



JAN 22 2018

Edwin Steven
Valley Milk LLC
400 N Washington Rd
Turlock, CA 95380

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-9149
Project Number: N-1172894

Dear Mr. Steven:

Enclosed for your review and comment is the District's analysis of Valley Milk LLC's application for an Authority to Construct for a new milk processing line, at 400 N Washington Rd, Turlock, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Tim Bush of Permit Services at (559) 230-5913.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:tb

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Milk Drying Operation with an Indirect Heat Transfer Process Heater

Facility Name: Valley Milk LLC
Mailing Address: 400 N Washington Rd
Turlock, CA 95380
Contact Person: Edwin Steven
Telephone: (575) 693-9238
E-Mail: esteven@valleymilkca.com
Application #: N-9149-9-0
Project #: N-1172894
Deemed Complete: September 7, 2017

Date: January 10, 2018
Engineer: Tim Bush
Lead Engineer: Jerry Sandhu

I. Proposal

Valley Milk LLC has requested an Authority to Construct (ATC) permit for the installation of a new milk drying operation with a 24.3 MMBtu/hr indirect heat transfer process heater served by a baghouse. Dried milk is sent through a mill, sifter, and storage tanks that are enclosed and vented through the proposed baghouse. This ATC permit is a replacement unit for the equipment under ATC permit N-9149-7-0. The applicant undersized the required burner in the milk dryer on ATC permit N-9149-7-0 and is now proposing a larger burner. Additionally, ATC permit N-9149-7-0 was a replacement unit for ATC permit N-9149-3-0. See Appendix F for copies of ATCs N-9149-3-0 and N-9149-7-0. Therefore, a permit condition on ATC permit N-9149-9-0 will be included to require the deletion of corresponding ATC permits N-9149-3-0 and N-9149-7-0 prior to or at the same time this replacement ATC permit is issued. The draft ATC is included in Appendix A.

- This Authority to Construct (ATC) cancels and supersedes ATCs N-9149-3-0 and N-9149-7-0. [District Rule 2201]

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4202	Particulate Matter – Emission Rate (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)

Rule 4304	Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters (10/19/95)
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 4309	Dryers, Dehydrators, and Ovens (12/15/05)
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 (8/21/03)
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 400 North Washington Road in Turlock, 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

Pasteurized and concentrated milk is pumped into two milk dryer feed tanks. From the dryer feed tanks the milk is pumped into the milk dryer where it is atomized into a fine mist and the water is rapidly evaporated by large volumes of hot air from the indirect-fired process heater. The hot air exits the milk dryer and is vented through the proposed baghouse as the milk powder falls to the bottom of the dryer into the fluid bed drying chamber. From the drying chamber the milk powder is further processed through the vibro-fluidizer where hot and cold air are used to dry, condition, and cool the milk powder to the designed temperature and moisture content. The exhaust air in the vibro-fluidizer is vented through the proposed baghouse and the milk powder is collected and dropped into a mill for particle size reduction and then into a sifter for particle sizing and separation. The properly size milk powder is conveyed into storage tanks awaiting packaging. The mill, sifter, and storage tanks are enclosed and also vented through the proposed baghouse.

V. Equipment Listing

N-9149-9-0: MILK DRYING OPERATION CONSISTING OF A MUNTER VARIMAX NATURAL GAS INDIRECT-FIRED PROCESS HEATER EQUIPPED WITH A 24.3 MMBTU/HR ALZETA CSB243-HA ULTRA-LOW NOX BURNER AND WITH AN INTEGRATED STATIC FLUID BED DRYING CHAMBER, A VIBRO-FLUIDIZER, A MILK POWDER MILL, A MILK POWDER SIFTER, ONE 500 CUBIC FOOT START-UP MILK POWDER STORAGE SILO, AND TWO 3,900 CUBIC FOOT (EACH) MILK POWDER STORAGE SILOS ALL SERVED BY A 65,600 SCFM GEA PROCESS ENGINEERING, INC MODEL HUDSON STYLE BAGHOUSE

VI. Emission Control Technology Evaluation

The natural gas-fired process heater will be equipped with an ultra-low NO_x burner capable of achieving NO_x and CO emissions of 5 ppmvd @ 3% O₂ and 150 ppmvd @ 3% O₂, respectively, and is fired on PUC-quality natural gas.

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

The fluid bed drying chamber, vibro-fluidizer, mill, sifter, and storage silos will be enclosed and vented through the proposed baghouse for particulate matter (PM) control. The proposed baghouse will control PM₁₀ emissions with an expected efficiency of at least 99.0% and is proposed to operate with a maximum emission concentration limit of 0.00675 gr/dscf.

Filtering Velocity Calculation for the GEA Process Engineering, Inc. Baghouse:

Maximum Air Flow: 65,600 cfm

Filter Area: 10,550 ft²

$$\text{Filtering Velocity} = 65,600 \text{ cfm} \div 10,550 \text{ ft}^2 = 6.2 \text{ fpm}$$

The filtering velocity is below the typical values found in the Air Pollution Engineering Manual (Reference from Air Pollution Engineering Manual, Air & Waste Management Association –1992 Table 5, page 128). Additionally, the filter media, air temperature, and material filtered are other designed parameters affecting baghouse performance. The baghouse serving the milk dryer has been specifically designed by the baghouse manufacturer for this operation. Therefore, the baghouse is expected to operate within the recommended design parameters.

The baghouse serving the milk drying operation will be equipped with a pressure differential gauge. Therefore, monitoring of the baghouse pressure drop across the filters will be required. The following permit conditions will be included in the ATC and PTO to ensure proper operation of the baghouse:

- The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the filter media. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
- When in operation, the differential pressure of the baghouse shall not be less than 1 inch water column nor greater than 10 inches water column. [District Rule 2201]
- Differential operating pressure shall be monitored and recorded on each day that the baghouse operates. [District Rule 2201]

- Replacement bags numbering at least 10% of the total number of bags in the baghouse shall be maintained on the premises. [District Rule 2201]
- Records of all maintenance of the baghouse, including all change outs of filter media, shall be maintained. [District Rules 1070 and 2201]

VII. General Calculations

A. Assumptions

- 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.
- NO_x, CO, VOC, PM₁₀, and SO_x will be emitted from the combustion of natural gas in the process heater and PM will be emitted from the drying, milling, sifting, conveying, and storage of the produced milk powder.
- The indirect process heater will be fired on PUC-regulated natural gas.
- Natural gas heating value of 1,000 Btu/scf (District Practice).
- F-Factor for Natural Gas of 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B).
- 100% of the particulate matter emitted from the baghouse will be PM₁₀.
- The baghouse will control 99% of the PM₁₀ emissions
- Maximum Daily Milk Powder Production Rate is 125.0 tons/day (Per applicant).

B. Emission Factors

For the proposed process heater, the emission factor (EF) for the combustion of natural gas for NO_x, CO, and VOC emissions will be based on the applicant's proposed emission rates. The EF for PM₁₀ when burning PUC quality natural gas is based on the emission factor from similar units per District practices. The EF for SO_x, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720.

$$\begin{aligned} \text{F Factor for Natural Gas:} & \quad 8,578 \text{ scf/MMBtu} \\ \text{Molar Specific Volume of Gas:} & \quad 379.5 \text{ ft}^3/\text{lb-mole} \\ \text{Molecular Weight for NO}_x: & \quad 46 \text{ lb/lb-mole} \\ \text{Molecular Weight for CO:} & \quad 28 \text{ lb/lb-mole} \\ \text{Molecular Weight for VOC:} & \quad 16 \text{ lb/lb-mole} \\ \text{PE}_{2\text{NO}_x, \text{CO}, \text{ \& VOC}} & = \text{Heat Input (MMBtu/day, MMBtu/yr)} \\ & \quad \times \text{Emission Concentration} \times 10^{-6} \text{ (ppmv)} \\ & \quad \times \text{Molecular Weight (lb/lb-mole)} \times 8,578 \text{ scf/MMBtu} \\ & \quad \times 1 \text{ lb-mole}/379.5 \text{ ft}^3 \times [20.95/(20.95 - \text{O}_2\%)] \end{aligned}$$

The EFs are summarized in the following table:

Emission Factors (EF)		
Pollutant	EF _{Process Heater}	Source
NOx	5.0 ppmvd @ 3% O ₂ (0.0061 lb/MMBtu)	Applicant's Proposal
SOx	0.00285 lb/MMBtu	District Policy APR-1720
PM ₁₀	0.003 lb/MMBtu	District Practice
CO	150 ppmvd @ 3% O ₂ (0.1108 lb/MMBtu)	Applicant's Proposal
VOC	13 ppmvd @ 3% O ₂ (as CH ₄) (0.0055 lb/MMBtu)	Applicant's Proposal

For the proposed baghouse serving the milk powder drying, milling, sifting, conveying, and storage equipment, the applicant is proposing to utilize a PM₁₀ emission concentration limit of 0.00675 gr/dscf and the corresponding baghouse blower exhaust flow rate of 65,600 scfm.

$$EF_{PM10/Baghouse} = 0.00675 \text{ gr/dscf}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project Potential to Emit (PE2)

Emissions due to the combustion of natural gas from the Process Heater:

Emissions from the combustion of natural gas in the proposed process heater is based on the worst-case of operating 24 hours/day and 8,760 hours/year at a heat input rate of 24.3 MMBtu/hr. Therefore:

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

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

Daily PE2				
Pollutant	EF ₂ (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NOx	0.0061	24.3	24	3.6
SOx	0.00285	24.3	24	1.7
PM ₁₀	0.003	24.3	24	1.7
CO	0.1108	24.3	24	64.6
VOC	0.0055	24.3	24	3.2

Annual PE2				
Pollutant	EF ₂ (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NOx	0.0061	24.3	8,760	1,298
SOx	0.00285	24.3	8,760	607
PM ₁₀	0.003	24.3	8,760	639
CO	0.1108	24.3	8,760	23,586
VOC	0.0055	24.3	8,760	1,171

PM₁₀ Emissions from Dry Material Handling:

PM₁₀ emissions from the dry material handling will be controlled by the proposed baghouse based on a baghouse emission concentration of 0.00675 gr/dscf and exhaust flow rate of 65,600 scfm operating at 1,440 min/day (24 hr/day). The facility is also proposing to limit the facility-wide PM₁₀ emissions to not exceed 29,000 lb/year. The PM₁₀ emissions are calculated as follows:

$$PE_{2PM_{10}/Dry\ Material\ Handling} = \text{Operating Time (min/day or min/year)} \\ \times EF_{PM_{10}/Baghouse} \times 65,600\ scfm \times 1\ lb/7,000\ gr$$

Dry Material Handling			
Pollutant	Emission Factor (EF _{Dry Material Handling})	Daily PE2 (lb/day)	Annual PE2 (lb/year)
PM ₁₀	0.00675 gr/dscf	91.1	29,000 (SLC)

Total Daily and Annual PE2:

The total daily and annual emissions are the combined total from the combustion of natural gas in the process heater and emissions from the equipment served by the proposed baghouse. Therefore:

$$\text{Daily PE}_{Total} = \text{Daily PE}_{Process\ heater} + \text{Daily PE}_{PM_{10}/Dry\ Material\ Handling}$$

$$\text{Annual PE}_{Total} = \text{Annual PE}_{Process\ heater} + \text{Annual PE}_{PM_{10}/Dry\ Material\ Handling}$$

Total Daily and Annual PE						
Pollutant	PE _{Natural Gas}		PE _{Dry Material Handling}		PE _{2Total}	
	lb/day	lb/year	lb/day	lb/year	lb/day	lb/year
NOx	3.6	1,298	0	0	3.6	1,298
SOx	1.7	607	0	0	1.7	607
PM ₁₀	1.7	639	91.1	29,000 (SLC)	92.8	29,000 (SLC)
CO	64.6	23,586	0	0	64.6	23,586
VOC	3.2	1,171	0	0	3.2	1,171

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.

SSPE1 (lb/year) ⁽¹⁾					
Permit No.	NOx	SOx	PM ₁₀	CO	VOC
N-9149-1-0 (ATC Permit) ⁽²⁾	0	0	0	0	0
N-9149-2-0 (ATC Permit) ⁽²⁾	0	0	0	0	0
N-9149-3-0 (ATC Permit) ⁽²⁾	0	0	0	0	0
N-9149-4-0 (ATC Permit) ⁽²⁾	0	0	0	0	0
N-9149-5-0 (ATC Permit)	1,747	820	29,000 ⁽³⁾	10,632	1,580
N-9149-6-0 (ATC Permit)	1,747	820		10,632	1,580
N-9149-7-0 (ATC Permit)	1,052	494		19,218	952
N-9149-8-0 (ATC Permit)	0	0		0	0
Total	4,546	2,134		29,000	40,482

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 No.	NOx	SOx	PM ₁₀	CO	VOC
N-9149-1-0 (ATC Permit)	0	0	0	0	0
N-9149-2-0 (ATC Permit)	0	0	0	0	0
N-9149-4-0 (ATC Permit)	0	0	0	0	0
N-9149-5-0 (ATC Permit)	1,747	820	29,000 ⁽⁴⁾	10,632	1,580
N-9149-6-0 (ATC Permit)	1,747	820		10,632	1,580
N-9149-8-0 (ATC Permit)	0	0		0	0
N-9149-9-0 (ATC Permit)	1,298	607		23,586	1,171
Total	4,792	2,247		29,000	44,850

¹ Unless otherwise noted, the annual PE for this facility was obtained from project #N-1163349.

² These permit units will be deleted prior to or at the same time ATC permits N-9149-5-0 thru '8-0 are implemented; therefore, the emissions from this unit will be set equal to zero.

³ ATC Permits N-9149-5-0 thru '8-0 will be limited by a facility-wide PM₁₀ emissions limit (SLC) of 29,000 lb/year.

⁴ ATC Permits N-9149-5-0 thru '9-0 will be limited by a facility-wide PM₁₀ emissions limit (SLC) of 29,000 lb/year.

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
SSPE1	4,546	2,134	29,000	29,000	40,482	4,112
SSPE2	4,792	2,247	29,000	29,000	44,850	4,331
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(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	2.3	2.1	1.1	20.2	14.5	14.5
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

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

7. SB 288 Major Modification

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

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

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

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification.

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

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

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

I. Project Emissions Increase - New Major Source Determination

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

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

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Total PE from New and Modified Units	0.6	0.6	0.3	11.8	14.5	14.5
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

The 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 E.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an 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

New Emissions Unit BACT Applicability (Process Heater)				
Pollutant	Daily PE2 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	3.6	> 2.0	n/a	Yes
SO _x	1.7	> 2.0	n/a	No
PM ₁₀	1.7	> 2.0	n/a	No
CO	64.6	> 2.0 and SSPE2 ≥ 200,000 lb/year	44,850	No
VOC	3.2	> 2.0	n/a	Yes

As determined in the table above, BACT is triggered for NO_x and VOC emissions from the process heater.

New Emissions Unit BACT Applicability (Dry Material Handling)				
Pollutant	Daily PE2 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	0	> 2.0	n/a	No
SO _x	0	> 2.0	n/a	No
PM ₁₀	91.1	> 2.0	n/a	Yes
CO	0	> 2.0 and SSPE2 ≥ 200,000 lb/year	44,850	No
VOC	0	> 2.0	n/a	No

As determined in the table above, BACT is triggered for PM₁₀ emissions from the dry material handling operation.

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

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

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

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

d. SB 288/Federal Major Modification

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

2. BACT Guideline

Process Heater:

There is no current BACT guideline for this source category. Therefore, a project specific BACT analysis will be performed for this process heater.

Dry Material Handling:

The District's current BACT Clearinghouse Guideline 8.4.3, covers dry material handling operations (See Appendix B), which applies to the milk drying, milling, sifting, conveying, and storage processes. Therefore, relevant information will be cited from the referenced BACT Guideline without further analysis.

3. Top-Down BACT Analysis

The process heater serving the milk dryer triggers BACT for NO_x and VOC emissions. Pursuant to the top-down BACT analysis in Appendix C of this document, BACT is satisfied with the following control methods:

NO_x: 5.0 ppmvd @ 3% O₂ (or less).
VOC: Use of PUC-Quality Natural Gas Fuel.

The applicant is proposing the above control methods; therefore BACT requirements are satisfied for the proposed process heater.

The dry material handling operation triggers BACT for PM₁₀ emissions. Pursuant to the top-down BACT analysis in Appendix C of this document, BACT is satisfied with the following control method:

PM₁₀: Processing equipment all enclosed and vented to a fabric filter baghouse, or equivalent (99% or greater control efficiency).

The applicant is proposing the above control method; therefore BACT requirements are satisfied for the proposed milk drying, milling, sifting, conveying, and storage operations.

B. Offsets

1. Offset Applicability

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	PM₁₀	CO	VOC
SSPE2	4,792	2,247	29,000	44,850	4,331
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed,
- 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

New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

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

b. PE > 100 lb/day

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	4,546	4,792	20,000 lb/year	No
SO _x	2,134	2,247	54,750 lb/year	No
PM ₁₀	29,000	29,000	29,200 lb/year	No
CO	40,482	44,850	200,000 lb/year	No
VOC	4,112	4,331	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	4,792	4,546	246	20,000 lb/year	No
SO _x	2,247	2,134	113	20,000 lb/year	No
PM ₁₀	29,000	29,000	0	20,000 lb/year	Yes*
CO	44,850	40,482	4,368	20,000 lb/year	Yes*
VOC	4,331	4,112	219	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year.

*The ATC permits previously issued under projects #N-1151582 and N-1163349 were never installed and ATC permit N-9149-7-0 is being replaced by the ATC permit under this project. As seen above, annual CO emissions for ATC N-9149-9-0 are greater than 20,000 lb/year and the unit is part of the SLC with PM₁₀ emissions of 29,000 lb/year. Therefore, therefore public noticing for SSIPE purposes will be performed.

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for PM₁₀ and CO emissions for an SSIPE greater than 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

For the proposed natural gas fired process heater, the DELs will be based on the maximum process heater fuel combustion rate and emission factors. For the milk drying, milling, sifting, conveying, and storage operations, the DELs will be based on the maximum quantity of milk powder produced and emission rate in pounds emitted per ton of milk powder produced. The following conditions will be placed on the ATC and PTO to enforce the requirements of this section:

Proposed Rule 2201 (DEL) Conditions:

- {Modified 3200} Emissions from combustion of natural gas in the process heater shall not exceed any of the following limits: 5 ppmvd NO_x @ 3% O₂ or 0.0061 lb-NO_x/MMBtu (referenced as NO₂), 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 150 ppmvd CO @ 3% O₂ or 0.1108 lb-CO/MMBtu, or 13 ppmvd VOC @ 3% O₂ or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
- {4355} The unit shall only be fired on PUC-regulated natural gas. [District Rules 2201 and 4320]

- The quantity of milk powder produced shall not exceed 125 tons in any single day. [District Rule 2201]
- PM₁₀ emissions from the baghouse serving the milk powder production equipment shall not exceed 0.729 pounds per ton of milk powder produced⁵. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Process Heater:

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

Milk Drying, Milling, Sifting, Conveying, and Storage:

According to District Policy APR 1705, non-combustion equipment served by a baghouse/dust collector or cyclone with expected PM₁₀ emissions of 30 pounds per day or greater shall be source tested upon initial start-up. Units with PM₁₀ emissions in excess of 70 pounds per day should also be tested on an annual basis. Pursuant to Section VII.C.2. of this document, the PM₁₀ emissions from the baghouse serving the milk drying, milling, sifting, conveying, and storage equipment will exceed 70 pounds per day. Therefore, initial startup and annual source testing of the proposed baghouse will be required. The following permit conditions will be included on the ATC permit to enforce the source testing requirements:

- Source testing to measure PM₁₀ emissions from the exhaust of the baghouse serving the milk drying operation shall be conducted within 60 days of initial start-up and annually thereafter. [District Rule 2201]

2. Monitoring

Process Heater:

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

⁵ DEL for Milk Powder Processing Baghouse (PM10) = 91.1 lb-PM10/day ÷ 125 tons Milk Powder Produced = 0.729 lb-PM10/ton of milk powder produced

Milk Drying, Milling, Sifting, Conveying, and Storage:

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Process Heater:

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

Milk Drying, Milling, Sifting, Conveying, and Storage:

The following recordkeeping requirements will also be included in the ATC and PTO to verify compliance with the daily emission limits:

- The permittee shall maintain a daily record of the total quantity of dried milk produced (in tons per day). [District Rule 2201]
- The permittee shall maintain a rolling 12-consecutive month total of the facility-wide PM₁₀ emissions (in pounds). The rolling 12-consecutive month total shall be updated at least once each month. [District Rules 1070 and 2201]
- All records shall be maintained and retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall 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}.

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

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards (NSPS)

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

40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or reconstruction). The proposed 24.3 MMBtu/ process heater is within the heat input range; therefore, this subpart applies to this emission unit.

60.42c – Standards for Sulfur Dioxide

Since coal will not be combusted by the process heater, the requirements of this section are not applicable.

60.43c – Standards for Particulate Matter

The process heater will not be fired on coal, mixtures of coal with other fuels, wood, mixtures of wood with other fuels, or oil; therefore the process heater is not subject to the requirements of this section.

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

Since the process heater in this project is not subject to the sulfur dioxide requirements of this subpart, testing to demonstrate compliance is not required.

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

Since the process heater in this project is not subject to the particulate matter requirements of this subpart, testing to demonstrate compliance is not required.

60.46c – Emission Monitoring for Sulfur Dioxide

Since the process heater in this project is not subject to the sulfur dioxide requirements of this subpart, no monitoring is required.

60.47c – Emission Monitoring for Particulate Matter

Since the process heater in this project is not subject to the particulate matter requirements of this subpart, no monitoring is required.

60.48c – Reporting and Recordingkeeping Requirements

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

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

The design heat input capacity and type of fuel combusted at the facility will be listed on each 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 process heater is not subject to §60.42c or §40.43c.

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

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

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

This requirement is not applicable since the process heater 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 amounts of each fuel combusted during each day unless an applicable alternative is provided per Sections 60.48(g)(2) or 60.48(g)(3). Section 60.48(g) (2), which allows monthly records, applies because only natural gas will be burned. Therefore, monthly fuel records will be required. The following conditions will be listed on the ATC permit and PTO:

- 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. [40 CFR 60.48 (c)(g)]
- The permittee shall maintain monthly records of the natural gas combusted by this unit. [40 CFR 60.48c (g)(2)]

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 Rules 4306 and 4320 are more stringent and requires that records be kept for five years. Therefore, compliance is expected with this section.

Compliance with the requirements of this Rule is expected.

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

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

The requirements of 40 CFR Part 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters).

The District has not been delegated the authority to implement NSPS regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permit(s).

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). Opacity is expected to be less than 20% provided that the equipment is maintained and operated properly. The following condition will be listed on each ATC and PTO to ensure compliance with the visible emission requirement:

- {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]

Per District Policy SSP 1005, the visible emissions from a baghouse/dust collector shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in any one hour. If the equipment is properly maintained this requirement should not be exceeded.

The following condition will be listed on the ATC to ensure compliance with this visible emission requirement.

- Visible emissions from the exhaust of the baghouse shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rule 2201]

Rule 4102 Nuisance

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix D), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District’s Risk Management Policy is expected.

The prioritization score for this project is shown below:

RMR Summary						
Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required?	Special Permit Requirements?
Unit 9-0 (Milk Drying Operation)	0.16 ¹	N/A	N/A	N/A	No	Yes
Project Totals	0.16 ¹	N/A	N/A	N/A		
Facility Totals	0.74	N/A	N/A	N/A		

¹The project passed on prioritization with a score of less than 1; therefore, no further analysis was required.

The following conditions will be added the ATC to ensure compliance:

- The process heater exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (a flapper type is acceptable), roof overhang, or any other obstruction. [District Rule 4102]

- The height of the process heater exhaust stack from the ground shall be at least 118 feet. [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.

Process Heater

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
 PM10 Emission Factor: 0.003 lb-PM10/MMBtu
 Percentage of PM as PM10 in Exhaust: 100%
 Exhaust Oxygen (O₂) Concentration: 3%

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

$$GL = \left(\frac{0.003 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.002 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Since 0.002 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected.

Dry Material Handling Operation

The dry material handling operation will be served by a baghouse with a proposed particulate matter (PM) emission rate concentration of 0.00675 gr/dscfm, which is less than this rule required PM emission rate concentration of 0.1 gr/dscf. Therefore, as long as the equipment is properly maintained and operated, compliance with District Rule 4201 requirements is expected.

As shown above compliance with District Rule 4201 requirements is expected for these permit units. The following condition will be listed on each ATC permit and PTO to ensure compliance:

Therefore, compliance with District Rule 4201 requirements is expected and a permit condition will be listed on the permit as follows:

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

Rule 4202 Particulate Matter Emission Rate

The purpose of this rule is to limit particulate matter emissions by establishing allowable emission rates. Per section 4.1, particulate matter emissions from any source operation shall not exceed the allowable hourly emission rate as calculated using the following applicable formulas:

$$E_{Max} = 3.59 \times P^{0.62} \text{ - if } P \leq 30 \text{ tons/hr}$$

$$E_{Max} = 17.31 \times P^{0.16} \text{ - if } P > 30 \text{ tons/hr}$$

Where, E_{Max} = Emissions in lb/hr
 P = Process weight rate in tons/hr

$$P = 125 \text{ tons/day} \div 24 \text{ hrs/day}$$

$$= 5.21 \text{ tons/hr}$$

Since the process rate for this unit is less than 30 tons/hr, the formula for the maximum allowable hourly emission rate is:

$$E_{Max} = 3.59 P^{0.62}$$

$$E_{Max} = 3.59 \times 5.21^{0.62}$$

$$= 10.0 \text{ lb-PM/hr}$$

Based on the assumption that 100% of the PM is PM10.

$$E_{Proposed} = 91.1 \text{ lb-PM}_{10}/\text{day} \div (1.0 \text{ lb-PM}_{10}/\text{lb-PM} \times 24 \text{ hr/day})$$

$$= 3.8 \text{ lb-PM/hr}$$

Since $E_{Proposed} < E_{Max}$, compliance with this rule is expected.

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.

District Rule 4301 Limits			
Pollutant	NO ₂	Total PM	SO ₂
Process Heater (lb/hr)	0.15	0.07	0.07
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

Rule 4304 Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters

Pursuant to District Rules 4305 and 4306, Section 6.3.1, the process heater is not required to tune since it follows a District approved Alternate Monitoring scheme where the applicable emission limits are periodically monitored. Therefore, the unit is not subject to this rule.

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

The subject unit is subject to Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2*.

In addition, the unit is also subject to District Rule 4320.

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

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

In addition, the unit is also subject to District Rule 4320.

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

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

Rule 4309 Dryers, Dehydrators, and Ovens

The purpose of this rule is to limit emissions of oxides of nitrogen (NO_x) and carbon monoxide (CO) from dryers, dehydrators, and ovens. This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater.

Section 3.10 of this rule defines a dryer as a device in which material is dried or cured in direct contact with the products of combustion.

The proposed milk drying operation is served by a 24.3 MMBtu/hr natural gas indirect-fired process heater and is not subject to the requirements of this rule. Therefore, further discussion is required.

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

Pursuant to Section 2.0 of District Rule 4320, the process heater is subject to District Rule 4320. The following table details compliance with the requirements of this rule for these boilers and process heater.

Section 5.2 NO_x and CO Emission Limits

Section 5.2, NO_x and CO emission limits: The proposed process heater is subject to the emission limits listed in Table 1, Category B. All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.0 percent (%) by volume stack gas oxygen.

District Rule 4320 Emissions Limits		
Category	NO _x Limit	CO
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	400 ppmv
	b) Enhanced Schedule 5 ppmvd or 0.0062 lb/MMBtu	

The applicant has proposed to install a process heater with an ultra-low NO_x burner to achieve a NO_x emissions limit of 5.0 ppmv and a CO emissions limit of 150 ppmv. The proposed NO_x and CO emission limits will meet the requirements of Section 5.2.

The following conditions will be included on the permit:

- {3200} Emissions from combustion of natural gas in the process heater shall not exceed any of the following limits: 5 ppmvd NO_x @ 3% O₂ or 0.0061 lb-NO_x/MMBtu (referenced as NO₂), 0.00285 lb-SO_x/MMBtu, 0.003 lb-PM₁₀/MMBtu, 150 ppmvd CO @ 3% O₂ or 0.1108 lb-CO/MMBtu, or 13 ppmvd VOC @ 3% O₂ or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]