San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

NOV 0 2 2015

Mr. Ray Arthur
Fresno-Clovis Regional Wastewater Reclamation Facility
5607 W. Jensen Ave
Fresno, CA 93706

Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)
District Facility # C-535
Project # C-1152564

Dear Mr. Arthur:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The proposed Authority to Construct permits authorize the installation of a new transportable IC engine powering a pump and include the proposed transportable engine in an existing Specific Limiting Condition to limit annual NOx emissions.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authorities to Construct 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. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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Thank you for your cooperation in this matter.

Sincerely,

for Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Various Specified Locations IC Engine Powering a Pump

Facility Name:	Fresno/Clovis Regional WWTP	Date:	October 26, 2015
Mailing Address:	5607 W. Jensen Ave Fresno, CA	Engineer:	Jesse A. Garcia
		Lead Engineer:	Joven Refuerzo
Contact Person:	Ray Arthur		
Telephone:	(559) 621-5266		
Application #(s):	C-535-9-15, -24-4, -44-0		
Project #:	C-1152564		
Deemed Complete:	October 15, 2015		

I. Proposal

Fresno/Clovis Regional WWTP has requested an Authority to Construct (ATC) permit for the installation of a various specified locations John Deere Tier 4 Final engine powering a pump to provide for various needs throughout the facility.

Additionally, to not increase emissions at the facility, the applicant is proposing to include the proposed engine in the existing Specific Limiting Condition (SLC) for both units, C-535-9 and -24 such that the post project emissions equal the pre project emissions. Therefore, the following condition will be included on the proposed ATCs:

- Authorities to Construct (ATCs) C-535-9-15, -24-4 and -44-0 shall be implemented concurrently. [District Rule 2201]

Pursuant to District Policy APR 1420, NSR Calculations for Units with Specific Limiting Conditions, to include the proposed IC engine, unit -44, in the existing SLC is not an NSR modification to units -9 and -24.

On October 22, 1015, the applicant amended the original proposal to limit the annual hours of operation to 2,160 hours.

Fresno/Clovis Regional WWTP has received their Title V Permit. This modification can be classified as a Title V minor modification pursuant to Rule 2520, 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. Fresno/Clovis Regional WWTP must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4701	Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702	Internal Combustion Engines (11/14/13)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The operation will be approved for various unspecified locations within the existing facility at 5607 W. Jensen Ave in Fresno, 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.

IV. Process Description

The sewage treatment plant is equipped to collect digester gas to fuel the boiler and two gas turbines at the facility. Excess digester gas that is not combusted in the boilers, and gas turbines is burned in the enclosed ground flare. The existing flare is equipped with a continuous pilot and a sensing device to determine whether the pilot is operating.

The existing transportable 125 BHP diesel-fired IC engine powering an air compressor will be used to support pneumatic tools for road repairs at the wastewater facility.

The proposed transportable 74 bhp IC engine powering a pump will be used at various locations throughout the existing facility to pump water from one pond to another as necessary to ensure proper operation of the facility.

V. Equipment Listing

Pre-Project Equipment Description (see PTO in Appendix E):

C-535-9-3: 36.3 MMBTU/HR JOHN ZINK COMPANY WASTE GAS FLARE

C-535-24-2: 125 BHP JOHN DEERE MODEL 4045HF275 TIER 3 CERTIFIED TRANSPORTABLE DIESEL-FIRED IC ENGINE POWERING AN AIR COMPRESSOR

Proposed ATC:

C-535-9-15: MODIFICATION OF 36.3 MMBTU/HR JOHN ZINK COMPANY WASTE GAS FLARE: INCLUDE PERMIT UNIT -44 IN THE EXISTING SPECIFIC LIMITING CONDITION FOR ANNUAL NOX EMISSIONS

C-535-24-4: MODIFICATION OF 125 BHP JOHN DEERE MODEL 4045HF275 TIER 3 CERTIFIED TRANSPORTABLE DIESEL-FIRED IC ENGINE POWERING AN AIR COMPRESSOR: INCLUDE PERMIT UNIT -44 IN THE EXISTING SPECIFIC LIMITING CONDITION FOR ANNUAL NOX EMISSIONS

C-535-44-0: TRANSPORTABLE 74 BHP JOHN DEERE MODEL 4045TFC03 TIER 4 FINAL CERTIFIED DIESEL-FIRED IC ENGINE POWERING A PUMP

Post Project Equipment Description:

C-535-9-15: 36.3 MMBTU/HR JOHN ZINK COMPANY WASTE GAS FLARE

C-535-24-4: 125 BHP JOHN DEERE MODEL 4045HF275 TIER 3 CERTIFIED TRANSPORTABLE DIESEL-FIRED IC ENGINE POWERING AN AIR COMPRESSOR

C-535-44-0: VARIOUS SPECIFIC LOCATIONS 74 BHP JOHN DEERE MODEL 4045TFC03 TIER 4 FINAL CERTIFIED DIESEL-FIRED IC ENGINE POWERING A PUMP

VI. Emission Control Technology Evaluation

C-535-9 and -24:

There are no proposed changes to the emission control device or practices as described in project number C-1052548 and 1074104; therefore, there is no need to evaluate the emission control device.

C-535-44:

The applicant has proposed to install a Tier 4 Final certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel.

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

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 above, pursuant to APR 1420, units -9 and -24 are not being modified; therefore, calculations are not required for those units, but are shown for reference only.

A. Assumptions

C-535-9:

- The maximum operating schedule is 24 hours per day.
- The unit is fired solely on digester gas.
- Annual pre-project and post-project potential to emit is calculated based on 365 days of operation per year.
- Digester Gas Heating Value: 595 Btu/scf @ 68°F (Average data from Source Test performed 11/17/04 – See Appendix II of Project C-1052548)
- F-Factor for Digester Gas: 9230 dscf/MMBtu @ 68°F (Average data from Source Test performed 11/17/04 – See Appendix II of Project C-1052548)
- Molar volume = 385.6 scf/lb-mol @ 68°F
- VOC emission factor = 0.0027 lb-VOC/MMBtu per the requirements of District Rule 4311.
- Maximum daily fuel usage = 1,584,000 scf/day per current permit.

C-535-24 and -44:

- Operating schedule: 24 hours/day
- 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)
- Total combined PE2 for NO_x from units -9, -24, and -44 = 19,272 lb/year

B. Emission Factors

C-535-9:

The emission factors for the flare were obtained from project number C-1052548.

Emission Factors		
Pollutant	Emission Factor	Source
NO_X	2.2 lb-NO_X/hr	Current Permit
SO_X	1.8 lb-SO_X/hr	Current Permit
PM10	0.18 lb-PM_{10}/hr	Current Permit
CO	10.5 lb-CO/hr	Current Permit
VOC	0.0027 lb-VOC/MMBtu	Current Permit

C-535-24:

Diesel-fired IC Engine Emission Factors		
	g/hp·hr	Source
NO_X	4.1	Current Permit
*SO_X	0.0051	Mass Balance Equation Below
PM_{10}	0.19	Current Permit
CO	0.75	Current Permit
VOC	0.3	Current Permit

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

C-535-44:

Diesel-fired IC Engine Emission Factors		
	g/hp·hr	Source
NO_X	3.12	ARB Certification
*SO_X	0.0051	Mass Balance Equation Above
PM_{10}	0.0007	ARB Certification
CO	0.746	ARB Certification
VOC	0.16	ARB Certification

C. Calculations

1. Pre-Project Potential to Emit (PE1)

C-535-9

Daily NOx, SOx, PM10, and CO emissions are calculated based on the hourly emission rates from the current permit:

Daily Emissions for NOx, SOx, PM10, and CO								
NOx	2.2	lb/hour	x	24	hours/day	=	52.8	lb/day
SOx	1.8	lb/hour	x	24	hours/day	=	43.2	lb/day
PM10	0.18	lb/hour	x	24	hours/day	=	4.3	lb/day
CO	10.5	lb/hour	x	24	hours/day	=	252.0	lb/day

Daily VOC emissions are calculated based on the allowable emission factor from District Rule 4311, the allowed daily volumetric fuel input for the flare, and a 24 hour operating day:

Daily Emissions for VOC											
VOC	0.0027	lb/MMBtu	x	1.584	MMscf/day	x	595 x 10^6	Btu/MMscf	=	2.5	lb/day

Annual emission of all pollutants are calculated based on the daily emission rates and 365 operating days per year:

Annual Emissions								
NOx	52.8	lb/day	x	365	days/year	=	19,272	lb/year
SOx	43.2	lb/day	x	365	days/year	=	15,768	lb/year
PM10	4.3	lb/day	x	365	days/year	=	1,577	lb/year
CO	252.0	lb/day	x	365	days/year	=	91,980	lb/year
VOC	2.5	lb/day	x	365	days/year	=	913	lb/year

C-535-24

The daily and annual PE are calculated as follows:

Daily PE1 (lb-pollutant/day) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/day) / 453.6 g/lb

Annual PE1 (lb-pollutant/yr) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/yr) / 453.6 g/lb

Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE1 (lb/day)	Annual PE1 (lb/yr)
NO_X	4.10	125	24	8760	**27.1**	**9,897**
SO_X	0.0051	125	24	8760	**0.0**	**12**
PM_{10}	0.19	125	24	8760	**1.3**	**459**
CO	0.75	125	24	8760	**5.0**	**1,811**
VOC	0.30	125	24	8760	**2.0**	**724**

Pre-Project Potential to Emit (PE1) (lb/year)					
Permit	NO_X	SO_X	PM_{10}	CO	VOC
C-535-9	19,272	15,768	1,577	91,980	913
C-535-24		0	459	1,811	724

C-535-44

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

2. Post Project Potential to Emit (PE2)

C-535-9, -24

The applicant proposes no change in emissions; therefore, PE2 = PE1.

Post-Project Potential to Emit (PE2) (lb/day)					
Permit	NO_X	SO_X	PM_{10}	CO	VOC
C-535-9	52.8	43.2	4.3	252.0	2.5
C-535-24	27.1	0.0	1.3	5.0	2.0
Post-Project Potential to Emit (PE2) (lb/year)					
Permit	NO_X	SO_X	PM_{10}	CO	VOC
C-535-9	19,272	15,768	1,577	91,980	913
C-535-24		0	459	1,811	724

C-535-44

The daily and annual PE are calculated as follows:

Daily PE2 (lb-pollutant/day) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/day) / 453.6 g/lb

Annual PE2 (lb-pollutant/yr) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/yr) / 453.6 g/lb

Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO_X	3.12	74	24	2160	**12.2**	**1,099**
SO_X	0.0051	74	24	2160	**0.0**	**2**
PM_{10}	0.0007	74	24	2160	**0.0**	**0**
CO	0.0746	74	24	2160	**0.3**	**26**
VOC	0.16	74	24	2160	**0.6**	**56**

Additionally, since the applicant is proposing to limit the post project NOx emissions to the pre project NOx emissions, the annual PE2 is summarized in the following table:

Post-Project Potential to Emit (PE2) (lb/year)					
Permit	NO_X	SO_X	PM_{10}	CO	VOC
C-535-9	19,272	15,768	1,577	91,980	913
C-535-24		0	459	1,811	724
C-535-44		2	0	26	56

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (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 (AER) that have occurred at the source, and which have not been used on-site.

The SSPE1 is taken as the SSPE2 from Project C-1150232 and summarized below:

SSPE1 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-535-6-14	1,613	3,796	704	8,944	587
C-535-10-2	1,554	1	111	336	124
C-535-11-2	37	0	6	19	7
C-535-12-2	37	0	6	19	7
C-535-13-2	0	0	0	0	2,920
C-535-17-2	113	0	20	61	22
C-535-18-14	9,299	18,141	11,753	244,842	183
C-535-19-14	9,299	18,141	11,753	244,842	183
C-535-9-3	19,272	15,768	1,577	91,980	859
C-535-24-2		0	459	1,811	724
C-535-26-0	3,921	12,416	1,046	13,070	5,489
C-535-28-0	0	0	0	0	0
SSPE1	45,145	68,263	27,435	605,924	11,105

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-535-6-14	1,613	3,796	704	8,944	587
C-535-10-2	1,554	1	111	336	124
C-535-11-2	37	0	6	19	7
C-535-12-2	37	0	6	19	7
C-535-13-2	0	0	0	0	2,920
C-535-17-2	113	0	20	61	22
C-535-18-14	9,299	18,141	11,753	244,842	183
C-535-19-14	9,299	18,141	11,753	244,842	183
C-535-9-3	19,272	15,768	1,577	91,980	859
C-535-24-4		0	459	1,811	724
C-535-44-0		2	0	26	56
C-535-26-0	3,921	12,416	1,046	13,070	5,489
C-535-28-0	0	0	0	0	0
SSPE2	45,145	68,265	27,435	605,950	11,161

5. Major Source Determination

Rule 2201 Major Source Determination:

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

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Facility emissions pre-project	45,145	68,263	27,435	605,924	11,105
Facility emissions – post project	45,145	68,265	27,435	606,950	11,161
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	Yes	No

As seen in the table above, the facility is an existing Major Source for NOx and CO and will remain a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	23	6	34	303	14	14
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	Y	N	N

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

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 District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since C-535-44 is a new emissions unit, BE = 0 for all pollutants.

7. SB 288 Major Modification

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

Non-road engines shall not be considered in determining whether a project is an SB 288 Major Modification. The Federal CAA reserves the regulation of non-road engines to Title II (National Emission Standards) of the CAA.

8. Federal Major Modification

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

Non-road engines shall not be considered in determining whether a project is a Federal Major Modification. The Federal CAA reserves the regulation of non-road engines to Title II (National Emission Standards) of the CAA.

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

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO2	SO2	CO	PM	PM10
Total PE from New and Modified Units	10	8	47	1	1
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As demonstrated above, because the post-project total potentials to emit from all new and modified emission units are below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

C-535-44
As seen in Section VII.C.2 above, the applicant is proposing to install a new IC engine with a PE greater than 2 lb/day for NO_X only. BACT is triggered for NOx emissions since the PE is greater than 2 lb/day for the emission unit.

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. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

BACT Guideline 3.2.11, applies to the transportable IC engines. [Transportable Compression-Ignited IC Engines (Non-Agricultural)] (See Appendix C)

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 (see Appendix C), BACT has been satisfied with the following:

NOx: Tier 4 Certification

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	45,145	68,265	27,435	606,950	11,161
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	No	Yes	No

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_X and the SSPE2 is greater than the offset thresholds for NO_X, SO_X, and CO. Therefore offset calculations will be required for this project.

Pursuant to District Policy APR 1130, offsets will not be required for this project for NO_x or CO since the total project annual emission increase (Σ [PE2 – PE1] for all units modified in the project) averages less than or equal to 0.5 lb/day and is therefore rounded to zero for the purposes of triggering NSR requirements.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

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

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

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

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing

requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	45,145	45,145	20,000 lb/year	No
SO_X	68,263	68,265	54,750 lb/year	No
PM_{10}	27,435	27,435	29,200 lb/year	No
CO	605,924	605,950	200,000 lb/year	No
VOC	11,105	11,161	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	45,145	45,145	0	20,000 lb/year	No
SO_x	68,265	68,263	2	20,000 lb/year	No
PM_{10}	27,435	27,435	0	20,000 lb/year	No
CO	605,950	605,924	26	20,000 lb/year	No
VOC	11,161	11,105	56	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, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions for C-535-44:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 3.12 g-NOx/bhp-hr, 0.746 g-CO/bhp-hr, or 0.16 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} Emissions from this IC engine shall not exceed 0.0007 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

Additionally, to limit annual emissions, the following condition will be included on all the ATCs:

- The combined annual emissions from units C-535-9, -24 and -44, calculated on a rolling 12 month basis, shall not exceed 19,272 lbs-NOx/year. [District Rule 2201]

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 be added to the ATCs:

- Combined annual NOx emissions, from units C-535-9, -24 and -44 to demonstrate compliance with the 12 month rolling limit, shall be maintained and updated monthly. [District Rule 2201]

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
   a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
   b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). 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 may construct/operate under the ATC upon submittal of the Title V administrative amendment/minor modification application.

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.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions. Therefore, the following condition will be listed on the ATCs to ensure compliance:

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

Rule 4102 Nuisance

Rule 4102 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.

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 (Appendix D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-535-44	2.97 per million	Yes

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 required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for PM_{10}. T-BACT is satisfied with BACT for PM_{10} (see Appendix C), which is the latest Tier certification; therefore, compliance with the District's Risk Management Policy is expected.

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

- The PM10 emissions rate shall not exceed 0.0007 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

Rule 4201 Particulate Matter Concentration

Particulate matter emissions from the operation will be less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions. Compliance is expected, based on past District experience with similar units. Therefore, the following condition will be listed on the ATC:

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

Rule 4311 Flares

C-535-9
The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx) from the operation of flares and is applicable to flares that are owned and operated by major sources.

Section 5.1 refers to emergency flares and is not applicable to this unit.

Section 5.2 requires that a flame always be present in the flare whenever combustible gases are present. The following condition will be placed on the permit to ensure compliance:

- A flame shall be present at all times in the flare whenever combustible gases are vented through the flare. [District Rule 4311, 5.2]

Section 5.3 requires that the flare be equipped with either an automatic ignition system or operated with a continuous pilot. Per the applicant, this unit is equipped with a continuous pilot. The following condition will be added to ensure compliance:

- The flare shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311, 5.3]

Section 5.4 requires that the flare be equipped with a device to monitor and confirm operation of the pilot. The following condition will be placed on the permit to ensure compliance:

- The flare shall be equipped and operated with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame. [District Rule 4311, 5.4]

Sections 5.5 and 5.6 refer to flares equipped with flow sensing automatic ignition devices and to open flares respectively. Since this unit is an enclosed ground flare, not equipped with a flow sensing automatic ignition device, these sections do not apply.

Section 5.7 requires that ground level enclosed flares, without steam-assist and rated at 10–100 MMBtu/hour heat release; meet the following emission standards for VOC and NOx:

NOx: 0.1330 lb/MMBtu
VOC: 0.0027 lb/MMBtu

The current permit limitation for NOx emissions is stated on the permit as 2.2 lb-NOx/hr. Converting this to an emission factor based on the rated heat release capacity of the flare:

NOx Emission Factor = 2.2 lb-NOx/hr ÷ 36.3 MMBtu/hr = 0.060 lb-NOx/MMBtu

Therefore, the unit is expected to perform within the NOx emission standard of Rule 4311. The following condition on the permit will ensure compliance:

- Emissions shall not exceed any of the following limits: 0.18 lb PM10/hr, 1.8 lb SOx/hr, 2.2 lb NOx/hr, or 10.5 lb CO/hr. [District Rules 2201 and 4311, 5.7]

Compliance with the VOC emission standard will be ensured by the following condition:

- VOC emissions shall not exceed 0.0027 lb-VOC/MMBtu. [District Rules 2201 and 4311, 5.7]

Section 5.8 states that effective on and after July 1, 2011, flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. The facility submitted an FMP on June 29, 2010 and a revised FMP on June 29, 2011.

The following condition will be listed on the permit to ensure compliance:

- Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311]

Section 5.9 sites Petroleum Refinery SO2 Performance Targets. The flare does not serve a petroleum refinery; therefore, Section 5.9 is not applicable.

Section 5.10 states the operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare.

The following condition will be listed on the permit to ensure compliance:

- The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311]

Section 5.11 states that the operator of a petroleum refinery or a flare with a flaring capacity equal to or greater than 50 MMBtu/hr shall monitor the flare pursuant to Sections 6.6, 6.7, 6.8, 6.9, and 6.10. The flare is not part of petroleum refinery; therefore, Section 5.11 is not applicable.

Section 6.1.1 requires the operator of flares that are subject to Section 5.6 to make available to the APCO upon request the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5).

The flare is not subject to Section 5.6; therefore, Section 6.1.1 is not applicable.

Section 6.1.2 requires the operator of flares that are subject to Section 5.7 to make available to the APCO upon request a copy of the source testing result conducted pursuant to Section 6.4.2.

The following condition will be listed on the permit to ensure compliance:

- Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311]

Section 6.1.3 requires the operator of flares that are used during an emergency, to maintain a record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation.

The following condition will be placed on the permit to ensure compliance:

- Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311]

Section 6.1.4 applies only to operators claiming an exemption pursuant to Section 4.3. This project is not claiming an exemption pursuant to Section 4.3; therefore, Section 6.1.4 is not applicable.

Sections 6.1.5 applies only to flares operated at petroleum refineries or those with a flaring capacity greater than or equal to 5 MMBtu/hr subject to a flare minimization plan.

The following condition will be listed on the permit to ensure compliance:

- Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311]

Section 6.1.6 applies to flares subject to flare minimization plans pursuant to Section 5.8.

The following condition will be listed on the permit to ensure compliance:

- Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311]

Section 6.1.7 applies to flares subject to flare minimization requirements pursuant to Section 5.8 and to flares operated at petroleum refineries or those with a flaring capacity equal to or greater than 50 MMBtu/hr.

The following condition will be listed on the permit to ensure compliance:

- The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311]

Section 6.2 applies to flares subject to a flare minimization plan.

Section 6.2.1 states the operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time.

The following condition will be listed on the permit to ensure compliance:

- The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311]

Section 6.2.2 states the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following:

6.2.2.1 The results of an investigation to determine the primary cause and contributing factors of the flaring event;
6.2.2.2 Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented;
6.2.2.3 If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and
6.2.2.4 The date, time, and duration of the flaring event.

The following condition will be listed on the permit to ensure compliance:

- The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or

implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311]

Section 6.2.3 states the operator of a flare subject to flare monitoring requirements pursuant to Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following:

6.2.3.1 The total volumetric flow of vent gas in standard cubic feet for each day.
6.2.3.2 Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6.
6.2.3.3 If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month.
6.2.3.4 If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month.
6.2.3.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow.
6.2.3.6 Flare monitoring system downtime periods, including dates and times.
6.2.3.7 For each day and for each month provide calculated sulfur dioxide emissions.
6.2.3.8 A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5.

The flare is not subject to Sections 6.6, 6.7, 6.8, 6.9, and 6.10.

The following condition will be listed on the permit to ensure compliance:

- The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; if the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311]

Sections 6.3.1 through 6.3.3 specify test methods for source testing. The following conditions will be placed on the permit to ensure compliance:

- VOC emissions for source test purposes, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". [District Rule 4311, 6.3.1]

- NOx emissions for source test purposes, in pounds per million Btu, shall be determined by using EPA Method 19. [District Rule 4311, 6.3.2]

- NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100. [District Rule 4311, 6.3.3]

Section 6.3.4 applies to flares subject to vent gas composition monitoring requirements pursuant to Section 6.6. The flare in this project is not subject to Section 6.6.

Section 6.3.5 applies to flares subject to vent gas flow verification requirements pursuant to Section 6.2.3.8. For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA:

6.3.5.1 EPA Methods 1 and 2;
6.3.5.2 A verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10.
6.3.5.3 Tracer gas dilution or velocity.
6.3.5.4 Other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter.

The following condition will be listed on the permit to ensure compliance:

- For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311]

Section 6.4.2 requires the operator of an enclosed ground flare to conduct source testing every 12 months to demonstrate compliance with the emission standards of Section 5.7. The following conditions will be placed on the permit to ensure compliance:

- Source testing to measure digester gas-combustion NOx and VOC emissions from this unit shall be conducted at least once every twelve (12) months. [District Rule 4311, 6.1.2]

- The results of each source test shall be submitted to the District within 45 days thereafter. [District Rule 4311, 6.1.2]

- 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 Rules 1081 and 4311]

Based on the above analysis, compliance with District Rule 4311 is expected.

Rule 4701 Internal Combustion Engines - Phase 1

Rule 4701 limits the emissions of oxides of nitrogen (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine rated greater than 50 bhp that requires a Permit to Operate (PTO).

Transportable engines as defined in the rule are not subject to the emission limits of this rule per Section 4.2.7. The following condition ensures the engine complies with the transportable definition in this rule:

- This engine shall be operated at one location or site at the facility for no more than 12 consecutive months. [District Rules 2201 and 4701 and 17 CCR 93116]

The engine is subject to the administrative requirements of Sections 6.1, 6.2.2, and 6.2.3. These administrative requirements are satisfied by related Rule 4702 conditions.

Rule 4702 Internal Combustion Engines

Purpose (Section 1.0):

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

Applicability (Section 2.0):

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

Requirements (Section 5.0):

Section 5.2 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 4 below.

Engine Type	Emission Limit/ Standard	Compliance Date
2. Certified Compression-Ignited Engine		
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 diesel IC engine proposed in this project is EPA Certified Tier 4 and met the most stringent no road compression engine emission standard in effect at the time of installation for an engine of its horsepower rating. Therefore, the engine in this project complies with the emission requirements of this rule.

Sulfur Oxide (SOx) Emission Control Requirements (Section 5.7)

Section 5.7.4 requires the use of California Reformulated Diesel for compression-ignited engines; or

Section 5.7.5 Operate the engine on liquid fuel that contains no more than 15 ppm sulfur, as determined by the test method specified in Section 6.4.6; or

Section 5.7.6 Install and properly operate an emission control system that reduces SO2 emissions by at least 95% by weight as determined by the test method specified in Section 6.4.6.

The SOx control requirements of this rule are satisfied by the use of CARB certified diesel fuel. The following condition will ensure compliance with this requirement:

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201, 4702, and 4801, and 17 CCR 93116]

Monitoring (Section 5.9):

Section 5.9.1 requires that the operator of a compression-ignited engine subject to the emission requirements of Section 5.2 comply with the requirements specified in Sections 5.9.2 through 5.9.5.

Section 5.9.2 requires the owner to properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

Section 5.9.3 requires the owner to monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

Section 5.9.4 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.

Section 5.9.5 is applicable to engines retrofitted with a NOx exhaust control. The engines in this project do not have add-on NOx controls. Therefore, the requirements of Section 5.9.5 are not applicable.

The following conditions will ensure compliance with the applicable monitoring requirements of this rule:

- {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] N

- {4037} During periods of operation, the permitted 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]

- This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 2201 and 4702 and 17 CCR 93116]

Emission Control Plan (Section 6.1):

The engine in this project is a certified compression-ignited engine not retrofitted with exhaust control and not subject to Section 8.0. Therefore, an ECP is not required.

Recordkeeping (Section 6.2):

Section 6.2 requires that except for engines subject to Section 4.0, the owner of an engine subject to the requirements of Section 5.1 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 of fuel used,
- Maintenance or modifications performed,
- Monitoring data,
- Compliance source test results, and
- Any other information necessary to demonstrate compliance with this rule.

Section 6.2.2 requires that the data collected pursuant to the requirements of Section 5.7 shall be maintained for at least five years, shall be readily available, and made available to the APCO upon request.

- {4050} The owner/operator 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, and any other information necessary to demonstrate compliance. [District Rule 4702]

Compliance Testing (Section 6.3):

The engine in this project is a certified compression-ignited engine not retrofitted with exhaust control and not subject to Section 8.0. Therefore, source testing is not applicable.

Inspection and Monitoring (I&M) Plan (Section 6.5):

The engine in this project is a certified compression-ignited engine not retrofitted with an exhaust control and not subject to Section 8.0. Therefore, an I&M Plan is not required by this rule.

District Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2% by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

For C-535-24 and -44:
Rule 4801 requires that sulfur compound emissions (as SO_2) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume SO_2 = (n x R x T) ÷ P
n = moles SO_2
T (standard temperature) = 60 °F or 520 °R

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

$$\frac{0.000015\,lb-S}{lb-fuel}\times\frac{7.1\,\text{lb}}{\text{gal}}\times\frac{64\,\text{lb}-SO_2}{32\,\text{lb}-S}\times\frac{1\,\text{MMBtu}}{9{,}051\,\text{scf}}\times\frac{1\,\text{gal}}{0.137\,\text{MMBtu}}\times\frac{\text{lb}-\text{mol}}{64\,\text{lb}-SO_2}\times\frac{10.73\,\text{psi}-\text{ft}^3}{\text{lb}-\text{mol}-{}^\circ\text{R}}\times\frac{520{}^\circ\text{R}}{14.7\,\text{psi}}\times 1{,}000{,}000 = 1.0\ \text{ppmv}$$

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

- 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]

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)

The purpose of this airborne toxic control measure (ATCM) is to reduce diesel particulate matter (PM) emissions from portable diesel-fueled engines having a rated brake horsepower of 50 and greater (> 50 bhp).

§ 93116.1 - Applicability:

Except for certain exemptions listed in Section 93116.1(b) (not applicable to the engine in this project), this ATCM applies to all portable engines having a maximum rated horsepower of 50 bhp or greater.

The diesel engine in this project is portable and greater than 50 bhp; therefore, the Portable Diesel Engine ATCM applies.

§ 93116.2 - Definitions:

(bb) 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. 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.

Since the facility is not a seasonal operation, the following ATC condition will ensure the proposed IC engines qualify as "portable" under this ATCM:

- This engine shall be operated at one location or site at the facility for no more than 12 consecutive months. [District Rules 2201 and 17 CCR 93116]

§ 93116.3 - Requirements:

(a) Fuel

Section 93116.3(a) requires diesel-fueled portable engines to use one of the following fuels:

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

The proposed IC engine will use CARB very low sulfur diesel fuel. The following condition will be listed on the ATC to ensure compliance with the fuel requirements of this ATCM:

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201, 4702, and 4801 and 17 CCR 93116]

(b) Diesel PM Emissions Standards

(2) New Diesel Engines

This section applies to diesel engines that have not been permitted or registered prior to January 1, 2010.

This section requires that the new engine be certified to the most stringent standard contained in the federal or California emission standards for nonroad engines with the following exception:

(A) Engines meeting the definition of portable that have never been permitted or registered may be permitted or registered by a district or registered in the Statewide Portable Equipment Registration Program if they are certified to the on-road emission standards pursuant to 40 CFR Part 86, or the equivalent category in title 13, Cal. Code Regs.

The engine is a 2014 model year, Tier 4I certified engine. Therefore, it meets the requirements of this rule.

(c) Fleet Requirements

Although Section 993116.3(c)(2) of this regulation indicates that the fleet requirements do apply to portable engines with District issued permits,[1] the District will not address the fleet requirements on the ATC permit at this time.

Compliance is expected with this regulation.

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)

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 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; and
- 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.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has prepared or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency,* for addressing GHG emission impacts

[1] Section 93116.3 (c)(2) For the purposes of this regulation, the portable diesel-fueled engines affected by the fleet provisions of this regulation include all portable diesel-fueled engines operated in California, including portable diesel fueled engines registered with the Statewide Portable Equipment Registration Program or permitted by or registered with a district.

when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, *CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation*, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying project complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

The GHG emissions increases associated with this project result from the combustion of fossil fuel(s), other than jet fuel, delivered from suppliers subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative 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 § 15301 (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 ATCs C-535-9-15, -24-2 and -44-0 subject to the permit conditions on the attached draft ATCs in Appendix E.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-535-9-15	3020-02 H	36.3 MMBtu/hr	$1080
C-535-24-2	3020-10 B	125 bhp	$123
C-535-44-0	3020-10 A	74 bhp	$84

Appendices

A: ARB Executive Order
B: QNEC and PAS Emissions Profile
C: BACT Guideline and Top-Down BACT Analysis
D: Risk Management Review Memo
E: Current Permits and Draft ATC

APPENDIX A
ARB Executive Order

California Environmental Protection Agency Air Resources Board	JOHN DEERE POWER SYSTEMS	EXECUTIVE ORDER U-R-004-0504 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2015	FJDXL04.5304	4.5	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Control Module, Electronic Direct Injection, Turbocharger, Oxidation Catalyst, Periodic Trap Oxidizer	Loaders, Tractor, Dozer, Pump, Compressor, Generator Set, Other Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ kW < 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		FEL	--	--	--	--	0.01	--	--	--
		CERT	--	--	4.4	0.1	0.001	--	--	--

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 6th day of May 2015.

T-ORA Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

Attachment: Page 1 of 1

5-1-15

EO#: U-R-004-0504

Engine Model Summary Form

Manufacturer: **John Deere Power Systems**
Engine category: **Nonroad CI**
EPA Engine Family: **FJDXL04.5304**
Mfr Family Name: **350TCA**
Process Code: **New Submission**

1. Engine code	2. Engine Model	3. kW@RPM (SAE Gross)	4. Fuel Rate: mm/stroke@peak kW (for diesel only)	5. Fuel Rate: (kg/hr)@peak kW (for diesels only)	6. Torque (Nm) @RPM (SEA Gross)	7. Fuel Rate: mm/stroke@peak torque	8. Fuel Rate: (kW/hr)@peak torque	9. Emission Control Device Per SAE J1930
4045TFC03A	4045	55@2400	63.2@2400	15.5@2400	304@1550	74.9@1550	11.8@1550	EC EM PTOX OC TC DFI
4045TFC03B	4045	55@2200	67.3@2200	15.1@2200	304@1550	74.8@1550	11.8@1550	EC EM PTOX OC TC DFI
4045TFC03A	4045	55@1800	72.8@1800	13.4@1800				EC EM PTOX OC TC DFI
4045TPRNT3	4045	55@2400	60.2@2400	14.7@2400	311@1600	75.2@1600	12.3@1600	EC EM PTOX OC TC DFI

APPENDIX B
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year
$PE1_{quarterly}$= $PE1_{annual}$ ÷ 4 quarters/year

Since PE1 = PE2 the QNEC = 0 for C-535-9-15, -24-4.

For C-535-44-0:

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	0[2]	0	0
SO_X	0.5	0	0.5
PM_{10}	0	0	0
CO	6.5	0	6.5
VOC	14	0	14

[2] Although the permit unit has the potential to emit greater than 0, (per Section VII.C.2,) the applicant has proposed a Specific Limiting Condition to limit annual NOx emissions; therefore, there is effectively 0 increase for annual NOx emissions.

Application Emissions

Permit #: C-535-9-15	**Last Updated**
Facility: FRESNO/CLOVIS REGIONAL WWTP	10/19/2015 GARCIAJ

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	19272.0	15768.0	1577.0	91980.0	913.0
Daily Emis. Limit (lb/Day)	52.8	43.2	4.3	252.0	2.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-535-24-4	**Last Updated**
Facility: FRESNO/CLOVIS REGIONAL WWTP	10/19/2015 GARCIAJ

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	12.0	459.0	1181.0	724.0
Daily Emis. Limit (lb/Day)	27.1	0.0	1.3	5.0	2.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: C-535-44-0	**Last Updated**
Facility: FRESNO/CLOVIS REGIONAL WWTP	10/23/2015 GARCIAJ

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	2.0	0.0	26.0	56.0
Daily Emis. Limit (lb/Day)	12.2	0.0	0.0	0.3	0.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	6.0	14.0
Q2:	0.0	0.0	0.0	6.0	14.0
Q3:	0.0	1.0	0.0	7.0	14.0
Q4:	0.0	1.0	0.0	7.0	14.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

APPENDIX C
Top-Down BACT Analysis

BACT Guideline 3.2.11 and Top-Down BACT Analysis

Top-Down BACT Analysis for NOx

BACT Guideline 3.2.11 applies to transportable diesel IC engines (non-agricultural).

Step 1 - Identify all control technologies

- Latest available CARB certification standard for the particular horsepower range (Achieved in Practice)
- LPG/Propane fired engine (Alternate Basic Equipment)

Step 2 - Eliminate technologically infeasible options

There are no infeasible options. However, as noted in the footnote below, the Alternate Basic Equipment option can be eliminated from consideration since it cannot be applied to the engine already installed.

Step 3 - Rank remaining options by control effectiveness

- Latest available CARB certification standard for the particular horsepower range (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The cost analysis shown is a multi-pollutant cost analysis for NO_x emissions. As demonstrated in the cost analysis, an LPG engine as ABE is not cost effective for any engine. Therefore, an LPG engine is not cost effective for the proposed IC engines.

Step 5 - Select BACT

BACT for NOx is Latest available CARB certification standard for the particular horsepower range. The engine is Tier 4. Therefore, the engine proposed in this project met BACT.

INFO FOR THE PROPOSED BASIC EQUIPMENT

Proposed Basic Equipment: Diesel-fueled IC Engine

Power Rating:	74	bhp (for reference only)
Certification:	4f	<=Proposed engine Tier cert. level
Operating Schedule:	8,760	hr/year
Annual Load Factor[1]:	100%	
Brake Specific Fuel Consumption (BSFC)[2]:	7,264	Btu/bhp-hr
Fuel Cost[3]:	$2.54	per gallon
Fuel Higher Heating Value (HHV)[4]:	137,000	Btu/gal
Thermal Efficiency of Engine:	35%	

MISCELLANEOUS PROJECT INFO

Capital recovery factor (10%, 10 yrs):	0.163	
Convert bhp to kW:	0.7457	kW/bhp

BACT Cost Effectiveness Thresholds: *(Select "Yes" or "No" below for each pollutant)*

Pollutant	Is BACT Triggered?	Cost Effective Threshold, $/ton[5]
NOx	Yes	$24,500
SOx	No	0
PM_{10}	No	0
CO	No	0
VOC	No	0

INFO FOR BACT TECHNOLOGICALLY FEASIBLE OPTION

Tech. Feasible Option 1: NOx - Selective Catalytic Reduction (SCR) System

SCR System Capital Cost[6]:	$78,800	
Control Efficiency:	85%	
Fuel Penalty[7]:	2.50%	
Catalyst Replacement Cost[8]:	$5,000.00	per catalyst element
Catalyst Replacement Frequency[8]:	1	catalyst replacement per 10 years
Reagent (Urea) Cost[9]:	$3.00	per gallon delivered
Reagent (Urea) Usage Rate[9]:	0.0036	gal/bhp-hr

Tech. Feasible Option 2: PM_{10} - Diesel Particulate Filter (DPF)

Turn-key DPF Cost[10]:	$0	per unit
Control Efficiency:	85%	
Maintenance Costs[10]:	$0	per year

INFO FOR BACT ALTERNATE BASIC EQUIPMENT (ABE) OPTION

ABE Option 1: Electrical Motor

Cost to Electrify[11]:	$300.00	per horsepower (bhp)
Utility Line Extension Distance[12]:	1,020	ft
Power Line Extension Cost[12]:	$43.22	per foot (average)
Electric Rate[13]:	$0.13628	$/kW-hr
Daily PG&E Customer Charges[13]:	$1.38	
Electric rates increase by 1.5%/yr over 10 yrs:	1.16	
Miscellaneous Costs[14]:	4.0%	

ABE Option 2: Spark-Ignition IC Engine

Fuel Type: Natural Gas

Fuel Cost[15]:	$7.75	$/1,000 scf
Fuel HHV:	1,000	Btu/scf (APR 1720)
Thermal Efficiency of Engine:	35%	
NG Utility Line Extension distance:	0	ft
NG Utility Line Extension Cost[16]:	$800	per foot
Brake Specific Fuel Consumption (BSFC)[17]:	10,100	Btu/bhp-hr
Capital Cost of Emission Control System[18]:	$15,000	
Natural Gas IC Engine Cost[19]:	$350	per horsepower (bhp)

Fuel Type: LPG

Fuel Cost[20]:	$1.58	$/gal
Propane tank lease[20]:	$70.00	$/year
Fuel Higher Heating Value (HHV)[4]:	90,500	Btu/gal
Thermal Efficiency of Engine:	35%	
Brake Specific Fuel Consumption (BSFC)[17]:	10,100	Btu/bhp-hr
Capital Cost of Emission Control System[18]:	$15,000	
LPG IC Engine Cost[19]:	$350	per horsepower (bhp)

NOTES AND REFERENCES

[1]N/A

[2]Based on thermodynamic conversion factor of 2,542.5 Btu/bhp-hr and diesel engine efficiency of 35%: 2,542.4 ÷ 0.35 = 7,264

[3]Price of on-highway diesel fuel less applicable federal, state, and local highway fuel taxes. Price of on-highway, ultra low sulfur diesel fuel for California from the following website.

http://www.eia.gov/dnav/pet/pet_pri_gnd_a_EPD2DXL0_pte_dpgal_w.htm

Visit the following webpages for guidance about diesel fuel taxes:

USEIA info about calculating off-road diesel fuel prices:
http://www.eia.gov/tools/faqs/faq.cfm?id=14&t=5

Federal and state motor fuels taxes:
http://www.eia.gov/petroleum/marketing/monthly/xls/fueltaxes.xls

CA diesel fuel sales tax rate:
http://www.boe.ca.gov/sptaxprog/diesel_fuel_tax.htm

CA motor fuel tax rate for diesel
http://www.boe.ca.gov/sptaxprog/tax_rates_stfd.htm

Use applicant/facility diesel fuel price when available.

[4]Diesel and LPG fuel Higher Heating Values (HHV) per AP 42, Appendix A (9/85)

[5]BACT Cost Effective Thresholds May 2008 Update G:\Intranet_files\PER\policies\bact\may_2008_updates_to_bact_cost_effectiveness_thresholds.pdf

[6]Selective Catalytic Reduction (SCR) system costs to retrofit a diesel IC engine were provided by Johnson Matthey for project C-1132751 and include catalyst element, catalyst housing, sensors, exhaust ductwork, urea injection system with urea storage tank and air compressor, installation, taxes, and freight.

[7]The use of add-on controls results in additional load on the IC engine. The additional load results in higher fuel combustion of about 2.5% more fuel than an uncontrolled engine.

[8]Catalyst element replacement cost and life is per Joey Mier of MurCal, 1/5/2015

[9]Urea cost and usage rate is per Mark Peterson of Valley Power Systems, Nov 2014

[10]Per Chris Dutton of Donaldson (916-457-7019), one unit costs $8,000 and lasts 7-8 yrs. 500 hp and up need 2 units. Doesn't include maintenance costs. Note, Engelhard's PM filters are distributed through Donaldson (this assumption is from 2008 and needs to be updated).

[11]Per District SI Dept. using data from electrical motor installation projects which the District has helped to fund. The cost to electrify an agricultural well site is approximately $300 per horsepower. This cost includes an electrical motor, a variable frequency drive (VFD), r/v starter, head shaft, misc. equip., tax, and labor

[12]Per District SI Dept., 1/14/2015. This is the average distance and cost per foot of utility line extensions over 73 electric utility line extension projects which the District helped to fund. Use applicant/site specific information when available.

[13]Electricity rate and daily customer charges are from PG&E website listed below for large Ag (35 hp+), high use (1500 hr/yr+), rate schedule 'AG-5B & AG-5E', summer peak rate. The below address links to the PG&E website and opens the most current cost information. Update this cost for each determination.

http://www.pge.com/nots/rates/tariffs/LgAgCurrent.xls

[14]Property tax, insurance, and administrative charges (typically 4% of total capital investment annually; from OAQPS Control Cost Manual, 4th Edition, January 1990)

[15]NG fuel costs are from the following web site: http://www.eia.gov/dnav/ng/ng_sum_lsum_dcu_SCA_m.htm

[16]Per Gary Weins at PG&E (2008), a project to run a line 50-100 ft from a main gas line could be $20,000 to $80,000.

[17]The spark-ignition IC engine BSFC is from CAPCOA Portable IC Engine Tech. Ref. Document, 5/95.

[18]Includes air to fuel ratio controller, catalyst element, catalyst housing, exhaust ductwork, sensors, taxes, and installation. Per Joey Mier, Murcal, Dec 2014

[19]Total cost for a complete SI IC engine (w/out catalyst) on the ground and pumping water is a low-end average cost based on information gathered from Mitch Torp of TGP West (805-610-4170) and Mark Peterson, of Valley Power Systems (559-485-6900), Jan 2015

[20]Per Red Triangle Oil, Fresno (559-485-4320) on 4/20/15 for a 500 gallon fill-up. Tank is leased and there is an annual fee (Jan-Dec). For a 250 gallon tank, annual lease is $50. For 1,000 gallon fill-up, price is $1.45/gal and annual lease is $150. 1,000 gallon tank is for heavy users of propane.

COST EFFECTIVE ANALYSIS FOR STATIONARY AG IRRIGATION PUMP, ABE OPTION: DIESEL ENGINE VS. LPG-FUELED ENGINE

Pursuant to Section X.B of District Policy APR 1305, the cost effectiveness of ABE options is calculated using the following formula:

$CE_{alt} = (COST_{alt} - COST_{basic}) \div (EMISSION_{basic} - EMISSION_{alt})$

Where:

CE_{alt} = the cost effectiveness of the alternate basic equipment expressed as dollars per ton of emissions reduced

$COST_{alt}$ = the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost

$COST_{basic}$ = the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost

$EMISSION_{basic}$ = the emissions from the proposed basic equipment, without BACT

$EMISSION_{alt}$ = the emissions from the alternate basic equipment

Calculations

Determine $COST_{alt}$:

The costs of the ABE option include the following capital and annual costs:

Capital Costs:	-Rich-burn IC engine -Installation costs including taxes	-Emission control system
Annual Costs:	-Fuel (LPG)	-LPG storage tank lease

The total annualized costs for the ABE option are calculated in the following table.

Power Rating (bhp)	Annualized Capital Cost of the SI ICE, $/year	Capital Cost for 3-Way Catalyst and Air-Fuel Ratio Controller	Annual LPG Fuel Cost, $/yr	Total Capital and Annual Costs, ABE, $/year
50	$2,853	$2,445.00	$77,303	$82,600.69
100	$5,705	$2,445.00	$154,536	$162,686.39
150	$8,558	$2,445.00	$231,770	$242,772.08
200	$11,410	$2,445.00	$309,003	$322,857.77
250	$14,263	$2,445.00	$386,236	$402,943.47
300	$17,115	$2,445.00	$463,469	$483,029.16
400	$22,820	$2,445.00	$617,936	$643,200.55
500	$28,525	$2,445.00	$772,402	$803,371.93
600	$34,230	$2,445.00	$926,868	$963,543.32

Determine $COST_{basic}$:

The cost of the proposed basic equipment includes the following capital and annual costs:

Capital Costs: Purchase of the diesel-fired IC engine

Annual Costs: Purchase of diesel fuel

The total annualized costs for the proposed basic equipment are calculated in the following table:

Power Rating (bhp)	Annualized Diesel Engine Capital Cost, $/year[1]	Annual Fuel Cost, $/year	Total Cost of Proposed Basic Equip, $/year
50	$1,816.93	$59,076.34	$60,893.27
100	$1,784.91	$118,152.67	$119,937.59
150	$2,417.54	$177,229.01	$179,646.55
200	$3,101.44	$236,305.35	$239,406.79
250	$4,175.59	$295,381.69	$299,557.28
300	$5,156.53	$354,458.02	$359,614.56
400	$5,474.66	$472,610.70	$478,085.36
500	$7,590.89	$590,763.37	$598,354.26
600	$9,599.72	$708,916.05	$718,515.77

[1]The costs in the table above for a diesel IC engine were provided by the District's SI Dept. (Sept. 2014) and are for an engine meeting the Tier 4 emission standard. The costs are from diesel-to-diesel re-power projects that the District has helped to fund.

DETERMINE $EMISSION_{basic}$:

The proposed basic equipment in this project is a diesel-fired IC engine.
Emission for an interim Tier 4 diesel-fired IC engine are shown in the table below for a range of power ratings.
The emission standards are the CARB Off Road Compression - Ignition Diesel Engine Standards (use engine certified emission values when appropriate).
The NOx EF is 95% of the NMHC+NOx and the VOC EF is 5% of the NMHC+NOx emission standard (per Carl Moyer protocol when only the NMHC+NOx value is available).

PM_{10} is assumed to be 96% of the PM value per CARB, 1988.

The SOx EF is based on use of very low sulfur content fuel (very low S fuel is Achieved-in-Practice).

Category (Power Range)	NOx EF, (g/bhp-hr)	SOx EF, (g/bhp-hr)	PM_{10} EF, (g/bhp-hr)	CO EF, (g/bhp-hr)	VOC EF, (g/bhp-hr)
Industry Standard Emissions, 50 to <75	3.12	0.0051	0.0007	0.0746	0.16
Industry Standard Emissions, 75 ≤ bhp <100	0.29	0.0051	0.0096	3.7	0.14
Industry Standard Emissions, 100 ≤ bhp <175	0.29	0.0051	0.0096	3.7	0.14
Industry Standard Emissions, 175 ≤ bhp <750	0.29	0.0051	0.0096	2.6	0.14
Industry Standard Emissions, bhp ≥ 750	2.6	0.0051	0.0051	2.6	0.14

Calculate annual emissions for the proposed basic equipment

Power Rating (bhp)	NOx, ton/year	SOx, ton/year	PM_{10}, ton/year	CO, ton/year	VOC, ton/year
50	1.5063	0.0025	0.0003	0.0360	0.0772
100	0.2800	0.0049	0.0093	3.5728	0.1352
150	0.4200	0.0074	0.0139	5.3591	0.2028
200	0.5601	0.0098	0.0185	5.0212	0.2704
250	0.7001	0.0123	0.0232	6.2765	0.3380
300	0.8401	0.0148	0.0278	7.5317	0.4056
400	1.1201	0.0197	0.0371	10.0423	0.5407
500	1.4001	0.0246	0.0463	12.5529	0.6759
600	1.6802	0.0295	0.0556	15.0635	0.8111

DETERMINE EMISSION$_{alt}$:

Emission Factors for Alternate Basic Equipment (g/bhp-hr)					
Category	NOx	SOx	PM_{10}	CO	VOC
RB LPG, 50 ≤ bhp < 100	1.3	0.0094	0.064	8.5	0.2
RB LPG, 100 ≤ bhp < 500	1.0	0.0094	0.064	2.0	0.2
RB LPG, 500 ≤ bhp < 1,350	1.0	0.0094	0.064	2.0	0.2

Calculate annual emissions for the ABE option

Rich-burn

Power Rating (bhp)	NOx, ton/year	SOx, ton/year	PM_{10}, ton/year	CO, ton/year	VOC, ton/year
50	0.6276	0.0045	0.0309	4.1038	0.1159
100	0.9656	0.0091	0.0618	1.9312	0.2317
150	1.4484	0.0136	0.0927	2.8968	0.3476
200	1.9312	0.0182	0.1236	3.8624	0.4635
250	2.4140	0.0227	0.1545	4.8280	0.5794
300	2.8968	0.0272	0.1854	5.7937	0.6952
400	3.8624	0.0363	0.2472	7.7249	0.9270
500	4.8280	0.0454	0.3090	9.6561	1.1587
600	5.7937	0.0545	0.3708	11.5873	1.3905

DETERMINE COST EFFECTIVENESS OF ABE OPTION

Per APR 1305, if a BACT option controls more than one type of air pollutant, calculate the Multi-Pollutant Cost Effectiveness Threshold (MCET) for the control option.

$$MCET = \Sigma(\text{Quantity of Emissions Reduced, ton/year} \times \text{Cost Effective Threshold, \$/ton})_{\text{each pollutant}}$$

The quantity of emissions reduced and the MCET are calculated in the following table for each pollutant

Power Rating (bhp)	NOx, ton/yr	SOx, ton/yr	PM10, ton/yr	CO, ton/yr	VOC, ton/yr	MCET, $/year
50	0.8787	-0.0020	-0.0306	-4.0678	-0.0387	$21,528
100	-0.6856	-0.0042	-0.0525	1.6416	-0.0965	-$16,797
150	-1.0284	-0.0062	-0.0788	2.4623	-0.1448	-$25,196
200	-1.3711	-0.0084	-0.1051	1.1588	-0.1931	-$33,592
250	-1.7139	-0.0104	-0.1313	1.4485	-0.2414	-$41,991
300	-2.0567	-0.0124	-0.1576	1.7380	-0.2896	-$50,389
400	-2.7423	-0.0166	-0.2101	2.3174	-0.3863	-$67,186
500	-3.4279	-0.0208	-0.2627	2.8968	-0.4828	-$83,984
600	-4.1135	-0.0250	-0.3152	3.4762	-0.5794	-$100,781

Cost Effectiveness Determination

Determine whether the ABE option is cost effective

Power Rating (bhp)	Total Capital and Annual Costs, ABE, $/year	Total Capital and Annual Costs, Proposed Basic Equip., $/year	Cost Difference (ABE - Basic Equipment), $/year	MCET, $/year	Is ABE Option Cost Effective?
50	$82,600.69	$60,893.27	$21,707	21528.15	No
100	$162,686.39	$119,937.59	$42,749	-$16,797	No
150	$242,772.08	$179,646.55	$63,126	-$25,196	No
200	$322,857.77	$239,406.79	$83,451	-$33,592	No
250	$402,943.47	$299,557.28	$103,386	-$41,991	No
300	$483,029.16	$359,614.56	$123,415	-$50,389	No
400	$643,200.55	$478,085.36	$165,115	-$67,186	No
500	$803,371.93	$598,354.26	$205,018	-$83,984	No
600	$963,543.32	$718,515.77	$245,028	-$100,781	No

APPENDIX D
Risk Management Review Memo

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Vanesa Gonzalez – Permit Services
From:	Kyle Melching - Technical Services
Date:	October 23, 2015
Facility Name:	Fresno/Clovis Regional WWTP
Location:	5607 W. Jenson Ave., Fresno
Application #(s):	C-535-9-5 & 44-0
Project #:	C-1152564

A. RMR SUMMARY

RMR Summary			
Categories	**Diesel ICE (Unit 44-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	N/A[1]	N/A[1]	>1
Acute Hazard Index	N/A[2]	N/A[2]	0.00
Chronic Hazard Index	N/A[2]	N/A[2]	0.12
Maximum Individual Cancer Risk	**2.97E-06**	2.97E-06	5.06E-06
T-BACT Required?	**Yes, PM10**		
Special Permit Conditions?	**Yes**		

1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.

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

Proposed Permit Conditions

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

Unit # 44-0

1. Modified {1901} The PM10 emissions rate shall not exceed **0.0007** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

B. RMR REPORT

I. Project Description

Technical Services received a request on October 15, 2015, to perform a Risk Management Review for a 74 bhp diesel IC engine powering a pump. The facility is proposing to a SLC for annual

emissions from this unit and unit -9. Unit -9 already operates at the max SLC emissions limit, so no further analysis will be done for unit -9.

II. Analysis

Technical Services performed a screening level health risk assessment using the District's Diesel Exhaust Risk Screening spreadsheet.

The following parameters were used for the review:

Analysis Parameters						
Unit #s	**bhp-hr**	**PM_{10} g/hp-hr**	**Receptor (m)**	**Quad**	**Hours/Year**	**Load%**
44-0	74	0.0007	25	2	8,760	100
Location Type		Rural	**Receptor Type**			Business/ Residence

III. Conclusion

The individual cancer risk associated with the operation of the proposed full-time diesel IC engine is **2.97E-06**; which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved as proposed **with** 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 each proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

IV. Attachments

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. DICE Screening Risk Tool
D. Facility Summary

APPENDIX E
Current Permit and Draft ATCs

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-535-9-3 **EXPIRATION DATE:** 01/31/2016

EQUIPMENT DESCRIPTION:
36.3 MMBTU/HR JOHN ZINK COMPANY WASTE GAS FLARE

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 4102]
2. The flare shall be operated in a manner preventing the emission of noxious odors or other nuisances. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201] Federally Enforceable Through Title V Permit
4. The waste gas flare system shall be specifically designed for burning wastewater treatment plant digester gas, and alternate fuel may be used as pilot fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
5. The flare shall be equipped and operated with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
6. The flare system shall have continuous readout and recording of gas flow rate and stack temperature. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Flare flue gas temperature shall be maintained to at least 1,400 øF and 0.6 seconds minimum residence time. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Total volume of gaseous fuel flared shall not exceed 1,584,000 scf per day. [District NSR Rule] Federally Enforceable Through Title V Permit
9. A flame shall be present at all times in the flare whenever combustible gases are vented through the flare. [District Rule 4311, 5.2] Federally Enforceable Through Title V Permit
10. The flare shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311, 5.3] Federally Enforceable Through Title V Permit
11. Daily testing of digester gas is required so as to not exceed an average of 200 ppm as hydrogen sulfide (H2S). Corrections shall be made, and re-tested within 3 hours in order to maintain average below 200 ppm. [District NSR Rule] Federally Enforceable Through Title V Permit
12. Emissions shall not exceed any of the following limits: 0.18 lb PM10/hr, 1.8 lb SOx/hr, 2.2 lb NOx/hr, or 10.5 lb CO/hr. [District NSR Rule and Rule 4311, 5.7] Federally Enforceable Through Title V Permit
13. VOC emissions shall not exceed 0.0027 lb-VOC/MMBtu. [District NSR Rule and Rule 4311, 5.7] Federally Enforceable Through Title V Permit
14. Source testing to measure digester gas-combustion NOx and VOC emissions from this unit shall be conducted at least once every twelve (12) months. [District Rule 4311, 6.1.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

15. The results of each source test shall be submitted to the District within 45 days thereafter. [District Rule 4311, 6.1.2] Federally Enforceable Through Title V Permit

16. 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 Rules 1081 and 4311]

17. VOC emissions for source test purposes, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". [District Rule 4311, 6.3.1] Federally Enforceable Through Title V Permit

18. NOx emissions for source test purposes, in pounds per million Btu, shall be determined by using EPA Method 19. [District Rule 4311, 6.3.2] Federally Enforceable Through Title V Permit

19. NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100. [District Rule 4311, 6.3.3] Federally Enforceable Through Title V Permit

20. The sulfur content of gas being flared shall be determined using ASTM D-1072, D-3031, D-4084, D 3246, D-4810, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

21. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

22. This flare shall be inspected annually while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If excess emissions continue, a EPA Method 9 test shall be conducted within 72 hours. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

23. Daily records of total gas flared shall be maintained. [District NSR Rule and 2520, 9.3.2] Federally Enforceable Through Title V Permit

24. Records of flare maintenance, inspections and repair shall be maintained. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

25. Records of daily sulfur testing results shall be maintained. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

26. Records of all source tests shall be maintained. [District Rule 4311, 6.2] Federally Enforceable Through Title V Permit

27. 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 Rules 1070 and 4311] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-535-24-2 **EXPIRATION DATE:** 01/31/2016

EQUIPMENT DESCRIPTION:
125 BHP JOHN DEERE MODEL 4045HF275 TIER 3 CERTIFIED TRANSPORTABLE DIESEL-FIRED IC ENGINE POWERING AN AIR COMPRESSOR

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
3. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District NSR Rule and 4801 and 17 CCR 93116] Federally Enforceable Through Title V Permit
4. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93116] Federally Enforceable Through Title V Permit
5. The only approved storage and operational location for this IC engine shall be Facility C-535 at 5607 W Jensen Avenue, Fresno. [District NSR Rule] Federally Enforceable Through Title V Permit
6. This transportable IC engine shall not be attached to a foundation or operated at any location at this facility for more than 12 consecutive months. The period during which the engine is maintained at a storage location shall be excluded from the residency time determination. [District Rule 4701, 40 CFR Part 89, 13 CCR 2421, and 17 CCR 93116] Federally Enforceable Through Title V Permit
7. Total annual NOx emissions combined from the waste gas flare (C-535-9) and the transportable diesel-fired IC engine (C-535-24) shall not exceed 19,272 pounds in any calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Total annual NOx emissions combined from the waste gas flare (C-535-9) and the transportable diesel-fired IC engine (C-535-24) shall be calculated as follows: Annual NOx Emissions = [(1.13 x IC Engine Annual Hours of Operation (hours per year)) + (60.6 x Waste Gas Flare's Annual Fuel Combusted (MMscf per year))]. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Emissions from this IC engine shall not exceed any of the following limits: 4.10 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.30 g-VOC/bhp-hr. [District NSR Rule and 17 CCR 93116] Federally Enforceable Through Title V Permit
10. Emissions from this IC engine shall not exceed 0.19 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District NSR Rule, 4102, and 17 CCR 93116] Federally Enforceable Through Title V Permit
11. 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] Federally Enforceable Through Title V Permit
12. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. The permittee shall maintain an engine-operating log that shall include the following: daily records of the date, location at the facility, operational time; a record of the cumulative annual hours of operation of the engine; and records of operational characteristics monitoring. [District NSR Rule and 4702] Federally Enforceable Through Title V Permit

14. 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 93116] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-535-9-15 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: FRESNO/CLOVIS REGIONAL WWTP
MAILING ADDRESS: 5607 W JENSEN AVE
FRESNO, CA 93706-9458

LOCATION: 5607 W JENSEN AVE
FRESNO, CA 93706

EQUIPMENT DESCRIPTION:
MODIFICATION OF 36.3 MMBTU/HR JOHN ZINK COMPANY WASTE GAS FLARE: INCLUDE PERMIT UNIT -44 IN THE EXISTING SPECIFIC LIMITING CONDITION FOR ANNUAL NOX EMISSIONS

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 Rule 2201] 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. Authorities to Construct (ATCs) C-535-9-15, -24-4 and -44-0 shall be implemented concurrently. [District Rule 2201] Federally Enforceable Through Title V Permit
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 4102]
5. The flare shall be operated in a manner preventing the emission of noxious odors or other nuisances. [District Rule 4102]
6. Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201] Federally Enforceable Through Title V Permit
7. The waste gas flare system shall be specifically designed for burning wastewater treatment plant digester gas, and alternate fuel may be used as pilot fuel. [District Rule 2201] 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

Arnaud Marjollet, Director of Permit Services
C-535-9-15 : Nov 2 2015 9:03AM -- GARCIAJ : Joint Inspection NOT Required

8. The flare shall be equipped and operated with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame. [District Rule 4311] Federally Enforceable Through Title V Permit

9. The flare system shall have continuous readout and recording of gas flow rate and stack temperature. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Flare flue gas temperature shall be maintained to at least 1,400 øF and 0.6 seconds minimum residence time. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Total volume of gaseous fuel flared shall not exceed 1,584,000 scf per day. [District Rule 2201] Federally Enforceable Through Title V Permit

12. A flame shall be present at all times in the flare whenever combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

13. The flare shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit

14. Daily testing of digester gas is required so as to not exceed an average of 200 ppm as hydrogen sulfide (H2S). Corrections shall be made, and re-tested within 3 hours in order to maintain average below 200 ppm. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Emissions shall not exceed any of the following limits: 0.18 lb PM10/hr, 1.8 lb SOx/hr, 2.2 lb NOx/hr, or 10.5 lb CO/hr. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit

16. VOC emissions shall not exceed 0.0027 lb-VOC/MMBtu. [District Rules 2201 and 4311] Federally Enforceable Through Title V Permit

17. Total combined annual NOx emissions from the waste gas flare (C-535-9), the transportable diesel-fired IC engine powering an air compressor (C-535-24), and the transportable diesel-fired IC engine powering a pump (C-535-44) shall not exceed 19,272 pounds in any calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit

18. Total combined annual NOx emissions from the waste gas flare (C-535-9), the transportable diesel-fired IC engine powering an air compressor (C-535-24), and the transportable diesel-fired IC engine powering a pump (C-535-44) shall be calculated as follows: Annual NOx Emissions = [(60.6 x Waste Gas Flare's Annual Fuel Combusted (MMscf per year)) + (1.13 x IC Engine Powering an Air Compressor Annual Hours of Operation (hours per year)) + (0.51 x IC Engine Powering a Pump Annual Hours of Operation (hours per year))]. [District Rule 2201] Federally Enforceable Through Title V Permit

19. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. This standard does not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311] Federally Enforceable Through Title V Permit

20. Source testing to measure digester gas-combustion NOx and VOC emissions from this unit shall be conducted at least once every twelve (12) months. [District Rule 4311] Federally Enforceable Through Title V Permit

21. The results of each source test shall be submitted to the District within 45 days thereafter. [District Rule 4311] Federally Enforceable Through Title V Permit

22. 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 Rules 1081 and 4311] Federally Enforceable Through Title V Permit

23. VOC emissions for source test purposes, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". [District Rule 4311] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

24. NOx emissions for source test purposes, in pounds per million Btu, shall be determined by using EPA Method 19. [District Rule 4311] Federally Enforceable Through Title V Permit

25. NOx and O2 concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100. [District Rule 4311] Federally Enforceable Through Title V Permit

26. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of this rule shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, which ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311] Federally Enforceable Through Title V Permit

27. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit

28. The operator of a flare subject to flare monitoring requirements pursuant to Section 5.10 shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; if the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month; a flow verification report which shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit

29. For purposes of the flow verification report required by Section 6.2.3.8, vent gas flow shall be determined using one or more of the following methods, or by any alternative method approved by the APCO, ARB, and EPA: EPA Methods 1 and 2; a verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to Section 5.10; tracer gas dilution or velocity; other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter. [District Rule 4311] Federally Enforceable Through Title V Permit

30. The operator shall monitor and record the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. [District Rule 4311] Federally Enforceable Through Title V Permit

31. The sulfur content of gas being flared shall be determined using ASTM D-1072, D-3031, D-4084, D 3246, D-4810, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

32. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

33. This flare shall be inspected annually while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If excess emissions continue, a EPA Method 9 test shall be conducted within 72 hours. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

34. Daily records of total gas flared shall be maintained. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

35. Records of flare maintenance, inspections and repair shall be maintained. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

36. Records of daily sulfur testing results shall be maintained. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

37. Permittee shall maintain the following records: a copy of the source testing result conducted pursuant to Section 6.4.2; a copy of the approved flare minimization plan pursuant to Section 6.5; a copy of annual reports submitted to the APCO pursuant to Section 6.2. [District Rule 4311] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

38. Permittee shall maintain records of the following when the flare is used during an emergency: duration of flare operation, amount of gas burned, and the nature of the emergency situation. [District Rule 4311] Federally Enforceable Through Title V Permit

39. Records of the total annual NOx emissions from units C-535-9, -24 and -44 shall be maintained and updated monthly. [District Rule 1070] Federally Enforceable Through Title V Permit

40. 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 Rules 1070 and 4311] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-535-24-4

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: FRESNO/CLOVIS REGIONAL WWTP
MAILING ADDRESS: 5607 W JENSEN AVE
FRESNO, CA 93706-9458

LOCATION: 5607 W JENSEN AVE
FRESNO, CA 93706

EQUIPMENT DESCRIPTION:
MODIFICATION OF 125 BHP JOHN DEERE MODEL 4045HF275 TIER 3 CERTIFIED TRANSPORTABLE DIESEL-FIRED IC ENGINE POWERING AN AIR COMPRESSOR: INCLUDE PERMIT UNIT -44 IN THE EXISTING SPECIFIC LIMITING CONDITION FOR ANNUAL NOX EMISSIONS

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 Rule 2201] 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. Authorities to Construct (ATCs) C-535-9-15, -24-4 and -44-0 shall be implemented concurrently. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. 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]
6. 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
7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93116] 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

Arnaud Marjollet, Director of Permit Services

C-535-24-4 : Nov 2 2015 9:03AM -- GARCIAJ : Joint Inspection NOT Required

8. The only approved storage and operational location for this IC engine shall be Facility C-535 at 5607 W Jensen Avenue, Fresno. [District Rule 2201] Federally Enforceable Through Title V Permit

9. This transportable IC engine shall not be attached to a foundation or operated at any location at this facility for more than 12 consecutive months. The period during which the engine is maintained at a storage location shall be excluded from the residency time determination. [District Rule 4701, 40 CFR Part 89, 13 CCR 2421, and 17 CCR 93116] Federally Enforceable Through Title V Permit

10. Total combined annual NOx emissions from the waste gas flare (C-535-9), the transportable diesel-fired IC engine powering an air compressor (C-535-24), and the transportable diesel-fired IC engine powering a pump (C-535-44) shall not exceed 19,272 pounds in any calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Total combined annual NOx emissions from the waste gas flare (C-535-9), the transportable diesel-fired IC engine powering an air compressor (C-535-24), and the transportable diesel-fired IC engine powering a pump (C-535-44) shall be calculated as follows: Annual NOx Emissions = [(60.6 x Waste Gas Flare's Annual Fuel Combusted (MMscf per year)) + (1.13 x IC Engine Powering an Air Compressor Annual Hours of Operation (hours per year)) + (0.51 x IC Engine Powering a Pump Annual Hours of Operation (hours per year))]. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Emissions from this IC engine shall not exceed any of the following limits: 4.10 g-NOx/bhp-hr, 0.75 g-CO/bhp-hr, or 0.30 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93116] Federally Enforceable Through Title V Permit

13. Emissions from this IC engine shall not exceed 0.19 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93116] Federally Enforceable Through Title V Permit

14. 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] Federally Enforceable Through Title V Permit

15. 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

16. The permittee shall maintain an engine-operating log that shall include the following: daily records of the date, location at the facility, operational time; a record of the cumulative annual hours of operation of the engine; and records of operational characteristics monitoring. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit

17. Records of the total annual NOx emissions from units C-535-9, -24 and -44 shall be maintained and updated monthly. [District Rule 1070] Federally Enforceable Through Title V Permit

18. 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 93116] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-535-44-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: FRESNO/CLOVIS REGIONAL WWTP
MAILING ADDRESS: 5607 W JENSEN AVE
FRESNO, CA 93706-9458

LOCATION: 5607 W JENSEN AVE
FRESNO, CA 93706

EQUIPMENT DESCRIPTION:
TRANSPORTABLE 74 BHP JOHN DEERE MODEL 4045TFC03 TIER 4 FINAL CERTIFIED DIESEL-FIRED IC ENGINE POWERING A PUMP

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 Rule 2201] 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. Authorities to Construct (ATCs) C-535-9-15, -24-4 and -44-0 shall be implemented concurrently. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. 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]
6. 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
7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93116] 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

Arnaud Marjollet, Director of Permit Services

C-535-44-0 : Nov 2 2015 9:03AM – GARCIAJ : Joint Inspection NOT Required

8. Operation of this engine shall not exceed 2,160 hours per year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The only approved storage and operational location for this IC engine shall be Facility C-535 at 5607 W Jensen Avenue, Fresno. [District Rule 2201] Federally Enforceable Through Title V Permit

10. This transportable IC engine shall not be attached to a foundation or operated at any location at this facility for more than 12 consecutive months. The period during which the engine is maintained at a storage location shall be excluded from the residency time determination. [District Rule 4701, 40 CFR Part 89, 13 CCR 2421, and 17 CCR 93116] Federally Enforceable Through Title V Permit

11. Total combined annual NOx emissions from the waste gas flare (C-535-9), the transportable diesel-fired IC engine powering an air compressor (C-535-24), and the transportable diesel-fired IC engine powering a pump (C-535-44) shall not exceed 19,272 pounds in any calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Total combined annual NOx emissions from the waste gas flare (C-535-9), the transportable diesel-fired IC engine powering an air compressor (C-535-24), and the transportable diesel-fired IC engine powering a pump (C-535-44) shall be calculated as follows: Annual NOx Emissions = [(60.6 x Waste Gas Flare's Annual Fuel Combusted (MMscf per year)) + (1.13 x IC Engine Powering an Air Compressor Annual Hours of Operation (hours per year)) + (0.51 x IC Engine Powering a Pump Annual Hours of Operation (hours per year))]. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Emissions from this IC engine shall not exceed any of the following limits: 3.12 g-NOx/bhp-hr, 0.0746 g-CO/bhp-hr, or 0.16 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93116] Federally Enforceable Through Title V Permit

14. Emissions from this IC engine shall not exceed 0.0007 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93116] Federally Enforceable Through Title V Permit

15. 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] Federally Enforceable Through Title V Permit

16. 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

17. The permittee shall maintain an engine-operating log that shall include the following: daily records of the date, location at the facility, operational time; a record of the cumulative annual hours of operation of the engine; and records of operational characteristics monitoring. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit

18. Records of the total annual NOx emissions from units C-535-9, -24 and -44 shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

19. 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 93116] Federally Enforceable Through Title V Permit