



NOV 10 2014

Mr. Timothy Alburger  
Seneca Resources  
2131 Mars Court  
Bakersfield, CA 93308

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)  
District Facility # S-1114  
Project # 1143178**

Dear Mr. Alburger:

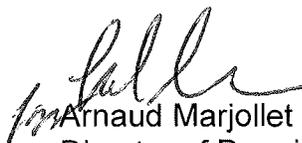
Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project authorizes an increase in heat input rating from 62.5 MMBtu/hr to 87.7 MMBtu/hr of a steam generator.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authority to Construct with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority 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. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

Enclosures

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

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

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**Northern Region**  
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**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Increase Heat Input Rating of 62.5 MMBtu/hr Steam Generator

Facility Name: Seneca Resources  
Mailing Address: 2131 Mars Court  
Bakersfield, CA 93308

Date: November 3, 2014  
Engineer: Richard Edgehill  
Lead Engineer: Allan Phillips *ABUR AQE*

Contact Person: Tim Alburger  
Telephone: (661) 399-4270 #3544 and (661) 619-9926 (cell)  
Fax: (661) 399-7706  
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NOV 03 2014

Application #(s): S-1114-20-18  
Project #: S-1143178

Deemed Complete: August 6, 2014

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## I. Proposal

Seneca Resources (Seneca) is requesting an Authority to Construct (ATC) to increase the maximum hourly heat input rating of steam generator S-1114-20 from 62.5 MMBtu/hr to 87.7 MMBtu/hr. The emissions increase will be mitigated by cancellation of 25.2 MMBtu/hr steam generator S-3007-8 which is part of the same stationary source.

The project triggers BACT. Public notice and offsets are not required.

Seneca facility S-1114 has a 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. Seneca must apply to administratively amend their Title V permit.

### Disposition of Outstanding ATCs

There are no outstanding ATCs for units S-1114-20. PTOs S-1114-20-17 and S-3007 -8-6 (to be cancelled) are included in **Attachment I**.

## II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (June 16, 2011)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (3/17/05)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
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

Steam generator S-1114-20 is authorized to operate at SE Section 14, T31S, R22E, SE and NE Section 15, T31S, R22E, NE Section 24, T26S, R20E, and Sections 18, 19, and 20, T11N, R23W. The locations are within Seneca's Heavy Oil Western Stationary Source (HOWSS)

The above locations are not 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

In thermally-enhanced oil recovery (TEOR), steam generators produce steam for injection into heavy crude oil-bearing strata via injection wells to reduce the viscosity of the crude oil, thereby facilitating petroleum production.

### Proposed Modifications

Seneca is proposing to increase the maximum hourly heat input rating from 62.5 MMBtu/hr to 87.7 MMBtu/hr for steam generator S-1114-20. This will be accomplished by increasing the blower horsepower, installing a larger VFD (variable-frequency drive) for the blower, and adjustment of programming parameters.

## V. Equipment Listing

### Pre-Project Equipment Description (Current PTO):

S-3007-8-6: 25.2 MMBTU/HR NATIONAL CO S/N S8736 NATURAL GAS/PROPANE/PRODUCTION GAS-FIRED STEAM GENERATOR WITH BURNER DIFFUSER PLATE AND FLUE GAS RECIRCULATION (FGR)

S-1114-20-17: 62.5 MMBTU/HR STRUTHERS NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE BURNER, MULTIPLE LOCATIONS - M & M GENERATOR #5

### Proposed Modifications

S-1114-20-18: MODIFICATION OF 62.5 MMBTU/HR STRUTHERS NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE BURNER, MULTIPLE LOCATIONS - M & M GENERATOR #5): INCREASE MAXIMUM HEAT INPUT RATING FROM 62.5 MMBTU/HR TO 87.7 MMBTU/HR

### Post Project Equipment Description:

S-1114-20-18: 87.7 MMBTU/HR STRUTHERS NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE BURNER, MULTIPLE LOCATIONS - M & M GENERATOR #5

## VI. Emission Control Technology Evaluation

Emissions from gas-fired steam generators include NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and SO<sub>x</sub>.

Low-NO<sub>x</sub> burners reduce NO<sub>x</sub> formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO<sub>x</sub> burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO<sub>x</sub>. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

## VII. General Calculations

### A. Assumptions

- The maximum operating schedule is 24 hours per day (per applicant)
- EPA F-factor for natural gas is 8,578 dscf/MMBtu (40 CFR 60, Appendix B)
- Natural/Field Gas Heating Value: 1,000 Btu/scf (District Practice)
- S-1114-20 pre-project maximum hourly heat input: 62.5 MMBtu/hr

- S-1114-20 post-project maximum hourly heat input: 87.7 MMBtu/hr

**B. Emission Factors**

S-3007-8

Pollutant	Post-Project Emission Factors (EF2)			Source
NO <sub>x</sub>	18.0 lb-NO <sub>x</sub> /MMscf	0.018 lb-NO <sub>x</sub> /MMBtu	15 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Current PTO
SO <sub>x</sub>	50.0 lb-SO <sub>x</sub> /MMscf	0.05 lb-SO <sub>x</sub> /MMBtu		"
PM10	4.4 lb-PM10/MMscf	0.0044 lb- PM10/MMBtu		"
CO	74.0 lb-CO/MMscf	0.074 lb-CO/MMBtu	100 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	"
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmvd	"

S-1114-20

Pollutant	Post-Project Emission Factors (EF2)			Source
NO <sub>x</sub>	11.0 lb-NO <sub>x</sub> /MMscf	0.011 lb-NO <sub>x</sub> /MMBtu	9 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Current PTO
SO <sub>x</sub>	2.85 lb-SO <sub>x</sub> /MMscf	0.00285 lb-SO <sub>x</sub> /MMBtu		"
PM10	5.0 lb-PM10/MMscf	0.005 lb-PM10/MMBtu		"
CO	18.5 lb-CO/MMscf	0.0186 lb-CO/MMBtu	25 ppmvd CO (@ 3%O <sub>2</sub> )	BACT Limit
			50 ppmvd CO* (@ 3%O <sub>2</sub> )	Current PTO
VOC	3.0 lb-VOC/MMscf	0.003 lb-VOC/MMBtu		Current PTO

\*Pre-project current PTO

1. Pre-Project Potential to Emit (PE1)

S-3007-8 (to be cancelled)

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
<b>NO<sub>x</sub></b>	0.018	25.2	24	10.9
<b>SO<sub>x</sub></b>	0.05000	25.2	24	30.2
<b>PM<sub>10</sub></b>	0.0440	25.2	24	26.6
<b>CO</b>	0.074	25.2	24	44.8
<b>VOC</b>	0.0055	25.2	24	3.3

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
<b>NO<sub>x</sub></b>	0.018	25.2	8,760	3,974
<b>SO<sub>x</sub></b>	0.05000	25.2	8,760	11,038
<b>PM<sub>10</sub></b>	0.0440	25.2	8,760	9,713
<b>CO</b>	0.074	25.2	8,760	16,336
<b>VOC</b>	0.0055	25.2	8,760	1,214

S-1114-20

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
<b>NO<sub>x</sub></b>	0.011	62.5	24	16.5
<b>SO<sub>x</sub></b>	0.00285	62.5	24	4.3
<b>PM<sub>10</sub></b>	0.0050	62.5	24	7.5
<b>CO</b>	0.037	62.5	24	55.5
<b>VOC</b>	0.0030	62.5	24	4.5

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
<b>NO<sub>x</sub></b>	0.011	62.5	8,760	6,023
<b>SO<sub>x</sub></b>	0.00285	62.5	8,760	1,560
<b>PM<sub>10</sub></b>	0.0050	62.5	8,760	2,738
<b>CO</b>	0.037	62.5	8,760	20,258
<b>VOC</b>	0.0030	62.5	8,760	1,643

PE1 – Annual Emissions Limits (lb/yr)					
Permit Unit	NO <sub>x</sub> (as NO <sub>2</sub> )	SO <sub>x</sub> (as SO <sub>2</sub> )	PM10	CO	VOC
S-3007-8	3,974	11,038	9,713	16,336	1,214
S-1114-20	6,023	1,560	2,738	20,258	1,643
Total	9,997	12,598	12,451	36,594	2,857

## 2. Post-Project Potential to Emit (PE2)

The PE2 for each pollutant is calculated with the following equation:

- $PE2 = EF \text{ (lb/MMBtu)} \times \text{Heat Input (MMBtu/hr)} \times \text{Op. Sched. (hr/day or hr/year)}$

S-1114-20

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0110	87.7	24	23.2
SO <sub>x</sub>	0.00285	87.7	24	6.0
PM <sub>10</sub>	0.0044	87.7	24	9.3
CO	0.018	87.7	24	36.7
VOC	0.0030	87.7	24	6.3

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.011	87.7	8,760	8,451
SO <sub>x</sub>	0.00285	87.7	8,760	2,190
PM <sub>10</sub>	0.0044	87.7	8,760	3,380
CO	0.018	87.7	8,760	13,829
VOC	0.0030	87.7	8,760	2,305

### Greenhouse Gas (GHG) Emissions

There is a decrease in annual GHG emissions.

The emissions profiles are included in **Attachment II**.

## 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 (not applicable).

SSPE1 (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1*	70,452	337,187	108,670	293,180	138,171

\*Combined SSPE1 for facilities S-1114, S-3007, and S-3755 from District Calculator (9-9-14) neglecting emissions changes from ATCs for new and modified units

#### 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 (not applicable).

SSPE2 (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	70,452	337,187	108,670	293,180	138,171
PTOs S-3008-8-6 and S-1114-20-17	-9,997	-12,598	-12,451	-36,594	-2,857
ATC S-1114-20-18	8,451	2,190	3,380	13,829	2,305
SSPE2	68,906	326,779	99,599	270,415	137,619

#### 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 <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub> *	CO	VOC
Facility emissions pre-project	70,452	337,187	108,670	<108,670	293,180	138,171
Facility emissions – post project	68,906	326,779	99,599	<99,599	270,415	137,619
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	Yes	No	No	Yes	Yes

\*PM2.5 is included in PM10

This source is an existing Major Source for NO<sub>x</sub>, SO<sub>x</sub>, CO, and VOC and will remain a Major Source for these air contaminants. The source is an existing non-major source for PM<sub>10</sub> and PM<sub>2.5</sub> and is not becoming a major source for PM<sub>10</sub> and PM<sub>2.5</sub> in 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)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Estimated Facility PE before Project Increase	35	69	169	147	54	54
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

**6. Baseline Emissions (BE)**

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

Pursuant to Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

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

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, Section 3.12, a Clean Emissions Unit is defined as an emissions unit that is “equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

The steam generators S-1114-20 and S-3007-8 are clean emissions units as they satisfy the following requirements of BACT Guideline 1.2.1 3<sup>rd</sup> Quarter 2008 (applicable within the last 5 years):

Previous version of BACT Guideline 1.2.1 (rescinded date, October 26, 2009)

- NO<sub>x</sub>: 14 ppmvd @ 3% O<sub>2</sub>\*
- SO<sub>x</sub>: Natural gas, LPG and waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub>.\*\*
- PM<sub>10</sub>: Natural gas, LPG and waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub>.\*\*
- CO: 50 ppmvd @ 3% O<sub>2</sub>
- VOC: Gaseous fuel

\*PTO S-3007-8-6 has an limit of 15 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> but operates at less than 14 ppmv @ 3% O<sub>2</sub> per source test results.

\*\*Source test data has shown that the sulfur content of the fuel gas combusted in S-3007-8 does not exceed 1 gr S/100 scf.

## 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."

Since this facility is a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, and VOC, the combined total emissions of this project and project 1142803 are compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO <sub>x</sub>	8,451	50,000	No
SO <sub>x</sub>	2,190	80,000	No
VOC	2,305	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

## 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.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

### Step 1

For existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase (EI)} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions  
UBC = Unused baseline capacity

PAE: If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

BAE: BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

UBC: the UBC is the portion of PAE that the emission units could have accommodated during the baseline period

Applicant provided PAE and BAE emissions

BAE\*

	NOx	SOx	PM10	CO	VOC
2013	3,120	0	0	0	0
2012	3,960	0	0	0	0
Average	3,540	0	0	0	0

\*2012 and 2013 emissions statements, no emissions of pollutants other than NOx were reported

PAE\*

	NOx	SOx	PM10	CO	VOC
	5,897	1,528	2,680	9,971	1,608

\*takes into account maintenance, safety inspections, services, etc which results in less than full time operation, 8,184 hr/yr (applicant email 10-21-14)

BC was calculated as the fraction of PE1

UBC

	NOx	SOx	PM10	CO	VOC
Prior to 7-9-13 PE1	7,665	1,560	2,738	20,258	1,643
As of 7-9-13 PE1	6,023	1,560	2,738	20,258	1,643
Average PE1	6,844	1,560	2,738	20,258	1,643
Max capacity during baseline period (MC)*	5,989	1,365	2,396	17,726	1,438
UBC = MC - BAE	2,449	1,365	2,396	17,726	1,438

\*87.5% of average of PE1 over baseline period (applicant email 10-23-14)

Emission Increase (EI) = PAE – BAE - UBC

EI

NOx	SOx	PM10	CO	VOC
-92	163	284	-7,755	170

The project's combined total emission increases are compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions* Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO <sub>x</sub>	<0	0	No
VOC*	170~0	0	No
PM <sub>10</sub>	284	30,000	No
PM <sub>2.5</sub>	284	20,000	No
SO <sub>x</sub>	163	80,000	No

\*If there is any emission increases in NO<sub>x</sub> or VOC, this project is a Federal Major Modification and no further analysis is required. However, District policy APR 1130 states that IPEs less than or equal to 0.5 lb/day to be set to zero for NSR.

The project is not a Federal Major Modification.

**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
- Sulfuric acid mist
- Hydrogen sulfide (H2S)
- Total reduced sulfur (including H2S)
- Reduced sulfur compounds

**I. Project Emissions Increase - New Major Source Determination**

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new Major Source subject to PSD requirements.

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). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

<b>PSD Major Source Determination: Potential to Emit (tons/year)</b>						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	6.5	3.2	2.2	13.8	4.5	4.5
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

**10. 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 for each pollutant is shown in the table(s) below and reported in the PAS database emissions profile.

The QNEC shall be calculated as follows:

$$\text{QNEC} = (\text{PE2} - \text{BE})/4, \text{ where:}$$

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.  
 PE2 = Post Project Potential to Emit for each emissions unit, lb/yr.  
 BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/yr.

QNEC (lb/qtr) — S-1114-20					
Pollutant	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
PE2 (lb/yr)	8,451	2,190	3,380	13,829	2,305
BE (lb/yr)	6,023	1,560	2,738	20,258	1,643
QNEC	607	158	161	-1607	166

## 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 exempted pursuant to Section 4.2, 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 SB288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

As discussed in Section I above, there are no new emissions units associated with this project; therefore BACT for new units with PE > 2 lb/day is not triggered.

**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**

$$AIPE = PE2 - HAPE$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

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

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$HAPE = PE1 \times (EF2/EF1)$$

Where,

PE1 = The emissions unit's Potential to Emit prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$AIPE = PE2 - (PE1 * (EF2 / EF1))$$

$$EF2 = EF1$$

and

$$AIPE = PE2 - PE1$$

= Increase in Permitted Emissions (lb/day)

<b>AIPE</b>					
Adjusted Increase (lb/day) in Daily Permitted Emissions					
Permit Unit	NOx	SOx	PM10	CO	VOC
S-1114--20	22.4 – 16.5 = 5.9	6.0 – 4.3 = 1.7	9.3 – 7.5 = 1.8	36.7 – 55.5 = -18.8	6.3 – 4.5 = 1.8

SOx, PM10, CO, and VOC: BACT is not required as the AIPE is less than 2 lb/day

NOx: BACT is required as the AIPE is greater than 2 lb/day.

**d. SB 288/Federal Major Modification**

As discussed in Section VII.C.7 above, this project is not a SB288/Federal Major modification and therefore BACT is not required for SB288/Federal Major Modification purposes.

**2. BACT Guideline**

The current NOx requirement is based BACT Guideline 1.2.1 "Steam Generator ( $\geq 5$  MMBtu/hr, Oilfield (**Attachment III**)).

**3. Top-Down BACT Analysis**

Current BACT Requirement

NOx: 9 ppmv NOx @3% O<sub>2</sub> when firing  $\geq 50\%$  by volume PUC-quality natural gas (**Attachment IV**)

**B. Offsets**

**1. Offset Applicability**

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

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

<b>Offset Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Post Project SSPE (SSPE2)	>20,000	>54,750	>29,200	>200,000	>20,000
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets calculations required?	Yes	Yes	Yes	Yes	Yes

**2. Quantity of Offsets Required**

As seen above, the facility is an existing Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM10, CO, and VOCs and the SSPE2 is greater than the offset thresholds; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for NO<sub>x</sub> is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

As calculated in Section VII.C.6 above, the Baseline Emissions (BE) from these units are equal to the Pre-Project Potential to Emit (PE1) since the units S-1114-20 and S-3007-8 are Clean Emissions Units.

$$\text{Offsets Required (lb/year)} = ([\Sigma\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR}$$

$$\Sigma\text{PE2 (VOC)} = \text{PE2 for S-1114-20}$$

$$\Sigma\text{BE (VOC)} = \text{PE1 for S-1114-20} + \text{PE1 for S-3007-8}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

$$\Sigma\text{BE} = \text{Combined PE1 for S-1114-20 and PE1 for S-3007-8.}$$

Offsets Calculation					
Pollutant	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
ΣPE2 (lb/yr)	8,451	2,190	3,380	13,829	2,305
ΣBE (lb/yr)	9,997	12,598	12,451	36,594	2,857
	-1546	-10,408	-9071	-22,765	-552

Σ[PE2 – BE] is less than zero. Offsets will not be required for the project.

## 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 SSPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute a Federal or SB 288 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. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

#### 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 <sub>x</sub>	70,452	68,906	20,000 lb/year	No
SO <sub>x</sub>	337,187	326,779	54,750 lb/year	No
PM <sub>10</sub>	108,670	99,599	29,200 lb/year	No
CO	293,180	270,415	200,000 lb/year	No
VOC	138,171	137,619	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.

<b>SSIPE Public Notice Thresholds</b>					
<b>Pollutant</b>	<b>SSPE1 (lb/year)</b>	<b>SSPE2 (lb/year)</b>	<b>SSIPE (lb/year)</b>	<b>SSIPE Public Notice Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	70,452	68,906	-1,546	20,000 lb/year	No
SO <sub>x</sub>	337,187	326,779	-10,408	20,000 lb/year	No
PM <sub>10</sub>	108,670	99,599	-9,071	20,000 lb/year	No
CO	293,180	270,415	-22,765	20,000 lb/year	No
VOC	138,171	137,619	-552	20,000 lb/year	No

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

**e. Title V Significant Permit Modification**

As shown in the Discussion of Rule 2520 below, this project does not constitute a Title V Significant Modification. Therefore, public noticing for Title V Significant Modifications is not required for this project.

**2. Public Notice Action**

As discussed above, public noticing is not required for this project.

**D. Daily Emission Limits (DELs)**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. The DELs are comprised of the EF (lb/MMBtu) \* maximum heat input (87.7 MMBtu/hr \* 24 hr/day).

**Proposed Rule 2201 (DEL) Conditions:**

Emissions rates shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 9 ppmv @ 3% O<sub>2</sub> or 0.011 lb/MMBtu, SO<sub>x</sub>: 0.00285 lb/MMBtu, PM<sub>10</sub>: 0.005 lb/MMBtu, CO: 25 ppmv @ 3% O<sub>2</sub> or 0.0185 lb/MMBtu, or VOC: 0.003 lb/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Y

## **E. Compliance Assurance**

### **1. Source Testing**

Startup source testing will be required.

Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306 and 4320] Y

The unit is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*, and District Rule 4320 *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*. Source testing requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rule 4320 of this evaluation.

### **1. Monitoring**

#### Sulfur Monitoring for Rule 4320 Compliance

The following conditions will be included on the ATCs for the steam generators: Permittee shall demonstrate compliance with the sulfur oxide emissions limit by analysis of the fuel gas sulfur content at least annually. [District Rules 2520, 9.3.2 and 4320, 5.7.6.1] Y

As required by *District Rule 4305, Boilers, Steam Generators and Process Heaters, Phase 2*, *District Rule 4306, Boilers, Steam Generators and Process Heaters, Phase 3*, and *District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to monitoring requirements. Monitoring requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rule 4320 of this evaluation.

### **2. Recordkeeping**

The ATC includes the following recordkeeping condition:

All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Y

As required by *District Rule 4305, Boilers, Steam Generators and Process Heaters, Phase 2*, *District Rule 4306, Boilers, Steam Generators and Process Heaters, Phase 3*, and *District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rule 4320 of this evaluation.

### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

#### 4. Reporting

No reporting is required to demonstrate 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.

The Title V Compliance Certification form is included in **Attachment V**.

##### **Rule 4001 New Source Performance Standards**

40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction).

The subject steam generator has a rating of 85 MMBtu/hr and is fired on natural/TEOR gas. Subpart Dc has no standards for gas-fired steam generators. Therefore the subject steam generator is not an affected facility and subpart Dc does not apply.

**Rule 4101 Visible Emissions**

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). A condition will be placed on the ATC to ensure compliance with the opacity limit.

Therefore, compliance with the requirements of this rule is expected.

**Rule 4102 Nuisance**

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

**California Health & Safety Code 41700 – Health Risk Analysis**

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Attachment VI**), 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
S-1114-20	6.87E-07	No

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

**Unit ‘-20**

{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

**Rule 4201 Particulate Matter Concentration**

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F

PM<sub>10</sub> Emission Factor: 0.005 lb-PM<sub>10</sub>/MMBtu

Percentage of PM as PM<sub>10</sub> in Exhaust: 100%

Exhaust Oxygen (O<sub>2</sub>) Concentration: 3%

$$\text{Excess Air Correction to F Factor} = \frac{20.9}{(20.9 - 3)} = 1.17$$

$$GL = \left( \frac{0.005 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left( \frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.0035 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with the requirements of this rule is expected.

**Rule 4301 Fuel Burning Equipment**

Rule 4301 limits air contaminant emissions from fuel burning equipment as defined in the rule. Section 3.1 defines fuel burning equipment as “any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer”.

Section 5.0 gives the requirements of the rule.

A person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

A person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

- 200 pound per hour of sulfur compounds, calculated as sulfur dioxide (SO<sub>2</sub>)
- 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO<sub>2</sub>)
- Ten pounds per hour of combustion contaminants as defined in Rule 1020 and derived from the fuel.

District Rule 4301 Limits			
Unit	NO <sub>2</sub>	Total PM	SO <sub>2</sub>
S-1114-20 (lb/hr)	0.011 x 87.7 = 0.96	0.005 x 87.7 = 0.44	0.00285 x 87.7 = 0.25
Rule Limit (lb/hr)	140	10	200

The particulate emissions from the steam generators will not exceed 0.1 gr/dscf at 12% CO<sub>2</sub> or 10 lb/hr. Further, the emissions of SO<sub>x</sub> and NO<sub>x</sub> will not exceed 200 lb/hr or 140 lb/hr, respectively.

Therefore, compliance with the requirements of this rule is expected.

### **District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2**

The units have a maximum heat input of 85 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4305, the unit is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2*.

In addition, the unit is also subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*.

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305.

### **District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3**

The units have a maximum heat input of 85 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4306, the unit is subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*.

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4306 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4306.

### **Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr**

#### **Section 5.2 NO<sub>x</sub> and CO Emission Limits**

The units are subject to the following NO<sub>x</sub> limits in Table 2, as shown below.

The applicant has proposed to meet the final NO<sub>x</sub> emission limit for units firing on less than 50%, by volume, PUC quality gas. listed below and a CO limit of 0.0185 lb/MMBtu or 25 ppmv @ 3% O<sub>2</sub>.

C. Oilfield Steam Generators

Rule 4320 Emissions Limits				
Category	Operated on gaseous fuel		Operated on liquid fuel	
	NO <sub>x</sub> Limit	CO Limit	NO <sub>x</sub> Limit	CO Limit
3. Units firing on less than 50%, by volume, PUC quality gas.	Staged Enhanced Schedule Initial Limit 12 ppmv or 0.014 lb/MMBtu; and	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
	Final Limit 9 ppmv or 0.011 lb/MMBtu			

Therefore, compliance with Section 5.2 of District Rule 4320 is expected.

A permit condition listing the emissions limits will be listed on permit as shown in the DEL section above.

**Section 5.4 Particulate Matter Control Requirements**

Section 5.4 of the rule requires one of four options for control of particulate matter: 1) combustion of PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases, 2) limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic, 3) install and properly operate an emission control system that reduces SO<sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO<sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O<sub>2</sub> or 4) refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

The sulfur emissions limit reflects 1 gr S/100 scf (0.00285 lb SO<sub>x</sub>/MMBtu).

Compliance with the Section is expected.

**Section 5.6, Startup and Shutdown Provisions**

Applicable emissions limits are not required during startup and shutdown provided The duration of each start-up or each shutdown shall not exceed two hours, the emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown or operator has submitted an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions specified in Sections 5.6.3.1 through 5.6.3.3.

No startup and shutdown conditions have been proposed.

## **Section 5.7, Monitoring Provisions**

Section 5.7 requires either use of a APCO approved Continuous Emissions Monitoring System (CEMS) for NO<sub>x</sub>, CO, and oxygen, or implementation of an APCO-approved Alternate Monitoring System.

In order to satisfy the requirements of District Rule 4320, the applicant will continue to implement pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO<sub>x</sub>, CO, and O<sub>2</sub> exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer.

### **5.7.6 Monitoring SO<sub>x</sub> Emissions**

Section 5.7.6.1 Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permit To Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

Section 5.7.6.2 Operators complying with Section 5.4.1.3 by installing and operating a control device with 95% SO<sub>x</sub> reduction shall propose the key system operating parameters and frequency of the monitoring and recording. The monitoring option proposed shall be submitted for approval by the APCO.

Section 5.7.6.3 Operators complying with Section 5.4.1.3 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit To Operate. Source tests shall be performed in accordance with the test methods in Section 6.2.

The unit is operating in compliance with this section and not changes affecting compliance are proposed.

## **Section 5.8, Compliance Determination**

The unit currently operates in compliance with the Compliance Determination requirements of Section 5.8. No proposed changes to these requirements are proposed.

## **Section 6.1 Recordkeeping**

No proposed changes to recordkeeping requirements are proposed.

## **Section 6.2 Test Methods**

No proposed changes to test methods are proposed.

## **Section 6.3 Compliance Testing**

No proposed changes to compliance testing procedures are proposed

## **Conclusion**

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule, see attached draft permit(s). Therefore, compliance with District Rule 4320 requirements is expected.

### **District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1**

This rule applies to boilers, steam generators, and process heaters at NO<sub>x</sub> Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. If applicable, the emission limits, monitoring provisions, and testing requirements of this rule are satisfied when the unit is operated in compliance with Rule 4320. Therefore, compliance with this rule is expected.

### **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<sub>2</sub>, on a dry basis averaged over 15 consecutive minutes.

The modified steam generator will continue to combust gas with a sulfur content not exceeding 1.0 gr S/100 scf. Compliance is expected.

### **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.

The proposed steam generator will combust fuel (natural gas) which results in GHG emissions that are mitigated under ARB's Cap and Trade regulation. Consistent with CCR §15064(h)(3), the District finds that compliance with ARB's Cap and Trade

regulation would avoid or substantially lessen the impact of project-specific GHG emissions on global climate change. The District therefore concludes that projects occurring at facilities which combust fuel subject to ARB's Cap and Trade regulation 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. Pending a successful Public Notice period, issue ATC S-1114-20-18 subject to the permit conditions on the attached draft ATC in **Attachment XII**.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1114-20-18	3020-02-H	87.7 MMBtu/hr	\$1030.00

**Attachments**

- I: Current PTO
- II: Emissions Profiles
- III: BACT Guideline
- IV: BACT Analysis
- V: Title V Compliance Certification Form
- VI: HRA Summary
- VII: Draft ATCs

**ATTACHMENT I**  
**Current PTOs**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1114-20-17

**EXPIRATION DATE:** 02/29/2016

**SECTION:** SE15 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR STRUTHERS NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE BURNER, MULTIPLE LOCATIONS - M & M GENERATOR #5

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
4. Steam generator is authorized to operate at the following locations: SE Section 14, T31S, R22E; SE and NE Section 15, T31S, R22E; NE Section 24, T26S, R20E; Sections 18, 19, and 20, T11N, R 23W. [District Rule 2201] 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. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
7. Except as provided below, fuel burned in this unit shall not be PUC quality natural gas. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
8. Fuel H<sub>2</sub>S, total sulfur, and methane content shall be determined semi-annually using the following test methods H<sub>2</sub>S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, double GC for H<sub>2</sub>S and mercaptans or ASTM D6228; and methane content: ASTM D1945. [District Rule 4320] Federally Enforceable Through Title V Permit
9. When PUC quality gas is burned, the total gas fired in this unit in any calendar month shall be less than 50% by volume PUC quality natural gas. [District Rule 4320] Federally Enforceable Through Title V Permit
10. In months where PUC quality gas is burned, the permittee shall maintain records on a calendar month basis of the volume of PUC quality natural gas and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320] Federally Enforceable Through Title V Permit
11. Permittee shall install and maintain operational non-resettable, totalizing mass or volumetric flow meter(s) in the fuel (natural gas and TEOR gas) line(s) of the unit. Permittee shall determine the higher heating value (hhv) of the fuels (natural gas and TEOR gas) on a quarterly basis once per calendar quarter and whenever there is a change in the source of the TEOR gas. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Emissions rates shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 9 ppmv @ 3% O<sub>2</sub> or 0.011 lb/MMBtu, SO<sub>x</sub>: 0.00285 lb/MMBtu, PM<sub>10</sub>: 0.005 lb/MMBtu, CO: 50 ppmv @ 3% O<sub>2</sub> or 0.037 lb/MMBtu, or VOC: 0.003 lb/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
21. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

23. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO<sub>2</sub>. Compliance with this requirement may be demonstrated by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
27. Permittee shall demonstrate compliance with the sulfur oxide emissions limit by analysis of the fuel gas sulfur content at least annually. [District Rules 2520, 9.3.2 and 4320, 5.7.6.1] Federally Enforceable Through Title V Permit
28. If compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D1072, D3031, D4084, D3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
29. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D1826-88 or D1945-81 in conjunction with ASTM D3588-89 for gaseous fuels. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. To demonstrate compliance with this requirement the operator shall test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels. [District Rule 2520, 9.3.2 and Kern County Rule 407] Federally Enforceable Through Title V Permit
31. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
32. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1070, 1081, 4201, 4301, 4305, 4306, and 4320. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
33. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: Kern County Rules 107, and 407. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-3007-8-6

**EXPIRATION DATE:** 09/30/2016

**SECTION:** SE23 **TOWNSHIP:** 11N **RANGE:** 23W

**EQUIPMENT DESCRIPTION:**

25.2 MMBTU/HR NATIONAL CO S/N S8736 NATURAL GAS/PROPANE/PRODUCTION GAS-FIRED STEAM GENERATOR WITH BURNER DIFFUSER PLATE AND FLUE GAS RECIRCULATION (FGR)

## PERMIT UNIT REQUIREMENTS

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1. No modification to this unit shall be performed without an Authority to Construct for such modification(s), except for changes specified in conditions below. [District Rule 2010]
2. The fuel supply line shall be physically disconnected from this unit. [District Rule 4306]
3. A source test to demonstrate compliance with the indicated emission limits shall be performed within 60 days of recommencing operation of this unit. [District Rule 4306]
4. Operators shall notify the District at least seven (7) calendar days prior to recommencing operation of this dormant emissions unit, at which time this permit will be administratively modified to remove DEU references [District Rule 4306]
5. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. 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]
7. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
8. Upon recommencing operation, emissions from the natural gas/propane/production gas-fired unit shall not exceed any of the following limits: 15 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.018 lb-NO<sub>x</sub>/MMBtu, 0.05 lb-SO<sub>x</sub>/MMBtu, 0.0044 lb-PM<sub>10</sub>/MMBtu, 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]
9. H<sub>2</sub>S concentration shall not exceed 1,000 ppm in lease gas. Testing to measure lease gas sulfur content shall be conducted using ASTM D3246 oxidation combustion microcoulometric or ASTM D6228 double GC for H<sub>2</sub>S and mercaptans. [District Rule 1081]
10. Upon recommencing operation, compliance with sulfur limit shall be verified by lease gas sulfur sample no less than every calendar quarter in which the unit is operated. [District Rule 1081]
11. Upon recommencing operation, the permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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12. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306]
13. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306]
14. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306]
15. Upon recommencing operation, source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306]
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 Rule 1081]
17. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
18. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306]
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]
20. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306]
21. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306]
22. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
23. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of recommencing operation of this unit. [District Rules 2201, 4305, and 4306]
24. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081]
25. Permittee shall maintain records of volume of fuel gas burned and lease gas incinerated, calendar quarterly lease and fuel gas sulfur content and BTU content. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

26. Upon recommencing operation, the permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306]
27. Upon recommencing operation, the permittee shall maintain records of fuel hhv, lease gas sulfur content and cumulative annual fuel use. [District Rule 2201]
28. 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, 4305, and 4306]

These terms and conditions are part of the Facility-wide Permit to Operate.

## **ATTACHMENT II Emissions Profiles**

Permit #: S-1114-20-18	<b>Last Updated</b>
Facility: SENECA RESOURCES	09/11/2014 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	8451.0	2190.0	3380.0	13829.0	2305.0
Daily Emis. Limit (lb/Day)	22.4	6.0	9.3	36.7	6.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	607.0	157.0	160.0	-1607.0	165.0
Q2:	607.0	157.0	160.0	-1607.0	165.0
Q3:	607.0	158.0	161.0	-1607.0	166.0
Q4:	607.0	158.0	161.0	-1608.0	166.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

## **ATTACHMENT III BACT Guideline**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.2.1\***

Last Update 3/24/2014

**Oilfield Steam Generator (> or =20 MMBtu/hr)**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		
SOx	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO2 scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO2 @ 3% O2		
PM10	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO2 scrubber and either achieve 95% by weight control of sulfur compounds or achieving an emission rate of 9 ppmvd SO2 @ 3% O2		
NOx	<ul style="list-style-type: none"> <li>•Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O2; or</li> <li>•Units firing on ≥50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O2, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or</li> <li>•Units firing on &lt;50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O2</li> </ul>	5 ppmvd @ 3% O2	
CO	25 ppmvd @ 3% O2		

## ATTACHMENT IV BACT Analysis

### Top Down BACT Analysis for Steam Generators

Oxides of nitrogen (NO<sub>x</sub>) are generated from the high temperature combustion of the natural gas fuel. A majority of the NO<sub>x</sub> emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO<sub>x</sub> emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

#### 1. BACT Analysis for NO<sub>x</sub> Emissions:

##### a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse Guideline 1.2.1, updated 3/24/14, identifies for achieved in practice BACT for NO<sub>x</sub> emissions from oil field steam generators ≥5 MMBtu/hr as follows (non-applicable Achieved-in-Practice requirements are in strikeout text):

##### Achieved-in-Practice

- Units rated 85 MMBtu/hr and fired solely on PUC-quality natural gas: 6 ppmvd @ 3% O<sub>2</sub> – **not applicable** – unit will be fired on fuel containing > 50% by volume waste gas
- Units firing on ≥50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O<sub>2</sub>, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas– **not applicable** – unit will be fired on fuel containing > 50% by volume waste gas
- Units firing on <50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O<sub>2</sub>– **applicable**

##### Technologically Feasible

5 ppmv @ 3% O<sub>2</sub>

##### b. Step 2 - Eliminate technologically infeasible options

Steam generator will not combust fuel with ≥50% PUC quality natural gas; commercial propane; and/or LPG and will not be rated at 85 MMBtu/hr. Therefore, these alternatives are not technologically feasible (listed in strikeout text above).

##### c. Step 3 - Rank remaining options by control effectiveness

- Units firing on <50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O<sub>2</sub>

#### Step 4 - Cost Effectiveness Analysis

The capital/installation cost for Selective Catalytic Reduction (SCR) to achieve 5 ppmv NOx @ 3% O<sub>2</sub> is \$435,000 (Esys Quote, applicant email, 9-26-14).

Equivalent Annual Control Equipment Cost calculation per APCD Policy APR 1305-9 Section X(A)(1). Assume  $i = 10\%$  and  $n = 10$  years.

$$A = P * ((i*(1 + i)^n) / ((1 + i)^n - 1))$$
$$A = \$435,000 * ((.10*(1 + .10)^{10}) / ((1 + .10)^{10} - 1))$$
$$A = \$70,775$$

The reduction in NOx is from the Industrial Standard 7 ppmv NOx @ 3% O<sub>2</sub>, 0.008 lb NOx/MMBtu) to 5 ppmv NOx @ 3% O<sub>2</sub>, 0.0062 lb NOx/MMBtu.

$$(0.008 \text{ lb/MMBtu} - 0.0061 \text{ lb/MMBtu}) (87.7 \text{ MMBtu/hr})(8760 \text{ hr/yr})$$

$$= 1,460 \text{ lb NOx/yr (0.73 ton/yr)}$$

Control Cost per Section X(A)(4)

$$\text{Control Cost} = (\$70,775/\text{yr})/(0.73 \text{ ton VOC/yr})$$
$$= \$96,952/\text{ton NOx}$$

This exceeds the cost effectiveness threshold for VOCs of \$ 24,500/ton. Therefore, SCR is not cost effective.

**ATTACHMENT V**  
**Title V Compliance Certification Form**

San Joaquin Valley  
Unified Air Pollution Control District

RECEIVED  
JUL 17 2014  
SJVAPCD  
Southern Region

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION                       ADMINISTRATIVE  
 MINOR PERMIT MODIFICATION                                       AMENDMENT

COMPANY NAME: <b>Seneca Resources</b>	FACILITY ID: <b>S- 1114</b>
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name:	
3. Agent to the Owner:	

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

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

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

Brad Elliott

Signature of Responsible Official

July 17, 2014

Date

**Brad Elliott**

Name of Responsible Official (please print)

**Vice President – West Division**

Title of Responsible Official (please print)

**ATTACHMENT VI**  
**HRA/AAQA**

**San Joaquin Valley Air Pollution Control District  
Risk Management Review  
REVISED**

To: Richard Edgehill – Permit Services  
 From: Cheryl Lawler – Technical Services  
 Date: October 2, 2014  
 Facility Name: Seneca Resources  
 Location: Heavy Oil Western SS (Multiple Locations)  
 Application #(s): S-1114-20-18  
 Project #: S-1143178

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**A. RMR SUMMARY**

<b>RMR Summary</b>			
<b>Categories</b>	<b>Natural Gas Steam Generator (Unit 20-18)</b>	<b>Project Totals</b>	<b>Facility Totals</b>
<b>Prioritization Score</b>	0.27	0.27	>1
<b>Acute Hazard Index</b>	0.00	0.00	0.13
<b>Chronic Hazard Index</b>	0.00	0.00	0.12
<b>Maximum Individual Cancer Risk</b>	<b>6.87E-07</b>	6.87E-07	4.98E-06
<b>T-BACT Required?</b>	<b>No</b>		
<b>Special Permit Conditions?</b>	<b>Yes</b>		

**Proposed Permit Conditions**

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

**Unit 20-18**

1. {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 September 29, 2014, to re-run an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for an 87.7 MMBtu/hr natural gas steam generator to be operated at multiple locations. The project was re-run to determine if a receptor distance limitation condition would be required on the permit.

### II. Analysis

For the Risk Management Review, Technical Services modeled the project using a worst case receptor distance of 25 meters at any facility location where the generator may be placed. Toxic emissions from the generator were calculated using Ventura County emission factors for natural gas external combustion. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score was less than 1.0 (see RMR Summary Table); however, the cumulative facilitywide prioritization scores totaled to greater than 1.0. Therefore, a refined Health Risk Assessment was required and performed. AERMOD was used, with point source parameters outlined below, and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

<b>Analysis Parameters</b>			
<b>Source Types</b>	Point		
<b>Stack Height (m)</b>	5.49	<b>Stack Gas Temperature (K)</b>	377
<b>Stack Diameter (m)</b>	0.91	<b>Stack Gas Velocity (m/sec)</b>	11.14
<b>Increased Natural Gas Process Rates (mmscf)</b>	0.025 hr 220.75 yr		
<b>Closest Receptor Distance</b>	Worst Case 25 meters	<b>Project Location</b>	Rural
<b>Closest Receptor Type</b>	Business		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>; as well as the RMR. The generator was modeled at worst case locations within fence-line distances provided by the applicant to ensure that the project does not cause a violation of a State or National AAQS. The emission rates used for criteria pollutant modeling were 36.7 lb/day CO, 22.4 lb/day NO<sub>x</sub>, 6.0 lb/day SO<sub>x</sub>, and 9.3 lb/day PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***  
Values are in  $\mu\text{g}/\text{m}^3$

Natural Gas Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>1</sup>	Pass <sup>1</sup>

\*Results were taken from the attached PSD spreadsheets.

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

### III. Conclusions

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

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the unit is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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

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

### Attachments

RMR Request Form  
Project Emails  
Prioritization  
Risk Results  
AAQA Results  
Facility Summary

**ATTACHMENT VII**  
**Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1114-20-18

**LEGAL OWNER OR OPERATOR:** SENECA RESOURCES  
**MAILING ADDRESS:** 2131 MARS COURT  
BAKERSFIELD, CA 93308-6830

**LOCATION:** HEAVY OIL WESTERN  
CA

**SECTION:** SE15 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 62.5 MMBTU/HR STRUTHERS NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE BURNER, MULTIPLE LOCATIONS - M & M GENERATOR #5: INCREASE MAXIMUM HEAT INPUT RATING FROM 62.5 MMBTU/HR TO 87.7 MMBTU/HR

**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. PTO S-3007-8-6 shall be cancelled upon implementation of ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 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 Marjolle, Director of Permit Services**

S-1114-20-18 : Sep 29 2014 12:59PM - EDGEHILR : Joint Inspection NOT Required

7. Steam generator is authorized to operate at the following locations: SE Section 14, T31S, R22E; SE and NE Section 15, T31S, R22E; NE Section 24, T26S, R20E; Sections 18, 19, and 20, T11N, R 23W. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
9. Except as provided below, fuel burned in this unit shall not be PUC quality natural gas. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
10. Fuel H<sub>2</sub>S, total sulfur, and methane content shall be determined semi-annually using the following test methods H<sub>2</sub>S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, double GC for H<sub>2</sub>S and mercaptans or ASTM D6228; and methane content: ASTM D1945. [District Rule 4320] Federally Enforceable Through Title V Permit
11. In months where PUC quality gas is combusted in this unit, the permittee shall maintain records on a calendar month basis for demonstration that the percentage by volume of PUC quality gas is less than 50% of the total gas combusted. Combustion of gas with greater than 50% by volume PUC quality gas is a violation of Rule 4320 and this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
12. Permittee shall install and maintain operational non-resettable, totalizing mass or volumetric flow meter(s) in the fuel (natural gas and TEOR gas) line(s) of the unit. Permittee shall determine the higher heating value (hhv) of the fuels (natural gas and TEOR gas) on a quarterly basis once per calendar quarter and whenever there is a change in the source of the TEOR gas. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emissions rates shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 9 ppmv @ 3% O<sub>2</sub> or 0.011 lb/MMBtu, SO<sub>x</sub>: 0.00285 lb/MMBtu, PM<sub>10</sub>: 0.005 lb/MMBtu, CO: 25 ppmv @ 3% O<sub>2</sub> or 0.0185 lb/MMBtu, or VOC: 0.003 lb/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
28. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO<sub>2</sub>. Compliance with this requirement may be demonstrated by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
29. Permittee shall demonstrate compliance with the sulfur oxide emissions limit by analysis of the fuel gas sulfur content at least annually. [District Rules 2520, 9.3.2 and 4320, 5.7.6.1] Federally Enforceable Through Title V Permit
30. If compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D1072, D3031, D4084, D3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
31. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D1826-88 or D1945-81 in conjunction with ASTM D3588-89 for gaseous fuels. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. To demonstrate compliance with this requirement the operator shall test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels. [District Rule 2520, 9.3.2 and Kern County Rule 407] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

33. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
34. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1070, 1081, 4201, 4301, 4305, 4306, and 4320. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
35. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: Kern County Rules 107, and 407. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
36. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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