

September 21, 2022

Mr. David Rocha
Baker Commodities
PO Box 416
Kerman, CA 93630

**Re: Notice of Preliminary Decision – ATC / Certificate of Conformity
District Facility # C-72
Project # C-1223013**

Dear Mr. Rocha:

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 purpose of this project is the installation of a 50.2 MMBtu/hr natural gas-fired boiler equipped with an ultra-low NOx burner to provide steam to the cooker, permitted under C-72-3. The proposed boiler will replace the existing boiler associated with Permit to Operate C-72-8.

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. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Samir Sheikh
Executive Director/Air Pollution Control Officer

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

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

Mr. David Rocha
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Thank you for your cooperation in this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brian Clements". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

Brian Clements
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email
cc: Gerardo Rios, EPA (w/enclosure) via EPS
cc: Jared Weinstein, Montrose Environmental, via email

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Installation of a 50.2 MMBtu/hr Natural Gas-Fired Boiler

Facility Name:	Baker Commodities	Date:	September 21, 2022
Mailing Address:	16801 W Jensen Ave Kerman, CA 93630	Engineer:	Entor Pineda
Contact Person:	Jared Weinstein	Lead Engineer:	Dustin Brown
Telephone:	(657) 693-1677		
E-Mail:	<u>JWeinstein@montrose-env.com</u>		
Application #:	C-72-13-0		
Project #:	C-1223013		
Deemed Complete:	August 5, 2022		

I. Proposal

Baker Commodities has requested an Authority to Construct (ATC) permit to install a 50.2 MMBtu/hr natural gas-fired boiler equipped with an ultra-low NO_x burner to provide steam to the animal rendering operation, permitted under C-72-3-18. The proposed boiler will replace the existing boiler associated with PTO C-72-8-8. Thus the following condition will be included to ensure the timely removal and cancelation of permit unit C-72-8-8:

- Within 90 days after startup of the equipment authorized by this Authority to Construct, Permit to Operate (PTO) C-72-8-8 shall be surrendered to the District and the associated equipment shall be permanently removed. [District Rule 2201]

Baker Commodities received their Title V Permit on November 30, 2004. 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. Baker Commodities must apply to administratively amend their Title V permit.

The draft ATC is included in Appendix A.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)

Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 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 (10/16/08)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4351	Boilers, Steam Generators, and Process Heaters – Phase 1
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 facility is located at 16801 W Jensen Ave in Kerman, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Baker Commodities is an unenclosed animal matter rendering facility. The new boiler will be used to provide hot water and steam for use in various processes. The boiler will be fired solely on PUC-quality natural gas.

V. Equipment Listing

PTO Equipment Description (existing boiler to be replaced):

C-72-8-8: 37.8 MMBTU/HR HURST MODEL SERIES 500 NATURAL GAS/YELLOW GREASE-FIRED BOILER EQUIPPED WITH JOHN ZINC/GORDON PIATT ULTRA LOW-NOX BURNER MODEL RMB-GO-90-E2-30-F9H WITH FORCED FGR

ATC Equipment Description (new proposed boiler):

C-72-13-0: 50.2 MMBTU/HR HURST MODEL S500-E-X-1200-150 NATURAL GAS-FIRED BOILER EQUIPPED WITH A ROGUE COMBUSTION BURNER WITH CLEARSIGN CORE TECHNOLOGY ULTRA-LOW NOX BURNER MODEL 1200 CORE-S

VI. Emission Control Technology Evaluation

Emissions from natural gas-fired boilers include NO_x, CO, VOC, PM₁₀, and SO_x.

NO_x is the major pollutant of concern when burning natural gas. NO_x formation is either due to thermal fixation of atmospheric nitrogen in the combustion air (thermal NO_x) or due to conversion

of chemically bound nitrogen in the fuel (fuel NO_x). Due to the low fuel nitrogen content of natural gas, nearly all NO_x emissions are thermal NO_x. Formation of thermal NO_x is affected by four furnace zone factors: (1) nitrogen concentration, (2) oxygen concentration, (3) peak temperature, and (4) time of exposure at peak temperature.

VII. General Calculations

A. Assumptions

- This unit will solely be fired on PUC quality natural gas
- Emissions from natural gas-fired boilers include NO_x, CO, VOC, PM₁₀, and SO_x
- Maximum Heat input rating is 20.0 MMBtu/hr
- Max operating schedule is 24 hours per day and 8,760 hours per year
- Natural gas heating value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf /MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- To streamline emission calculations, PM_{2.5} emissions are assumed to be equal to PM₁₀ emissions. Only if needed to determine if a project is a Federal major modification for PM_{2.5} will specific PM_{2.5} emission calculations be performed

To streamline emission calculations, PM_{2.5} emissions are assumed to be equal to PM₁₀ emissions. Only if needed to determine if a project is a Federal major modification for PM_{2.5} will specific PM_{2.5} emission calculations be performed.

B. Emission Factors

C-72-8-8 (Pre-Project)

Per PTO (Appendix B) the unit is authorized to be fired on Natural gas, yellow grease or denatured yellow grease, and Fuel oil #2. The emission factors for each fuel are demonstrated below:

Pollutant	Pre-Project Emission Factors (Natural Gas)		Source
	ppmv	lb/MMBtu	
NO _x	9	0.011	Per PTO
SO _x	--	0.00285	District Policy APR 1720
PM ₁₀	--	0.008	District Practice
CO	175	0.130	Per PTO
VOC	--	0.0055	Per PTO

Pollutant	Pre-Project Emission Factors (yellow Grease or Denatured Yellow Grease)		Source
	ppmv	lb/MMBtu	
NO _x	40	0.0546	Per PTO
SO _x	--	.002	Per PTO
PM ₁₀	--	0.016	Per PTO
CO	200	0.166	Per PTO
VOC	--	0.0056	Per PTO

Pollutant	Pre-Project Emission Factors (Diesel/Fuel Oil #2)		Source
	Lb/1,000 gal	lb/MMBtu	
NO _x	19.2	0.140	Per PTO
SO _x	7.1	0.052	Per PTO
PM ₁₀	2	0.015	Per PTO
CO	5.5	0.04	Per PTO
VOC	0.137	0.001	Per PTO

C-72-13-0 (Post-Project)

Pollutant	Post-Project Emission Factors		Source
	ppmv	lb/MMBtu	
NO _x	2.5	0.0030	Manufacturer Data
SO _x	--	0.00285	District Policy APR 1720
PM ₁₀	--	0.003	District Practice
CO	50	0.0370	Manufacturer Data
VOC	--	0.0042	Manufacturer Data

C. Calculations

1. Pre-Project Potential to Emit (PE1)

C-72-8-8

Per PTO -8-8 (Appendix B), the following daily limits for each pollutant must not be exceeded as a result of firing this boiler using any combination of Natural gas, Yellow Grease, Denatured Yellow Grease and Fuel Oil #2:

Daily PE1	
Pollutant	PE (lb/day)
NO _x	27.8
SO _x	10.3
PM ₁₀	8.2
CO	99.9
VOC	3.2

Annual PE1:

Annual PE1 for NO_x is limited by the PTO to 3,642 lb/yr

Annual PE1 for SO_x, PM₁₀, CO, and VOC is calculated as follows:

Annual PE1 = Daily PE1 x 365 days/year

Annual PE1					
Pollutant	Daily PE1 (lb/day)	x	Operating Schedule (day/year)	=	PE1 (lb/year)
NO _x	--	x	--	=	3,642
SO _x	10.3	x	365	=	3,760
PM ₁₀	8.2	x	365	=	2,993
CO	99.9	x	365	=	36,464
VOC	3.2	x	365	=	1,168

C-72-13-0

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

2. Post-Project Potential to Emit (PE2)

The potential to emit for the boilers are calculated as follows, and summarized in the table below:

$$\text{PE2} = \text{Emission Factor} \times \text{Total Heat Input} \times \text{Operating schedule}$$

C-72-8-8

Since this emissions unit will be removed, PE2 = 0 for all pollutants.

C-72-13-0

Daily PE2							
Pollutant	Emission Factor (lb/MMBtu)	x	Total Heat Input (MMBtu/hr)	x	Operating Schedule (hr/day)	=	PE2 (lb/day)
NO _x	0.0030	x	50.2	x	24	=	3.6
SO _x	0.00285	x	50.2	x	24	=	3.4
PM ₁₀	0.003	x	50.2	x	24	=	3.6
CO	0.037	x	50.2	x	24	=	44.6
VOC	0.0042	x	50.2	x	24	=	5.1

Annual PE2							
Pollutant	Emission Factor (lb/MMBtu)	x	Total Heat Input (MMBtu/hr)	x	Operating Schedule (hr/day)	=	PE2 (lb/year)
NO _x	0.0030	x	50.2	x	8,760	=	1,319
SO _x	0.00285	x	50.2	x	8,760	=	1,253
PM ₁₀	0.003	x	50.2	x	8,760	=	1,319
CO	0.0370	x	50.2	x	8,760	=	16,271
VOC	0.0042	x	50.2	x	8,760	=	1,847

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 the following table. All emissions for the rendering operation (C-72-3 and '-9) are included with permit unit C-72-3. Emissions from permit unit C-72-3 are acquired from project C-1203537. The annual emissions for permit unit -9 is

calculated and acquired from project C-1201819. The annual emissions for ATC C-72-12-0 are from project C-1223012. All other permit unit emissions are acquired from project C-1201393.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-72-1-7 (ATC)	33,286	18,964	12,144	53,108	1,144
C-72-3-21					
C-72-6-5	0	0	0	0	32
C-72-7-12	0	0	0	0	0
C-72-8-8	3,642	3,760	2,993	36,464	1,168
C-72-9-8 (ATC)	0	0	335	0	0
C-72-10-2	59	0	3	11	4
C-72-11-0 (ATC)	921	756	796	1,964	1,804
C-72-12-0 (ATC)	183	174	183	2,257	256
SSPE1	38,091	23,654	16,454	93,804	4,408

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

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

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-72-1-7 (ATC)	33,286	18,964	12,144	53,108	1,144
C-72-3-21					
C-72-6-5	0	0	0	0	32
C-72-7-12	0	0	0	0	0
C-72-9-8 (ATC)	0	0	335	0	0
C-72-10-2	59	0	3	11	4
C-72-11-0	921	756	796	1,964	1,804
C-72-12-0 (ATC)	183	174	183	2,257	256
C-72-13-0 (project)	1,319	1,253	1,319	16,271	1,847
SSPE2	35,768	21,147	14,780	73,611	5,087

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
SSPE1	38,091	23,654	16,454	16,454	93,804	4,408
SSPE2	35,768	21,147	14,780	14,780	73,611	5,087
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

As seen in the table above, the facility is an existing Major Source for NO_x and will remain a major source for NO_x; however, it will not become a Major Source for any other pollutant 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	17.8	2.2	11.8	46.9	8.2	8.2
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.

Unit -8 (existing boiler to be removed):

a. BE NO_x

As shown in Section VII.C.5 above, the facility is a major source for NO_x emissions.

Unit -8-8 being removed is neither a clean emissions unit nor a highly utilized unit; therefore, in compliance with determining Historical Actual Emissions (HAE), the annual fuel usage for this unit for 2020 and 2021 (i.e. two years prior to the application) were acquired from emission inventory submittals for the unit. The District will also use NO_x source test results from the April 2, 2019 source test for the unit to establish the HAE.

HAE:

<u>Annual actual heat input</u>	<u>Source test Results</u>
2021: 102,520 MMBtu/year	2019: 0.01 lb NO _x /MMBtu
2020: 169,670 MMBtu/year	2019: 0.01 lb NO _x /MMBtu

2021 HAE

$$102,520 \text{ MMBtu/year} \times 0.01 \text{ lb NO}_x/\text{MMBtu} = 1,025 \text{ lb NO}_x/\text{yr}$$

2020 HAE

$$169,670 \text{ MMBtu/year} \times 0.01 \text{ lb NO}_x/\text{MMBtu} = 1,697 \text{ lb NO}_x/\text{yr}$$

$$\begin{aligned} \text{Average HAE} &= (1,697 + 1,025)/2 \\ &= 1,361 \text{ lb NO}_x/\text{yr} \end{aligned}$$

$BE_{NO_x} = 1,361 \text{ lb-NO}_x/\text{yr}$

b. BE SO_x, PM₁₀, CO, and VOC

Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is not a major source for SO_x, PM₁₀, CO or VOC emissions.

Therefore Baseline Emissions BE=PE1.

BE					
Pollutant	Daily PE1 (lb/day)	x	Operating Schedule (day/year)	=	BE (lb/year)
SO _x	10.3	x	365	=	3,760
PM ₁₀	8.2	x	365	=	2,993
CO	99.9	x	365	=	36,464
VOC	3.2	x	365	=	1,168

Unit -13-0 (Proposed Unit)

Since this unit is a new unit BE = 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 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	1,319	50,000	No
SO _x	1,253	80,000	No
PM ₁₀	1,319	30,000	No
VOC	1,847	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 can not 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.

Since this facility is a Major Source for NO_x only, a Federal Major Modification may only be triggered for NO_x.

Related Projects

For federal purposes, projects that are substantially related should be considered as one project for Federal NSR (Federal Major Modification) purposes. EPA has provided general guidance that to be substantially related, the projects should have an apparent technical or financial dependence.

The purpose of this project is to install a new 50.2 MMBtu/hr natural gas-fired boiler to serve as a permanent replacement for the permit unit C-72-8. The installation of the new boiler is being proposed due to permit unit ‘-8 nearing end of life and no longer operating at full capacity.

In addition to the proposed unit discussed in this evaluation, there is currently another ATC project at the facility (C-1223012) that is to install a 20.0 MMBtu/hr natural gas-fired boiler to provide supplemental capacity during this peak season to the boiler permitted under permit unit C-72-8 for the rendering operation. The supplemental capacity is necessary for the facility to process the increase in raw material received during peak summer months. The proposed supplemental boiler will be removed by end of the peak season (late September – October).

While these projects are similar in nature, the project discussed in this evaluation is for the permanent replacement of unit '-8. The unit proposed in project C-1223013 is for a temporary supplemental boiler to aid in the proper operation of the rendering facility during this peak season. Based on the above information, the District has determined that the projects are not dependent on each other technically or financially; therefore, each will be considered separate projects and will be processed independently.

NO_x

Step 1: Project Emissions Increase

Since the heat input for the new boiler is greater than the heat input for the boiler it is replacing, the new boiler does not qualify as a “replacement unit” under Federal NSR since the design parameters are being altered. Therefore, the new boiler will be treated as a new emissions unit under Federal NSR. For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project:

Emission Increase = PE2

The project’s total NO_x emission increases are calculated in Section VII.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	1,319	0	Yes

*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 emissions, this project constitutes a Federal Major Modification. Therefore, federal offset quantity calculations will be performed below.

New Major Source

As demonstrated above, This facility is already a major source for NO_x, but will not become a Major Source for another pollutant as a result of this project, therefore, this facility is not a New Major Source pursuant to 40 CFR 51.165 a(1)(iv)(A)(3).

Federal Offset Quantity Calculation

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 40 CFR 51.165(a)(3)(ii)(J), 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 actual emissions (AE) for each emission unit times the applicable federal offset ratio.

$$FOQ = \sum(PE2 - AE) \times \text{Federal offset ratio}$$

Actual Emissions

As described in 40 CFR 51.165(a)(1)(xii), actual emissions (AE), as of a particular date, shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

For permit unit C-72-13, AE = 0 since this is a new emissions unit.

For permit unit C-72-8, which is being replaced, Actual Emissions (AE) are calculated below as the average emissions using emissions inventory information for the years 2020 and 2021 (two years prior to the application).

Permit No.	2020 Actual Emissions (lb/year)	2021 Actual Emissions (lb/year)	Actual Emissions (lb/yr)
C-72-8-8	1,697	1,025	1,361

In order for the Actual Emissions (AE) detailed in the table above to be applicable during the federal offset quantity determination the following sections from 40 CFR Part 51 Subpart I § 51.165 must be met by the unit being replaced:

(1) Emissions reductions achieved by shutting down an existing emission unit or curtailing production or operating hours may be generally credited for offsets if they meet the requirements in paragraphs (a)(3)(ii)(C)(1)(i) through (ii) of this section.

(i) Such reductions are surplus, permanent, quantifiable, and federally enforceable.

Based on District Rule 4306 (adopted into the SIP on January 13, 2010) emission requirements from the State Implementation Plan (SIP), the unit being replaced meets all discussed emissions requirements. Additionally, unit -8 meets all permitted emissions limits set by the District; thus, the emissions from unit '-8 can be considered surplus. The total emissions reduction is quantifiable as demonstrated in the table above which is based off fuel usage and source test results in the two most recent years.

The applicant is proposing to remove unit -8 and permanently replace it with the proposed unit -13-0. Thus, to ensure this reduction is permanent and federally enforceable, the following condition will be included in the ATC:

- Within 90 days after startup of the equipment authorized by this Authority to Construct, Permit to Operate (PTO) C-72-8-8 shall be surrendered to the District and the associated equipment shall be permanently removed. [District Rule 2201]

(ii) The shutdown or curtailment occurred after the last day of the base year for the SIP planning process. For purposes of this paragraph, a reviewing authority may choose to consider a prior shutdown or curtailment to have occurred after the last day of the base year if the projected emissions inventory used to develop the attainment demonstration explicitly includes the emissions from such previously shutdown or curtailed emission units. However, in no event may credit be given for shutdowns that occurred before August 7, 1977.

The proposed shut down will not be occurring until after the ATC is issued in late 2022. Thus, considering District Rule 4306 was approved and implemented into the SIP on January 13, 2010 this shut down is occurring after the base year for the SIP planning process and meets the requirements of paragraph (ii) of this section.

Unit C-72-8 meets the requirements discussed above; therefore, AE calculated in the table above can be used in the determination of federal offset quantity (FOQ).

Federal Offset Ratio

According the CAA 182(e), the federal offset ratio for VOC and NOx is 1.5 to 1 (due to the District extreme non-attainment status for ozone). Otherwise, the federal offset ratio for PM2.5, PM10, and SOx is 1.0 to 1.

Federal Offset Quantity (FOQ)

This project includes new and modified/surrendered units:

$$FOQ = \sum (PE2 - AE)_{\text{All New and Modified Units}} \times \text{Federal offset ratio}$$

For new units, $AE = 0$

Therefore,

$$FOQ = [\sum PE2_{All\ New\ Units} + \sum (PE2 - AE)_{All\ Modified\ Units}] \times \text{Federal offset ratio}$$

NOx		Federal Offset Ratio		1.5
Permit No.	Post-Project Potential to Emit (PE2) (lb/year)	Actual Emissions (lb/year)	Emissions Change (lb/yr)	
C-72-13-0 (new)	1,319	0	1,319	
C-72-8-8 (existing)	0	1,361	-1,361	
			$\sum (PE2 - AE) \text{ (lb/year):}$	-42
			Federal Offset Quantity (lb/year): $\sum (PE2 - AE) \times 1.5$	0
			Federal Offset Quantity (tons/year): $\sum (PE2 - AE) \times 1.5 \div 2,000$	0

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)(iii). 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	0.7	1.2	0.6	8.1	0.7	0.7
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 D.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new 50.2 MMBtu/hr boiler with a PE greater than 2 lb/day for NO_x, SO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, SO_x, PM₁₀, and VOC only since the PEs are greater than 2 lb/day. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7, this project does not constitute an SB 288 Modification for any pollutant. However, as discussed in Section VII.C.8, this project does trigger a Federal Major Modification for NO_x. Therefore BACT is triggered for NO_x emissions.

2. BACT Guideline

The District's BACT Clearinghouse previously included BACT Guideline 1.1.1, which would have been applied to the proposed boiler. However, BACT Guideline 1.1.1 has been rescinded; therefore, the District will conduct a project specific BACT analysis for NO_x, SO_x, PM₁₀ and VOC emissions (see Appendix C) for the proposed boiler.

3. Top-Down BACT Analysis

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

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

- NO_x: 2.5 ppmv NO_x @ 3% O₂
- SO_x: PUC-quality Natural Gas
- PM₁₀: PUC-quality Natural Gas
- VOC: PUC-quality Natural Gas

B. Offsets

1. 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	35,768	21,147	14,780	73,611	5,087
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	Yes	No	No	No	No

2. Quantity of District Offsets Required

2.1 NO_x

District Offset Quantities Calculation

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

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = 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

As calculated in Section VII.C.6 above, the BE from this unit are equal to the HAE.

The project is a Federal Major Modification and therefore the correct offset ratio for NO_x is 1.5:1.

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

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

$$\begin{aligned} \text{PE2 (NO}_x\text{)} &= \text{PE2 (unit -8)} + \text{PE2 (unit -13)} \\ &= 0 \text{ lb/year} + 1,319 \text{ lb/year} \\ &= 1,319 \text{ lb/year} \end{aligned}$$

$$\begin{aligned} \text{BE (NO}_x\text{)} &= \text{BE (unit -8)} + \text{BE (unit -13)} \\ &= 1,361 \text{ lb/year} + 0 \text{ lb/year} \\ &= 1,361 \text{ lb/year} \end{aligned}$$

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

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([1,319 - 1,361] + 0) \times \text{DOR} \\ &= -42 \text{ lb-NO}_x\text{/year} \Rightarrow 0 \text{ lb-NO}_x\text{/year} \end{aligned}$$

As demonstrated in the calculation above, the amount of offsets required is zero.

As discussed above, District offsets are triggered but not required for NO_x under NSR. However, as demonstrated above, this project does trigger Federal Major Modification requirements, but no federal offset are required for this project. In conclusion, offsets will not be required for this project and no further discussion is required.

C. Public Notification

1. Applicability

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

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

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

As demonstrated in Section VII.C.8 of this evaluation, this project is a Federal Major Modification for NO_x emissions. 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	38,091	35,768	20,000 lb/year	No
SO _x	23,654	21,147	54,750 lb/year	No
PM ₁₀	16,454	14,780	29,200 lb/year	No
CO	93,804	73,611	200,000 lb/year	No
VOC	4,408	5,087	20,000 lb/year	No

As demonstrated above, offset thresholds were surpassed for NO_x in SSPE1. There were no offset thresholds surpassed with this project for any of the other pollutants; 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	35,769	38,091	-2,322	20,000 lb/year	No
SO _x	21,147	23,654	-2,507	20,000 lb/year	No
PM ₁₀	14,780	16,454	-1,674	20,000 lb/year	No
CO	73,611	93,804	-20,193	20,000 lb/year	No
VOC	5,087	4,408	1,251	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 and Title V Significant Modification for NO_x emissions. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

- The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320]
- {4910} Emissions shall not exceed any of the following limits: 2.5 ppmv NO_x @ 3% O₂ or 0.0030 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.0370 lb-CO/MMBtu, or 10 ppmv VOC @ 3% O₂ or 0.0042 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]

E. Compliance Assurance

1. Source Testing

This boiler is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and process Heaters, Phase 3*, and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr*. Source testing requirements, in accordance with these rules will be discussed in more detail in Section VIII of this evaluation.

2. Monitoring

This boiler is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*, and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr*. Monitoring requirements, in accordance with these rules will be discussed in more detail in Section VIII of this evaluation below.

3. Recordkeeping

This boiler is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*, and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr*. Recordkeeping, in accordance with these rules will be discussed in more detail in Section VIII of this evaluation below.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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

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

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 constitutes a Federal Major Modification, therefore this requirement is applicable. Baker Commodities' compliance certification is included in Appendix F.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a 50.2 MMBtu/hr natural gas-fired boiler.

Since the new boiler will provide steam and hot water 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.”

Minor permit modifications are permit modifications that are not Title I modifications as defined in Rule 2520, are not modifications as defined in section 111 or 112 of the Federal Clean Air Act, and are not major modifications under the prevention of significant deterioration (PSD) provisions of Title I of the CAA or under EPA PSD regulations. Since this project is a Title I modification (i.e. Federal Major Modification) and involves the installation of a new emission unit that is subject to a New Source Performance Standard (NSPS), the proposed project is 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 EPA has reviewed the project and the final ATC permit is issued.

Therefore, the following conditions will be listed on the ATC 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]

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 – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Subpart Dc applies to steam generating units which are constructed, modified, or reconstructed after June 9, 1989, and have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.

The maximum heat input capacity of the proposed unit is within the applicable range. Therefore, the proposed boiler is subject to the requirements of this regulation.

60.42c – Standards for Sulfur Dioxide

The requirements of this paragraph are applicable to units which combust only coal or combusts coal in combination with other fuels. The proposed boiler in this project is only going to be fired on PUC natural-gas and not coal, the requirements of this section are not applicable.

60.43c – Standards for Particulate Matter

The requirements of this paragraph are applicable to units which combust coal or combusts mixtures of coal with other fuels. The proposed boiler in this project will only be fired on PUC natural-gas and not be fired on coal, combust mixtures of coal with other fuels, combust wood, combust mixtures of wood with other fuels, or oil; thus, the requirements of section 60.43c is not applicable to this project.

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

This paragraph outlines the compliance and performance test methods and procedures for sulfur dioxide for units that are subject to an SO₂ emission standard from §60.42c. As discussed above, the boiler in this project is not subject to the requirements of Sections 60.42c – Standards for Sulfur Dioxide, no testing is required to show compliance.

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

This paragraph outlines the compliance and performance test methods and procedures for particulate matter for units subject to a PM emission standard from §60.43c. As discussed above, the boiler in this project is not subject to the requirements of Section 60.43c – Standards for Particulate Matter, no testing is required to show compliance.

60.46c – Emission monitoring for Sulfur Dioxide

This paragraph outlines emission monitoring requirements for sulfur dioxide for units that are subject to an SO₂ emission standard from §60.42c. As discussed above, the boiler in this project is not subject to the requirements of Section 60.42c – Standards for Sulfur Dioxide, no monitoring is required. Therefore, the requirements of this section are not applicable to the boiler in this project.

60.47c – Emission Monitoring for Particulate Matter

This paragraph outlines the emission monitoring requirements for particulate matter for units that are subject to an PM emission standard from §60.43c. As discussed above, the boiler in this project is not subject to the requirements of Section 60.43c – Standards for Particulate Matter, no monitoring is required. Therefore, the requirements of this section are not applicable to the boiler in this project.

60.48c – Reporting and Recordkeeping 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 until this determination is made by the Administrator

The requirement is not applicable since the unit will not be equipped with an emerging technology used to control SO₂ emissions

Section 60.48c(g) states that the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each day. The following conditions will be added to the permit to assure 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 60.48 (c)(g)]
- Permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [District Rule 2201 and 40 CFR 60.48 (c)(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.

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

This subpart is applicable to boilers and process heaters located at Major Sources of HAP emissions. This facility is not a Major source of HAP emissions. Therefore, the proposed unit is not subject to this subpart.

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

Pursuant to Section 63.1195(e) a gas-fired boiler, as defined in Subpart JJJJJ, is not subject to any requirement of this Subpart. Pursuant to the definition in the subpart, a gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel.

The boiler under this project meets the definition of a “gas-fired boiler” as this unit is required to use natural gas fuel. Therefore, Subpart JJJJJ requirements are not applicable.

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). The following condition will be included to ensure continuous compliance:

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

Rule 4102 Nuisance

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

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

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

Health Risk Assessment Summary	
	Worst Case Potential
Prioritization Score	1,190
Cancer Risk	5.26E-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 D: Health Risk Assessment Summary

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

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

Rule 4201 Particulate Matter Concentration

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 corrected to 60°F (40 CFR 60, Appendix B)

PM₁₀ Emission Factor: 0.003 lb-PM₁₀/MMBtu

Percentage of PM as PM₁₀ in Exhaust: 100%

Exhaust Oxygen (O₂) Concentration: 3%

$$\text{Grain Loading (GL)} = \left(\frac{0.003 \text{ lb} - \text{PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb} - \text{PM}} \right) \div \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \right)$$

GL = 0.002 grain/dscf < 0.1 grain/dscf

Therefore, the following condition will be listed on the permit as a mechanism to ensure compliance:

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

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO₂, NO₂, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

Hourly emission rates are calculated in the table below based on worst case daily PE2 calculated in Section VII.C.2 of this document. For NO_x, PM and SO_x, hourly rate is calculated by dividing by 24 hours/day.

District Rule 4301 Limits			
	NO ₂	Total PM	SO ₂
Daily PE2 (lb/day)	3.6	3.6	3.4
Operation (hr/day)	24	24	24
Hourly Rate (lb/hr)	0.15	0.15	0.14
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule for the new boiler within this project. Therefore, continued compliance is expected.

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

The new boiler involved with this project is subject to Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2*. In addition, the boiler is also subject to District Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305.

Therefore, compliance with District Rule 4305 requirements is expected and no further discussion is required.

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

The new boiler involved with this project is subject to Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*. In addition, the boiler is also subject to District Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than

District Rule 4306 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4306.

Therefore, compliance with District Rule 4306 requirements is expected and no further discussion is required.

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

The purpose of this rule is to limit emissions of oxides of nitrogen (NO_x), carbon monoxide (CO), oxides of sulfur (SO₂), and particulate matter 10 microns or less (PM₁₀) from boilers, steam generators, and process heaters.

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour (MMBtu/hr). Since the boiler is greater than 5 MMBtu/hr and is fired on natural gas, this rule is applicable.

Section 5.2, NO_x and CO Emissions Limits

Section 5.2 specifies the following:

- 5.2.1 On and after the indicated Compliance Deadline, units shall not be operated in a manner which exceeds the applicable NO_x emissions limit specified in Table 1 (until December 31, 2023) and Table 2 (on and after December 31, 2023). Units shall not be operated in a manner to which exceeds a carbon monoxide (CO) emissions limit of 400 ppmv.
- 5.2.2 No unit fired on liquid fuel shall be operated in a manner to exceed emissions of 40 ppmv NO_x and 400 ppmv CO.
- 5.2.3 All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with section 8.1.

The proposed 50.2 MMBtu/hr natural gas-fired boiler falls under Category A of Table 1 and it is summarized in the table below:

Table 1: Tier 1 NO _x Emission Limits	
Category	NO _x Limits
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through G units	a) Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or
	b) Enhanced Schedule 5 ppmv or 0.0062 lb/MMBtu

The proposed unit is subject to Category A of the emission limits specified in Table 1 of Section 5.2 as this unit is not operated as low use unit and is not located at an oilfield, refinery or wastewater treatment plant. The applicant has proposed the following emission limits which are in compliance with the emission limits in Table 1:

- The proposed NO_x emission factor is 2.5 ppmv @ 3% O₂ (0.0030 lb/MMBtu), and
- The proposed CO emission factor is 50 ppmv @ 3% O₂ (0.0370 lb/MMBtu)

Table 2 (Tier 2 NO_x Emission limits) requirements will apply on and after December 31, 2023 as specified in the table below.

Table 2: Tier 2 NO _x Emission Limits				
Category	NO _x Limits	Emission Control Plan	Authority to Construct	Compliance Deadline
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through E units				
1. Units with a total rated heat input > 20.0 MMBtu/hr and ≤ 75 MMBtu/hr	2.5 ppmv or 0.0030 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023

As stated above, the applicant has proposed a NO_x EF of 2.5 ppmv @ 3%; therefore, the boiler will comply with the NO_x emission limits of Table 2 and compliance with section 5.2 of District Rule 4320 is expected.

The following condition will be included on the permit to assure continued compliance with the NO_x and CO requirements of this rule:

- Emissions shall not exceed any of the following limits: 2.5 ppmv NO_x @ 3% O₂ or 0.0030 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.0370 lb-CO/MMBtu, or 10 ppmv VOC @ 3% O₂ or 0.0042 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306 and 4320]

Section 5.3, Annual Fee Calculations

Annual Fees are required if the unit will not be meeting the emission limits in Section 5.2 of this rule. Since the proposed boiler will meet the emissions limits of section 5.2, the annual fee requirements are not applicable.

Section 5.4, Particulate Matter Control Requirements

Section 5.4.1 of this rule requires the operator to comply with one of the following requirements for the steam generator:

1. Fire the boiler exclusively on PUC-quality natural gas, commercial propane, butane or liquefied petroleum gas, or a combination of such gases;
2. Limit fuel sulfur content to no more than five (5) grains of total sulfur per on hundred (100) standard cubic feet;
3. Install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight; or limit exhaust SO₂ to less than or equal to 9 ppmv corrected to 3.0% O₂

The facility has proposed that the boiler will be fired exclusively on PUC-quality natural gas. Therefore, the requirements of this section will be satisfied. The following condition will assure continued compliance:

- The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320]
- {4356} Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320]

Section 5.5, Low use

Section 5.5 specifies requirements for units with maximum annual heat input limits of less than 1.8 billion Btu's per calendar year. The proposed new boiler's annual heat input will exceed the 1.8 billion Btu heat input per calendar year criteria limit addressed by this section. Therefore, the requirements of Section 5.5 are not applicable.

Section 5.6, Startup and Shutdown Provisions

Section 5.6 states that on and after the full compliance deadline 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

Although the applicant has not requested to establish startup or shutdown limit for the proposed boiler, Ultra-Low NO_x burners achieve their rated emissions within a few minutes of initial startup and do not require a special shutdown procedure. Therefore, startup and shutdown limits are not warranted.

Section 5.7, Monitoring Provisions

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 emissions limits shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NO_x, CO and O₂, or install and maintain APCO-approved alternate monitoring.

The applicant has proposed to use the pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO_x, CO, and O₂ 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 listed on the permit in order to assure compliance with the requirements of the proposed alternate monitoring plan:

- {4315} The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]

The following conditions will also be required pursuant to District Policy SSP 1105:

- {4316} If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]

- {4317} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]
- {4318} The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x 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, 4306, and 4320]

Section 5.7.2 and 5.7.3 specify monitoring requirements for units that are subject to the low use requirements specified in Section 5.5. As discussed above, the proposed boiler is not subject to the low use requirements of Section 5.5. Therefore, the requirements of Sections 5.7.2 and 5.7.3. are not applicable to this unit.

Section 5.7.4 allows units operated at seasonal sources and subject to 40 CFR 60 Subpart Db to install a parametric monitoring system in lieu of CEMS. The proposed boiler in this project is not operated at a seasonal source. Therefore, this unit is not subject to the requirements of this section.

Section 5.7.6 outlines requirements for monitoring SO_x emissions. The following condition will be listed on the permit in order to ensure compliance with the requirements:

- {4356} Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 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 5.1. 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 permits as followed:

- {4350} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 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 re-ignition as defined in Section 3.0. Therefore, the following condition will be listed on the permit as follows:

- {4351} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320]

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 previously listed permit condition will be on the permit as follows:

- {4317} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]

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 condition will be listed on the permit as follows:

- {4352} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320]

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 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.

The following condition will be listed on the permits as mechanism to assure continued compliance:

- {4911} 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, and 4320]

Section 6.1.2 requires that the operator of a unit subject to Section 5.5 shall record the amount of fuel use at least on a monthly basis. Since the units are not subject to the requirements listed in Section 5.5, it is not subject to Section 6.1.2 requirements.

Section 6.1.3 requires that the operator of a unit subject to Section 5.5.1 or 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics have been performed. The units are not subject to Section 6.1.3. Therefore, the requirements of this section do not apply to these units.

Section 6.1.4 requires that the operator of a unit with startup or shutdown provisions keep records of the duration of the startup or shutdowns. The facility has not proposed the use of startup and shutdown provisions, thus, the requirements of this section do not apply to these units.

Section 6.1.5 requires that the operator of a unit fired on liquid fuel during PUC-quality natural gas curtailment periods record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period. The facility has not proposed the use of curtailment fuels; therefore, the requirements of this section do not apply to these units.

Section 6.2, Test Methods

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

Test Methods		
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

The following condition will be listed on the permits as a mechanism to assure continued compliance:

- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {4346} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
- {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
- {4348} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]

Section 6.3, Compliance Testing

Section 6.3.1 requires that these units be tested to determine compliance with the applicable requirements of Section 5.2 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. Since the applicant is proposing a new boiler, initial source testing within 60 days of startup will be required.

The following condition will be listed on the permits to assure continued compliance with this section:

- {4344} Source testing to measure NO_x and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320]
- {4345} Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320]
- {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Section 6.4, Emission Control Plan (ECP)

Section 6.4.1 requires that the operator of any unit shall submit to the APCO for approval an Emissions Control Plan according to the compliance schedule in Section 7.0 of District Rule 4320.

The applicant is proposing to operate this new boiler in compliance with the emissions limits listed in Section 5.2, Tables 1 and 2 of this rule and with the periodic monitoring and source testing requirements. Therefore, the application provided as a part of this project is considered their emission control plan and the applicant will not be required to submit an additional Emission Control Plan for this unit. No further discussion is required.

Section 7.0, Compliance Schedule

Section 7.0 indicates that an operator must be in compliance with both the ATC deadline and compliance deadlines listed in Table 1 of Section 5.2.

The applicant has proposed to operate this new boiler in compliance with the emissions limits listed in Section 5.2, Tables 1 and 2, of this rule and with the periodic monitoring and source testing requirements. Therefore, the compliance schedule requirements are satisfied and no further discussion is required.

Conclusion

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

Rule 4351 Boilers, Steam Generators and Process Heaters – Phase I

This rule applies to boilers, steam generators, and process heaters at NO_x Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. As shown in Section VII.C.5 of this document, the facility is a Major Source for NO_x emissions. In addition, the facility is located in Fresno County; therefore, the requirements of this rule are applicable to the proposed new boiler. However, the requirements of this rule are satisfied when a unit is operated in compliance with more stringent requirements of Rule 4320. Since the proposed new boiler will be operating in compliance with Rule 4320, compliance with this rule is expected.

Rule 4801 Sulfur Compounds

This rule requires that a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO₂, on a dry basis averaged over 15 consecutive minutes.

Compliance with the more stringent fuel sulfur requirements of Rule 4320 will ensure that the proposed new boiler will meet the emission limits of Rule 4801; therefore, compliance with this rule 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.

The District has verified that this site is located within 1,000 feet of a school. However, pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

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

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*, for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

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

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

The GHG emissions increases associated with this project result from the combustion of fossil fuel(s), other than jet fuel, delivered from suppliers subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing or former use. Furthermore, the District determined that the activity will not have a significant effect on the environment. Therefore, the District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the common sense exemption that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

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.

Although the project is located at a potential facility of concern (Rendering Facility), the proposed project has been determined to have a less than significant environmental impact. 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 successful NSR and COC Noticing periods, issue ATC C-72-13-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-72-13-0	3020-02-H	50.2 MMBtu/hr boiler	\$1,238

Appendixes

- A: Draft ATC
- B: PTO C-72-8-8
- C: BACT Analysis
- D: HRA Summary and AAQA
- E: Quarterly Net Emissions Change
- F: Compliance Certification
- G: April 2, 2019 Source Test Results for unit C-72-8

APPENDIX A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-72-13-0

LEGAL OWNER OR OPERATOR: BAKER COMMODITIES, INC

MAILING ADDRESS: PO BOX 416
KERMAN, CA 93630

LOCATION: 16801 W JENSEN AVE
KERMAN, CA 93630

EQUIPMENT DESCRIPTION:

50.2 MMBTU/HR HURST MODEL S500-E-X-1200-150 NATURAL GAS-FIRED BOILER EQUIPPED WITH A ROGUE COMBUSTION BURNER WITH CLEARSIGN CORE TECHNOLOGY ULTRA-LOW NOX BURNER MODEL 1200 CORE-S

CONDITIONS

1. Within 90 days after startup of the equipment authorized by this Authority to Construct, Permit to Operate (PTO) C-72-8-8 shall be surrendered to the District and the associated equipment shall be permanently removed. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {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
3. {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
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

C-72-13-0 : Sep 20 2022 1:56PM -- PINEDAE : Joint Inspection NOT Required

7. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
8. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
9. Emissions shall not exceed any of the following limits: 2.5 ppmv NO_x @ 3% O₂ or 0.0030 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 50 ppmv CO @ 3% O₂ or 0.0370 lb-CO/MMBtu, or 10 ppmv VOC @ 3% O₂ or 0.0042 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. 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 60.48 (c)(g)] Federally Enforceable Through Title V Permit
11. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x 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, 4306, and 4320] Federally Enforceable Through Title V Permit
15. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
16. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

19. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [District Rule 2201 and 60.48(c)(g)] Federally Enforceable Through Title V Permit
27. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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APPENDIX B
PTO C-72-8-8

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-72-8-8

EXPIRATION DATE: 06/30/2024

EQUIPMENT DESCRIPTION:

37.8 MMBTU/HR HURST MODEL SERIES 500 NATURAL GAS/YELLOW GREASE-FIRED BOILER EQUIPPED WITH JOHN ZINC/GORDON PIATT ULTRA LOW-NOX BURNER MODEL RMB-GO-90-E2-30-F9H WITH FORCED FGR

PERMIT UNIT REQUIREMENTS

1. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. If the District determines that the combustion of yellow grease or denatured yellow grease is causing a nuisance then the facility must cease combustion of this product in the boiler. [District Rule 4102]
5. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
6. The boiler shall only be fired by PUC-regulated natural gas, yellow grease, or denatured yellow grease as primary fuels, with fuel oil #2 (diesel) as backup. [District Rules 2201 and 4301 and 40 CFR 60.42c(d)] Federally Enforceable Through Title V Permit
7. Denatured yellow grease is yellow grease blended with fuel oil No. 2, not to exceed 1.0% fuel oil No.2 by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall maintain records of the gallons of fuel oil and yellow grease blended to make the denatured yellow grease fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Except for diesel fuel used to make denatured yellow grease, this unit shall only be fired on fuel oil #2 (diesel) during natural gas curtailment for no more than 168 cumulative hours in a calendar year plus 48 hours per calendar year for equipment testing. [District Rules 2201 and 4306] Federally Enforceable Through Title V Permit
10. The sulfur content of the diesel fuel used shall not exceed 0.05% by weight. [District Rule 2201 and 40 CFR 60.42c(d) and 40 CFR 60.43c(e)(4)] Federally Enforceable Through Title V Permit
11. Natural gas consumption shall not exceed 771,264 scf per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The combined amount of yellow grease and denatured yellow grease combusted in this boiler shall not exceed 3,914 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The amount of Fuel Oil #2 (Diesel) used as fuel in the boiler shall not exceed either of the following limits: 1,448 gallons per day or 13,031 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

14. A non-resettable, totalizing volumetric fuel flow meter shall be utilized to measure the cubic feet of natural gas combusted in the boiler. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
15. A separate non-resettable, totalizing liquid fuel flow meter to measure, in gallons, the yellow grease (and denatured yellow grease) combusted in the boiler shall be utilized. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
16. A separate non-resettable, totalizing liquid fuel flow meter shall be utilized to measure the gallons of Fuel Oil #2 (Diesel) combusted in the boiler. [District Rules 2201 and 4306] Federally Enforceable Through Title V Permit
17. Operator shall provide that fuel hhv be certified by third party fuel supplier or determined annually by: ASTM D 240 or D 2382 for liquid hydrocarbon fuels; ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
18. Emissions shall not exceed any of the following limits when fired on natural gas: 9 ppmv NOx @ 3% O2 (0.011 lb NOx/MMBtu), 0.00285 lb SOx/MMBtu, 0.0076 lb PM10/MMBtu, 175 ppmv CO @ 3% O2 (0.1295 lb CO/MMBtu), or 0.0042 lb VOC/MMBtu. All emissions measurements shall be averaged over a period of 15 minutes. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
19. Emissions shall not exceed any of the following limits when fired on yellow grease or denatured yellow grease: 40 ppmv NOx @ 3% O2 (0.0546 lb NOx/MMBtu), 0.002 lb SOx/MMBtu, 0.016 lb PM10/MMBtu, 200 ppmv CO @ 3% O2 (0.166 lb CO/MMBtu) or 0.0056 lb VOC/MMBtu. All emissions measurements shall be averaged over a period of 15 minutes. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
20. Emissions shall not exceed any of the following limits when fired on Fuel Oil #2: 19.2 lb NOx/1,000 gal (0.140 lb-NOx/MMBtu), 7.1 lb SOx/1,000 gal, 2.0 lb PM10/1,000 gal, 5.5 lb CO/1,000 gal, or 0.137 lb VOC/1,000 gal. All emissions measurements shall be averaged over a period of 15 minutes. [District Rules 2201 and 4306] Federally Enforceable Through Title V Permit
21. Ongoing compliance with the daily or annual NOx emissions limit is calculated as follows: Total pounds of NOx emissions = $1.1E-05 \times \text{cubic feet (Natural Gas)} + 0.0072 \times \text{gallon (Yellow Grease and Denatured Yellow Grease)} + 0.0192 \times \text{gallon (Fuel Oil \#2)}$. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
22. NOx emissions as a result of firing this boiler using any combination of Natural Gas, Yellow Grease, Denatured Yellow Grease, and Fuel Oil #2 shall not exceed either of the following: 27.8 lb NOx/day or 3,642 lb NOx/year. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
23. VOC emissions as a result of firing this boiler using any combination of Natural Gas, Yellow Grease, Denatured Yellow Grease, and Fuel Oil #2 shall not exceed 3.2 lb VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
24. SOx emissions as a result of firing this boiler using any combination of Natural Gas, Yellow Grease, Denatured Yellow Grease, and Fuel Oil #2 shall not exceed 10.3 lb SOx/day. [District Rule 2201] Federally Enforceable Through Title V Permit
25. CO emissions as a result of firing this boiler using any combination of Natural Gas, Yellow Grease, Denatured Yellow Grease, and Fuel Oil #2 shall not exceed 99.9 lb CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
26. PM10 emissions as a result of firing this boiler using any combination of Natural Gas, Yellow Grease, Denatured Yellow Grease, and Fuel Oil #2 shall not exceed 8.2 lb PM10/day. [District Rule 2201] Federally Enforceable Through Title V Permit
27. If the unit is fired on diesel fuel that is not supplier-certified 0.05% sulfur content or less, then the sulfur content of the fuel being fired in the unit shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520 and 40 CFR 60.42c(d), 40 CFR 60.44c(g), and 40 CFR 60.46c(d)] Federally Enforceable Through Title V Permit
28. If the unit is fired on diesel fuel that is not supplier-certified 0.05% sulfur content or less, the sulfur content of each fuel source shall be tested weekly, except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be semi-annually. [District Rule 2520 and 40 CFR 60.42c(d), 40 CFR 60.44c(g), and 40 CFR 60.46c(d)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

29. Operator shall maintain copies of fuel invoices and supplier certifications. [District Rule 2520 and 40 CFR 60.42c(d)(h), 40 CFR 60.44c(h), 40 CFR 60.46c(e), and 40 CFR 60.48c(f)] Federally Enforceable Through Title V Permit
30. Operator shall record all dates on which the unit is fired on any fuel other than PUC-regulated natural gas. [District Rule 2520] Federally Enforceable Through Title V Permit
31. Operator shall monitor and record for each unit the hhv and cumulative annual use of each fuel. [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
32. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
33. Operator shall ensure that all required source testing conforms to the compliance testing procedures described in District Rule 1081. [District Rule 1081 and Fresno County Rule 108.1] Federally Enforceable Through Title V Permit
34. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
35. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
36. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
37. Source testing to measure NOx and CO combustion emissions from this boiler while firing on denatured yellow grease shall be conducted within 60 days of initial firing on denatured yellow grease. [District Rules 2201, 4102, 4305 and 4306] Federally Enforceable Through Title V Permit
38. Source testing to measure natural gas combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
39. Source testing to measure yellow grease combustion NOx and CO emissions from this unit shall be performed within 60 days of the combined amount of yellow grease and denatured yellow grease usage exceeding 29,958 gallons during any rolling 12-month period unless compliance with yellow grease NOx and CO emissions has been demonstrated within 12 months prior to the date of the exceedance. After demonstrating compliance on two (2) consecutive source tests when the unit is fired on yellow grease, the unit shall be tested within 60 days of the combined amount of yellow grease and denatured yellow grease usage exceeding 29,958 gallons during any rolling 12-month period unless compliance with yellow grease NOx and CO emissions has been demonstrated within 36 months prior to the date of the exceedance. 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 the rolling 12-month period according to the requirements described above. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
40. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
41. Source testing to measure concentrations of oxides of nitrogen (as NO₂, ppmv) shall be conducted using EPA Method 7E or CARB Method 100; EPA Method 19 for NOx emission rate (lb/MMBtu). [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
42. Nitrogen oxide (NOx) emission concentrations in ppmv referenced at dry stack emissions shall be corrected to 3% O₂ and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
43. Source testing to measure concentrations of carbon monoxide (CO) shall be conducted using EPA Method 10 or CARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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44. Source testing to measure the stack gas oxygen shall be conducted using EPA Methods 3 or 3A, or CARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
45. Source testing to measure concentrations of oxides of sulfur (SO_x) as SO₂ shall be conducted using EPA Methods 6 or 8, or CARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
46. Source testing to measure concentrations of PM₁₀ shall be conducted using EPA Method 201 and 202, or EPA Method 201a and 202, or CARB Method 501 and 5. [District Rule 2201] Federally Enforceable Through Title V Permit
47. In lieu of performing a source test for PM₁₀, the results of the total particulate test may be used for compliance with the PM₁₀ emissions limit. If this option is used, then all of the particulate emissions will be considered to be PM₁₀. [District Rule 2201] Federally Enforceable Through Title V Permit
48. Source testing to measure concentrations of total particulate emissions shall be conducted using CARB Method 5. [District Rule 2201] Federally Enforceable Through Title V Permit
49. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
50. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
51. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
52. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
53. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x 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] Federally Enforceable Through Title V Permit
54. If the unit is fired on back-up fuel (i.e. diesel) for a period exceeding 48 cumulative hours in a calendar year, the permittee shall monitor and record the stack concentration of NO_x at least once during that year using an APCO approved portable NO_x analyzer. Monitoring for back-up fuel NO_x emissions shall not be required when the unit is operating on primary fuel, i.e. the unit need not be fired on back-up fuel solely to perform monitoring. [District Rule 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

55. Back-up fuel NO_x 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 Rule 4306] Federally Enforceable Through Title V Permit
56. The permittee shall maintain records of: (1) the date and time of back-up fuel NO_x measurements, (2) the measured back-up fuel NO_x concentration (in ppmv or lb/MMBtu) 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 Rule 4306] Federally Enforceable Through Title V Permit
57. The permittee shall maintain records of daily consumption of natural gas. [District Rules 2201 and 1070] Federally Enforceable Through Title V Permit
58. The permittee shall maintain records of dates the boiler operated on yellow grease or denatured yellow grease and the daily and annual amount of yellow grease and denatured yellow grease that was combusted in the boiler (in gallons). [District Rules 2201 and 1070] Federally Enforceable Through Title V Permit
59. The permittee shall maintain records of daily and annual amount of fuel oil that was combusted in the boiler (in gallons). [District Rules 2201 and 1070] Federally Enforceable Through Title V Permit
60. The permittee shall monitor and record the cumulative annual hours of operation when fired on fuel oil No. 2 during natural gas curtailment and testing. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
61. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4320] Federally Enforceable Through Title V Permit
62. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306] Federally Enforceable Through Title V Permit
63. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1081, 4201, 4301, and 4801. A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit
64. The requirements of 40 CFR 72.6(b) are not applicable because this is not an affected unit under the acid rain provisions. The requirements of 40 CFR 60.40c do not apply to this source because it is not used to produce electricity for sale. A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit
65. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rule 4305, Sec. 4.2, 5.1.1, 5.1.2., 5.4, 6.1.1, 6.2 (excepting 6.2.3), 6.3, 8.1 and Rule 4351 Sec 4.2, 5.2.2.1, 5.2.2.2, 6.1.1, 6.2 (excepting 6.2.3), 8.1. A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit

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

APPENDIX C
BACT Analysis

Top-Down BACT Analysis

C-72-13-0: 50.2 MMBtu/hr natural gas-fired boiler with SCR system

Note: The following project specific BACT analysis is based on a recent District project N-1183435 that was to install a new 30.3 MMBtu/hr natural gas-fired boiler (permit unit C-72-11-0). Since the new 50.2 MMBtu/hr natural gas-fired boiler proposed under this project is also natural gas fired and greater than 20 MMBtu/hr, most information from project C-1223013 is retained and updated only where necessary.

NOx:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

The following references were consulted to determine emission limits and control required to reduce NOx emissions for boilers rated above 20 MMBtu/hr:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD BACT clearinghouse
- Bay Area AQMD BACT clearinghouse
- Sacramento Metro AQMD BACT Clearinghouse

Note that SJVAPCD BACT clearinghouse was not consulted because the BACT requirements are out of date and are being revised at this time. When a boiler triggers BACT, a case-by-case determination is conducted and the results of that determination are considered BACT for that industry.

The following Rules were also consulted:

- South Coast AQMD Rule 1146
- Bay Area AQMD Regulation 7, Rule 9
- Sacramento Metro AQMD Rule 411
- SJVAPCD Rule 4320

A survey of source test results for units located in the SJVAPCD was also conducted. The purpose of the survey was to determine the emission levels that are currently being met. Note that results of limited units with different heat input rating were reviewed.

Survey of BACT Guidelines:

Since NOx and CO are related, this analysis will also include CO. The table below shows NOx and CO data.

Agency	Heat input rate (MMBtu/hr)	NOx (ppmvd @ 3% O2)	CO (ppmvd @ 3% O2)
EPA	The EPA RACT/BACT/LAER clearinghouse does not include general guidelines, only determinations done by individual agencies. The NOx and CO ranges are shown in the section below.		
	>20*	8 to 74 RBLC ID (8 ppm): MD-0042 RBLC ID (74 ppmv): TX-0501	49, 103 RBLC ID (49 ppm): MD-0042 RBLC ID (103 ppmv): TX-0501
	*Note that out of 59 units, 14 units indicate NOx level of less than or equal to 9 ppmvd @ 3% O2, and the remaining units are greater than 9 ppmvd NOx @ 3% O2.		
CARB	The CARB clearinghouse does not include general guidelines, only individual determinations done by individual districts. None of the determinations are more stringent than most stringent standards shown below so the CARB data will not be listed.		
SCAQMD	≥ 20 (Group II Units)	7	≤ 50 – firetube ≤ 100 – watertube
BAAQMD	≥ 50	--	50 – firetube 100 – watertube
SMAQMD*	At the time of this project, SMAQMD only has BACT guidelines for boilers with a heat input rating lower than 20 MMBtu/hr.		

Survey of Applicable Rules:

Since NOx and CO are related, this analysis will also include CO. The table below shows NOx and CO data.

Agency	Heat input rate (MMBtu/hr)	NOx (ppmvd @ 3% O2)	CO (ppmvd @ 3% O2)
SCAQMD Rule 1146	5 to < 75	7	≤ 50 – firetube ≤ 100 – watertube
BAAQMD Reg 9 Rule 7	≥ 20 load following	15	400
	≥ 20 to < 75	9	400
SMAQMD Rule 411	> 20	9	400
SJVAPCD Rule 4320	>20 and ≤ 75	2.5	400
EPA	40 CFR Part 60 Subparts Db does not contain NOx emission limits for the proposed boiler unit.		
CARB	No Rules		

Survey of Source Tests:

The following table summarizes source test results of boilers >20 MMBtu/hr with active valid Permits to Operate at similar facilities:

Facility/Permit #	Heat input rate (MMBtu/hr)	Technology in-use	Test date	Emissions (ppmvd @ 3% O ₂)	
				NO _x	CO
Hilmar Cheese Company (N-1275-30-3)	50.2	Low-NO _x burner with SCR	07/20/21	3.9	<1.0
			07/20/21	3.5	<1.0
JR Simplot Company (C-705-1-11)	71.4	Low-NO _x burner with SCR and FGR	12/07/21	1.35	<1.0
			12/07/21	1.35	<1.0
E&J Gallo Winery (C-447-1-13)	62.0	Low-NO _x burner with SCR and FGR	08/25/21	2.15	<1.0
			08/25/21	1.25	<1.0
E&J Gallo Winery (C-1344-7-2)	60.0	Low-NO_x burner with SCR and FGR	05/17/19	2.6	<1.0
			05/17/19	2.0	<1.0

From the review of the above data, the following level of emissions is considered achieved-in-practice for a boiler >20 MMBtu/hr:

NO_x: 2.5 ppmvd NO_x @ 3% O₂

Note that the above emission standard leaves about 28%¹ margin of compliance over the average tested value².

Technologically Feasible:

None

Alternate Basic Equipment:

None

Step 2 - Eliminate technologically infeasible options

There is no technologically infeasible option.

Step 3 - Rank remaining options by control effectiveness

1. 2.5 ppmvd NO_x @ 3% O₂ using SCR system or equivalent emission control equipment

Step 4 - Cost Effectiveness Analysis

There is no technically feasible option or alternative basic equipment listed in Step 3 (above). Therefore, no further discussion is required.

¹ (2.5 – 2.3)/2.3 = 0.09 or 9%

² Average tested value = (2.6 + 2.0)/2 = 2.3 ppmvd @ 3% O₂

Step 5 – Select BACT

BACT for the proposed boiler is to achieve 2.5 ppmvd @ 3% O₂ or less NO_x emissions during normal source operation. The applicant has proposed to comply with this standard; therefore, BACT requirements are satisfied.

PM10:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

The following references were consulted to determine emission limits and control required to reduce PM₁₀ emissions for boilers rated above 20 MMBtu/hr:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD BACT clearinghouse
- Bay Area AQMD BACT clearinghouse
- Sacramento Metro AQMD BACT Clearinghouse

Note that SJVAPCD BACT clearinghouse was not consulted because the BACT requirements are out of date and are being revised at this time. When a boiler triggers BACT, a case-by-case determination is conducted and the results of that determination are considered BACT for that industry.

The following Rules were also consulted:

- South Coast AQMD Rule 1146
- Bay Area AQMD Regulation 7, Rule 9
- Sacramento Metro AQMD Rule 411
- SJVAPCD Rule 4320

A survey of source test results for units located in the SJVAPCD was also conducted. The purpose of the survey was to determine the emission levels that are currently being met. Note that results of limited units with different heat input rating were reviewed.

Survey of BACT Guidelines:

Agency	Heat input rate (MMBtu/hr)	PM10 (lb/MMBtu)
EPA	The EPA RACT/BACT/LAER clearinghouse does not include general guidelines, only determinations done by individual agencies. The NOx and CO ranges are shown in the section below.	
	>20*	0.0018-0.02 RBLC ID (0.0018): MI-0412 RBLC ID (0.02): OH-0323
	*Units fired on natural gas and are not equipped with any post-combustion PM10 emission control equipment.	
CARB	The CARB clearinghouse does not include general guidelines, only individual determinations done by individual districts. None of the determinations are more stringent than most stringent standards shown below so the CARB data will not be listed.	
SCAQMD	≥ 20	Natural gas fuel

BAAQMD	≥ 50	Natural gas or treated refinery gas fue;
SMAQMD*	At the time of this project, SMAQMD only has BACT guidelines for boilers with a heat input rating lower than 20 MMBtu/hr.	

Survey of Applicable Rules:

Agency	Heat input rate (MMBtu/hr)	PM10 (lb/MMBtu)
SCAQMD Rule 1146	5 to < 75	None
BAAQMD Reg 9 Rule 7	≥ 20 load following	None
	≥ 20 to < 75	None
SMAQMD Rule 411	> 20	None
SJVAPCD Rule 4320	>20	None
EPA	40 CFR Part 60 Subparts Db does not contain NOx emission limits for the proposed boiler unit.	
CARB	No applicable rule	

Survey of Source Tests:

None of the boilers in the table below is tested for PM10 emissions.

Facility/Permit #	Heat input rate (MMBtu/hr)	Method to reduce PM10 emissions	Permitted Emissions (lb/MMBtu)
			PM10
Hilmar Cheese Company (N-1275-30-3)	76.93	PUC quality natural gas	0.0060 lb/MMBtu
JR Simplot Company (C-705-1-11)	48	PUC quality natural gas	0.0076 lb/MMBtu
E&J Gallo Winery (C-447-1-13)	60.6	PUC quality natural gas	0.0022 lb/MMBtu
E&J Gallo Winery (C-1344-7-2)	60.7	PUC quality natural gas	0.0076 lb/MMBtu

From the review of the above data, the following level of emissions is achieved-in- practice for a boiler >20 MMBtu/hr:

PM₁₀: Use of PUC quality natural gas fuel

Technologically Feasible:

None

Alternate Basic Equipment:

None

Step 2 - Eliminate technologically infeasible options

There is no technologically infeasible option.

Step 3 - Rank remaining options by control effectiveness

1. Use of PUC quality natural gas fuel

Step 4 - Cost Effectiveness Analysis

There is no technically feasible option or alternative basic equipment listed in Step 3 (above). Therefore, no further discussion is required.

Step 5 – Select BACT

BACT for the proposed boiler is to use PUC quality natural gas fuel. The applicant has proposed to use PUC quality natural gas. Therefore, BACT requirements are satisfied.

VOC:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

The following references were consulted to determine emission limits and control required to reduce VOC emissions for boilers rated above 20 MMBtu/hr:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD BACT clearinghouse
- Bay Area AQMD BACT clearinghouse
- Sacramento Metro AQMD BACT Clearinghouse

Note that SJVAPCD BACT clearinghouse was not consulted because the BACT requirements are out of date and are being revised at this time. When a boiler triggers BACT, a case-by-case determination is conducted and the results of that determination are considered BACT for that industry.

The following Rules were also consulted:

- South Coast AQMD Rule 1146
- Bay Area AQMD Regulation 7, Rule 9
- Sacramento Metro AQMD Rule 411
- SJVAPCD Rule 4320

A survey of source test results for units located in the SJVAPCD was also conducted. The purpose of the survey was to determine the emission levels that are currently being met. Note that results of limited units with different heat input rating were reviewed.

Survey of BACT Guidelines:

Agency	Heat input rate (MMBtu/hr)	VOC (ppmvd @ 3% O2)
EPA	The EPA RACT/BACT/LAER clearinghouse does not include general guidelines, only determinations done by individual agencies. The NOx and CO ranges are shown in the section below.	
	>20*	3.6 to 19 RBLC ID (3.6 ppm): PA-0291 RBLC ID (19 ppmv): MI-0412
	*Units fired on natural gas and are not equipped with any post-combustion VOC emission control equipment.	
CARB	The CARB clearinghouse does not include general guidelines, only individual determinations done by individual districts. None of the determinations are more stringent than most stringent standards shown below so the CARB data will not be listed.	
SCAQMD	≥ 20	None

BAAQMD	≥ 50	None
SMAQMD	At the time of this project, SMAQMD only has BACT guidelines for boilers with a heat input rating lower than 20 MMBtu/hr.	

Survey of Applicable Rules:

Agency	Heat input rate (MMBtu/hr)	VOC (lb/MMBtu)
SCAQMD Rule 1146	5 to < 75	None
BAAQMD Reg 9 Rule 7	≥ 20 load following	None
	≥ 20 to < 75	None
SMAQMD Rule 411	> 20	None
SJVAPCD Rule 4320	>20	None
EPA	40 CFR Part 60 Subparts Db does not contain VOC emission limits for the proposed boiler unit.	
CARB	No applicable rule	

Survey of Source Tests:

None of the boilers in the table below is tested for VOC emissions. The permitted emissions are summarized in the table.

Facility/Permit #	Heat input rate (MMBtu/hr)	Method to reduce PM10 emissions	Permitted Emissions
			VOC
Hilmar Cheese Company (N-1275-30-3)	50.2	PUC quality natural gas	0.0042 lb/MMBtu
JR Simplot Company (C-705-1-8)	71.4	PUC quality natural gas	0.0055 lb/MMBtu
E&J Gallo Winery (C-447-1-13)	62.0	PUC quality natural gas	0.0025 lb/MMBtu
E&J Gallo Winery (C-1344-7-2)	60.0	PUC quality natural gas	0.0055 lb/MMBtu

From the review of the above data, the following level of emissions is achieved-in- practice for a boiler >20 MMBtu/hr:

VOC: Use of PUC quality natural gas fuel

Technologically Feasible:

None

Alternate Basic Equipment:

None

Step 2 - Eliminate technologically infeasible options

The use of oxidation catalyst is removed from consideration since use of this emission control equipment will inadvertently reduce the boiler efficiency and will result in an increase in collateral NOx emissions.

Step 3 - Rank remaining options by control effectiveness

1. Use of PUC quality natural gas fuel

Step 4 - Cost Effectiveness Analysis

There is no technically feasible option or alternative basic equipment listed in Step 3 (above). Therefore, no further discussion is required.

Step 5 – Select BACT

BACT for the proposed boiler is to use PUC quality natural gas fuel. The applicant has proposed to use PUC quality natural gas. Therefore, BACT requirements are satisfied.

SO_x:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

The following references were consulted to determine emission limits and control required to reduce SO_x emissions for boilers rated above 20 MMBtu/hr:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD BACT clearinghouse
- Bay Area AQMD BACT clearinghouse
- Sacramento Metro AQMD BACT Clearinghouse

Note that SJVAPCD BACT clearinghouse was not consulted because the BACT requirements are out of date and are being revised at this time. When a boiler triggers BACT, a case-by-case determination is conducted and the results of that determination are considered BACT for that industry.

The following Rules were also consulted:

- South Coast AQMD Rule 1146
- Bay Area AQMD Regulation 7, Rule 9
- Sacramento Metro AQMD Rule 411
- SJVAPCD Rule 4320

A survey of source test results for units located in the SJVAPCD was also conducted. The purpose of the survey was to determine the emission levels that are currently being met. Note that results of limited units with different heat input rating were reviewed.

Survey of BACT Guidelines:

Agency	Heat input rate (MMBtu/hr)	SO _x (lb/MMBtu)
EPA	The EPA RACT/BACT/LAER clearinghouse does not include general guidelines, only determinations done by individual agencies. The NO _x and CO ranges are shown in the section below.	
	>20*	0.0006 to 0.003 RBLC ID (0.0006): AR-0173 RBLC ID (0.003): TX-0888
	*Units fired on natural gas and are not equipped with any post-combustion VOC emission control equipment.	
CARB	The CARB clearinghouse does not include general guidelines, only individual determinations done by individual districts. None of the determinations are more stringent than most stringent standards shown below so the CARB data will not be listed.	
SCAQMD	≥ 20	None
BAAQMD	≥ 50	None

SMAQMD	At the time of this project, SMAQMD only has BACT guidelines for boilers with a heat input rating lower than 20 MMBtu/hr.
---------------	---

Survey of Applicable Rules:

Agency	Heat input rate (MMBtu/hr)	SO _x (lb/MMBtu)
SCAQMD Rule 1146	5 to < 75	None
BAAQMD Reg 9 Rule 7	≥ 20 load following	None
	≥ 20 to < 75	None
SMAQMD Rule 411	> 20	None
SJVAPCD Rule 4320	>20	None
EPA	40 CFR Part 60 Subparts Db does not contain SO _x emission limits for the proposed boiler unit.	
CARB	No applicable rule	

Survey of Source Tests:

None of the boilers in the table below is tested for SO_x emissions. The permitted emissions are summarized in the table.

Facility/Permit #	Heat input rate (MMBtu/hr)	Method to reduce PM10 emissions	Permitted Emissions*
			SO _x
Hilmar Cheese Company (N-1275-30-3)	50.2	PUC quality natural gas	0.00285 lb/MMBtu
JR Simplot Company (C-705-1-11)	71.4	PUC quality natural gas	0.0006 lb/MMBtu
E&J Gallo Winery (C-447-1-13)	62.0	PUC quality natural gas	0.00285 lb/MMBtu
E&J Gallo Winery (C-1344-7-2)	60.0	PUC quality natural gas	0.00285 lb/MMBtu

* Due to most permitted emission units similar to the proposed unit in this project are ran in PUC quality natural gas, SO_x emissions are acquired from District Policy APR 1720.

From the review of the above data, the following level of emissions is achieved-in- practice for a boiler >20 MMBtu/hr:

SO_x: Use of PUC quality natural gas fuel

Technologically Feasible:

None

Alternate Basic Equipment:

None

Step 2 - Eliminate technologically infeasible options

The use of oxidation catalyst is removed from consideration since use of this emission control equipment will inadvertently reduce the boiler efficiency and will result in an increase in collateral SO_x emissions.

Step 3 - Rank remaining options by control effectiveness

2. Use of PUC quality natural gas fuel

Step 4 - Cost Effectiveness Analysis

There is no technically feasible option or alternative basic equipment listed in Step 3 (above). Therefore, no further discussion is required.

Step 5 – Select BACT

BACT for the proposed boiler is to use PUC quality natural gas fuel. The applicant has proposed to use PUC quality natural gas. Therefore, BACT requirements are satisfied.

APPENDIX D
HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District

Risk Management Review and Ambient Air Quality Analysis

To: Jesse Garcia – Permit Services
 From: Ye Vang – Technical Services
 Date: August 12, 2022
 Facility Name: BAKER COMMODITIES, INC
 Location: 16801 W JENSEN AVE, KERMAN
 Application #(s): C-72-13-0
 Project #: C-1223013

1. Summary

1.1 Risk Management Review (RMR)

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
13	1190	0.00	0.00	5.26E-08	No	Yes
Project Totals	1190	0.00	0.00	5.26E-08		
Facility Totals	>1	0.00	0.00	4.63E-07		

1.2 Ambient Air Quality Analysis (AAQA)

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass ²		Pass ²		
NO_x	Pass ²				Pass ²
SO_x	Pass ²	Pass ²		Pass ²	Pass ²
PM10				Pass ³	Pass ³
PM2.5				Pass ⁴	Pass ⁴

Notes:

- Results were taken from the attached AAQA Report.
- The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted below.
- Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 5 µg/m³ for the 24-hour average concentration and 1 µg/m³ for the annual concentration.
- Modeled PM2.5 concentrations were below the District SIL for non-fugitive sources of 1.2 µg/m³ for the 24-hour average concentration and 0.2 µg/m³ for the annual concentration.

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

Unit # 13-0

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

2. Project Description

Technical Services received a request on August 13, 2022 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -13-0: 50.2 MMBTU/HR HURST MODEL S500-E-X-1200-150 NATURAL GAS-FIRED BOILER EQUIPPED WITH A ROGUE COMBUSTION ULTRA LOW-NOX BURNER MODEL 1200 CORE-S

3. RMR Report

3.1 Analysis

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

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

Then, generally no further analysis is required.

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

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

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

- Natural gas usage rates for the proposed operation were provided by the Permit Engineer. These usage rates were speciated into toxic air contaminants using emission factors derived from the table, "Natural Gas Fired External Combustion Equipment", in the 2001 report, Ventura County Air Pollution Control District AB 2588 Combustion Emission Factors.

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

The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2011 from Mendota (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used

the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
13	1	NG Combustion	MMSCF	0.050	440

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
13	50.2 MMBTU NG Boiler	5.49	552	21.17	0.81	Vertical

4. AAQA Report

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

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

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

Monitoring Stations				
Pollutant	Station Name	County	City	Measurement Year
CO	Clovis-Villa	Fresno	Clovis	2018
NOx	Clovis-Villa	Fresno	Clovis	2018
PM10	Clovis-Villa	Fresno	Clovis	2018
PM2.5	Clovis-Villa	Fresno	Clovis	2018
SOx	Fresno - Garland	Fresno	Fresno	2018

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

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
13	1	0.15	0.14	1.86	0.15	0.15

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
13	1	1,319	1,253	16,271	1,319	1,319

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and meteorological data for 2007-2011 from Mendota (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
13	50.2 MMBTU NG Boiler	5.49	552	21.17	0.81	Vertical

5. Conclusion

5.1 RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. In addition, the cancer risk for each unit in this project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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

5.2 AAQA

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

6. Attachments

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

APPENDIX E
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:

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

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

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	329.75	0	329.75
SO _x	313.25	0	313.25
PM ₁₀	329.75	0	329.75
CO	4067.75	0	4067.75
VOC	461.75	0	461.75

APPENDIX F

Compliance Certification



San Joaquin Valley Air Pollution Control District

www.valleyair.org



Permit Application For:

ADMINISTRATIVE AMENDMENT MINOR MODIFICATION SIGNIFICANT MODIFICATION

1. PERMIT TO BE ISSUED TO: Baker Commodities, Inc	
2. MAILING ADDRESS: STREET/P.O. BOX: PO Box 416	
CITY: Kerman	STATE: CA 9-DIGIT ZIP CODE: 93630
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: STREET: 16801 Jensen Avenue CITY: Kerman SECTION: _____ TOWNSHIP: _____ RANGE: _____	INSTALLATION DATE: To be determined
4. GENERAL NATURE OF BUSINESS: Animal Rendering	
5. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary) To replace the current boiler unit (C-72-8-8) with a new boiler rated at 50.2 MMBtu/hr equipped with a 2.5 PPM Ultra-Low NOx burner.	
6. TYPE OR PRINT NAME OF APPLICANT: David Rocha	TITLE OF APPLICANT: Plant Manager
7. SIGNATURE OF APPLICANT: 	DATE: 7-18-22 PHONE #: (559) 846-9393 CELL PHONE #: (559) 283-1877 E-MAIL: DRocha@bakercommodities.com

FOR APCD USE ONLY:

DATE STAMP	FILING FEE RECEIVED: \$ _____ CHECK #: _____
	DATE PAID: _____
	PROJECT #: _____ FACILITY ID: _____

Northern Regional Office * 4800 Enterprise Way * Modesto, California 95356-8718 * (209) 557-6400 * FAX (209) 557-6475
 Central Regional Office * 1990 East Gettysburg Avenue * Fresno, California 93726-0244 * (559) 230-5900 * FAX (559) 230-6061
 Southern Regional Office * 34946 Flyover Court * Bakersfield, California 93308 * (661) 392-5500 * FAX (661) 392-5585



San Joaquin Valley Air Pollution Control District



TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

ADMINISTRATIVE AMENDMENT MINOR MODIFICATION SIGNIFICANT MODIFICATION

COMPANY NAME: Baker Commodities, Inc	FACILITY ID: C-72
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Baker Commodities, Inc	
3. Agent to the Owner: David Rocha	

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

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

7-18-22
Date

David Rocha

Name of Responsible Official (please print)

Plant Manager

Title of Responsible Official (please print)

APPENDIX G
April 2, 2019 Source Test Results for unit C-72-8

4.0 RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test program are presented in Table 4-1.

**TABLE 4-1
TEST RESULTS SUMMARY
BAKER COMMODITIES
KERMAN FACILITY, HURST BOILER, NATURAL GAS
APRIL 2, 2019**

Parameter	Units	Run #1	Run #2	Run #3	Average	Permit Limit
NO _x	ppmvd	8.35	8.38	8.40	8.37	---
	ppmvd @ 3% O ₂	8.21	8.27	8.20	8 <i>8.2</i>	9
	lb/MMBtu	0.0100	0.0100	0.010	0.010 <i>0.0100</i>	0.011
	lb/Hr	0.28	0.28	0.27	0.28 <i>0.277</i>	---
CO	ppmvd	74.78	68.03	62.92	68.58	---
	ppmvd @ 3% O ₂	73.57	67.17	61.46	67.40 ✓	175
	lb/MMBtu	0.054	0.050	0.045	0.050 <i>0.0498</i>	0.1295
	lb/Hr	1.52	1.37	1.25	1.38 ✓	---
O ₂	% vd	2.71	2.77	2.57	2.68 ✓	---
CO ₂	% vd	10.45	10.41	10.53	10.46 ✓	---
Fuel F-Factor (F _d)	DSCF/MMBtu	---	---	---	8,710 <i>8,578</i>	---
Fuel Calorific Value	Btu/Scf	---	---	---	1,050	---
Heat Input	MMBtu/Hr	27.96	27.55	27.55	27.69 ✓	---
Volume Flow	DSCFM (calculated)	4,663 <i>4594</i>	4,612 <i>4542</i>	4,562 <i>4492</i>	4,612 <i>4542</i>	---