San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

December 20, 2023

Mr. Daniel Mudge
California Resources Production Corporation
900 Old River Road
Bakersfield, CA 93311

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: S-8452
Project Number: S-1224261

Dear Mr. Mudge:

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 Authority to Construct application is requesting a permit for the installation of a 20 MMBtu/hr natural gas-fired in-line heater.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. 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. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

Brian Clements
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email
cc: Laura Yannayon, EPA (w/enclosure) via EPS

Samir Sheikh
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www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

In-line Heater

Facility Name:	California Resources Production Corporation	Date:	November 29, 2023
Mailing Address:	900 Old River Rd Bakersfield, CA 93311	Engineer:	Marissa Mak
		Lead Engineer:	Dan Klevann
Contact Person:	Daniel Mudge		
Telephone:	(661) 426-5432		
E-Mail:	Daniel.Mudge@crc.com		
Application #(s):	S-8452-112-0		
Project #:	S-1224261		
Deemed Complete:	October 26, 2022		

I. Proposal

California Resources Production Corporation (CRC) has requested an Authority to Construct (ATC) permit for the installation of a 20 MMBtu/hr in-line heater. The draft ATC is included in Appendix A.

CRC received their Title V Permit on November 30, 2014. This modification can be classified as a Title V significant 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. CRC must apply to administratively amend their Title V permit. The following conditions will be added to the ATCs to ensure compliance:

- *{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]*

- *{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]*

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/20/19)
Rule 2410	Prevention of Significant Deterioration (11/26/12)

Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)
Rule 4306	Boilers, Steam Generators, and Process Heaters – Phase 3 (12/17/20)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12/17/20)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

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

III. Project Location

The equipment will be located in CRC's heavy oil central stationary source at the Mt. Poso Facility within Section 4, Township 27S, Range 28E. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

See Appendix B for location map.

IV. Process Description

CRC is in the business of crude oil production. Production fluids flow into free water knockout vessels S-8452-92 and S-8452-93 where the oil, water and gas are separated. Water flows off the bottom of the vessel and is sent to produced water tank S-8452-81, then through heater treaters S-8452-75 and S-8452-79 and then to produced water tank T-4342. The water may then run through the proposed in-line heater prior to injection for waterflood. Oil is skimmed off the top of the fluids and sent to the wash tank S-8452-76 and then to the stock tank S-8452-77. Gas is pulled of the top of the tanks and vessels and processed through the tank vapor recovery system listed on PTO S-8452-81. See Appendix C for the process diagram.

This project is for the installation of the in-line heater prior to injection for waterflood.

V. Equipment Listing

S-8452-112-0: 20 MMBTU/HR NATURAL GAS-FIRED IN-LINE HEATER EQUIPPED WITH A NORTH AMERICAN 4211 MAGNAFLAME LOW NOX BURNER

VI. Emission Control Technology Evaluation

Emissions include NO_X, CO, VOC, PM_{10}, and SO_X from the burner.

The water heater will equipped with a low NO_x burner. Low-NO_X burners reduce NO_X 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_X 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_X. 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

- Operating schedule: 24 hours/day, 365 days/year
- Unit will be fired on natural gas or a mixture of natural gas and produced gas
- Natural gas higher heating value (HHV) = 1000 Btu/scf
- Natural gas sulfur content = 1 gr/100 scf
- Produced gas sulfur content = 5 gr/100 scf (proposed by applicant)
- To streamline emission calculations, PM2.5 emissions are assumed to be equal to PM10 emissions. Only if needed to determine if a project is a Federal major modification for PM2.5 will specific PM2.5 emission calculations be performed.

B. Emission Factors

Emission Factors			
Pollutant	**ppmv @ 3% O_2**	**lb/MMBtu**	**Source**
NO_X	5	0.0061	Manufacturer
SO_X	--	0.0143	See mass balance below
PM_{10}	--	0.0076	AP-42 Table 1.4-2
CO	25	0.0185	Manufacturer
VOC	--	0.0055	AP-42 Table 1.4-2

SO_x mass balance:

$$\frac{5.0\ gr\ S}{100\ scf}\left(\frac{lb}{7000\ gr}\right)\frac{scf}{1000\ Btu}\left(\frac{10^6\ Btu}{MMBtu}\right)\frac{64\ lb\ SO_2}{32\ lb\ S} = 0.0143\ \frac{lb\ SO_2}{MMBtu}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since the in-line heater is a new emissions units, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

Daily and annual PE for the heater is calculated using the following equations and summarized in the following date:

Daily PE2 = Rating (MMBtu/hr) x EF (lb/MMBtu) x Operation (hr/day)
Annual PE2 = Rating (MMBtu/hr) x EF (lb/MMBtu) x Operation (hr/yr)

PE2						
Pollutant	**Emissions Factor (lb/MMBtu)**	**Rating (MMBtu/hr)**	**Daily Hours of Operation (hrs/day)**	**Annual Hours of Operation (hrs/year)**	**Daily PE2 (lb/day)**	**Annual PE2 (lb/yr)**
NO_x	0.0061	20	24	8,760	**2.9**	**1,069**
SO_x	0.0143	20	24	8,760	**6.9**	**2,505**
PM_{10}	0.0076	20	24	8,760	**3.6**	**1,332**
CO	0.0185	20	24	8,760	**8.9**	**3,241**
VOC	0.0055	20	24	8,760	**2.6**	**964**

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

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

The SSPE1 is calculated in Appendix E and presented in the following table.

SSPE1 (lb/year)					
	NO_X	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	146,595	52,042	54,740	454,617	182,144

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

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

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	146,595	52,042	54,740	454,617	182,144
S-8452-112-0 (new)	1,069	2,505	1,332	3,241	964
SSPE2	**147,664**	**54,547**	**56,072**	**457,858**	**183,108**

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

This source is an existing Major Source for NO_x, CO, and VOC emissions and will remain a Major Source for NO_x, CO, and VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	73.3	91.1	26.0	227.3	27.4	27.4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

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

7. SB 288 Major Modification

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

Since this facility is a major source for NO_x, CO, and VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if further SB 288 Major Modification calculation is required.

As calculated in the Calculation section above:

SB 288 Major Modification Thresholds			
Pollutant	**Project PE2 (lb/year)**	**Threshold (lb/year)**	**SB 288 Major Modification Calculation Required?**
NO_x	1,069	50,000	No
SO_x	2,505	80,000	No
PM_{10}	1,332	30,000	No
VOC	964	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 and no further discussion is required.

8. Federal Major Modification / New Major Source

Federal Major Modification

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

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases cannot cancel out the increases. Step 2 allows consideration of the project's net emissions increase as described in 40 CFR 51.165 and the Federal Clean Air Act Section 182 (e), as applicable.

Step 1: Project Emissions Increase

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project:

Emission Increase = PE2

In conclusion, the project's combined total emission increases are calculated in Section VI.C.2 and summarized in the following table and 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_x*	1,069	0	Yes
VOC*	4,993	0	Yes
PM_{10}	1,332	30,000	No
$PM_{2.5}$	1,332	20,000	No
SO_x	2,505	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in NO_x and VOC emissions, this project constitutes a Federal Major Modification. Consequently, as discussed below in the offset section of this evaluation, pursuant to Section 4.8.1.1 of District Rule 2201, NOx and VOC internal emission reductions (IER) or other actual emission reductions (AERs) used to satisfy the offset quantity required under District Rule 2201 must surplus at the time of use (ATC issuance).

Separately, Federal Offset Quantity is calculated below.

Step 2: Project Net Emissions Increase

The second step includes comparing the total of all related emissions increases and decreases at the facility occurring within the past five years (including those projects not related to the subject project) to determine if the project results in a significant net emission increase and thus a Federal Major Modification. In this calculation, all creditable emission decreases and increases are counted.

Please note that, under the Federal Clean Air Act, section 182 (e) (2), Step 2 of the analysis shall not be performed for pollutant or their precursors for which a district is in extreme non-attainment status. Since the District is classified as extreme non-attainment for ozone, this requirement applies to NOx and VOC and Step 2 of the analysis shall not be performed for either of these 2 criteria pollutants.

Rather than supplying the required historical operating data for every emissions change over the past 5 years, the applicant has conceded that this project does constitute a Federal Major Modification for NOx and VOC. The Federal Offset Quantity is calculated below.

New Major Source

As demonstrated above, this facility is not becoming a Major Source as a result of this project, therefore, this facility is not a New Major Source pursuant to Section 3.30 of District Rule 2201.

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

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

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

I. Project 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.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	**VOC**	**SO_2**	**CO**	**PM**	**PM_{10}**
Total PE from New and Modified Units	0.80	0.48	1.25	1.62	0.67	0.67
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

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

11. PM2.5 Federal Offset Sanctions

As of June 27, 2023, the District is in nonattainment new source review (NNSR) offset sanctions pursuant to CAA 179(a) for PM2.5. Therefore, any New Major Source or Federal Major Modification for PM2.5 (including increases of its precursors NOx, VOC, and SOx), must supply any required federal offsets at a 2:1 ratio.

For the purposes of determining major source status the following shall not be included:

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

PM2.5 Federal Major Source Determination (lb/year)				
	NOx*	**SOx***	**PM2.5**	**VOC***
SSPE1	146,595	52,042	54,740	182,144
SSPE2	147,664	54,547	56,072	183,108
PM2.5 Federal Major Source Threshold**	140,000	140,000	140,000	140,000
Pre or Post-Project PM2.5 Federal Major Source?	Yes	No	No	Yes

* PM2.5 Precursors
** Pursuant to 40 CFR 51.165(a)(1)(iv)(A)

As shown in the table above, this facility is an existing federal Major Source for NOx, and VOC.

PM2.5 Federal Major Modification Source Determination (lb/year)				
	NOx*	**SOx***	**PM2.5**	**VOC***
NEI (Net Emission Increase)	1,069	2,505	1,332	964
Significance Threshold for PM2.5**	80,000	80,000	20,000	80,000
PM2.5 Federal Major Modification?	No	No	No	No

* PM2.5 Precursors

** Pursuant to 40 CFR 51.165(a)(1)(x)(A)

As seen in the tables above, this facility is an existing Major Source for NOx and VOC and the emission increases from this project are less than the significance thresholds for PM2.5, NOx, SOx, and VOC. Therefore, this project is not a federal major modification for PM2.5 and 2:1 offsets are not required.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

a. Any new emissions unit with a potential to emit exceeding 2.0 pounds per day, or the relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding 2.0 pounds per day,
b. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding 2.0 pounds per day, and/or
c. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new in-line heater with a PE greater than 2 lb/day for NO_X, SO_X, PM_{10}, CO, and VOC. In addition, as seen in Section VII.C.4, SSPE2 for CO is greater than 200,000 lb/year. Therefore, BACT is triggered for NO_X, SO_X, PM_{10}, CO and VOC since the PE are greater than 2 lb/day.

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

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

c. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 Major Modification but does constitute as a Federal Major Modification for NO_X and VOC emissions. Therefore, BACT is triggered for NO_X and VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 1.1.1 applies to natural gas or propane fired boilers/steam generators with heat input rate greater than 5 MMBtu/hr and less than or equal to 20 MMBtu/hr and is therefore applicable to the proposed equipment (See Appendix F).

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Appendix G), BACT has been satisfied with the following:

NO_X: 5 ppmd @ 3% O2 (0.0061 lb/MMBtu)
SO_X: PUC quality natural gas or propane with LPG backup
PM_{10}: PUC quality natural gas or propane with LPG backup
CO: 50 ppmvd @ 3% O2 (0.037 lb/MMBtu)
VOC: PUC quality natural gas or propane with LPG backup

B. Offsets

1. District Emission Offset Requirements

a. District Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	147,664	54,547	56,072	457,848	183,108
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	Yes	No	Yes	Yes	Yes

b. District Offset Quantity (DOQ) Required

As shown above, the SSPE2 is greater than the offset thresholds for NOx, PM10, CO, and VOC; therefore, District offsets are triggered for NOx, PM10, CO, and VOC under NSR. However, since this project is a Federal Major Modification or New Major Source for NOx and VOC, the District offset exemption from Section 4.6.10 and 4.6.11 of District Rule 2201 is applicable to this project and District offsets for NOx and VOC are not required.

PM10

As demonstrated above, the facility has an SSPE1 for PM10 greater than the offset thresholds. Therefore, offset calculations will be required for this project.

The quantity of offsets in pounds per year for PM10 is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x 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 = PE1 for:

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

otherwise,

BE = HAE

The facility is proposing to install a new emission unit; therefore BE = PE1 = 0.

Pursuant to Section 4.8, for PM10 offsets when the original location of the emission offsets is 15 miles or more from the same stationary source as the new or modified emissions unit, the distance offset ratio (DOR) shall be 1.5. ERC certificate N-1524-5 was originally generated for the retrofitting of two boilers with low-NOx burners and reducing the fuel oil usage at stationary source N-577 located well over 15 miles away from where the new emissions unit in this project will be located. Therefore, the offset ratio is 1.5:1 and, therefore, DOR will be 1.5.

Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 (PM10) = 1,332 lb/year
BE (PM10) = 0 lb/year
ICCE = 0 lb/year

Offsets Required (lb/year) = ([1,332 – 0] + 0) x 1.5
= 1,998 lb-PM10/year

Quarterly offsets required (lb/qtr) = (1,998 lb-NO_X/year) ÷ (4 quarters/year)
= 499.50 lb-PM10/qtr

Interpollutant Offsets

Pursuant to Section 4.13.3.1 of Rule 2201, interpollutant offsets may be approved by the APCO on a case-by-case basis, provided that the applicant demonstrates to the satisfaction of the APCO, that the emission increases from the new or modified source will not cause or contribute to a violation of an Ambient Air Quality Standard. In such cases, the APCO shall, based on an air quality analysis, impose offset ratios equal to or greater than the requirements of this rule. Section 4.13.3.1.2 of Rule 2201 states that interpollutant offsets between PM10 and PM10 precursors may be allowed. According to Section 3.31 of this rule, SOx is a precursor to the sulfate fraction of PM10.

The applicant has stated they plan to use SOx ERCs as interpollutant offsets for PM10. The District interpollutant offset ratio is 1:1 for SOx:PM10. Assuming an offset ratio of 1:1, the amount of SOx ERCs required are as follows:

SOx ERCs Required (lb/year) = 1,998 lb-PM10/year

SOx Quarterly offsets required (lb/qtr) = 499.50 lb-PM10/qtr

As demonstrated in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of

offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The redistribution is based on the Quarter 1 having the fewest days and the Quarters 3 and 4 having the most days. The redistribution method is summarized in the following table:

Redistribution of Required Quarterly Offsets (where X is the annual amount of offsets, and X ÷ 4 = Y.z)				
Value of z	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
0.0	Y	Y	Y	Y
0.25	Y	Y	Y	Y+1
0.5	Y	Y	Y+1	Y+1
0.75	Y	Y+1	Y+1	Y+1

Therefore the appropriate quarterly emissions to be offset are as follows:

PM10			
Quarter 1	**Quarter 2**	**Quarter 3**	**Quarter 4**
449	449	500	500

District Offset Quantities

As discussed above, District offsets are triggered and required for PM10 under NSR. In addition, as demonstrated above, this project does trigger Federal Major Modification requirements, but no federal offset quantities are required for PM10 for this project. The applicant has stated that the facility plans to use SOx ERC certificate N-1524-5 to offset the increases in PM10 emissions associated with this project.

Proposed Rule 2201 Offset Permit Conditions

The following permit conditions will be added to the Authority to Construct:

- *{GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter – 449 lb, 2nd quarter - 449 lb, 3rd quarter - 500 lb, and fourth quarter - 500 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.9 (as amended* 4/20/2019*) for the ERC specified below. SOx ERCs*

may be used to offset PM10 increases at an interpollutant ratio of 1.0 lb-SOx: 1.0 lb-PM10. [District Rule 2201]

- *{GC# 1983} ERC Certificate Number N-1524-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]*

CO

Pursuant to section 4.6.1 of Rule 2201, increases in CO in attainment areas are exempt from offsetting if the applicant demonstrates to the satisfaction of the APCO, that the Ambient Air Quality Standards are not violated in the areas to be affected and such emissions will be consistent with Reasonable Further Progress and will not cause or contribute to a violation of Ambient Air Quality Standards. As shown below in Section VIII.F, Ambient Air Quality Standards are not violated for the CO emissions; therefore, offsets are not required for CO.

2. Federal Emission Offset Requirements

a. Federal Offset Applicability

Pursuant to District Rule 2201, Section 4.8, federal offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the project is a New Major Source or a Federal Major Modification.

As demonstrated in section VII.C.8 above, this project is a New Major Source or a Federal Major Modification for NOx and VOC. Thus, federal offsets are triggered for this project.

b. Federal Offset Quantity (FOQ) Required

The Federal Offset Quantity (FOQ) is only calculated for the pollutants for which a project is a Federal Major Modification or a New Major Source as determined above.

Pursuant to Section 4.8.4 of District Rule 2201, the federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the federal baseline emissions (FBE) for each emission unit times the applicable offset ratio.

FOQ = ∑(PE2 – FBE) x offset ratio

Federal Baseline Emissions

Pursuant to Section 3.19 of District Rule 2201, for a given pollutant, federal baseline emissions (FBE) = PE1 for:

- Any Highly-Utilized Emissions Unit,
- Any Fully-Offset Emissions Unit.

otherwise,

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

Since this is a new unit, FBE = 0

Offset Ratio

According the Section 4.9 of District Rule 2201, the offset ratio for new major sources and federal major modifications for VOC and NOx is 1.3 to 1 for internal emission reductions (i.e. onsite actual emissions reductions); otherwise, the offset ratio is 1.5 to 1. The offset ratio for PM2.5, PM10, and SOx is 1.0 to 1.

Federal Offset Quantity (FOQ)

Since this project only includes new unit(s)

FOQ = PE2 x offset ratio

NOx **Offset Ratio** **1.5**

Permit No.	Post-Project Potential to Emit (PE2) (lb/year)	Federal Baseline Emissions (lb/year)	Emissions Change (lb/yr)
S-8452-112-0	1,069	0	1,069
		∑(PE2 – AE) (lb/year):	**1,069**
		Federal Offset Quantity (lb/year): ∑(PE2 – AE) x 1.5	**1,604**
		Federal Offset Quantity (tons/year): ∑(PE2 – AE) x 1.5 ÷ 2,000	**0.80**

VOC **Federal Offset Ratio** **1.5**

Permit No.	Post-Project Potential to Emit (PE2) (lb/year)	Actual Emissions (lb/year)	Emissions Change (lb/yr)
S-8452-112-0	964	0	964
		∑(PE2 – AE) (lb/year):	964
		Federal Offset Quantity (lb/year): ∑(PE2 – AE) x 1.5	**1,446**
		Federal Offset Quantity (tons/year): ∑(PE2 – AE) x 1.0 ÷ 2,000	**0.72**

3. Federal Offset Equivalency Demonstration

Section 7.0 of District Rule 2201 provides the requirements for the District to demonstrate on an individual ATC issuance basis that the number of creditable emission reductions collected by the District equals or exceeds the amount of creditable emission reductions that would otherwise be required as offsets under a federal non-attainment NSR program meeting the applicable requirements of 40 CFR 51.165 and the CAA.

As discussed above, this project triggers a Federal Major Modification for NOx and VOC, and federal offset quantities are required for this project for NOx and VOC. Pursuant to section 4.8.1.1 of District Rule 2201, actual emission reductions used to satisfy federal offset quantities for NOx and VOC must be creditable and surplus at the time of use (ATC issuance).

Surplus at the Time Of Use Emission Reduction Credits

The applicant has stated that the facility plans to use ERC certificates S-5153-2 and S-2627-1 to satisfy the federal offset quantities for NOx and VOC required for this project. Pursuant to the ERC surplus analysis in Appendix K, the District has verified that the surplus credits from the ERC certificates provided by the applicant are sufficient to satisfy the federal offset quantities for NOx and VOC required for this project.

Therefore the appropriate quarterly emissions to be offset are summarized as follows:

Federal Offset Quantity (FOQ) Required (lbs)					
Pollutant	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**	**Total Annual**
NOx	401	401	401	401	1,604
VOC	361	361	362	362	1,446

The applicant has proposed to use the following emission reduction certificates with the surplus value of credits summarized as follows:

Surplus NOx Credits Provided (lbs)					
ERC #	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**	**Total Annual**
S-5153-2	1,860	1,860	1,860	1,860	7,440

Surplus VOC Credits Provided (lbs)					
ERC #	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total Annual
S-3627-1	3,730	3,448	3,015	3,510	13,703

As discussed above, the facility has sufficient credits to fully offset the NOx and VOC emissions increases associated with this project.

Proposed Rule 2201 Federal Offset Permit Conditions

The following permit conditions will be added to the Authority(ies) to Construct:

- *{GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_X emission reduction credits for the following quantity of emissions: 1st quarter - 401 lb, 2nd quarter - 401 lb, 3rd quarter - 401 lb, and fourth quarter - 401 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.9 (as amended* 4/20/2019*) for the ERC specified below. NOx ERCs used to satisfy the offset quantity required under District Rule 2201 must be surplus at the time of issuance of this ATC and the total quantity of ERCs surrendered shall be calculated based on the ERC surplus value percent discount of each ERC certificate used. [District Rule 2201]*

- *{GC# 1983} ERC Certificate Number S-5153-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]*

- *{GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 361 lb, 2nd quarter - 361 lb, 3rd quarter - 362 lb, and fourth quarter - 362 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.9 (as amended* 4/20/2019*) for the ERC specified below. VOC ERCs used to satisfy the offset quantity required under District Rule 2201 must be surplus at the time of issuance of this ATC and the total quantity of ERCs surrendered shall be calculated based on the ERC surplus value percent discount of each ERC certificate used. [District Rule 2201]*

- *{GC# 1983} ERC Certificate Number S-3627-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]*

4. ERC Withdrawal Calculations

The applicant must identify the ERC Certificate(s) to be used to offset the increase of NOx, PM10 and VOC emissions for the project. As previously indicated, the applicant is proposing to use the following ERC certificate to mitigate the increases of NOx, PM10, and VOC emissions associated with this project:

Proposed ERC Certificates	
Certificate #	**Criteria Pollutant**
S-5153-2	NOx
N-1524-5	PM_{10}
S-3627-1	VOC

See Appendix L for detailed ERC Withdrawal Calculations.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

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

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

As demonstrated in Section VII.C.7 of this evaluation, this project is a Federal Major Modification. Therefore, public noticing is required for this project for Federal Major Modification purposes.

b. PE > 100 lb/day

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	146,595	147,664	20,000 lb/year	No
SO_X	52,042	54,547	54,750 lb/year	No
PM_{10}	54,740	56,072	29,200 lb/year	No
CO	454,617	457,858	200,000 lb/year	No
VOC	182,144	183,108	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	147,664	146,595	1,069	20,000 lb/year	No
SO_x	54,547	52,042	2,505	20,000 lb/year	No
PM_{10}	56,072	54,740	1,332	20,000 lb/year	No
CO	457,858	454,617	3,241	20,000 lb/year	No
VOC	183,108	182,144	964	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 constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project for Federal Major Modification purposes and Title V significant modifications. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

For this heater, the DELs are stated in the form of emission factors (ppmvd or lb/MMBtu).

Proposed Rule 2201 (DEL) Conditions:

- *Emission rates from this unit shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O2 or 0.0061 lb-NOx/MMBtu; 0.0143 lb SOx/MMBtu; 0.0076 lb-PM10/MMBtu; 25 ppmvd CO @ 3% O2 or 0.0185 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]*

- *The unit shall only be fired on natural gas or produced gas with a maximum sulfur content of 5.0 gr S/100scf. [District Rules 2201, 4301 and 4320]*

E. Compliance Assurance

1. Source Testing

This unit is subject to 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 Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

2. Monitoring

As required by 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 Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

3. Recordkeeping

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

- *{4066} The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (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 2201, 4305, 4306 and 4320*

- *Permittee shall maintain daily records of the type and quantity of fuel combusted by the in-line heater. [District Rule 2201 and 40 CFR 60.48c (g)]*

- *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, 4306, 4320, and 40 CFR 60.48c (i)]*

4. Reporting

As required by 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 reporting requirements. Reporting requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix H of this document for the AAQA summary sheet.

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

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet, AAQA thresholds have been exceeded but because the significant impact level (SIL) thresholds were not, the proposed equipment passes the AAQA and will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a New Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. CRC's compliance certification is included in Appendix J.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a 20.0 MMBtu/hr in-line heater to heat water.

Since the project will authorize the installation of a heater to provide heat for water tanks to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

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. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

A minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project involves the installation of a new emission unit that is subject to an NSPS requirement, the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

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 shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. 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).

Subpart Dc has standards for SOx and PM10. The proposed heater fits the definition of a steam generator as defined in this subpart and is subject to Subpart Dc requirements.

60.42c – Standards for Sulfur Dioxide

Since coal is not combusted by the steam generators in this project, the requirements of this section are not applicable.

60.43c – Standards for Particulate Matter

The steam generators do not fired on coal, combust mixtures of coal with other fuels, combust wood, combust mixtures of wood with other fuels, or oil; therefore, it will not be subject to the requirements of this section.

60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide.

Since the steam generators in this project are not subject to the sulfur dioxide requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the steam generators in this project.

60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter

Since the steam generators in this project are not subject to the particulate matter requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the steam generator in this project.

60.46c – Emission Monitoring for Sulfur Dioxide

Since the steam generators in this project is not subject to the sulfur dioxide requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the steam generators in this project.

60.47c – Emission Monitoring for Particulate Matter

Since the steam generators in this project is not subject to the particulate matter requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the steam generators in this project.

60.48c – Reporting and Recordingkeeping Requirements

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

The design heat input capacity and type of fuel combusted at the facility will be listed on the unit's equipment description. No conditions are required to show compliance with this requirement.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

This requirement is not applicable since the unit is not subject to §60.42c or §40.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility has not proposed an annual capacity factor; therefore one will not be required.

(4) Notification if an emerging technology will be used for controlling SO2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

This requirement is not applicable since the unit will not be equipped with an emerging technology used to control SO2 emissions. District Rule 4001, §3.0 defines the Administrator as the APCO of the District. The following condition ensures compliance:

- *Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)]*

Section 60.48c (g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The following conditions will be added to the permit to ensure compliance with this section.

- *A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48c (g)]*

- *Permittee shall maintain daily records of the type and quantity of fuel combusted by the in-line heater. [District Rule 2201 and 40 CFR 60.48c (g)]*

Section 60.48c (i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. District Rule 4320 requires that records be kept for five years. Compliance is ensured with the following condition:

- *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, 4306, 4320, and 40 CFR 60.48c (i)]*

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

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

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

40 CFR Part 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

§63.7485 Am I subject to this subpart?

40 CFR Part 63, Subpart DDDDD, Section §63.7485, defines the applicability of this subpart:

"You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in § 63.7575 that is located at, or is part of, a major source of HAP, except as specified in § 63.7491. For purposes of this subpart, a major source of HAP is as defined in § 63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in § 63.7575."

40 CFR 63.2 defines "major source" as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

Inspection of Emissions Inventory Reports from 2022 for the facilities at this stationary source (facilities S-8452 and S-1326) shows combined HAP emissions are 0.73 tons/yr (Appendix M). Emissions of a single HAP cannot exceed 10 tons if the combined HAP emissions are less than 10 tons; the combined HAP emissions are significantly below the threshold of 25 tons. While the Emissions Inventory Reports this determination is based upon reflects actual

emissions rather than Potential Emissions, it is safe to assume the facilities could not feasibly increase their throughput to an extent that would cause exceedance of the Major Source for HAP thresholds. Further, prior District survey of Potential Emissions of HAP at oilfield stationary sources indicated that none of these sources exceed the Major Source of HAP thresholds. Therefore, this facility is not considered to be a Major Source of HAP emissions. Since this facility is not a Major Source of HAP emissions, the in-line heater evaluated in this project is not subject to this Subpart.

40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

This subpart applies to industrial, commercial, and institutional boilers as defined in §63.11237 that is located at an area sources of HAP. §63.11195(e) states a gas-fired boiler, as defined in Subpart JJJJJ, is not subject to any requirements of this subpart. The proposed boiler is only fired on natural gas fuel. Therefore, the proposed unit is not subject to the requirements of this regulation, and no further discussion is required.

Rule 4101 Visible Emissions

Rule 4101 states that 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). As the IC engine is fired solely on PUC quality natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. The following condition will be listed on the permit to ensure compliance:

- *No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann 1 or equivalent to 20% opacity. [District Rule 4101]*

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected. The following condition will be included on the permit to ensure compliance:

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

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

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

Health Risk Assessment Summary	
	Worst Case Potential
Prioritization Score	0.00
Cancer Risk	2.19E-08
Acute Hazard Index	0.00
Chronic Hazard Index	0.00
T-BACT Required?	No

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

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

See Appendix H: Health Risk Assessment Summary

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 natural gas: 8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor: 0.0076 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%

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

$$GL = \left(\frac{0.0076\ lb-PM}{MMBtu}\right) \times \left(\frac{7{,}000\ grain}{lb-PM}\right) \div \left(\frac{8{,}578\ ft^3}{MMBtu} \times 1.17\right)$$

GL = 0.005 grain/dscf < 0.1 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.

According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

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_2)
- 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO_2)
- Ten pounds per hour of combustion contaminants (defined as total PM in Rule 1020) and derived from the fuel.

District Rule 4301 Limits (lb/hr)			
Unit	**NO_2**	**Total PM**	**SO_2**
S-8452-112-0	0.0061 lb/MMBtu x 20.0 MMBtu/hr = 0.122 lb/hr	0.0076 lb/MMBtu x 20.0 MMBtu/hr = 0.152 lb/hr	0.0143 lb/MMBtu x 20.0 MMBtu/hr = 0.286 lb/hr
Rule 4301 Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule.

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

Pursuant to Rule 4305, Section 2.0, the proposed new unit will be subject to Rule 4305. The proposed new unit will also be subject to Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than Rule 4305 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4305.

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

Pursuant to Rule 4306, Section 2.0, the proposed new unit will be subject to Rule 4306. The proposed new unit will also be subject to Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than Rule 4306 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4306.

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

This rule limits NOx, CO, SO2 and PM10 emissions from boilers, steam generators and process heaters rated greater than 5 MMBtu/hr. This project is proposing 20 MMBtu/hr in-line water heater and therefore, subject to Rule 4320.

Section 5.1 NOx Emission Limits

Section 5.1 states that an operator of a unit subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

- Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
- Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or
- Comply with the applicable Low-use Unit requirements of Section 5.5.

Section 5.2.1 states that on and after the indicated Compliance Deadline units shall not be operated in a manner which exceeds the applicable NO_x limit specified in Table 1 and Table 2 of this rule or a CO emissions limit of 400 ppmv.

The proposed unit is rated at 20.0 MMBtu/hr; therefore, the applicable emission limit category Section 5.2, Table 1, Category A from District Rule 4320 applies as follows:

Table 1: Tier 1 NOx Emission Limits			
Category	NO_X Limit	Authority to Construct	Compliance Deadline
A. Units with a total rated heat input > 5.0 MMBtu/hr to < 20.0 MMBtu/hr, except for Categories C through G units	a) Standard Schedule 9 ppmv or 0.011 lb/MMBtu; or	July 1, 2011	July 1, 2012
	b) Enhanced Schedule 6 ppmv or 0.007 lb/MMBtu	January 1, 2013	January 1, 2014

The applicable emission limit from Tier 2 is Table 2, Category A.5 as follows:

Table 2: Tier 2 NOx Emission Limits		
A. Units with a total rated heat input > 5.0 MMBtu/hr to ≤ 20.0 MMBtu/hr, except for Categories C through E units		
Category	NO_X Limit	Compliance Deadline
5. All other units	5 ppmv or 0.0061 lb/MMBtu	December 31, 2023

The proposed unit has an emission limit of 5 ppmv-NO_X @ 3% O_2 (or 0.0061 lb-NO_X/MMBtu) and 25 ppmv-CO @ O_2 (or 0.0185 lb-CO/MMBtu) and will be compliant. The following condition will be listed on the ATC to ensure compliance:

- *Emission rates shall not exceed any of the following: NOx (as NOx): 5 ppmvd @ 3% O2 or 0.0061 lb/MMBtu; SOx: 0.0143 lb/MMBtu; PM10: 0.0076 lb/MMBtu; CO: 25 ppmvd @ 3% O2 or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201, 4305, 4306 and 4320]*

Section 5.4 Particulate Matter Control Requirements

5.4.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

5.4.1.1 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;

5.4.1.2 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.4.1.3 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O2.

5.4.1.4 Notwithstanding the compliance deadlines indicated in Sections 5.4.1.1 through 5.4.1.3, 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 applicant is proposing to fire the unit on either PUC-quality natural gas or produced gas with a sulfur content to no more than 5 grain of total sulfur per one hundred (100) standard cubic feet. The following condition will be included on the ATC to ensure compliance:

- *The unit shall only be fired on natural gas or produced gas with a maximum sulfur content of 5 gr S/100 scf. [District Rules 2201, 4301, 4801, and 4320]*

Therefore, compliance with section 5.4 is expected.

Section 5.6 Startup and Shutdown Provisions

Section 5.6 states that on and after the full compliance deadline specified in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5.

The applicant has not requested startup or shutdown provisions; therefore, this section does not apply.

Section 5.7 Monitoring Provisions

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 shall both install and maintain an operational APCO approved Continuous Emission Monitoring System (CEMS) for NO_X, CO and O_2, or implement an APCO-approved alternate monitoring.

The applicant proposes to use Alternate Monitoring Scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO_X, CO, and O_2 exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the ATC to ensure compliance with the requirements of the proposed alternate monitoring plan:

- *{4063} The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer 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 2201, 4305, 4306, and 4320]*

- *If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, 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 2201, 4102, 4305, 4306 and 4320]

- *All NOx, CO, and O2 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 NOx, CO, and O2 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 sample 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 2201, 4102, 4305, 4306 and 4320]*

- *{4066} The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (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 2201, 4305, 4306 and 4320]*

- *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. Unless otherwise specified in the PTO, 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. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 2201, 4305, 4306 and 4320]*

Section 5.7.6 requires operators complying with Sections 5.4.1.1 or 5.4.1.2 to provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permits to Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

- *When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320]*

The following condition will be listed on the ATC to ensure compliance with the reporting section of this requirement:

- *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, 2201, 4305, 4306 and 4320]*

Section 5.8 Compliance Determination

Section 5.8.1 requires that the operator of any unit shall have the option of complying with either the applicable heat input (lb/MMBtu), emission limits or the concentration (ppmv) emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

Therefore, the following condition will be listed on the ATC as follows:

- *{2976} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]*

Section 5.8.2 requires that 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.

Therefore, the following permit condition will be listed on the ATC as follows:

- *{2972} 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. Unless otherwise 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. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 2201, 4305, 4306, and 4320]*

Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO_X analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings 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.

Therefore, the following permit condition will be listed on the ATC as follows:

- *{4065} 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 2201, 4305, 4306 and 4320]

Section 5.8.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. Therefore, the following permit condition will be listed on the ATC as follows:

- *{2980} 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 2201, 4305, 4306 and 4320]*

Section 6.1 Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

A permit condition will be listed on the ATC as follows:

- *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, 2201, 4305, 4306 and 4320]*

Section 6.2 Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO_X	ppmv	EPA Method 7E or ARB Method 100
NO_X	lb./MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O_2	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
Stack Gas Moisture Content	%	EPA Method 4
Oxides of sulfur		EPA Method 6C, EPA Method 8, or ARB Method 100
Total Sulfur as Hydrogen Sulfide (H_2S) Content		EPA Method 11 or EPA Method 15, as appropriate.
Sulfur Content of Liquid Fuel		ASTM D 6920-03 or ASTM D 5453-99

The following permit condition will be listed on the ATC as follows:

- *The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb./MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 2201, 4305, 4306, and 4320]*

Section 6.3 Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.1 and 5.2.3 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

The following permit conditions will be listed on the ATC:

- *A source test to demonstrate compliance with NOx, SOx, and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201, 4305, 4306 and 4320]*

- *Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before*

or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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 2201, 4305, 4306 and 4320]

- *The results of each source test shall be submitted to the District within 60 days thereafter. [District Rules 1081, 2201, and 4320]*

Section 7.0 Compliance Schedule

Section 7.0 identifies the dates by which the operator shall submit an application for an ATC and the date by which the owner shall demonstrate compliance with this rule.

The unit will be in compliance with the emissions limits listed in Table 1 and Table 2 of Section 5.2 of this rule, and periodic monitoring and source testing as required by District Rule 4320. Therefore, requirements of the compliance schedule, as listed in Section 7.0 of District Rule 4320, are satisfied. No further discussion is required.

Conclusion

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

Rule 4801 Sulfur Compounds

Rule 4801 prohibits discharge into the atmosphere of sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO_2), on a dry basis averaged over 15 consecutive minutes. As will be demonstrated below, compliance is expected with this rule.

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

$$\text{Volume } SO_2 = \frac{n\,RT}{P}$$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi
R (Universal Gas Constant) = $\frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot {}^\circ R}$
EPA F-Factor: 8,578 dscf/MMBtu at 60 °F

$$\frac{0.0143\ lb-SO_x}{MMBtu} x\ \frac{MMBtu}{8{,}578\ dscf} x\ \frac{1\ lb-mol}{64\ lb} x\ \frac{10.73\ psi\cdot ft^3}{lb\cdot mol\cdot °R} x\ \frac{520°R}{14.7\ psi} x\ \frac{1{,}000{,}000\ parts}{million} = \frac{9.89\ parts}{million}$$

$Sulfur\ Concentration\ = \frac{9.89\ parts}{million}$ < 2,000 ppmv (or 0.2%)

Therefore, compliance with District Rule 4801 requirements 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.

Greenhouse Gas (GHG) Significance Determination

District is a Responsible Agency

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

District CEQA Findings

Kern County approved the project and issued permits (i.e., Job Cards) on February 7, 2020 under its permitting process. The project is subject to the Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting. Projects with a Job Card issued either prior to March 25, 2020 or between April 7, 2021 and October 6, 2021, are covered by the Kern County Zoning Ordinance. The Kern County Zoning Ordinance was developed by the Kern County Planning Agency as a comprehensive set of goals, objectives, policies, and standards to guide development, expansion, and operation of oil and gas exploration within Kern County.

In 2015, Kern County revised their Kern County Zoning Ordinance in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified in the EIR, including the mitigation requirements of the Oil and Gas Emission Reduction Agreement (Oil and Gas ERA). Subsequently, Kern County certified a Supplemental Recirculated Environmental Import Report (SREIR) in March 8, 2021.

As a responsible agency the District complies with CEQA by considering the EIR and the SREIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096). The District's implementation of the Kern Zoning Ordinance and their EIRs applies to ATC applications received for any new/modified equipment used in oil/gas production in Kern County, including new wells, between November 5, 2015 and March 25, 2020, and between April 7, 2021 and October 6, 2021. The District has reviewed the EIR and the SREIR prepared by Kern County, the Lead Agency for the project, and finds them to be adequate. The District prepared a findings document for the project.

To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

Thus, the District concludes that through a combination of project design elements, permit conditions, and the Oil and Gas ERA, the project will be fully mitigated to result in no net increase in emissions.

Greenhouse Gas (GHG) Significance Determination

Oil and gas operations in Kern County must comply with the Kern County Zoning Ordinance – (C) Focused on Oil and Gas Local Permitting. In 2015, Kern County revised the Kern County Zoning Ordinance Focused on Oil and Gas Activities (Kern Oil and Gas Zoning Ordinance) in regards to future oil and gas exploration, and drilling and production of hydrocarbon resource projects occurring within Kern County.

Kern County served as lead agency for the revision to their ordinance under the California Environmental Quality Act (CEQA), and prepared an Environmental Impact Report (EIR) that was certified on November 9, 2015. The EIR evaluated and disclosed to the public the environmental impacts associated with the growth of oil and gas exploration in Kern County, and determined that such growth will result in significant GHG impacts in the San Joaquin Valley. Subsequently, Kern County certified a Supplemental Recirculated Environmental Import Report (SREIR) in March 8, 2021. As such, mitigation measures for GHG were included.

Pursuant to CEQA Guidelines §15250, the District is a Responsible Agency for the Project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating GHGs. The District has determined that the applicant is responsible for implementing GHG mitigation measures imposed in the EIR and the SREIR by the Kern County for the Kern County Zoning Ordinance.

Indemnification Agreement/Letter of Credit Determination

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

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-8452-112-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
S-8452-112-0	3020-02-H	20 MMBtu/hr	$1,238

Appendixes

A: Draft ATC
B: Location map
C: Process Flow Diagram
D: Manufacturer's Emissions Guarantee
E: SSPE1 Calculations
F: BACT Guideline
G: BACT Analysis
H: HRA Summary and AAQA Summary
I: Quarterly Net Emissions Change
J: Compliance Certification
K: ERC Surplus Analysis
L: ERC Withdrawal Calculations
M: Emissions Inventory Reports from 2022

APPENDIX A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-8452-112-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CALIFORNIA RESOURCES PRODUCTION CORP
MAILING ADDRESS: 9600 MING AVE
BAKERSFIELD, CA 93311

LOCATION: HEAVY OIL CENTRAL

EQUIPMENT DESCRIPTION:
20 MMBTU/HR NATURAL GAS-FIRED IN-LINE WATER HEATER EQUIPPED WITH A NORTH AMERICAN 4211 MAGNAFLAME LOW NOX BURNER

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. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 401 lb, 2nd quarter - 401 lb, 3rd quarter - 401 lb, and 4th quarter - 401 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.9 (as amended 4/20/2023) for the ERC specified below.. NOx ERCs used to satisfy the offset quantity required under District Rule 2201 must be surplus at the time of issuance of this ATC and the total quantity of ERCs surrendered shall be calculated based on the ERC surplus value percent discount of each ERC certificate used. [District Rule 2201]
4. ERC Certificate Number S-5153-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201]

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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services
S-8452-112-0 : Dec 21 2023 10:49AM -- DAVIDSOS : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 499 lb, 2nd quarter - 499 lb, 3rd quarter - 500 lb, and 4th quarter - 500 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.9 (as amended 4/20/2023) for the ERC specified below. SOx ERCs may be used to offset PM10 increases at an interpollutant ratio of 1.0 lb-SOx: 1.0 lb-PM10. [District Rule 2201]
6. ERC Certificate Number N-1524-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201]
7. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 361 lb, 2nd quarter - 361 lb, 3rd quarter - 362 lb, and fourth quarter - 362 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.9 (as amended 4/20/2019) for the ERC specified below. VOC ERCs used to satisfy the offset quantity required under District Rule 2201 must be surplus at the time of issuance of this ATC and the total quantity of ERCs surrendered shall be calculated based on the ERC surplus value percent discount of each ERC certificate used. [District Rule 2201]
8. ERC Certificate Number S-3627-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201]
9. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
10. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
11. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
12. Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [District Rule 4001 and 40 CFR 60.48c (a)]
13. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48c (g)]
14. Emission rates from this unit shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O2 or 0.0061 lb-NOx/MMBtu, 0.0143 lb SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O2 or 0.0185 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
15. The unit shall only be fired on natural gas or produce gas with a maximum sulfur content of 5.0 gr S/100scf. [District Rules 2201, 4301, 4801 and 4320]
16. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320]
17. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306 and 4320]
18. 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 2201, 4305, 4306 and 4320]
19. A source test to demonstrate compliance with NOx, SOx, and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201, 4305, 4306 and 4320]

CONDITIONS CONTINUE ON NEXT PAGE

20. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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 2201, 4305, 4306 and 4320]

21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rules 1081, 2201, and 4320]

22. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb./MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 2201, 4305, 4306 and 4320]

23. 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 2201, 4305, 4306 and 4320]

24. 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 2201, 4305, 4306 and 4320]

25. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer 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 2201, 4305, 4306 and 4320]

26. If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, 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 2201, 4102, 4305, 4306 and 4320]

27. All NOx, CO, and O2 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 NOx, CO, and O2 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 sample 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 2201, 4102, 4305, 4306 and 4320]

28. 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. Unless otherwise specified in the PTO, 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. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 2201, 4305, 4306 and 4320]

CONDITIONS CONTINUE ON NEXT PAGE

29. {4066} The permittee shall maintain records of: (1) the date and time of NOX, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOX and CO concentrations corrected to 3% O2, (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]

30. Permittee shall maintain daily records of the type and quantity of fuel combusted by the in-line heater. [District Rule 2201 and 40 CFR 60.48c (g)]

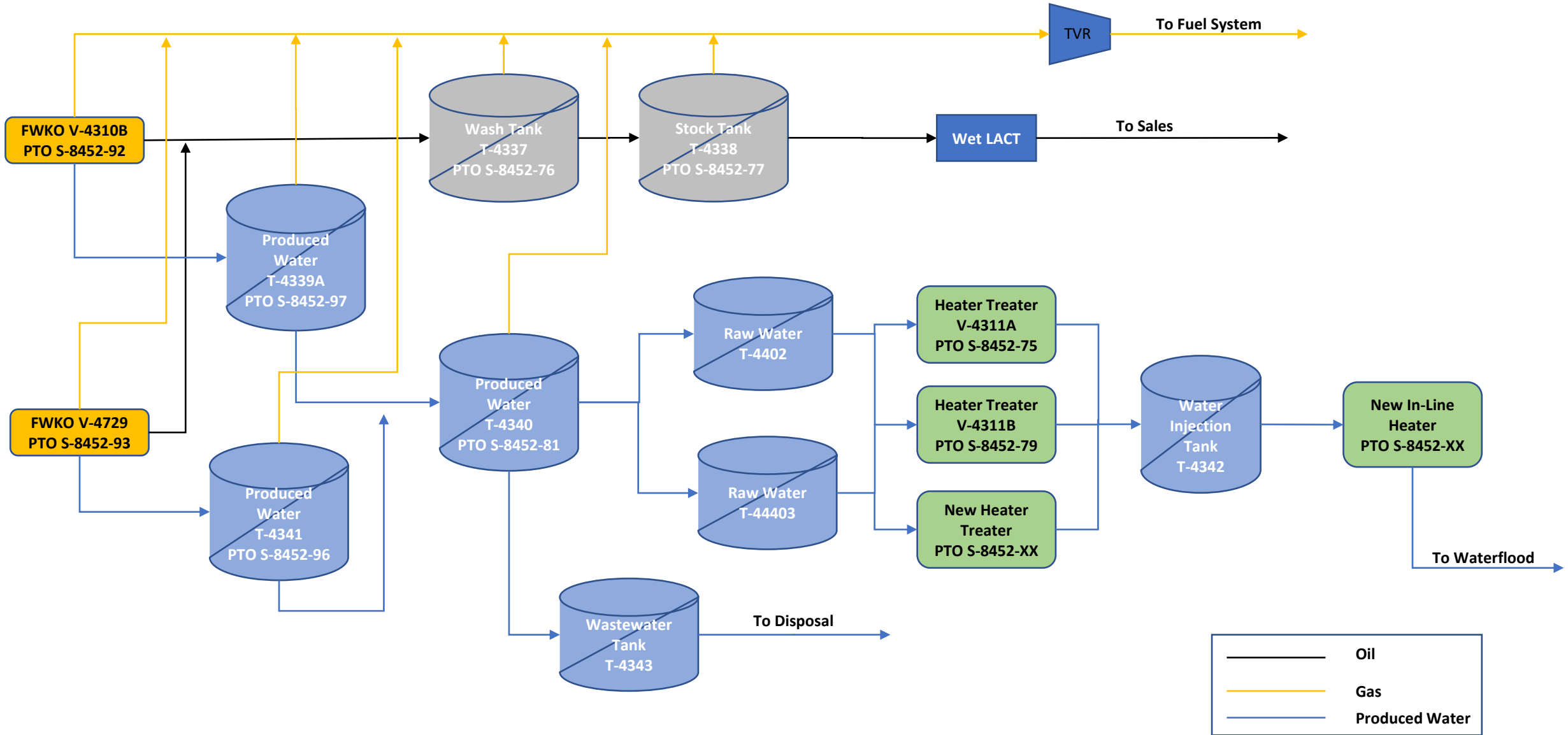
31. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4305, 4306, 4320, and 40 CFR 60.48c (i)]

APPENDIX B
Location Map

Mt. Poso Oilfield – North Unit Facility
Section 4, T27S, R28E

APPENDIX C
Process Flow Diagram

California Resources Production Corporation
Mt. Poso North Unit – New Heater Treater and/or In-Line Heater Project



APPENDIX D
Manufacturer's Emissions Guarantee

September 1, 2022

California Resource Corporation
Attn: Juan Carlos Torres
9600 Ming Avenue, Suite 300
Bakersfield, CA 93311
TEL: 661-763-6316
CELL: 661-747-2492
EMAIL: Juan.Torres@crc.com

Esys®
The Energy Control Company
4520 Stine Rd., Suite 7
Bakersfield, CA 93313
Contractors Lic. 662541
Phone 661 • 833 • 1902
Fax 661 • 833 • 4008

SUBJECT: 20 MMBTU/HR In-Line Water Heater – Emissions Guarantee

Reference: Esys Quotation #11793
North American 4211 MagnaFlame Low NOx Burner

Dear Mr. Torres:

By way of this letter, Esys shall guarantee emissions the emissions limits of **5 ppmv NOx and 25 ppmv CO** (corrected to dry stack conditions and 3 percent oxygen by volume) under the following conditions.

A. CPUC Quality Natural Gas

1) The NA 4211 Magnaflame Low NOx burner is fired on clean (CPUC grade) natural gas with a heat content of approximately 1,020 BTU/SCF. Natural gas refers to dry gas, which contains mainly methane and small quantities of other hydrocarbons such as ethane, propane, and butane; but does not contain any compounds that have nitrogen bound in them.

2) The following operating conditions will apply:

- 130° F Maximum Combustion Air Temperature at blower discharge
- ≤3 to 1 Turndown from Maximum Burner Fire Rate
- Properly sized Fire Tubes for burner application

B. CPUC Quality HD5 Propane Gas

1) The NA 4211 Magnaflame Low NOx burner is fired on HD5 propane with a heat content of approximately 2,516 BTU/SCF. HD5 has a maximum of 5% propylene.

2) The following operating conditions will apply:

- ❒ 1,600° F to 1,800° F Radiant Section Temperature
- ❒ Maximum 130° F Combustion Air at Burner Inlet
- ❒ 3 to 1 Turndown from Maximum Burner Fire Rate

Emissions Guarantee Conditions

1) Esys makes no guarantee of emission concentrations for stack constituents other than NO_x and CO.

2) All the existing water heater equipment is calibrated, tuned, and functioning properly in accordance with the burner manufacturer specifications. Esys must perform calibration and tuning of the burner equipment.

3) Esys approves new controls and instrumentation for proper operation of the water heater or approves existing controls and instrumentation with Esys approved and provided O_2 Trim Control System.

4) Compliance Testing must be conducted using county approved methods and equipment by a county approved independent source testing agency utilizing the appropriate EPA approved methods. All expenses for compliance testing shall be borne by the customer.

5) Compliance testing of the system must be conducted within 60 days of initial start-up. Start-up must occur no later than 120 days from the date of completion (unless agreed to in writing).

    a. Failure to test within this time frame constitutes full acceptance of the Esys provided Fives NA 4211 Burner System. All expenses for compliance testing including recommended retests shall be borne by the customer.

6) If the customer has difficulty attaining the guaranteed emission levels, Esys personnel or their sub-contractor(s) shall have adequate access to the combustion equipment for the purpose of adjustment.

7) Esys retains the right to secure the services of an independent agency or firm specializing in emission testing measurement.

8) Esys guarantees the above listed emission levels for a period of one (1) year from completion of installation of the Fives NA 4211 Magnaflame Burner. After initial startup and tuning, Esys will provide additional pre-compliance burner tuning and adjustment services on a time and material basis.

Note: The aforementioned emissions guarantee is subject to the inclusion of Esys Control System with O2 Trim Control as specified under Esys Quotation #11793.

Thank you for choosing our services. If you have any further questions, please feel free to contact us.

Sincerely,

Fabio Russoniello
General Manager
Fabio@esys.us
FMR:kv

APPENDIX E
SSPE1 Calculations

Pre-Project Stationary Source Potential to Emit (SSPE1)

SSPE1 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
S-1326-0-4	0	0	0	0	0
S-1326-9-27	4380	1560	1643	30113	3011
S-1326-36-4 through '-287-21	0	0	0	0	0
S-1326-294-12	4380	1560	1643	30113	3011
S-1326-314-7	5957	2122	2234	19360	4095
S-1326-315-3	0	0	0	0	0
S-1326-337-8	5957	2122	2234	6701	4095
S-1326-338-8	5957	2122	2234	6701	4095
S-1326-360-4 through '-363-6	0	0	0	0	0
S-1326-382-4	1360	68	160	7400	1260
S-1326-385-6	5957	2122	2234	13775	4095
S-1326-390-4	5957	2122	2234	6701	4095
S-1326-391-4	5957	2122	2234	6701	4095
S-1326-392-3	5957	2122	2234	6701	4095
S-1326-394-2 through '-396-2	0	0	0	0	0
S-1326-400-2	5957	2122	2234	13775	4095
S-1326-401-2	5957	2122	2234	13775	4095
S-1326-405-4	5957	2122	2234	5510	4095
S-1326-406-4	5957	2122	2234	5510	4095
S-1326-407-4	5957	2122	2234	5510	4095
S-1326-409-4 through '-413-4	0	0	0	0	0
S-1326-417-4	5957	2122	2234	13775	4095
S-1326-418-4	5957	2122	2234	13775	4095
S-1326-419-5	5957	2122	2234	13403	4095
S-1326-420-4	5957	2122	2234	13403	4095
S-1326-421-4	5957	2122	2234	13403	4095
S-1326-422-4	5957	2122	2234	13403	4095
S-1326-423-4	5957	2122	2234	13403	4095
S-1326-424-4	5957	2122	2234	13403	4095
S-1326-425-4	5957	2122	2234	13403	4095
S-1326-444-1 through '-446-1	0	0	0	0	0
S-1326-450-1	5957	2122	2234	137750	4095
S-1326-458-1	0	0	0	0	2161
S-8452-0-3 through '-5-3	0	0	0	0	0
S-8452-10-4	0	0	0	0	146
S-8452-11-5	0	0	0	0	1166
S-8452-12-5	0	0	0	0	21888
S-8452-13-5	0	0	0	0	34423
S-8452-14-11	0	0	0	0	190
S-8452-15-8	0	0	0	0	3133

S-8452-16-5	0	0	0	0	3400
S-8452-17-5	0	0	0	0	3400
S-8452-18-3 through ‘-28-3	0	0	0	0	0
S-8452-29-5	0	0	0	0	37
S-8452-30-3	0	0	0	0	0
S-8452-31-3	0	0	0	0	0
S-8452-32-3	680	28	80	3700	630
S-8452-34-3	0	0	0	0	0
S-8452-35-3	0	0	0	0	203
S-8452-36-3	0	0	0	0	365
S-8452-41-3	0	0	0	0	4601
S-8452-42-3	0	0	0	0	2223
S-8452-75-2	1445	374	394	2365	723
S-8452-76-2	0	0	0	0	25
S-8452-77-2	0	0	0	0	25
S-8452-79-1	1445	374	394	4862	723
S-8452-81-8	0	0	0	0	37
S-8452-82-2	0	0	0	0	30
S-8452-83-2	0	0	0	0	37
S-8452-84-2	0	0	0	0	37
S-8452-85-4	0	0	0	0	183
S-8452-86-2	0	0	0	0	37
S-8452-87-2	0	0	0	0	37
S-8452-88-2	0	0	0	0	37
S-8452-92-2	0	0	0	0	168
S-8452-93-2	0	0	0	0	168
S-8452-94-3	0	0	0	0	2972
S-8452-95-0	0	0	0	0	10
S-8452-96-2	0	0	0	0	183
S-8452-97-2	0	0	0	0	183
S-8452-98-0	0	0	0	0	0
S-8452-99-2	0	0	0	0	133
S-8452-100-2	0	0	0	0	133
S-8452-101-1	887	668	612	2982	443
S-8452-102-1	964	726	666	3241	482
SSPE1	**146,595**	**52,042**	**54,740**	**454,617**	**182,144**

APPENDIX F
BACT Guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.1.1*

Last Update: 11/30/2022

Natural gas or propane fired boilers/steam generators** with heat input rate greater than 5 MMBtu/hr and less than or equal to 20 MMBtu/hr

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	PUC quality natural gas or propane with LPG backup		
SOx	PUC quality natural gas or propane with LPG backup		
PM10	PUC quality natural gas or propane with LPG backup		
NOx	5 ppmvd @ 3% O2 (0.0061 lb/MMBtu)		
CO	50 ppmvd @ 3% O2 (0.037 lb/MMBtu)		

* This is a Summary Page for this Class of Source.
** This guideline is applicable to units fired solely on natural gas from a PUC or FERC regulated source or propane/LPG. This guideline is not applicable to Oilfield Steam Generators or Electric Utility Steam Generating Units.

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

***This is a Summary Page for this Class of Source**

APPENDIX G
BACT Analysis

Top Down BACT Analysis for the In-line Heater

This application was deemed complete on October 26, 2022. At that time, the applicable BACT Guideline, 1.1.1, had been rescinded; however, it has recently been reenacted on November 30, 2022. As shown in the top-down BACT analysis, the proposed unit meets those requirements. Therefore, a project-specific BACT analysis will not be necessary as meeting the current BACT guidelines is sufficient. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. Top-Down BACT Analysis for NO_X Emissions

Step 1 - Identify All Possible Control Technologies

BACT guideline identifies only the following option:

- *5 ppmvd @ 3% O2 (0.0061 lb/MMBtu)*

Step 2 - Eliminate Technologically Infeasible Options

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

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

Step 4 - Cost Effectiveness Analysis

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

Step 5 - Select BACT

BACT for NOx emissions is 5 ppmvd @ 3% O2. The applicant has proposed to install a unit with a NOx limit of 5 ppmvd @ 3% O2; therefore, BACT for NOx emissions is satisfied.

2. BACT Analysis for SO_x, VOC and PM_{10} Emissions

Step 1 - Identify All Possible Control Technologies

BACT guideline identifies only the following option:

- *PUC quality natural gas or propane with LPG backup*

Step 2 - Eliminate Technologically Infeasible Options

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

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

Step 4 - Cost Effectiveness Analysis

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

Step 5 - Select BACT

BACT for SO_x, VOC and PM10 emissions is the use of PUC quality natural gas or propane with LPG backup. The applicant has proposed to fire the unit on either PUC quality natural gas or produced gas with a sulfur content of 5 gr/100 scf. Per District Policy APR 1720, Generally Accepted SOx Emission Factor for Combustion of PUC-quality Natural Gas, 5 gr S/100 scf is considered PUC quality; therefore, BACT for SO_x, VOC and PM10 emissions is satisfied.

3. BACT Analysis for CO Emissions

Step 1 - Identify All Possible Control Technologies

BACT guideline identifies only the following option:

- *50 ppmvd @ 3% O2 (0.0037 lb/MMBtu)*

Step 2 - Eliminate Technologically Infeasible Options

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

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

Step 4 - Cost Effectiveness Analysis

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

Step 5 - Select BACT

BACT for CO emissions is 50 ppmvd @ 3% O2. The applicant has proposed to install a unit with a CO limit of 25 ppmvd @ 3% O2; therefore, BACT for CO emissions is satisfied.

APPENDIX H
HRA Summary and AAQA Summary

AAQA Summary

Nattional Ambient Air Quality Standard

Pollutant	Modeled Conc. (ug/m3)	Background (ug/m3)	Total (ug/m3)	AAQS (ug/m3)	SIL (ug/m3)	Exceeds AAQS	Exceeds SIL
CO, 1_Hour	20.4	2209.7	2230.1	23000	2000	NO	--
CO, 8_Hour	5.36	1488.4	1493.76	10000	500	NO	--
NO2, 1_Hour	6.64	0	6.64	188	7.5	NO	--
NO2, Annual	0.0979	20.02	20.1179	100	0	NO	--
PM10-24Hr, 24_H	0.965	185	185.965	150	5	YES	NO
PM2.5, 24_Hour	0.965	54.8	55.765	35	1.2	YES	NO
PM2.5, Annual	0.122	20.5	20.622	12	0.2	YES	NO
SOx, 1_Hour	3.2	15.71	18.91	196	7.8	NO	--
SOx, 24_Hour	0.375	4.98	5.355	365	5	NO	--
SOx, 3_Hour	1.52	12.3	13.82	1300	25	NO	--
SOx, Annual	0.0457	1.11	1.1557	80	1	NO	--

California Ambient Air Quality Standard

Pollutant	Modeled Conc. (ug/m3)	Background (ug/m3)	Total (ug/m3)	AAQS (ug/m3)	SIL (ug/m3)	Exceeds AAQS	Exceeds SIL
CO, 1_Hour	20.4	3308.82	3329.22	23000	2000	NO	--
CO, 8_Hour	5.36	1488.4	1493.76	10000	500	NO	--
NO2, 1_Hour	6.64	92.9	99.54	339	7.5	NO	--
NO2, Annual	0.0979	20.02	20.1179	57	0	NO	--
PM10, Annual	0.122	50.9	51.022	20	1	YES	NO
PM10-24Hr, 24_H	0.965	437	437.965	50	5	YES	NO
PM2.5, Annual	0.122	20.5	20.622	12	0.2	YES	NO
SOx, 1_Hour	3.2	19.64	22.84	655	7.8	NO	--
SOx, 24_Hour	0.375	7.07	7.445	105	5	NO	--

APPENDIX I
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

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

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{quarterly} = PE2_{annual} \div 4$ quarters/year

$PE1_{quarterly} = PE1_{annual} \div 4$ quarters/year

Quarterly NEC [QNEC]					
Pollutant	**$PE2_{annual}$**	**PE2 (lb/qtr)**	**$PE1_{annual}$**	**PE1 (lb/qtr)**	**QNEC (lb/qtr)**
NO_X	1,069	267.25	0	0	267.25
SO_X	2,505	626.25	0	0	626.25
PM_{10}	1,332	333	0	0	333
CO	3,241	810.250	0	0	810.250
VOC	964	241	0	0	241

APPENDIX J
Compliance Certification

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

☐ SIGNIFICANT PERMIT MODIFICATION
☒ MINOR PERMIT MODIFICATION
☐ ADMINISTRATIVE AMENDMENT

COMPANY NAME: California Resources Corporation	FACILITY ID: S-8452
1. Type of Organization: ☒ Corporation ☐ Sole Ownership ☐ Government ☐ Partnership ☐ Utility	
2. Owner's Name: California Resources Corporation	
3. Agent to the Owner: Andrew Giurlani/Charlotte Campbell	

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

(1) 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).

(2) 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.

(3) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(4) 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.

(5) For minor modifications, this application meets the criteria for use of minor permit modification procedures pursuant to District Rule 2520.

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

Signature of Responsible Official

9/30/2022
Date

Juan Campos
Name of Responsible Official (please print)

Director Environmental
Title of Responsible Official (please print)

Mt. Poso North Unit New Heater Treater/In-Line Heater

APPENDIX K
ERC Surplus Analysis

San Joaquin Valley Air Pollution Control District

Surplus ERC Analysis

Facility Name:	California Resources Production Corporation	**Date:**	November 13, 2023
Mailing Address:	900 Old River Rd Bakersfield, CA 93311	**Engineer:**	Marissa Mak
		Lead Engineer:	Dan Klevann
Contact Person:	Andrew Giurlani		
Telephone:	(661) 487-6920		
ERC Certificate(s) #:	S-5153-2, S-3627-1		
ATC Project #:	S-1224261		

I. Proposal

California Resources Production Corporation (CRC) is proposing the use of the following Emission Reduction Credit (ERC) certificates to meet the federal offset requirements of District project S-1224261.

Proposed ERC Certificate(s)	
Certificate #	**Criteria Pollutant**
S-5153-2	NOx
S-3627-1	VOC

The purpose of this analysis is to ensure that the emission reductions on these ERC certificates are surplus of all applicable Federal requirements; therefore, this analysis establishes the surplus value of the ERC certificates as of the date of this analysis. The current face value and surplus value of the ERC certificates evaluated in this analysis are summarized in the following tables:

Criteria Pollutant: NOx

ERC Certificate S-5153-2				
Pollutant	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Current Value	6,160	6,160	6,160	6,159
Surplus Value	2,944	2,944	2,944	2,944

Criteria Pollutant: VOC

ERC Certificate S-3627-1				
Pollutant	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Current Value	3,730	3,448	3,015	3,510
Surplus Value	3,730	3,448	3,015	3,510

II. Individual ERC Certificate Analysis

ERC Certificate S-5153-2

A. ERC Background

Criteria Pollutant: NOx

ERC Certificate S-5153-2 is a certificate that was split out from parent ERC Certificate S-4211-2. Original ERC Certificate S-4211-2 was issued to facility S-2234, California Resources Elk Hills LLC on April 24, 2014 under project S-1133368. The ERCs were generated from the shutdown of 35R Lean Oil Absorption Plant S-2234-19 and three IC engines powering gas compressors (S-2234-27, '-28, '-127) (see detailed equipment summary in Attachment 1). Of the units shut down, the gas plant under permit S-2234-19 was the only unit not a source of NOx emissions and therefore, will not be evaluated as part of this analysis. The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District analysis:

ERC Certificate S-5153-2				
Pollutant	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Original Value of Parent Certificate S-4211-2	13,364	14,303	18,022	17,508
Current Value of ERC Certificate S-5153-2	6,160	6,160	6,160	6,159

B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of NOx generated by the reduction project.

1. District Rules

Rule 2201 – New and Modified Stationary Source Review Rule (4/21/11)
Rule 2301 - Emission Reduction Credit Banking (1/19/12)

The application review for the original ERC banking project demonstrated that the ERC credit complied with District Rules 2201 and 2301 requirements at the time it was issued.

Rule 4702 - Internal Combustion Engines (11/14/13)

The application review for the original ERC banking project demonstrated that three IC engines powering gas compressors had NO_X limits that were below the limits in the Rules listed above. Therefore, the original NOx emission reductions were surplus of all applicable District Rule requirements.

2. Federal Rules and Regulations

There were no applicable federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

C. New or Modified Rule and Regulations Applicable to the Original Banking Project

All District and federal rules and regulations that have been adopted or amended since the date the original banking project was finalized will be evaluated below:

1. District Rules:

Rule 2201 – New and Modified Stationary Source Review (8/15/2019)
Rule 2301 - Emission Reduction Credit Banking (8/15/19)

District Rules 2201 and 2301 have been amended since the original ERC certificate was issued. However, the requirements of these rules only applied at the time of the original banking action. Thus, no further evaluation of these rules will be conducted in this analysis.

Rule 4701 – Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 - Internal Combustion Engines (8/19/21)

The requirements of Rules 4701 and 4702 would have been applicable to the engines that were shut down in the original ERC banking project. Of these two rules, Rule 4702 contains the most stringent NOx emission limits. Rule 4702 was last amended by the District on August 19, 2021; however, this version of the rule has not yet been included in the District's SIP. Therefore, the November 14, 2013 version of Rule 4702 (added to the District's SIP on April 25, 2016) must be used to determine surplus emission reductions.

Any adjustments to the surplus value of emission reductions from these units due to the requirements of this rule will be calculated in Section D of this analysis.

2. Federal Rules and Regulations:

40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The purpose of 40 CFR 60 Subpart JJJJ is to establish New Source Performance Standards to reduce emissions of NOx, SOx, PM, CO, and VOC from new and modified stationary spark ignition (SI) internal combustion (IC) engines.

Subpart JJJJ is applicable to existing stationary SI IC engines that were modified or reconstructed after June 12, 2006. Engines S-2234-27 and '-28 have not been modified since January 5, 2005 in project S-1041700 and therefore, are not subject to Subpart JJJJ.

Engine S-2234-127 was a 1,834 bhp natural gas-fired rich-burn IC engine with non-selective catalytic reduction last modified in April 29, 2010 and therefore is subject to Subpart JJJJ. However, the NOx emission limits of District Rule 4702 is more stringent and will therefore be used to make any adjustments to the surplus value of emission reductions in Section D of this analysis.

40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR 63.6580 Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. However, requirements do not include limits to NOx emissions and therefore will not result in further discounting of NOx ERCs.

D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, rules and regulations applicable to permit unit(s) in the original banking project have been adopted or amended since the date the original banking project was finalized. The emissions limits from these new/modified rules and regulations will be compared to the pre and post-project emission limits of each permit unit included in the original banking project to determine any discounting of the original surplus value of emission reductions due to the new/modified rule or regulation.

The amount of ERCs issued from each permit unit in the original banking project, the percentage of that amount which was discounted due to a new/modified rule or regulation, and the current surplus value of the amount of ERCs from each permit unit is calculated in the table(s) below:

Surplus Value Calculations for Permit Unit S-2234-27 and '-28 Full-Time Natural Gas Lean-burn IC Engine Powering a Gas Compressor		
(A) Emission Reductions Contributing to ERC	62,935	lb/year
Pre-Project (EF1)	136	ppmv @ 15% O_2
Post-Project (EF2)	0	ppmv @ 15% O_2
Most Stringent Applicable Rule (EF_{Rule}): Rule 4702, 5.2.2, Table 3 Category 2.b.	40	ppmv @ 15% O_2
(B) Percent Discount*	70.1%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	18,817	lb/year

*If $EF_{Rule} \leq EF2$, Percent Discount = 100%, or
If $EF_{Rule} > EF1$, Percent Discount = 0%, otherwise,
$(EF1 - EF_{Rule}) \times 100 \div (EF1 - EF2)$

Surplus Value Calculations for Permit Unit S-2234-127 Natural Gas-Fired Rich-burn IC engine		
(A) Emission Reductions Contributing to ERC	262	lb/year
Pre-Project (EF1)	5	ppm @ 15% O_2
Post-Project (EF2)	0	ppm @ 15% O_2
Most Stringent Applicable Rule (EF_{Rule}): Rule 4702, 5.2.2, Table 3 Category 1.d.	11	ppm @ 15% O_2
(B) Percent Discount*	0.0%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	262	lb/year

*If $EF_{Rule} \leq EF2$, Percent Discount = 100%, or
If $EF_{Rule} > EF1$, Percent Discount = 0%, otherwise,
$(EF1 - EF_{Rule}) \times 100 \div (EF1 - EF2)$

Total Discount Percentage for ERC Certificate

The total percentage ERC S-5153-2 is discounted by due to new and modified rules and regulations is summarized in the following table:

Total Percent Discount Summary for ERC Certificate S-5153-2			
Permit(s)	Amount of ERCs Issued (lb/year)	Percent Discount	Surplus Value (lb/year)
S-2234-27 and '-28	62,935	70.1%	18,817
S-2234-127	262	0.0%	262
Total	63,197	--	19,079
Total Percent Discount*		**69.8%**	

* Total Percent Discount = [(Total Amount of ERCs Issued – Total Surplus Value) ÷ Total Amount of ERCs Issued] x 100

E. Surplus Value of ERC Certificate

As shown in the previous section, the surplus at time of use value of this ERC certificate will be adjusted. The current face value of the ERC certificate, the percent the current value is discounted by based on the surplus analysis in the previous section, and the current calculated surplus value of the ERC certificate is shown in the table below:

ERC Certificate S-5153-2 – Criteria Pollutant NOx					
		1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
(A)	Current ERC Quantity	6,160	6,160	6,160	6,159
(B)	Percent Discount	**69.8%**	**69.8%**	**69.8%**	**69.8%**
(C) = (A) x [1 – (B)]	**Surplus Value**	1,860	1,860	1,860	1,860

ERC Certificate S-3627-1

A. ERC Background

Criteria Pollutant: VOC

ERC Certificate S-3627-1 is a certificate that was split out from parent ERC Certificate S-269-1. Original ERC Certificate S-269-1 was issued to California Resources Elk Hills LLC on October 17, 1994 under project S-940343. The ERCs were generated from the shutdown of two 1000 hp 4-stroke, lean-burn, natural gas-fired IC engines (S-2234-6 and

'-56) (see detailed equipment summary in Attachment 2). The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District analysis:

ERC Certificate S-3627-1				
Pollutant	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Original Value of Parent Certificate S-269-1	12,617	11,839	10,644	12,010
Current Value of ERC Certificate S-3627-1	3,730	3,448	3,015	3,510

B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of VOCs generated by the reduction project.

3. District Rules

Rule 2301 - Emission Reduction Credit Banking (12/17/92)

The application review for the original ERC banking project demonstrated that the ERC credit complied with District Rule 2301 requirements at the time it was issued.

Rule 4701 Emissions From Stationary Internal Combustion Engines – Central and Western Kern County Fields (12/12/92)
Rule 4702 Stationary Internal Combustion Engines (8/19/21)

The application review for the original ERC banking project demonstrated that the two IC engines had VOC limits that were below the limits in the Rules listed above. Therefore, the original VOC emission reductions were surplus of all applicable District Rule requirements.

4. Federal Rules and Regulations

There were no applicable federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

C. New or Modified Rule and Regulations Applicable to the Original Banking Project

All District and federal rules and regulations that have been adopted or amended since the date the original banking project was finalized will be evaluated below:

District Rules:

Rule 2301 - Emission Reduction Credit Banking (8/15/19)

District Rule 2301 has been amended since the original ERC certificate was issued. However, the requirements of this rule only applied at the time of the original banking action. Thus, no further evaluation of this rule will be conducted in this analysis.

Rule 4701 – Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 - Internal Combustion Engines (8/19/21)

The requirements of Rules 4701 and 4702 would have been applicable to the engines that were shut down in the original ERC banking project. Of these two rules, Rule 4702 contains the most stringent VOC emission limits. Rule 4702 was last amended by the District on August 19, 2021; however, this version of the rule has not yet been included in the District's SIP. Therefore, the November 14, 2013 version of Rule 4702 (added to the District's SIP on April 25, 2016) must be used to determine surplus emission reductions.

Any adjustments to the surplus value of emission reductions from these units due to the requirements of this rule will be calculated in Section D of this analysis.

3. Federal Rules and Regulations:

40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The purpose of 40 CFR 60 Subpart JJJJ is to establish New Source Performance Standards to reduce emissions of NOx, SOx, PM, CO, and VOC from new and modified stationary spark ignition (SI) internal combustion (IC) engines.

Subpart JJJJ is applicable to existing stationary SI IC engines that were modified or reconstructed after June 12, 2006. Engines S-2234-6 and '-56 were shut down on October 20, 1993 per project S-940343 and therefore not subject to Subpart JJJJ.

40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

40 CFR 63.6580 Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. However, requirements do not include limits to VOC emissions and therefore will not result in further discounting of VOC ERCs.

D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, rules and regulations applicable to permit unit(s) in the original banking project have been adopted or amended since the date the original banking project was finalized. The emissions limits from these new/modified rules and regulations will be compared to the pre and post-project emission limits of each permit unit included in the original banking project to determine any discounting of the original surplus value of emission reductions due to the new/modified rule or regulation.

The amount of ERCs issued from each permit unit in the original banking project, the percentage of that amount which was discounted due to a new/modified rule or regulation, and the current surplus value of the amount of ERCs from each permit unit is calculated in the table(s) below:

Surplus Value Calculations for Permit Unit S-2234-6 Full-Time Natural Gas Lean-Burn IC Engine		
(A) Emission Reductions Contributing to ERC	17,524	lb/year
Pre-Project (EF1)	68.5[1]	ppmv @ 15% O_2
Post-Project (EF2)	0	--
Most Stringent Applicable Rule (EF_{Rule}): Rule 4702, 5.2.2, Table 3 Category 2.c.	90	ppmv @ 15% O_2
(B) Percent Discount*	0.0%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	17,524	lb/year

1. Per source test in ERC banking project 940343: EF1 = 208 ppmv @ 3% O2 and using District calculator, it was converted to be 68.5 ppmv @ 15% O2.

*If $EF_{Rule} \leq$ EF2, Percent Discount = 100%, or
If EF_{Rule} > EF1, Percent Discount = 0%, otherwise,
(EF1 – EF_{Rule}) x 100 ÷ (EF1 – EF2)

Surplus Value Calculations for Permit Unit S-2234-56 Full-Time Natural Gas Lean-Burn IC Engine		
(A) Emission Reductions Contributing to ERC	29,585	lb/year
Pre-Project (EF1)	38.8[1]	ppmv @ 15% O_2
Post-Project (EF2)	0	--
Most Stringent Applicable Rule (EF_{Rule}): Rule 4702, 5.2.2, Table 3 Category 1.d.	90	ppmv @ 15% O_2
(B) Percent Discount*	0.0%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	29,585	lb/year

1. Per source test in ERC banking project 940343: EF1 = 116 ppmv @ 3% O2 and using District

calculator, it was converted to be 38.3 ppmv @ 15% O2.

*If $EF_{Rule} \leq EF2$, Percent Discount = 100%, or
If $EF_{Rule} > EF1$, Percent Discount = 0%, otherwise,
$(EF1 - EF_{Rule}) \times 100 \div (EF1 - EF2)$

Total Discount Percentage for ERC Certificate

The total percentage ERC S-3627-1 is discounted by due to new and modified rules and regulations is summarized in the following table:

Total Percent Discount Summary for ERC Certificate S-3627-1			
Permit(s)	Amount of ERCs Issued (lb/year)	Percent Discount	Surplus Value (lb/year)
S-2234-6	17,524	0.0%	17,524
S-2234-56	29,585	0.0%	29,585
Total		--	
Total Percent Discount*		**0.0%**	

* Total Percent Discount = [(Total Amount of ERCs Issued – Total Surplus Value) ÷ Total Amount of ERCs Issued] x 100

E. Surplus Value of ERC Certificate

The emissions continue to be Surplus of all District and Federal Rules and Regulations; therefore, no adjustments to the ERC values are necessary.

ERC Certificate S-3627-1 – Criteria Pollutant VOC					
		1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
(A)	Current ERC Quantity	3,730	3,448	3,015	3,510
(B)	Percent Discount	**0.0%**	**0.0%**	**0.0%**	**0.0%**
(C) = (A) x [1 – (B)]	**Surplus Value**	3,730	3,448	3,015	3,510

Attachment

1. Summary of Equipment Shut Down in Original ERC Banking Project

Summary of Equipment Shut Down in Original ERC Banking Project

District Permit	Equipment Summary
S-2234-19	1000 BHP NATURAL GAS FIRED I.C. ENGINE #R-6 ALSO APPROVED AT SECTION 7, 17, 30, T30S, R23E
S-2234-6	35R GAS PLANT WITH LEAN OIL RECLAIMING STILL, FOUR AIR COMPRESSORS, ABSORBER, RICH OIL RECTIFIER, STRIPPER, DE-ETHANIZER AND DE-PROPANIZER
S-2234-27	4,000 BHP DELAVAL MODEL HVA12 LEAN-BURN NATURAL GAS-FIRED IC ENGINE WITH PRE-COMBUSTION CHAMBER POWERING A GAS COMPRESSOR (K-9 UNX #11726)
S-2234-28	4,000 BHP DELAVAL MODEL HVA12 LEAN-BURN NATURAL GAS-FIRED IC ENGINE WITH PRE-COMBUSTION CHAMBER POWERING A GAS COMPRESSOR (K-10 UNX #11718)
S-2234-56	1,000 BHP NATURAL GAS FIRED I.C. ENGINE (2-35R)
S-2234-127	1,834 BHP WAUKESHA MODEL #7042 NATURAL GAS-FIRED IC ENGINE DRIVING A GAS COMPRESSOR (R-25) EQUIPPED WITH NON-SELECTIVE CATALYTIC REDUCTION, AIR/FUEL RATIO CONTROLLER, POSITIVE CRANKCASE VENTILATION, AND OPERATES AT VARIOUS UNSPECIFIED LOCATIONS WITHIN FACILITY S-2234

APPENDIX L
ERC Withdrawal Calculations

NO_x	1st Quarter (lb)	2nd Quarter (lb)	3rd Quarter (lb)	4th Quarter (lb)
ERC S-5153-2	2,944	2,944	2,944	2,944
Offsets Required (Includes distance offset ratio)	401	401	401	401
Amount Remaining	2,543	2,543	2,543	2,543
Credits reissued under ERC S-YYYY-2	2,543	2,543	2,543	2,543

VOC	1st Quarter (lb)	2nd Quarter (lb)	3rd Quarter (lb)	4th Quarter (lb)
ERC S-3627-1	3,730	3,448	3,015	3,510
Offsets Required (Includes distance offset ratio)	361	361	362	362
Amount Remaining	3,369	3,087	2,653	3,148
Credits reissued under ERC S-YYYY-1	3,369	3,087	2,653	3,148

PM_{10}	1st Quarter (lb)	2nd Quarter (lb)	3rd Quarter (lb)	4th Quarter (lb)
ERC N-1524-5	20,616	17,953	11,011	21,192
Offsets Required (Includes distance and interpollutant offset ratio)	1,448	1,448	1,449	1,449
Amount Remaining	19,168	16,505	9,562	19,743
Credits reissued under ERC N-YYYY-5	19,168	16,505	9,562	19,743

APPENDIX M
Emissions Inventory Report from 2022

Facility ID (S-XXXX)	CAS #	Compound	annual emissions		Is a HAP (Y/N)
1326	83329	Acenaphthene	5.01E-03	LB-YR	N
1326	208968	Acenaphthylene	3.43E-03	LB-YR	N
1326	75070	Acetaldehyde	1.30E+02	LB-YR	Y
1326	107028	Acrolein	1.30E+02	LB-YR	Y
1326	120127	Anthracene	2.23E-02	LB-YR	N
1326	56553	Benz[a]anthracene	1.21E-02	LB-YR	N
1326	71432	Benzene	1.93E+01	LB-YR	Y
1326	50328	Benzo[a]pyrene	3.43E-03	LB-YR	N
1326	205992	Benzo[b]fluoranthene	3.43E-03	LB-YR	N
1326	191242	Benzo[g,h,i]perylene	3.43E-03	LB-YR	N
1326	207089	Benzo[k]fluoranthene	3.43E-03	LB-YR	N
1326	218019	Chrysene	1.05E-02	LB-YR	N
1326	53703	Dibenz[a,h]anthracene	3.43E-03	LB-YR	N
1326	100414	Ethyl benzene	1.14E+02	LB-YR	Y
1326	206440	Fluoranthene	1.30E-02	LB-YR	N
1326	86737	Fluorene	2.23E-02	LB-YR	N
1326	50000	Formaldehyde	3.09E+02	LB-YR	Y
1326	110543	Hexane	6.32E-02	LB-YR	Y
1326	7783064	Hydrogen sulfide	1.59E+03	LB-YR	N
1326	193395	Indeno[1,2,3-cd]pyrene	3.43E-03	LB-YR	N
1326	91203	Naphthalene	1.76E+00	LB-YR	N
1326	1151	PAHs, total,	2.57E-01	LB-YR	N
1326	85018	Phenanthrene	1.11E-01	LB-YR	N
1326	115071	Propylene	5.57E+03	LB-YR	N
1326	129000	Pyrene	1.86E-02	LB-YR	N
1326	108883	Toluene	1.90E+02	LB-YR	Y
1326	1330207	Xylenes (mixed)	2.40E+02	LB-YR	Y
8542	75070	Acetaldehyde	7.68E-01	LB-YR	Y
8542	107028	Acrolein	6.07E-01	LB-YR	Y
8542	71432	Benzene	7.87E+01	LB-YR	Y
8542	100414	Ethyl benzene	3.59E+00	LB-YR	Y
8542	50000	Formaldehyde	4.45E+00	LB-YR	Y
8542	110543	Hexane	1.09E+00	LB-YR	Y
8542	7783064	Hydrogen sulfide	3.15E+02	LB-YR	N
8542	91203	Naphthalene	8.13E-02	LB-YR	N
8542	1151	PAHs, total	2.62E-02	LB-YR	N
8542	115071	Propylene	1.24E+02	LB-YR	N
8542	108883	Toluene	8.11E+01	LB-YR	Y
8542	1330207	Xylenes (mixed)	1.59E+02	LB-YR	Y
			4.53	ton-TAC/yr	
		Totals	0.73	ton-HAP/yr	