to 0.1 grain per dscf, compliance with Rule 4201 is expected.

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

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

Rule 4701 Stationary Internal Combustion Engines – Phase I

Pursuant to Section 7.5.2.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to full time IC engines. Therefore, this engine will comply with the requirements of District Rule 4702 and no further discussion is required.

Rule 4702 Internal Combustion Engines – Phase 2

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

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower and that requires a Permit-to-Operate (PTO).

Section 5.1 requires that the owner of an internal combustion engine shall not operate it in such a manner that results in emissions exceeding the limits in the Engine Emission Limits table below for the appropriate engine type, according to the compliance schedule listed in Section 7.0. An engine shall be restricted by permit condition to emissions limits, in ppmv (corrected to 15% oxygen on a dry basis), that meet or exceed the following applicable emission limits pursuant to Section 5.1 or Section 8.2.

Engine Type	Emission Limit/ Standard	Compliance Date
1. Non-Certified Compression-Ignited Engine		
a. Greater than 50 bhp but not more than 500 bhp	EPA Tier 3 or Tier 4	1/1/2010
b. Greater than 500 bhp but not more than 750 bhp and less than 1000 annual operating hours	EPA Tier 3	1/1/2010
c. Greater than 750 bhp and less than 1000 annual operating hours	EPA Tier 4	7/1/2011
d. Greater than 500 bhp and greater than or equal to 1000 annual operating hours	80 ppm NO _x , 2,000 ppm CO, 750 ppm VOC	1/1/2008 or, if owner has an agreement to electrify, comply by 1/1/2010
2. Certified Compression-Ignited Engine		
a. EPA Certified Tier 1 or Tier 2 Engine	EPA Tier 4	1/1/2015 or 12 years after installation date, whichever is later
b. EPA Certified Tier 3 or Tier 4 Engine	Meet Certified Compression-Ignited Engine Standard in effect at time of installation	At time of installation

The engine involved with this project is a compression-ignited IC engine that is an EPA Certified Tier 2 engine. Therefore, the IC engine involved with this project meets the emission limit/standard.

Section 5.2 requires that all continuous emission monitoring systems (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes. Any 15-consecutive minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule. The IC engine involved with this project does not have a CEMS installed; therefore this section of the rule is not applicable.

Section 5.7.1 requires that the owner of an engine subject to the requirements of Sections 5.1 or 4.2 comply with the requirements specified in Sections 5.7.2 through 5.7.5.

Since the IC engine is subject to the requirements of Section 5.1, it must comply with the requirements specified in Sections 5.7.2 through 5.7.5.

Section 5.7.2 requires the owner to properly operation and maintain each engine as recommended by the engine manufacturer or emission control system supplier; therefore, the following condition will be added to the permit:

- {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

Section 5.7.3 requires the owner to monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier; therefore, the following conditions will be added to the permit:

- {4037} During periods of operation, 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]

Section 5.7.4 requires each engine to install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Stationary Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions; therefore, the following condition will be added to the permit:

- {3846} This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

Section 5.7.5 is applicable to spark-ignited IC engines retrofitted with a NO_x exhaust control. The IC engine in this project is not spark-ignited; therefore, the requirements of Section 5.7.5 do not apply.

Section 6.1 requires that the owner of an engine subject to the requirements Section 5.1 or Section 8.0 except for an engine specified in Section 6.1.1, shall submit to the APCO an emission control plan of all actions to be taken to satisfy the emission requirements of Section 5.1 and the compliance schedules of Section 7.0.

Section 6.1.1 states that the requirements to submit an emission control plan shall not apply to an engine specified in Section 6.1.1.1 through 6.1.1.6.

Section 6.1.1.1 exempts certified compression-ignited engines that have not been retrofitted with an exhaust control system and is not subject to Section 8.0 from Sections 6.5.2 through 6.5.9. Therefore, this section of the rule is not applicable.

Section 6.2 requires that except for engines subject to Section 4.0, the owner of an engine subject to the requirements of this rule shall maintain an engine operating log to demonstrate compliance with this rule. This information 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 engine operating log shall include, on a monthly basis, the following information:

- Total hours of operation,
- Type and quantity (cubic feet of gas or gallons of liquid) of fuel used,
- Maintenance or modifications performed,
- Monitoring data,
- Compliance source test results, and
- Any other information necessary to demonstrate compliance with this rule.

Therefore, the following condition will added to the permit:

- 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. [District Rule 4702]

Section 6.2.2 requires that the data collected pursuant to the requirements of Section 5.6 shall be maintained for at least five years, shall be readily available, and made available to the APCO upon request. Therefore, the following condition will be added to the permit:

- 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]

Section 6.3 applies to an engine subject to the requirements of Section 5.1 or the requirements of Section 8.0 except for engines specified in Section 6.3.1. Per Section 6.3.1 the following engines are not subject to the requirements of Sections 6.3.2 through 6.3.4,

- A certified compression-ignited engine that has not been retrofitted with an exhaust control and is not subject to the requirements of Section 8.0.
- A certified spark-ignited engine that has not been retro-fitted with an exhaust control and is not subject to the requirements of Section 8.0.
- An AO spark-ignited engine that has not been retro-fitted with a catalytic emission control device and is not subject to the requirements of Section 8.0.
- An engine subject to Section 4.2.
- An engine subject to Section 4.3.
- An engine with an operating exhaust control system that has been certified in accordance with Section 9.0 Exhaust Control System Certification Requirements.

The engine proposed in this project is a certified compression-ignited engine that has not been retrofitted with an exhaust control and is not subject to the requirements of Section 8.0. Therefore, the requirements of this section of the rule do not apply.

Section 6.5 requires that the owner of an engine subject to the emission limits in Section 5.1 or the requirements of Section 8.2, except for an engine specified in Section 6.5.1, shall submit to the APCO for approval, an I&M plan that specifies all actions to be taken to satisfy the following requirements and the requirements of Section 5.6. The actions to be identified in the I&M plan shall include, but are not limited to, the information specified below:

Per Section 6.5.1, the requirements of Section 6.5.2 through Section 6.5.9 shall not apply to any of the following engines:

- A certified compression-ignited engine that has not been retrofitted with an exhaust control and is not subject to the requirements of Section 8.0.
- A certified spark-ignited engine that has not been retro-fitted with an exhaust control and is not subject to the requirements of Section 8.0.
- An AO spark-ignited engine that has not been retro-fitted with a catalytic emission control device and is not subject to the requirements of Section 8.0.
- An engine subject to Section 4.2.
- An engine subject to Section 4.3.
- An engine with an operating exhaust control system that has been certified in accordance with Section 9.0 Exhaust Control System Certification Requirements.

The engine proposed in this project is a certified compression-ignited engine that has not been retrofitted with an exhaust control and is not subject to the requirements of Section 8.0. Therefore, this engine is not required to meet the requirements of Sections 6.5.2 through 6.5.9.

Section 7.6 requires that the owner of an engine subject to the requirements of this rule shall not operate the engine unless the owner demonstrates and maintains the engine in compliance with the applicable requirements of this rule by the dates indicated in Compliance Schedule 1 of Section 7.6.2.

The proposed engine meets all the requirements of Rule 4702.

Rule 4801 Sulfur Compounds

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

$$\begin{aligned} \text{Volume SO}_2 &= (n \times R \times T) \div P \\ n &= \text{moles SO}_2 \\ T \text{ (standard temperature)} &= 60 \text{ }^\circ\text{F or } 520 \text{ }^\circ\text{R} \\ R \text{ (universal gas constant)} &= \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{ }^\circ\text{R}} \end{aligned}$$

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

Since 1.0 ppmv is \leq 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3395} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93116]

40 CFR Part 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants: Stationary Reciprocating Internal Combustion Engines)

This subpart is applicable to stationary internal combustion engines that are located at major or area sources of HAP emissions, except if the stationary IC engine is being tested at a stationary IC engine test cell/stand. The engine being proposed in this project is a transportable engine and is not stationary; therefore, this subpart is not applicable.

Code of Federal Regulations (CFR), Title 40, Part 89

The term “non-road” is defined in Title 40 Code of Federal Regulations (CFR) Part 89 (Control Of Emissions From New and In-Use Non-Road Compression-Ignition Engines). Like District “transportable” engines, federal “non-road” engines are also mobile.

Per 40 CFR Part 89, non-road engines include compression ignited engines that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indications of transportability include but are not limited to wheels, skids, carrying handles, dollies, trailers, or platforms.

An internal combustion engine is NOT a non-road engine if:

1. The engine is used to propel a motor vehicle or a vehicle used solely for competition; or is subject to standards promulgated under section 202 of the Clean Air Act; or
2. The engine is regulated by a New Source Performance Standard promulgated under section 111 of the Clean Air Act; or
3. The engine will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e.,

at least 2 years) and that operates at that single location approximately three months (or more) each year.

In addition, there are several categories that are not included in the definition of non-road (or subject to 40 CFR 89). These categories are:

1. Aircraft Engines
2. Mining Engines
3. Locomotive Engines
4. Marine Engines
5. Hobby Engines (less than 50 cc per cylinder)
6. Tier 4 Engines that are subject to emissions standards under 40 CFR Part 1039

The proposed engine meets the definition of a non-road engine and is therefore subject to this part.

40 CFR Part 89 identifies emissions certification requirements for new non-road engines. There are no emission requirements for existing engines.

Per 40 CFR Part 89.2, "new" means:

"a non-road engine, non-road vehicle, or non-road equipment the equitable or legal title to which has never been transferred to an ultimate purchaser. Where the equitable or legal title to the engine, vehicle, or equipment is not transferred to an ultimate purchaser until after the engine, vehicle, or equipment is placed into service, then the engine, vehicle, or equipment will no longer be new after it is placed into service. A nonroad engine, vehicle, or equipment is placed into service when it is used for its functional purposes."

The certification requirements of this regulation are known as either Tier 1, Tier 2, or Tier 3 certifications (shown in Section VI of this document, from 40 CFR 89.112).

Pursuant to 40 CFR Part 89, Appendix A to Subpart A:

"EPA believes that states are not precluded (*or prevented*) under section 209 from regulating the use and operation of non-road engines, such as regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel; nor are permits regulating such operations precluded (*or prevented*), once the engine is no longer new. EPA believes that states are precluded from requiring retrofitting of used nonroad engines except that states are permitted to adopt and enforce any such retrofitting requirements identical to California requirements which have been authorized by EPA under section 209 of the Clean Air Act."

Therefore, beyond the requirements of Part 89, local authorities can only regulate the use and operation of non-road engines such as regulations on the hours of usage, daily mass emission limits, or sulfur limits on fuel. Local authorities cannot require retrofitting

of used nonroad engines except those that are identical to California requirements that have been authorized by EPA, e.g. in the California Code of Regulations (CCR).

The engine proposed is of the meets the latest certification standards for the applicable rated power category; therefore, this part is satisfied.

California Code of Regulations (CCR), Title 13 (Motor Vehicles), Division 3 (Air Resources Board), Chapter 9 (Off-Road Vehicles and Engines Pollution Control Devices), Article 4 (Off-Road Compression-Ignition Engines and Equipment)

§ 2420 - Applicability:

This article is applicable to new heavy-duty compression-ignited engines produced on or after January 1, 1996 and all other new 2000 model year and later off-road compression-ignition engines, with the exception of all engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air ACT and as defined by regulation of the U.S. Environmental Protection Agency. The engine proposed falls under the applicability of this article since they are "off-road" as defined below.

§ 2421 - Definitions

Like District "transportable" engines and federal "non-road" engines, California "off-road" engines are also mobile. "Off-road" engines are defined as:

"(A) Except as specified in paragraph (B) of this definition, an off-road compression-ignition engine is any internal combustion engine:

1. In or on a piece of equipment that is self-propelled or serves as a dual purpose by both propelling itself and performing another function and is primarily used off the highways (such as garden tractors, off-highway mobile cranes and bulldozers); or
2. In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
3. That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to wheels, skids, carrying handles, dolly, trailer, or platform.

(B) An internal combustion engine is not an off-road compression-ignition engine if:

1. The engine is used to propel a vehicle subject to the emission standards contained in Title 13, California Code of Regulations, Sections 1950-1978, or a vehicle used solely for competition, or is subject to standards promulgated under Section 202 of the federal Clean Air Act (42 U.S.C. 7521); or

2. The engine is regulated by a federal New Source Performance Standard promulgated under Section 111 of the federal Clean Air Act (42 U.S.C. 7511); or
3. The engine otherwise included in paragraph (A)3 of this definition remains or will remain at a location for more than 12 consecutive months or a shorter time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at a single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.”

§ 2423 - Emission Standards:

This section requires subject engines to meet the tier certification requirements identified in this section, which are taken from 40 CFR Part 89 for Tiers 1 thru 3. The proposed engine was the latest available CARB certification (Tier 2 or 3) when installed; therefore, it meets the requirements listed in this section.

California Code of Regulations (CCR), Title 17 (Public Health), Division 3 (Air Resources), Chapter 1 (Air Resources Board), Subchapter 7.5 (Air Toxic Control Measures), Measure 93116 (Portable Diesel Engines)

§ 93116.1 - Applicability

Except as provided in §93116.1(b), all portable engines having a maximum rated hp of 50 bhp and greater and fueled with diesel are subject to this regulation. The proposed engine(s) are portable and are subject to this regulation.

§ 93116.2 - Definitions

Like District “transportable”, federal “non-road”, and California “off-road” engines, California “portable” engines are also mobile.

(b) Portable means designed and capable of being carried or moved from one location to another. Indicia of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. For the purposes of this regulation, dredge engines on a boat or barge are considered portable. The engine is not portable if:

- (1) the engine or its replacement is attached to a foundation, or if not so attached, will reside at the same location for more than 12 consecutive months. The period during which the engine is maintained at a storage facility shall be excluded from the residency time determination. Any engine, such as a back-up or stand-by engine, that replace engine(s) at a location, and is intended to perform the same

or similar function as the engine(s) being replaced, will be included in calculating the consecutive time period. In that case, the cumulative time of all engine(s), including the time between the removal of the original engine(s) and installation of the replacement engine(s), will be counted toward the consecutive time period; or

- (2) the engine remains or will reside at a location for less than 12 consecutive months if the engine is located at a seasonal source and operates during the full annual operating period of the seasonal source, where a seasonal source is a stationary source that remains in a single location on a permanent basis (at least two years) and that operates at that single location at least three months each year; or
- (3) the engine is moved from one location to another in an attempt to circumvent the portable residence time requirements.

§ 93116.2 - Requirements

Fuel and Fuel Additive Requirements:

This regulation stipulates that diesel-fueled portable engines shall use one of the following fuels:

1. CARB Diesel Fuel; or
2. An alternative diesel fuel that has been verified through the Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines; or
3. CARB diesel fuel utilizing fuel additives that have been verified through the Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines.

The proposed engine will use CARB certified diesel fuel.

Diesel PM Standards:

Portable diesel-fueled engines that have not been permitted or registered prior to January 1, 2006, (meaning new engines) are subject to "the most stringent of the federal or California emission standard for nonroad engines".

Prior to this permitting action, the engine was the latest CARB certification (Tier 1 or better) when it was installed.

Fleet Requirements:

The earliest fleet average PM requirement is 1/1/2013; therefore, there is no applicable fleet requirement at this time.

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.

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 activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

Greenhouse Gas Significance Determination

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions (See Attachment F). The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct C-799-9-0 subject to the permit conditions on the attached draft Authority to Construct in Attachment E.

X. Billing Information

Filing fees have been submitted with this application. The annual permit fees will be based on the following schedule.

Permit Number	Fee Schedule	Fee
C-799-9-0	3020-10-E	\$602

Attachments

- Attachment A: BACT Guideline and Top Down BACT Analysis
- Attachment B: Compliance Certification
- Attachment C: Certificate of Conformity
- Attachment D: HRA Summary and Ambient Air Quality Analysis
- Attachment E: Draft ATC
- Attachment F: Greenhouse Gas Emissions Calculations

Attachment A

BACT Guideline and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.2.11*

Last Update: 10/30/2008

Transportable Compression - Ignited IC Engines (Non-Agricultural, Non-Electric Generation)

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range.</p> <p>(Example: a 200 bhp engine proposed in 2007 shall be Tier 3 certified and meet the emission standard of =< 0.149 g-PM10/bhp-hr)</p>		LPG/Propane Fired Engine
NOx	<p>The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range.</p> <p>(Example: a 200 bhp engine proposed in 2007 shall be Tier 3 certified and meet the emission standard of =< 0.149 g-PM10/bhp-hr)</p>		LPG/Propane Fired Engine
CO	<p>The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range.</p> <p>(Example: a 200 bhp engine proposed in 2007 shall be Tier 3 certified and meet the emission standard of =< 0.149 g-PM10/bhp-hr)</p>		LPG/Propane Fired Engine
PM10	<p>The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range.</p> <p>(Example: a 200 bhp engine proposed in 2007 shall be Tier 3 certified and meet the emission standard of =< 0.149 g-PM10/bhp-hr)</p>		LPG/Propane Fired Engine
SOX	Very Low Sulfur Fuel (0.0015% fuel S by weight)		

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.

***This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

Top Down BACT Analysis

BACT Analysis for diesel-fired IC engine in permit C-799-9-0:

NO_x, PM₁₀, CO, and VOC (same requirements)

Step 1 - Identify All Possible Control Technologies

BACT guideline 3.2.11 identifies the following control technologies:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range		LPG/Propane Fired Engine
NO _x	The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range		LPG/Propane Fired Engine
CO	The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range		LPG/Propane Fired Engine
PM ₁₀	The proposed engine shall meet the latest available CARB certification standard for the particular horsepower range		LPG/Propane Fired Engine
SO _x	Very Low Sulfur Fuel		

Option 1: Latest Available Certified Compression-Ignited Engine

The latest available certification is considered achieved-in-practice (AIP) for BACT Guideline 3.2.11.

No additional control options for the engine will be considered at this time since, as shown above in Section II.A, federal law prohibits local authorities from regulating beyond the use and operation (hours, mass emission limits, or fuel sulfur content). Local authorities cannot require retrofitting of used nonroad engines except those that are identical to California requirements that have been authorized by EPA, e.g. in the California Code of Regulations (CCR). As a result, add-on controls (e.g. selective catalytic reduction, positive crankcase ventilation, turbocharging, intercooling, etc.) will not be considered as control options for this class and category or source.

Option 2: Propane/Liquid Petroleum Gas (LPG) Fueled Engine

The use of LPG results in lower emissions overall when compared to diesel emissions. The table below identifies emission factors (EFs) for LPG-fired IC engines:

Pollutant	EF	Source
NO _x	25 ppmvd @ 15% O ₂	District Rule 4702 (Achieved-In-Practice)
SO _x	0.012 g/bhp-hr	CARB Emissions Inventory Database
PM ₁₀	0.063 g/bhp-hr	AP-42 (7/00) Table 3.2-3
CO	400 ppmvd @ 15% O ₂	District Rule 4702 (Achieved-In-Practice)
VOC	100 ppmvd @ 15% O ₂	District Rule 4702 (Achieved-In-Practice)

*g/hp·hr equivalent of lb/MMBtu values is calculated as follows: (example SO_x)

$$0.35 \frac{lb}{1,000 gal} \times \frac{gal}{94,000 Btu} \times \frac{2,542.5 Btu}{hp \cdot hr} \times \frac{1 hp_m}{0.35 hp_{out}} \times \frac{453.6 g}{lb} = 0.012 \frac{g}{hp \cdot hr}$$

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 - Rank Remaining Control Technologies

Control Technology	Rank	Emission Factors (g/bhp-hr)	Technology Classification for BACT
LPG/Propane Engine + 3-way catalyst system	1	NO _x : 0.35 (≈ 25 ppmvd @ 15% O ₂) VOC: 0.5 (≈ 100 ppmvd @ 15% O ₂) CO: 3.4 (≈ 400 ppmvd @ 15% O ₂) PM ₁₀ : 0.063	ABE
Latest Tier Certification Levels	2	NO _x + VOC: 3.0 - 5.6 CO: 2.6 - 3.7 PM ₁₀ : 0.149 - 0.3	AIP

Step 4 - Cost Effectiveness Analyses

LPG Engines

LPG engine 980 bhp is not cost effective*

* Using the annual operation of 440 hours/year (worst case) and a linear extrapolation of Appendix A of District BACT analysis for Transportable Compression – Ignited IC Engines (Non-Agricultural, Non-Electric Generation) dated October 29, 2009 demonstrates that a LPG-fired engines 980 hp is not cost effective and is not required as Alternate Basic Equipment.

Latest Available Certified Compression-Ignited Engine

Per District BACT Policy, a cost effectiveness analysis is not required for AIP controls since the control must be implemented.

Step 5 - Select BACT

The remaining control not eliminated in Step 4 (latest available certification) is considered AIP BACT for this class and category of source for NO_x, PM₁₀, CO, and VOC.

Alternate Basic Equipment (ABE) Cost Analysis: LPG vs Diesel Engines

bhp	MCET ⁴ (\$/year)	Diesel Engine Purchase (\$/year)	Diesel Fuel ¹ (\$/year)	LPG Engine (\$/year)	3-way Cat (\$/year)	LPG Fuel ¹ (\$/year)	Cost Difference (ABE - Diesel) (\$/year)	Is LPG Cost Effective?
50	\$786	\$978	\$2,153	\$2,282	\$2,445	\$3,814	\$5,410	NO
100	\$1,572	\$1,467	\$4,306	\$3,668	\$2,445	\$7,628	\$7,968	NO
150	\$1,451	\$2,396	\$6,458	\$4,075	\$2,445	\$11,443	\$9,108	NO
200	\$1,824	\$2,869	\$8,611	\$6,341	\$2,445	\$15,257	\$12,563	NO
250	\$2,280	\$4,157	\$10,764	\$8,183	\$2,445	\$19,071	\$14,778	NO
300	\$2,736	\$4,189	\$12,917	\$8,981	\$2,445	\$22,885	\$17,206	NO
400	\$3,648	\$6,145	\$17,223	\$10,562	\$2,445	\$30,514	\$20,154	NO
500	\$4,559	\$6,292	\$21,528	\$12,844	\$2,445	\$38,142	\$25,612	NO
600	\$5,471	\$8,802	\$25,834	\$16,007	\$2,445	\$45,771	\$29,586	NO
700	\$6,383	\$10,562	\$30,140	\$19,234	\$2,445	\$53,399	\$34,376	NO
800	\$24,162	\$12,714	\$34,445	\$23,146	\$2,445	\$61,028	\$39,459	NO
900	\$27,182	\$15,159	\$38,751	\$27,710	\$2,445	\$68,656	\$44,901	NO
1,000	\$30,202	\$18,256	\$43,057	\$33,252	\$2,445	\$76,285	\$50,669	NO
1,100	\$33,222	\$21,842	\$47,362	\$39,935	\$2,445	\$83,913	\$57,089	NO
1,200	\$36,243	\$26,243	\$51,668	\$47,922	\$2,445	\$91,541	\$63,998	NO

Assumptions:

District Standard EF's - Latest Tier (g/bhp-hr) ³						Engine Rating (bhp)	Diesel Engine ² (\$)	LPG Engine ⁶ (\$)	3-way Cat (\$) ⁹
bhp	NOx	VOC	SOx	PM10	CO				
up to 100	3.3	0.18	0.0051	0.3	3.7	50	\$6,000	\$14,000	\$15,000
101-174	2.85	0.15	0.0051	0.22	3.7	100	\$9,000	\$22,500	\$15,000
175-750	2.85	0.15	0.0051	0.149	2.6	150	\$14,700	\$25,000	\$15,000
over 750	4.56	0.24	0.0051	0.149	2.6	200	\$17,600	\$38,900	\$15,000
						250	\$25,500	\$50,200	\$15,000
Diesel Fuel Cost (\$/gal):					\$2.75	300	\$25,700	\$55,100	\$15,000
Diesel Brake Specific Fuel Consumption ⁷ (Btu/bhp-hr):					7,500	400	\$37,700	\$64,800	\$15,000
Spark-Ignited BSFC ⁷ (Btu/bhp-hr):					10,100	500	\$38,600	\$78,800	\$15,000
Capital recovery factor (10%, 10 yrs):					0.163	600	\$54,000	\$98,200	\$15,000
LPG fuel cost ⁸ (\$/gal):					\$2.39	700	\$64,800	\$118,000	\$15,000
Op Schedule (hr/year):					440	800	\$78,000	\$142,000	\$15,000
						900	\$93,000	\$170,000	\$15,000
						1,000	\$112,000	\$204,000	\$15,000
						1,100	\$134,000	\$245,000	\$15,000
						1,200	\$161,000	\$294,000	\$15,000

¹Takes into account that engines typically operate at an annual average load of 65%.

²Per ERIP: Includes capital engine cost, misc. material, tax, and installation.

³The NOx, VOC, PM10, and CO EF's are worst-case latest tier levels depending on the max bhp of the engine. Per the Carl Moyer protocol, the NOx EF is 95% of the NMHC+NOx certification standard. The SOx EF is based on very low S fuel since that kind of fuel is Δ IP

⁴The emissions reductions used for the MCET are based on the difference between District std diesel emissions (Tier 3) and required District Rule 4702 spark-ignited engine emission levels. Assumes BACT is triggered for NOx, VOC, and PM10.

⁵Minimum 4702 requirements for NOx, VOC, CO for rich-burn ag engines (would have 3-way catalyst)

⁶Per Cummins, includes purchase, misc. equip. and tax.

⁷CAPCOA Portable IC Engine Tech. Ref. Document, 5/95.

⁸Per Red Triangle Oil (559-485-4320), local propane supplier on 9/23/08

⁹Per Ceasar Balman (Engine Control Systems), turnkey cost about \$3,000; replacment every 2 yrs (total \$15,000 over 10 yrs)

Other Notes:

LPG HHV (Btu/gal): 90,500 (from AP-42, A-6, 9/85)
453.6 g/lb x 2,000 lb/ton = 907,200 g/ton

Attachment B

Compliance Certification

MADERA POWER, LLC

P.O. Box 305

11427 Firebaugh Blvd.

Firebaugh, CA 93622

Tel. No.: (559) 659-4791

FAX No.: (559) 659-4793

May 27, 2011

Mr. David Warner
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 W. Gettysburgh Avenue
Fresno, CA 93726-0244

Re: Compliance Certification
Project No. C-1111164

Dear Mr. Warner:

In accordance with the requirements of San Joaquin Valley Air Pollution Control District Rule 2201, Section 4.15.2, Madera Power, LLC is submitting this Compliance Certification regarding major stationary sources owned and operated by Madera Power, LLC.

Madera Power, LLC is applying for Authority to Construct (ATC) for rental diesel-fired IC engine.


As of the date designated with signature below, Madera Power, LLC certifies the following:

All major stationary sources owned and operated by Madera Power, LLC in California which are subject to emission limitation are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

If you have any questions, please call me.

Your assistance is greatly appreciated.

Sincerely,


Larry Osborne
Plant Manager
Madera Power, LLC

5/27/11
Date

Cc: Stanley Tom
/MdC

Attachment C

Certificate of Conformity

San Joaquin Valley Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box) (For Rental Equipment ATC Application)

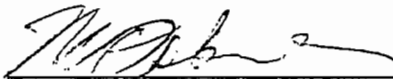
- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE
 MINOR PERMIT MODIFICATION AMENDMENT

COMPANY NAME: MADERA POWER, LLC	FACILITY ID: C- 799
1. Type of Organization: <input checked="" type="checkbox"/> LLC <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: MADERA POWER, LLC	
3. Agent to the Owner: Larry Osborne	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:



Signature of Responsible Official

5-13-11

Date

Larry Osborne

Name of Responsible Official (please print)

Plant Manager

Title of Responsible Official (please print)

Attachment D

HRA Summary and Ambient Air Quality Analysis

San Joaquin Valley Air Pollution Control District

REVISED Risk Management Review

To: Stanley Tom – Permit Services
 From: Yu Vu – Technical Services
 Date: July 6, 2011
 Facility Name: Madera Power, LLC
 Location: 11427 Firebaugh Blvd, Firebaugh, CA
 Application #(s): C-799-9-0
 Project #: C-1111164

A. RMR SUMMARY

RMR Summary			
Categories	Diesel ICE (Unit 9-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	>1.0
Acute Hazard Index	N/A ²	N/A ²	0.00
Chronic Hazard Index	N/A ²	N/A ²	0.00
Maximum Individual Cancer Risk (10 ⁻⁶)	0.22	0.22	7.66
T-BACT Required?	No		
Special Permit Conditions?	Yes		

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is not risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

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

Unit # 9-0

1. The PM10 emissions rate shall not exceed 0.15 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. This unit (unit C-799-9-0) shall have a maximum rated brake horsepower (bhp) no greater than 800 bhp. [District Rule 2201]
4. This unit (unit C-799-9-0) shall not operate within 5,000 ft of any sensitive business or residential receptor. [District Rule 2201]
5. This unit (unit C-799-9-0) shall have an exhaust stack height of at least 6.07 meters (20 feet) above grade. [District Rule 2201]

6. This unit (unit C-799-9-0) shall have an exhaust velocity of at least 88 meters/second (289 feet/second). [District Rule 2201]
7. This unit (unit C-799-9-0) shall have an exhaust temperature of at least 784° K (952° F).
8. The diameter on the exhaust stack for this unit (unit C-799-9-0) shall be no greater than 0.19 meters (0.62 feet) wide. [District Rule 2201]
9. This unit may not operate within 500 feet of the facility boundary when operating for a scheduled, non-emergency event.
10. This unit may not operate for more than 18 hours within any rolling 24 hour period when operating for a scheduled, non-emergency event.

B. RMR REPORT

I. Project Description

Technical Services received a revised RMR request on June 9, 2011, to perform a Risk Management Review and an Ambient Air Quality Analysis (AAQA) for a proposed installation of a transportable 800 hp diesel-fired IC engine powering various devices. The engine will operate for both intermittent use and some scheduled tasks. Only the scheduled operations are considered in the AAQA analysis.

II. Analysis

Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using the District's "DICE" database were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2003-2007 from Madera 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 Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 9-0^a			
Source Type	Point	Location Type	Rural
Stack Height (m)	19.915	Closest Receptor (m)	1460
Stack Diameter. (m)	0.19	Type of Receptor	Business
Stack Exit Velocity (m/s)	87.68	Max Hours per Year	500
Stack Exit Temp. (°K)	784	Fuel Type	Diesel
Engine Rating (bhp)	800		

^a The engines parameters listed here are considered worst-case values

In addition to the RMR, Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀. The emission rates used for criteria pollutant modeling were 4.59 lb/hr CO, 8.04 lb/hr NO_x, 0.01 lb/hr SO_x, 0.26 lb/hr PM₁₀ and 0.26 lb/hr PM_{2.5}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2.5}	X	X	X	Pass ³	Pass ³

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

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

³For this case, as per District procedure, minor PM_{2.5} sources are modeled only for primary PM_{2.5} concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 µg/m³ and the annual SIL of 0.3 µg/m³.

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the transportable IC engine 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 conditions 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.

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

Attachments:

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score

AAQA for Madera Power ICE (9-0) (C-799)
All Values are in Micrograms per Cubic Meter

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
ICE9A	71.7	0.3	41.1	21.6	0.1	0.1	0.0	0.0	8.20E-01	8.21E-03
ICE9B	72.3	0.3	41.4	30.1	0.1	0.1	0.0	0.0	1.07E+00	1.03E-02
ICE9C	68.5	0.2	39.2	25.2	0.1	0.1	0.0	0.0	1.10E+00	8.05E-03
Background	89.9	15.3	3,611.5	2,679.5	159.8	133.2	71.9	26.6	7.80E+01	4.00E+01
Facility Totals	302.4	16.1	3,733.1	2,756.4	160.1	133.4	72.0	26.6	8.10E+01	4.00E+01
AAQS	188.7	56.0	23,000.0	10,000.0	195.0	1,300.0	105.0	80.0	50.0	30.0
	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail
									1.2	0.3
EPA's Significance Level (ug/m³)										
NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual	
0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0	

ICE 9A, B, and C represent three different scenarios of use (each at a different location within the facility). The worst case value for the 1-hour NO_x occurs at Scenario 2 (ICE9B). The worst case value for the 24-hour PM_{2.5} occurs at Scenario 3 (ICE9C). The 1-hour NO_x passes the AAQS ($72.3 + 89.9 = 162.2 < 188.7$). The 24-hour PM_{2.5} passes because it falls below EPA's significance level of 1.2 ug/m³. The remaining PM values are also below their respective significance levels.

*Since 5-years of meteorological data were used, an adjustment factor of 1.5 for Madera was applied to the annual average concentrations for the devices modeled.

AAQA Emission (g/sec)

<i>Device</i>	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
ICE9A	7.61E-01	5.78E-02	4.36E-01	4.36E-01	7.87E-04	7.87E-04	7.87E-04	7.19E-05	2.48E-02	1.90E-03
ICE9B	7.61E-01	5.78E-02	4.36E-01	4.36E-01	7.87E-04	7.87E-04	7.87E-04	7.19E-05	2.48E-02	1.90E-03
ICE9C	7.61E-01	5.78E-02	4.36E-01	4.36E-01	7.87E-04	7.87E-04	7.87E-04	7.19E-05	2.48E-02	1.90E-03

*Since 5-years of meteorological data were used, an adjustment factor of 1.5 for Madera was applied to the annual average concentrations for the devices modeled.

Attachment E

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-799-1-10

LEGAL OWNER OR OPERATOR: MADERA POWER, LLC

MAILING ADDRESS: PO BOX 305
FIREBAUGH, CA 93622

LOCATION: 11427 FIREBAUGH BLVD
P O BOX 305
FIREBAUGH, CA 93622

EQUIPMENT DESCRIPTION:

MODIFICATION OF FUEL STORAGE AND FEED SYSTEM CONSISTING OF: TRUCK WEIGH SCALE, FUEL STORAGE BLDG., TRUCK TIPPER, 2 RECLAIM CONVEYORS (RC1A, RC2A), FUEL RECLAIM, COLLECTION, AND TRANSFER CONVEYORS WITH A DUST COLLECTION SYSTEM INCLUDING FOUR PICKUP POINTS SERVED BY A BAGHOUSE: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-799-1-8 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NOx/year, 54,000 lb-SOx/year, 83,520 lb-PM10/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District NSR Rule] Federally Enforceable Through Title V Permit

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.

Seyed Sadredin, Executive Director, APCO

DRAFT

DAVID WARNER, Director of Permit Services

2-799-1-10 : Jul 11 2011 11:38AM - TOMS : Joint Inspection NOT Required

5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
7. Except as otherwise required in this permit, 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] Federally Enforceable Through Title V Permit
8. Visible emissions from baghouse serving the fuel receiving operation shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Fugitive dust emissions shall be controlled by water sprays, dust suppressants, enclosures, fencing, or other wind barriers. [District Rule 4102] Federally Enforceable Through Title V Permit
10. Mobile equipment, except their propulsion motors, shall be subject to all applicable conditions of this permit. [District Rule 4102] Federally Enforceable Through Title V Permit
11. Visible emissions shall be inspected annually under material and environmental conditions, such as dry and windy, where high emissions are expected. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
12. Enclosure shall be completely inspected annually for evidence of particulate matter leaks and repaired as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
13. Records of visible emission checks, emission control system maintenance, inspections, and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
14. The baghouse shall be maintained and operated according to manufacturer's specifications. [District NSR Rule] Federally Enforceable Through Title V Permit
15. The baghouse cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District NSR Rule] Federally Enforceable Through Title V Permit
16. Material removed from the dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
17. Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District NSR Rule] Federally Enforceable Through Title V Permit
18. Records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
19. A spare set of bags shall be maintained on the premises at all times. [District NSR Rule] Federally Enforceable Through Title V Permit
20. The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District NSR Rule] Federally Enforceable Through Title V Permit
21. The baghouse shall operate at all times with a minimum differential pressure of 0.5 inches water column and a maximum differential pressure of 6.0 inches water column. [District NSR Rule] Federally Enforceable Through Title V Permit
22. Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District NSR Rule] Federally Enforceable Through Title V Permit
23. Throughput of fuel shall not exceed 100 tons per hour nor 2,400 tons per day for each of the following emissions points: each truck tipper, north reclaimer, south reclaimer, reclaimer to weigh belt transfer point, weigh belt to transfer conveyor (oversizers) transfer point, weigh belt to disk screen transfer point, disk screen to inclined conveyor transfer point, transfer conveyor to return conveyor transfer point, inclined conveyor to red conveyor transfer point, disc screen overs conveyor to fuel hog, fuel hog grinder, and fuel hog to hog transfer conveyor. [District NSR Rule] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

24. Emissions shall not exceed 0.012 lb PM10/ton for each of the north and south reclaimers. [District NSR Rule] Federally Enforceable Through Title V Permit
25. Emissions shall not exceed 0.005 lb PM10/ton for each of the following emissions points: transfer conveyor to return conveyor transfer point and inclined conveyor to red conveyor transfer point. [District NSR Rule] Federally Enforceable Through Title V Permit
26. Controlled emissions shall not exceed 0.001 lb PM10/ton for each of the following emissions points: reclaimer to weigh belt transfer point, weigh belt to transfer conveyor (oversizers) transfer point, weigh belt to disk screen transfer point, and disk screen to inclined conveyor transfer point. [District NSR Rule] Federally Enforceable Through Title V Permit
27. Emissions shall not exceed 0.000046 lb PM10/ton for each of the following emissions points: disc screen overs to fuel hog and fuel hog to hog transfer conveyor. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Emission shall not exceed 0.0012 lb PM10/ton for the fuel hog grinder. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Emission shall not exceed 0.024 lb PM10/ton for each of the truck tippers. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Emissions of PM10 shall not exceed 119.4 lb PM10/day from the entire operation. [District NSR Rule] Federally Enforceable Through Title V Permit
31. Emissions of PM10 shall not exceed 2.1 lb PM10/day from the baghouse exhaust. [District NSR Rule] Federally Enforceable Through Title V Permit
32. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule] Federally Enforceable Through Title V Permit
33. Permittee shall keep daily and annual records of fuel throughput in tons. [District NSR Rule] Federally Enforceable Through Title V Permit
34. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made readily available for District inspection upon request. [District NSR Rule and Rule 1070] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-799-3-17

LEGAL OWNER OR OPERATOR: MADERA POWER, LLC
MAILING ADDRESS: PO BOX 305
FIREBAUGH, CA 93622

LOCATION: 11427 FIREBAUGH BLVD
P O BOX 305
FIREBAUGH, CA 93622

EQUIPMENT DESCRIPTION:

MODIFICATION OF 28.5 MW RESOURCE RECOVERY FACILITY BOILER/GENERATOR INCLUDING: 460 MMBTU/HR ATMOSPHERIC FLUIDIZED BED BOILER, MULTICLONE, BAGHOUSE, REAGENT INJECTION SYSTEM, AMMONIA INJECTION SYSTEM, PROPANE OR NATURAL GAS-FIRED START-UP PREHEATER, WITH CONTINUOUS EMISSION MONITORS: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-799-3-15 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]
4. Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NOx/year, 54,000 lb-SOx/year, 83,520 lb-PM10/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District NSR Rule]

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.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

C-799-3-17; Jul 11 2011 11:38AM - TOMS - Joint Inspection NOT Required

5. {233} The APCO or any authorized representative, upon request, shall have access to, and copies of, any records required to be kept under the terms and conditions of this permit. [CH&SC 42303]
6. The APCO or any authorized representative, upon request, shall have access to inspect any equipment, operation, or method required in this permit, and to sample emissions from the source or require samples to be taken. [District Rule 1081] Federally Enforceable Through Title V Permit
7. The atmospheric fluidized bed (AFB) boiler shall not operate in excess of 348 days per calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Natural gas or propane burners shall be used during start-up and for combustor stabilization throughout the chamber prior to the introduction of solid fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Particulate matter concentrations shall not exceed 0.024 grains/dscf. [District NSR Rule and District Rules 4201 and 4301, 5.1] Federally Enforceable Through Title V Permit
10. Expected emissions of combustion contaminants from the fluidized bed boiler, as particulate matter (PM), will not exceed 10 lb/hr, as measured by EPA Method 5. [District Rule 4301] Federally Enforceable Through Title V Permit
11. Ash sample testing for substances not considered to be combustion contaminants using ion chromatography shall be performed at least once every 12 calendar months. [District NSR Rule] Federally Enforceable Through Title V Permit
12. A representative sample of ash shall be collected during source testing and analyzed by ion chromatography to determine the percentage of combustion contaminants exiting the stack. [District NSR Rule] Federally Enforceable Through Title V Permit
13. The PM source test result may be adjusted based on the fraction of combustion contaminants from the ash sample test results to determine the hourly combustion contaminant emission rate. [District NSR Rule] Federally Enforceable Through Title V Permit
14. Total PM10 shall not exceed 11.2 lb/hr. [District NSR Rule] Federally Enforceable Through Title V Permit
15. Emissions from this unit shall not exceed any of the following limits: 50 lb-NO₂/hr (1,200 lb-NO₂/day), 24 lb-ROG/hr (576 lb-ROG/day), 29 lb-SO₂/hr (696 lb-SO₂/day), 240 lb-PM/day, or 60 lb-CO/hr (1,440 lb-CO/day). [District Rules 2201 and 4301, 5.2] Federally Enforceable Through Title V Permit
16. Ammonia emissions shall not exceed 100 parts per million. [District NSR Rule] Federally Enforceable Through Title V Permit
17. A quarterly report of the daily fuel usage and type shall be submitted to the District by the 30th day of the following month. [District NSR Rule] Federally Enforceable Through Title V Permit
18. Offset creditable fuels are limited to the following: alfalfa straw, almond prunings, apple prunings, apricot prunings, barley straw, bean straw/stalks, cherry prunings, citrus prunings, corn stalks, fig prunings, forest slash/cull, grape prunings, generic orchard prunings, milo sorghum, nectarine prunings, olive prunings, peach prunings, pecan prunings, pistachio prunings, plum prunings, rice straw, wheat straw, walnut prunings, and generic field crops historically open burned in the San Joaquin Valley air basin. [District NSR Rule] Federally Enforceable Through Title V Permit
19. Fuels for the AFB boiler are limited to the following: alfalfa straw, almond prunings, almond shells, apple prunings, apricot prunings, barley straw, bean straw/stalks, cedar bark, cherry pits, cherry prunings, citrus prunings, coffee grounds, corn stalks, cotton gin trash, cotton stalks, ditchbank or canal weeds, fig prunings, forest slash/cull, grape pomace, grape prunings, generic orchard prunings, hog fuel (mill residue), landscape tree trimmings, milo sorghum, nectarine pits, nectarine prunings, olive pits, olive pomace, olive prunings, pallet/bins wood, peach pits, peach prunings, peanut shells, pecan prunings, pecan shells, pistachio prunings, pistachio shells, plum prunings, prune pits, raisin pomace, rice straw, sawdust, tomato pomace, tumbleweeds, turkey (wood) shavings, urban development clearing trees, walnut prunings, walnut shells, wheat straw, unburned fuel, and paper. [District NSR Rule] Federally Enforceable Through Title V Permit
20. Urban wood waste (construction, demolition, and landfill derived wood wastes) is approved as fuel so long as there is less than 1% by weight, of plastic, rubber and other non-wood combustibles (other than dirt or ash). [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE

21. All stack emissions shall be offset with creditable biomass on an annual basis. [District NSR Rule] Federally Enforceable Through Title V Permit
22. Emission offset credits shall be calculated using the following formula: $EC(y) = \text{Summation}[1/DF(i) \times T(i) \times EF(i)]$, where $EC(y)$ = the amount of offset credit available for the year, i = the i th load of biomass combusted for the offset year, $DF(i)$ = the distance factor for the i th load of biomass, $T(i)$ = the number of tons of biomass in the i th load, and $EF(i)$ = the emission factor for the type of biomass in the i th load. [District NSR Rule] Federally Enforceable Through Title V Permit
23. The biomass offset Distance Factor shall be 1.2 for sources within a 15-mile radius and 2.0 for sources outside the 15-mile radius. [District NSR Rule] Federally Enforceable Through Title V Permit
24. Open burn emission factors used to determine the quantity of offsets available from the diversion of biomass from open-burning shall be obtained from District Policy SSP 2005 "Open Burn Emission Factors." [District NSR Rule] Federally Enforceable Through Title V Permit
25. Daily records of biomass consumption shall be maintained which include the type, mass and geographic origin of all creditable biomass received and used. Records shall include certifications that any creditable biomass has historically been openly burned in the San Joaquin Valley air basin. [District NSR Rule and District Rule 4352, 6.2.1] Federally Enforceable Through Title V Permit
26. Monthly records of all fuel consumption (including biomass and all other permitted fuels) shall be kept. Records shall include type, quantity, and higher heating value (HHV) for each fuel used. [District Rule 4352, 6.2.1] Federally Enforceable Through Title V Permit
27. Annual records shall be maintained which quantify the total amount of stack emissions and the total amount of offsets claimed from the diversion of creditable biomass from open-burning, and which include calculations demonstrating that the total amount of annual offsets claimed is sufficient to fully offset the annual stack emissions. [District NSR Rule] Federally Enforceable Through Title V Permit
28. Amount of paper used for fuel shall not exceed 50% of the total fuel consumption. [District Rule 4102]
29. No fuel shall be chemically treated, painted, or oil stained. [District Rule 4102]
30. Fuel feed rate shall not exceed a maximum of 460 MMBtu/hr. [District NSR Rule] Federally Enforceable Through Title V Permit
31. Gross power production shall not exceed 28.5 Megawatts. [District NSR Rule] Federally Enforceable Through Title V Permit
32. Steam production shall not exceed 6,700,000 pounds per day at 900 øF and 850 psig. [District NSR Rule] Federally Enforceable Through Title V Permit
33. If urban wood wastes have been burned during the 365 day period prior to October 31 of any year, fuel testing shall be conducted by December 31 of that year. [District Rule 4102]
34. Fuel testing shall be conducted as follows: one truckload of urban wood waste fuel shall be weighed, dumped, and all contaminants shall be sorted from the fuel, identified and weighed. The report for this test shall be forwarded to the District by January 31 (one month after fuel testing deadline). [District Rule 4102]
35. The District shall be contacted and notified of the proposed date of any fuel testing. [District NSR Rule] Federally Enforceable Through Title V Permit
36. In addition to the scheduled annual fuel testing, testing shall also be performed on urban wood waste on-site within 24 hours of any such request of District staff. [District NSR Rule] Federally Enforceable Through Title V Permit
37. Permittee shall provide a toxics emissions test plan and protocol within 120 operating days of restarting facility and will initiate testing within 60 days of ARB and SJVAPCD approval of the protocol. [District Rule 4102]
38. In accordance with the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (amended June 1993), the facility shall be source tested for the following while fired on the maximum proposed mix of urban wood waste: full set of metals, PAHs, dioxins, furans, formaldehyde, acetaldehyde, PCBs and POM. The ratio of urban wood waste to other fuel combusted during the toxics testing will become the maximum ratio allowed for all subsequent combustion, unless otherwise revised under future Authorities to Construct. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

39. Urban woodwaste combustion shall cease within 462 days of operation, beginning the date of facility restart, unless an application for Authority to Construct (ATC), based on refined health risk assessment is filed and approved. [District Rule 4102]
40. Records shall be maintained of the number of days of operation since "restart" occurred. [District Rule 4102]
41. The baghouse shall consist of 2,310 bags with a rating of 226,000 acfm. [District NSR Rule] Federally Enforceable Through Title V Permit
42. All modules of the baghouse shall be equipped with a manometer which shall be calibrated on an annual or more frequent basis. [District NSR Rule] Federally Enforceable Through Title V Permit
43. The multiclone shall consist of a 1,500 hp motor with 200-11.5 inch collector tubes. [District NSR Rule] Federally Enforceable Through Title V Permit
44. The reagent injection system shall consist of a 2,540 cubic foot silo. [District NSR Rule] Federally Enforceable Through Title V Permit
45. The reagent bin for the dry additive injection system shall be under negative pressure whenever reagent is being loaded into the bin. [District NSR Rule] Federally Enforceable Through Title V Permit
46. The ammonia injection system includes 36 nozzles. [District NSR Rule] Federally Enforceable Through Title V Permit
47. The air flow rate and ammonia injection rate shall be monitored continuously and recorded. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Particulate matter emissions in the exhaust gas from this unit shall not exceed 0.03 lb/MMBtu heat input. [40 CFR 60.42Da(a)(1) and (2)] Federally Enforceable Through Title V Permit
49. The opacity of the exhaust gas from this unit shall not exceed 20 percent based on a 6-minute average except for one 6-minute period per hour of not more than 27 percent opacity. [40 CFR 60.42Da(b) and 40 CFR 64.3] Federally Enforceable Through Title V Permit
50. Sulfur dioxide (SO₂) emissions from the biomass unit shall not exceed 1.20 lb/MMBtu heat input. [40 CFR 60.43Da(d)(2)] Federally Enforceable Through Title V Permit
51. Sulfur compound emissions shall not exceed 0.2% by volume, 2,000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Madera County Rule 404] Federally Enforceable Through Title V Permit
52. SO₂ emissions shall be calculated based on the arithmetic average of all hourly emissions rates for SO₂ for the 30 successive boiler operating days. [40 CFR 60.48Da(g)] Federally Enforceable Through Title V Permit
53. Except for periods of start-up or shutdown, emissions concentrations in the exhaust from the unit shall not exceed any of the following limits based on a block 24 hour average : 115 ppmv NO_x at 3% O₂ or 400 ppmv CO at 3% O₂. [40 CFR 60.44Da(a) and District Rule 4352, 5.1 & 5.2] Federally Enforceable Through Title V Permit
54. The duration of each shutdown shall not exceed twelve (12) hours except as provided in Section 5.3.4 of District Rule 4352. [District Rule 4352, 5.3.1] Federally Enforceable Through Title V Permit
55. Except as provided in Section 5.3.4 of District Rule 4352, the duration of each start-up shall not exceed 96 hours, or 192 hours if curing of the refractory is required after a modification. [District Rule 4352, 5.3.2] Federally Enforceable Through Title V Permit
56. When two or more fuels are combusted simultaneously, NO_x emissions shall not exceed the prorated emissions calculated using the following formula: $E_n = [86w + 260z]/100$, where: E_n is the applicable standard for nitrogen oxides when multiple fuels are combusted simultaneously (ng/J heat input); w is the percentage of total heat input derived from the combustion of gaseous fuels; and z is the percentage of total heat input derived from the combustion of solid fuels. [40 CFR 60.44Da(c)] Federally Enforceable Through Title V Permit
57. Applicable emissions standards of 40 CFR part 60 for PM, SO₂, and NO_x apply at all times except during the startup, shutdown, or malfunction. [40 CFR 60.48Da(c)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

58. Continuous Emission Monitoring systems (CEMs) shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7 (c) and 60.13. CEMs must also satisfy the Performance Specifications of 40 CFR Part 51 Appendix P and 40 CFR Part 60 Appendix B, Performance Specifications 2, 3, and 4, and the Relative Accuracy Test Audit of Appendix F. [District NSR Rule, District Rules 1080, 6.0 and 4352, 5.5, 40 CFR 49Da(w) and 40 CFR 64.3] Federally Enforceable Through Title V Permit
59. The continuous emissions monitoring systems (CEMs) for NO_x, SO₂, and CO and continuous monitoring system for opacity and O₂ concentration shall be calibrated and maintained operational at all times including the periods of startup, shutdown, malfunction, and emergency conditions, except for the CEMs breakdowns, repairs, calibrate checks, and zero and span adjustments. [40 CFR 60.49Da(a), (b), (c), (d), and (e), 40 CFR 64.3 and District Rule 4352] Federally Enforceable Through Title V Permit
60. Hourly emissions for NO_x (as NO₂), SO₂, and CO shall be based on a consecutive three-hour average as determined by the CEM system. [District Rule 1080] Federally Enforceable Through Title V Permit
61. The owner or operator shall obtain emission data for at least 18 hours in at least 22 hours out of the 30 successive boiler operating days. If this minimum data cannot be obtained, the operator or owner shall supplement emission data with alternate monitoring system approved by the APCO or methods and procedures described in section 60.47a(h) of 40 CFR 60, Subpart Da. [40CFR 60.49Da(f) and 40 CFR 64.9] Federally Enforceable Through Title V Permit
62. The owner or operator shall use methods and procedures described in 40 CFR 60.47a(i) to conduct monitoring system performance evaluations and calibrate checks under subpart 60.13(c) and (d). Alternate methods and procedures described under section 60.47a(j) may also be used. [40 CFR 60.49Da(i) and (j) and 40 CFR 64.9] Federally Enforceable Through Title V Permit
63. Results of continuous emissions monitoring must be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080, 7.2 and 40 CFR 64.9] Federally Enforceable Through Title V Permit
64. A violation of NO_x emission standards indicated by the NO_x CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit
65. Operator shall notify the APCO shall be notified no later than eight hours after the detection of a breakdown of the CEM. The operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit
66. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess occurred. [40 CFR 60.51Da, 40 CFR 64.9 and District Rule 1080, 8.0] Federally Enforceable Through Title V Permit
67. The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [40 CFR 64.3] Federally Enforceable Through Title V Permit
68. The baghouse shall operate at all times with a minimum differential pressure of 3 inches water column and a maximum differential pressure of 10 inches water column. [40 CFR Part 64.3] Federally Enforceable Through Title V Permit
69. Differential operating pressure shall be monitored and recorded on each day that the combustor operates. [40 CFR 64.3] Federally Enforceable Through Title V Permit
70. During each day of operation, the permittee shall record the pressure drop of the baghouse, and compare the readings with the acceptable range. Upon detecting any excursion from the acceptable range pressure readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR 64.7] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

71. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR 64.7] Federally Enforceable Through Title V Permit
72. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR 64.9] Federally Enforceable Through Title V Permit
73. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64.8] Federally Enforceable Through Title V Permit
74. Source testing for PM₁₀, SO_x, NO_x, CO, VOC, and ammonia slip shall be performed at least once every 12 calendar months. [District NSR Rule, District Rule 1081, and District Rule 4352, 6.3.1] Federally Enforceable Through Title V Permit
75. 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] Federally Enforceable Through Title V Permit
76. Stack gas velocity shall be determined using EPA Method 2. Stack gas oxygen shall be determined using EPA Method 3 or 3A (or ARB Method 100). Stack gas moisture content shall be determined using EPA Method 4. Solid fuel higher heating value (hhv) shall be determined using ASTM Method D 2015 or E 711. [District Rule 4352, 6.4.1] Federally Enforceable Through Title V Permit
77. Source testing shall be conducted using the following methods: EPA Method 7E (or CARB Method 100) for NO_x (ppmv); EPA Method 19 for NO_x (lb/MMBtu heat input); EPA Method 5 for particulate matter (PM); EPA Method 19 for SO₂; EPA Method 9 for opacity; EPA method 10 (or CARB method 100) for CO; and EPA Method 18 (or CARB Method 100) for VOC. [District Rule 4352, 6.4.1 and 40 CFR 60.50Da] Federally Enforceable Through Title V Permit
78. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is zero, or is shut off for 30 minutes or longer. [District Rule 4352, 6.3.2 and 6.3.3] Federally Enforceable Through Title V Permit
79. The results of each source test and ash sample ion chromatography test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
80. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, maintenance of any CEM's that have been installed pursuant to District Rule 1080, and emission measurements. [District Rule 1080, 7.3.1, 40 CFR 60.7 (b) and 40 CFR 64.9] Federally Enforceable Through Title V Permit
81. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 forty-minute test runs for NO_x and CO. This mean shall be multiplied by the appropriate factor. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
82. Enclosure and dust collection system shall be completely inspected annually for evidence of particulate matter leaks and repaired as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
83. Dust collector filters shall be thoroughly inspected annually for tears, scuffs, abrasions, holes, or any evidence of particulate matter leaks and shall be replaced as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
84. Records of dust collector maintenance, inspections, and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
85. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-799-6-5

LEGAL OWNER OR OPERATOR: MADERA POWER, LLC
MAILING ADDRESS: PO BOX 305
FIREBAUGH, CA 93622

LOCATION: 11427 FIREBAUGH BLVD
P O BOX 305
FIREBAUGH, CA 93622

EQUIPMENT DESCRIPTION:

MODIFICATION OF MODIFICATION OF WOOD WASTE FUEL SCREENING AND HANDLING OPERATION WITH WET SUPPRESSION SYSTEM CONSISTING OF FEED HOPPER, TAKE AWAY CONVEYOR, DESTONER, ROCKS CONVEYOR, SEPARATOR CONVEYOR, DISCHARGE CONVEYOR, TWO PICKUP HOODS FEEDING TWO PLASTIC COLLECTION BOXES, ONE MANUAL PICKING STATION, AND ONE DOPPSTADT ROTATING DRUM SCREEN POWERED BY A 465 BHP DAIMLER CHRYSLER TIER 3 TRANSPORTABLE DIESEL-FIRED IC ENGINE: REMOVE FEED HOPPER AND FEED CONVEYOR, RELOCATE DOPPSTADT ROTATING SCREEN TO FEED HOPPER LOCATION, RELOCATE BLOWER #3 DISCHARGE FROM PLASTIC COLLECTION BOX #1 TO PLASTIC COLLECTION BOX #2, MAINTAIN BLOWER #4 DISCHARGE TO PLASTIC COLLECTION BOX #2, AND INSTALL ONE PICKUP HOOD AND BLOWER #5 AND RELOCATE PLASTIC COLLECTION BOX CONNECTED TO BLOWER #5 DISCHARGE: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-799-6-4 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [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.

Seyed Sadredin, Executive Director, APCO

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DAVID WARNER, Director of Permit Services
2-799-6-5 : Jul 11 2011 11:38AM - TOMS Joint Inspection NOT Required

4. Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NOx/year, 54,000 lb-SOx/year, 83,520 lb-PM10/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District NSR Rule]
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. The wet suppression system shall be maintained in good operating condition and shall be operated at all times when screening equipment is in operation. [District Rule 2201]
7. 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 Rules 2201 and 4101]
8. PM10 emissions rate from this unit shall not exceed 0.00319 lb-PM10/ton of fuel processed. [District Rule 2201]
9. The quantity of material processed through the equipment shall not exceed 800 tons per day. [District Rule 2201]
10. The quantity of material processed through the equipment shall not exceed 120,000 tons per year. [District Rule 2201]
11. 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]
12. 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 93116]
13. 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]
14. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
15. This nonroad transportable engine utilized by this permit shall not be operated at one location for more than 12 consecutive months and shall meet all the requirements of a nonroad transportable engine, per CFR Title 40 Part 89. [CCR, Title 17 and District Rule 4701]
16. The maximum amount of fuel used in the engine shall not exceed 22,303 gallons per year when operating at facility C-799 (this limit is to enforce the zero equivalency threshold for greenhouse gas emissions). [District Rule 2201 and California Environmental Quality Act]
17. 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]
18. Emissions from the IC engine shall not exceed any of the following limits: 2.76 g-NOx/bhp-hr, 1.04 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93116]
19. The PM10 emissions rate from the engine shall not exceed 0.11 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]
20. {4037} During periods of operation, 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]
21. 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, amount and type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 2201 and 4702]
22. A daily log shall be maintained and shall include the total quantity of material processed (in tons) and maintenance or modifications performed. [District Rule 2201]

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CONDITIONS CONTINUE ON NEXT PAGE

23. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule]
24. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 4702]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-799-7-3

LEGAL OWNER OR OPERATOR: MADERA POWER, LLC

MAILING ADDRESS: PO BOX 305
FIREBAUGH, CA 93622

LOCATION: 11427 FIREBAUGH BLVD
P O BOX 305
FIREBAUGH, CA 93622

EQUIPMENT DESCRIPTION:

MODIFICATION OF TRANSPORTABLE PETERSON POWER CORP MODEL 4710 SERIAL NO 29B-56-1404 WOOD WASTE FUEL GRINDING AND HANDLING OPERATION WITH PERMIT EXEMPT ENGINE (PER RULE 2020, SECTION 4.3, DEFINED AS MOTOR VEHICLE): ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-799-7-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]
4. Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NOx/year, 54,000 lb-SOx/year, 83,520 lb-PM10/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District NSR Rule]
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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.

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

C-799-7-3 Jul 11 2011 11:38AM - TQMS : Joint Inspection NOT Required

6. The wet suppression system shall be maintained in good operating condition and shall be operated at all times when grinding equipment is in operation. [District Rule 2201]
7. No air contaminant shall be discharged into the atmosphere from the grinding & handling of the process material for a period or periods aggregating more than 3 minutes in any one hour which is dark or darker than Ringelmann 1/4 or equivalent to 5% opacity. [District Rules 2201 and 4101]
8. PM10 emissions rate from this unit shall not exceed 0.347 lb-PM10/ton of fuel processed. [District Rule 2201]
9. The quantity of material processed through the equipment shall not exceed 800 tons in any one day. [District Rule 2201]
10. The permittee shall maintain records of the dates and locations where the wood waste grinding equipment operates. [District Rule 1070]
11. A daily log shall be maintained and shall include the following for each location the equipment is operated: the total quantity of material processed (in tons) and maintenance or modifications performed. [District Rule 2201]
12. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule]
13. {3246} All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-799-8-3

LEGAL OWNER OR OPERATOR: MADERA POWER, LLC
MAILING ADDRESS: PO BOX 305
FIREBAUGH, CA 93622

LOCATION: 11427 FIREBAUGH BLVD
P O BOX 305
FIREBAUGH, CA 93622

EQUIPMENT DESCRIPTION:

MODIFICATION OF TRANSPORTABLE 315 BHP JOHN DEERE MODEL 6068HF485T S/N PE6068L001281X TIER 3 DIESEL-FIRED IC ENGINE POWERING SCREENING OPERATIONS LISTED IN PERMITS C-799-6 OR S-285-10: ADD PERMIT UNIT C-799-9 TO SPECIFIC LIMITING CONDITION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-799-8-1 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]
4. Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NOx/year, 54,000 lb-SOx/year, 83,520 lb-PM10/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District NSR Rule]

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.

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

C-799-8-3 : Jul 11 2011 11:38AM - TOMS : Joint Inspection NOT Required

5. When operating at facility S-285, annual emissions from the boiler/generator listed under permit S-285-2-6 and the transportable IC engine listed under permit C-799-8 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 140,880 lb-NOx/year, 78,200 lb-SOx/year, 45,420 lb-PM10/year, 498,000 lb-CO/year, or 104,800 lb-VOC/year. [District NSR Rule]
6. This transportable engine shall be only operated at the facilities C-799 and S-285. [District Rule 2201]
7. Permittee shall notify the District Compliance Division every time the engine is moved to a new location for more than 24 hours. Such notification shall be made within 48 hours after the engine is moved [District Rule 1070]
8. This engine shall be operated at one location or site at a facility for no more than 12 consecutive months, or if at a seasonal source, the engine shall not be operated at one location or site at a facility for more than the duration of the season. [District Rule 2201 and 13 CCR 2421 and 17 CCR 93116]
9. {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]
10. The engine shall not operate within 5000 feet of the nearest receptor when operating at facility C-799. [District Rule 4201]
11. Operation of the engine shall not exceed 1352 hours per calendar year when operating at facility C-799 (this limit is to enforce the zero equivalency threshold for greenhouse gas emission). [District Rules 2201 and 4702 and 17 CCR 93116 and California Environmental Quality Act]
12. The engine shall not operate within 750 feet of the nearest receptor when operating at facility S-258. [District Rule 4201]
13. Operation of the engine shall not exceed 500 hours per calendar year when operating at facility S-258. [District Rules 2201 and 4702 and 17 CCR 93116]
14. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
15. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
16. {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]
17. Emissions from this IC engine shall not exceed any of the following limits: 2.37 g-NOx/bhp-hr, 0.45 g-CO/bhp-hr, or 0.17 g-VOC/bhp-hr. [District Rule 2201 and 40 CFR Part 89 and 13 CCR 2423 and 17 CCR 93116]
18. Emissions from this IC engine shall not exceed 0.08 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rule 2201 and 4102 and 40 CFR Part 89 and 13 CCR 2423 and 17 CCR 93116]
19. {3395} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]
20. {3846} The engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
21. {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
22. {4037} During periods of operation, 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]
23. 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. [District Rule 4702]
24. The permittee shall maintain records of each location where the engine is operated, including dates and duration of residency at each location, and shall update those records each time the engine is moved. [District Rule 2201 and 17 CCR 93116]

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CONDITIONS CONTINUE ON NEXT PAGE

25. {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, 4701, and 4702]
26. The permittee shall record the total time the engine operates at each facility, in hours per calendar year. [District Rule 2201]
27. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule]
28. {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]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
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PERMIT NO: C-799-9-0

LEGAL OWNER OR OPERATOR: MADERA POWER, LLC
MAILING ADDRESS: PO BOX 305
FIREBAUGH, CA 93622

LOCATION: 11427 FIREBAUGH BLVD
P O BOX 305
FIREBAUGH, CA 93622

EQUIPMENT DESCRIPTION:
TRANSPORTABLE 980 BHP KOMATSU MODEL SAA6D170E2-3 TIER 2 CERTIFIED DIESEL-FIRED IC ENGINE
POWERING VARIOUS EQUIPMENT AT THE FACILITY

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The permittee shall obtain APCO approval for the use of any equivalent engine not specifically approved by this Authority to Construct. Approval of an equivalent engine shall only be made after the APCO's determination that the submitted design and performance data for the proposed engine is equivalent to the approved engine. [District Rule 2201]
4. The permittee's request for approval of an equivalent engine shall include, at minimum, the following information: CARB certification/executive order, engine manufacturer and model number, maximum power rating (bhp), and manufacturer's guaranteed emission factors. [District Rule 2201]
5. The permittee's request for approval of an equivalent engine shall be submitted to the District at least 90 days prior to the planned installation date. The permittee shall also notify the District at least 30 days prior to the actual installation of the District approved equivalent engine. [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.

Seyed Sadredin, Executive Director, APCO

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DAVID WARNER, Director of Permit Services

C-799-9-0 : Oct 6 2011 10:00AM - TQMS : Joint Inspection NOT Required

6. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
7. No emission factor and no emission rate shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]
8. Any engine utilized by this permit shall meet the latest available CARB certification standard for the particular horsepower range. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Permittee shall provide written notification to the District within 48 hours of operating an engine under this permit (if an engine is located onsite longer than 24 hours). Such notification shall include the date the unit was brought onsite, the manufacturer, model number, maximum rating, and emissions information that documents that the unit meets the emission limits and requirements specified in the permit. [District Rule 1070] Federally Enforceable Through Title V Permit
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. 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] Federally Enforceable Through Title V Permit
12. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
13. Any engine utilized by this permit shall not operate within 5,000 feet of the nearest receptor. [District Rule 4102]
14. Any engine utilized by this permit shall have an exhaust stack height of at least 20 feet above grade. [District Rule 4102]
15. Any engine utilized by this permit shall have an exhaust velocity of at least 289 feet per second. [District Rule 4102]
16. Any engine utilized by this permit shall have an exhaust temperature of at least 952 degrees F. [District Rule 4102]
17. The diameter of the exhaust stack for any engine utilized by this permit shall be no greater than 0.62 feet wide. [District Rule 4102]
18. Any engine utilized by this permit shall not operate within 500 feet of the facility boundary when operating for a scheduled, non-intermittent event. [District Rule 4102]
19. Any engine utilized by this permit shall not operated more than 16 hours within any rolling 24 hour period when operating for a scheduled, non-intermittent event. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
20. Any engine utilized by this permit 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] Federally Enforceable Through Title V Permit
21. 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 93116] Federally Enforceable Through Title V Permit
22. Any engine utilized by this permit shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702] Federally Enforceable Through Title V Permit
23. Any engine utilized by this permit shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit
24. Each nonroad transportable engine utilized by this permit shall not be operated at one location for more than 12 consecutive months and shall meet all the requirements of a nonroad transportable engine, per CFR Title 40 Part 89. [CCR, Title 17 and District Rule 4701] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

25. Operation of this permit unit shall not exceed 440 hours per year, as determined by an operational nonresettable elapsed operating time meter or other APCO approved alternative. These records shall be updated at least monthly. [District Rules 2201 and 4702 and California Environmental Quality Act] Federally Enforceable Through Title V Permit
26. 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]
27. Emissions from the IC engine shall not exceed any of the following limits: 4.18 g-NO_x/bhp-hr, 0.6 g-CO/bhp-hr, or 0.22 g-VOC/bhp-hr. [District Rule 2201] Federally Enforceable Through Title V Permit
28. The PM₁₀ emissions rate from the engine shall not exceed 0.10 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
29. Specific Limiting Condition (SLC) limiting the annual emissions from the fuel handling listed under permit C-799-1, boiler/generator listed under permit C-799-3, the screening operation listed under permit C-799-6, the grinding operation listed under permit C-799-7, the transportable IC engine listed under permit C-799-8, and the transportable IC engine listed under permit C-799-9 calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 417,600 lb-NO_x/year, 54,000 lb-SO_x/year, 83,520 lb-PM₁₀/year, 501,120 lb-CO/year, or 200,448 lb-VOC/year. [District NSR Rule] Federally Enforceable Through Title V Permit
30. During periods of operation, 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] Federally Enforceable Through Title V Permit
31. The permittee shall maintain a permit operating log to demonstrate compliance. The 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. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit
32. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District Rule 2201] Federally Enforceable Through Title V Permit
33. 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] Federally Enforceable Through Title V Permit

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Attachment F

Greenhouse Gas Emissions Calculations

Greenhouse Gas Emissions Evaluation

The District has evaluated potential greenhouse gas emissions from the internal combustion engine rated at 980 brake horsepower to determine if there will be an increase in greenhouse gas emissions associated with this project.

Basis and Assumptions

- The engine is a compression-ignited unit fueled with diesel.
- The engine operates at full rated power.
- Specific fuel consumption is 220 g/kWh (typical for engine type).
- Density of diesel fuel is 7.0 lb/gallon.
- Higher Heating Value (HHV) of diesel is 138,700 Btu/gallon.
- Engine operates 440 hours per year.
- Emission factors and global warming potentials (GWP) for diesel fuel are taken from the California Climate Change Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.1, C.3 and C.6):

CO2 10.15 kg/gallon (22.3 lb/gallon)

CH4 1.44 g/gallon (0.006 lb/gal)

N2O 0.26 g/gallon (0.001 lb/gal)

GWP for CH4 = 23 lb-CO2e per lb-CH4

GWP for N2O = 296 lb-CO2e per lb-N2O

Calculations

Diesel fuel consumption rate at full rated horsepower:

$$980 \text{ bhp} \times \frac{0.7456 \text{ kW}}{\text{hp}} \times \frac{220 \text{ g}}{\text{kWh}} \times \frac{1 \text{ lb}}{453.6 \text{ g}} \times \frac{\text{gal}}{7 \text{ lb}} = 50.6 \text{ gal/hour}$$

Hourly Emissions

CO2 Emissions = 50.6 gal/hr x 22.3 lb/gal = 1128.99 lb-CO2e/hour

CH4 Emissions = 50.6 gal/hr x 0.006 lb/gal x 23 lb-CO2e per lb-CH4 = 6.99 lb-CO2e/hour

N2O Emissions = 50.6 gal/hr x 0.001 lb/gal x 296 lb-CO2e per lb-N2O = 14.99 lb-CO2e/hour

Total = 1128.99 + 6.99 + 14.99 = 1150.97 lb-CO2e/hour

Annual Increase of Emissions

1150.97 lb-CO2e/hour x 440 hr/year ÷ 2,000 lb/short ton = **235.21 short tons-CO2e/year**

235.21 short tons-CO2e/year x 0.9072 metric tons/short ton = **229.7 metric tons/year**

Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.