

May 4, 2022

Michael Oliver  
Central Valley Meat Co.  
10431 8 ¾ Ave  
Hanford, CA 93230

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Facility Number: C-2282**  
**Project Number: C-1210060**

Dear Mr. Oliver:

Enclosed for your review and comment is the District's analysis of Central Valley Meat Co.'s application for an Authority to Construct for the construction of a new rendering operation with an emission/odor control system consisting of a venturi/packed bed scrubber system followed by a regenerative thermal oxidizer (RTO) and room air scrubbers, the installation of four meat and bone meal (MBM) storage silos, and the installation of four 61.991 MMBtu/hr natural gas-fired boilers with selective catalytic reduction (SCR), at 10431 8 ¾ Ave, Hanford, CA.

The notice of preliminary decision for this project has been posted on the District's website ([www.valleyair.org](http://www.valleyair.org)). 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. Ramon Norman of Permit Services at (559) 230-5909.

Sincerely,



Brian Clements  
Director of Permit Services

BC:rn

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

**Samir Sheikh**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
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Bakersfield, CA 93308-9725  
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# San Joaquin Valley Air Pollution Control District Authority to Construct Application Review

## New Meat Rendering Operation

Facility Name: Central Valley Meat Co. Date: April 21, 2022  
Mailing Address: 10431 8 ¾ Ave Engineer: Ramon Norman  
Hanford, CA 93230 Lead Engineer: Dustin Brown  
1<sup>st</sup> Contact Person: Michael Oliver, Harris Ranch Beef Company  
Telephone: (559) 618-1738 E-Mail: [Michael.Oliver@harrisranchbeef.com](mailto:Michael.Oliver@harrisranchbeef.com)  
2<sup>nd</sup> Contact Person: Julie Mitchell, Yorke Engineering, LLC  
Telephone: (619) 375-9142 E-Mail: [JMitchell@YorkeEngr.com](mailto:JMitchell@YorkeEngr.com)  
Application #s: C-2282-3-2, -5-2, -7-2, -9-1, -10-1, -11-1, -12-0, -13-0, -14-0, -15-0, -16-0,  
& -17-0  
Project #: C-1210060  
Deemed Complete: May 12, 2021

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### I. Proposal

The primary business of Central Valley Meat Co. is the slaughter and processing of cattle to produce beef products. Central Valley Meat Co. has requested Authority to Construct (ATC) permits for a new meat rendering facility that will be adjacent to Central Valley Meat Co.'s existing beef processing facility, located near Hanford, CA. The proposed facility will be designed to serve the rendering needs of Central Valley Meat Co. and Harris Ranch Beef Company near Selma, CA, as well as other regional beef processing facilities. The rendering plant will be designed as a single species, all-beef facility, with all required certifications for a pet food-grade rendering facility. The proposed facility will consist of an enclosed meat rendering facility, along with support facilities such as a scale office, maintenance garage, employee welfare, and wastewater lagoons.

The proposed rendering facility will include:

- One meat rendering operation – including a raw material receiving system consisting of raw material bins, two Dupps Model 440U Supercookors and ancillary processing equipment, with emissions controlled by an emission/odor control system consisting of a two-stage venturi/packed bed scrubber system and a 7.4 MMBtu/hr regenerative thermal oxidizer (RTO) in series, a solid processing emission/odor control system consisting of a cyclone and two-stage venturi/packed bed scrubber system in series, and two 100,000 cubic feet per minute (cfm) packed bed scrubbers for control of odors and fugitive emissions from the cooker room and unloading area room air (ATC C-2282-12-0)

- Permit-exempt beef fat/tallow storage tanks
- Protein storage and Meat and Bone Meal (MBM) loadout operation including four storage silos, each served by a bin vent filter (ATC C-2282-13-0)
- Four new 61.991 MMBtu/hr (1,500 hp) natural gas-fired boilers, each with flue gas recirculation (FGR) and selective catalytic reduction (SCR) system (ATCs C-2282-14-0, -15-0, -16-0, & -17-0)

In addition, Central Valley Meat Co. has requested to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and VOC, which will require modification of the facility's permits for an existing 1,919 bhp emergency standby IC engine (Permit C-2282-3-0), four 19.95 MMBtu/hr natural gas-fired boilers (Permits C-2282-5-1, -7-1, -9-0, & -10-0), and one 250 bhp emergency IC engine powering a firewater pump (Permit C-2282-11-0).

The applicant indicates that the proposed rendering operation will process a maximum of 2,333 tons of raw material per day and 425,730 tons of raw material per year, and that the proposed protein storage and meat and bone meal (MBM) loadout operation will handle a maximum of 663 tons of MBM per day and 120,989 tons of MBM per year.

Current Permits C-2282-3-0, -5-1, -7-1, -9-0, -10-0, and -11-0 are included in Appendix A. Proposed draft ATC permits C-2282-3-2, -5-2, -7-2, -9-1, -10-1, -11-1, -12-0, -13-0, -14-0, -15-0, -16-0, and -17-0 are included in Appendix B.

## II. Applicable Rules

Rule 1070	Inspections (12/17/92)
Rule 1100	Equipment Breakdown (12/17/92)
Rule 2010	Permits Required (12/17/92)
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 4104	Reduction of Animal Matter (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)
Rule 4306	Boilers, Steam Generators, and Process Heaters – Phase 3 (12/17/20)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12/17/20)
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03)
Rule 4701	Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702	Internal Combustion Engines (8/19/21)
Rule 4801	Sulfur Compounds (12/17/92)

40 CFR Part 60 Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units  
40 CFR Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines  
40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines  
40 CFR Part 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters  
40 CFR Part 63 Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
California Code of Regulations (CCR), Title 17, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### III. Project Location

The facility is located at 10431 8 ¾ Ave, Hanford, 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

Central Valley Meat Co. operates an existing beef processing facility on the northern portion of the facility's site. Central Valley Meat Co. is proposing to add a new meat rendering facility to the existing meat processing facility. The new Central Valley Meat Co. rendering facility is intended to primarily serve the needs of its two affiliated beef processing plants (Central Valley Meat Co. and Harris Ranch Beef Company); however, the facility will be sized to also accept raw material from other regional beef suppliers.

#### ATC C-2282-3-2: Emergency Standby IC Engine

The existing beef processing facility includes one 1,919 bhp diesel-fired emergency standby IC engine that powers an electrical generator (Permit C-2282-3-0). The emergency standby IC engine provides electric power to the facility during unscheduled power outages and other emergencies. Other than emergency operation, the engine is permitted to operate up to 20 hours per year for maintenance and testing purposes.

As discussed above, the existing emergency standby IC engine will be modified as part of this project to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and 19,999 lb/year of VOC, as requested by Central Valley Meat Co.

### ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas-Fired Boilers

The existing beef processing facility includes four 19.95 MMBtu/hr natural gas-fired boilers that are used to provide heat, steam, and hot water for the operations at the beef processing facility (Permits C-2282-5-1, -7-1, -9-0, & -10-0).

As discussed above, the existing 19.95 MMBtu/hr natural gas-fired boilers will be modified as part of this project to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and 19,999 lb/year of VOC, as requested by Central Valley Meat Co.

### ATC C-2282-11-1: Emergency IC Engine Powering a Firewater Pump

The existing beef processing facility includes one 250 bhp diesel-fired emergency IC engine that powers a firewater pump (Permit C-2282-11-0) that is used for fire protection. Other than emergency operation, the engine is permitted to operate the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", but no more than a total of 100 hours per calendar year for all maintenance, testing, and required regulatory purposes.

As discussed above, the existing emergency IC engine powering a firewater pump will be modified as part of this project to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and 19,999 lb/year of VOC, as requested by Central Valley Meat Co.

### ATC C-2282-12-0: Rendering Operation

The proposed meat rendering operation (ATC C-2282-12-0), including two Dupps Model 440U Supercookor cookers, a condenser system, six screw presses, multiple screens, two centrifuges, and fat surge tanks, will process raw rendering materials, which will include offal/viscera, fat, bone, and meat scraps, from the operations at Central Valley Meat Co. and Harris Ranch Beef company and from other regional beef processing facilities that will deliver the rendering materials to the rendering operation. The raw rendering materials will be received in an enclosed unloading room via truck trailers. The raw material will be dumped directly into receiving pits, where the raw material will be conveyed through an enclosed screw conveyor, passing through a magnet to remove metal, and into one of the two pre-crushers, where the raw materials will be broken down into smaller pieces.

The material will then be fed into one of the two cookers, along with some recycled fat and oversized material from the drainer discharge. The cookers will be heated with the steam from the proposed boilers to remove excess moisture from the materials and provide partial separation of the fat (liquid fraction) from the protein (solid fraction). In the cooker, the materials will be continuously mixed and cooked. The vapor from the cooking process will be vented to a shell-and-tube heat exchanger where the vapor will be condensed to recover waste heat to be used to make hot water for sanitation at the Central Valley Meat Co. beef processing facility. The liquid condensate will then be sent to an industrial wastewater treatment plant for disposal. If the beef processing facility does not need hot water, then the vapor will be sent to an air-cooled condenser system. The non-condensable exhaust from the air-cooled condensers will be vented

to the odor control system that will include cyclones, scrubbers, and a regenerative thermal oxidizer (RTO) as described below.

The product from the cookers will be discharged to the incline drainer, where the fats and solids will be separated for further processing. The liquid fat from the drainer will be pumped to a vibrating screen, where the smaller solids will be extracted and sent to the drainer discharge conveyor to be mixed with the solids from the cookers. The liquid portion from the vibrating screen will be sent to a centrifuge to remove additional solids. Solids from the centrifuge will be sent to the drainer discharge conveyor to be mixed with the solids from the cookers. The fat from the centrifuge will be sent to a fat tank where it can be added back to the cooker(s) when needed or sent to finished beef tallow storage/shipping tanks. A process flow diagram of the proposed rendering operation is included in Appendix C.

The solids from the drainer will be conveyed into six screw presses, where liquid fats are further removed from the solids (crax). Any over-run material not taken by the presses will be returned to the cookers. The pressed material from the screw presses will be conveyed to the crax storage bin in the grinding room, where the crax will be further ground by one of two hammermills operating in parallel. The crax will then be screened using a gyratory reciprocating screen to produce commercial high-quality meat and bone meal (MBM). The conveying, grinding, and screening of the crax will be performed in an enclosed system. The material handling and processing system will be vented to a 6,000-cfm cyclone to control particulate matter (PM). The cyclone and grinding room air will then be vented to a 30,000 cfm two-stage scrubber system, consisting of a venturi scrubber and a packed bed scrubber connected in series, to further control PM and potential odors. The meat and bone meal will be conveyed to four storage silos located on the roof of the loadout area with a bucket elevator.

The meat rendering operation will be vented to an 18,000 cfm two-stage scrubber, consisting of a venturi scrubber and a packed bed scrubber connected in series, and further vented to an RTO with two 3.7 MMBtu/hr natural gas burners that will be designed to handle a flowrate of 20,000 cfm. The scrubbers and RTO will control emissions and odors from the rendering operation. The raw material unloading area, raw material receiving pit, pre-crushers, and cooker room will be vented to two 100,000-cfm packed bed scrubbers (room air scrubbers) that serve as additional odor control to reduce fugitive emissions from the cooker room and raw material receiving area. In the event of a malfunction of the RTO, the room air scrubbers will be used to minimize odorous emissions normally controlled by the RTO until operations can be shut down.

The proposed meat rendering operation will be permitted to operate a maximum of 24 hours per day and 365 days per year, but will be limited to maximum throughputs of 2,333 tons of raw material per day and 425,730 tons of raw material per year.

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

The meat and bone meal (MBM) loadout operation will consist of the four MBM storage silos that will each be equipped with a bin vent filter in order to control PM emissions from the filling of the storage silos. The MBM will be transferred from the MBM storage silos through an auger into haul trucks in the enclosed loadout room. The truck entry doors will be closed when the trucks are being filled in the loadout room.

The proposed MBM loadout operation will be permitted to operate a maximum of 24 hours per day and 365 days per year, but will be limited to maximum throughputs of 633 tons of MBM per day and 120,989 tons of MBM per year.

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas-Fired Boilers

Central Valley Meat Co. is proposing to install four identical 61.991 MMBtu/hr natural gas-fired boilers to provide heat and steam for the proposed meat rendering operation. Each boiler will be equipped with an SCR system to control NO<sub>x</sub> emissions.

**V. Equipment Listing**

**ATC C-2282-3-2**

Pre-Project Equipment Description:

C-2282-3-0: 1,919 BHP DETROIT DIESEL MODEL 91637316 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

Proposed Modification:

Add conditions limiting the total potential to emit from the facility to no more than 19,999 lb-NO<sub>x</sub>/year and 19,999 lb-VOC/year.

C-2282-3-2: MODIFICATION OF 1,919 BHP DETROIT DIESEL MODEL 91637316 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

Post-Project Equipment Description:

C-2282-3-2: 1,919 BHP DETROIT DIESEL MODEL 91637316 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

**ATC C-2282-5-2**

Pre-Project Equipment Description:

C-2282-5-1: 19.95 MMBTU/HR HURST MODEL 54X-500-15 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER

Proposed Modification:

Add conditions limiting the total potential to emit from the facility to no more than 19,999 lb-NO<sub>x</sub>/year and 19,999 lb-VOC/year.

C-2282-5-2: MODIFICATION OF 19.95 MMBTU/HR HURST MODEL 54X-500-15 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

Post-Project Equipment Description:

C-2282-5-2: 19.95 MMBTU/HR HURST MODEL 54X-500-15 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER

**ATC C-2282-7-2**

Pre-Project Equipment Description:

C-2282-7-1: 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER

Proposed Modification:

Add conditions limiting the total potential to emit from the facility to no more than 19,999 lb-NO<sub>x</sub>/year and 19,999 lb-VOC/year.

C-2282-7-2: MODIFICATION OF 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

Post-Project Equipment Description:

C-2282-7-2: 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER

**ATC C-2282-9-1**

Pre-Project Equipment Description:

C-2282-9-0: 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA LOW NOX BURNER

Proposed Modification:

Add conditions limiting the total potential to emit from the facility to no more than 19,999 lb-NO<sub>x</sub>/year and 19,999 lb-VOC/year.



C-2282-9-1: MODIFICATION OF 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

Post-Project Equipment Description:

C-2282-9-1: 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER

**ATC C-2282-10-1**

Pre-Project Equipment Description:

C-2282-10-0: 19.95 MMBTU/HR SUPERIOR MODEL SX8-X-1500-PFCF-G NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA LOW NOX BURNER

Proposed Modification:

Add conditions limiting the total potential to emit from the facility to no more than 19,999 lb-NO<sub>x</sub>/year and 19,999 lb-VOC/year.

C-2282-10-1: MODIFICATION OF 19.95 MMBTU/HR SUPERIOR MODEL SX8-X-1500-PFCF-G NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

Post-Project Equipment Description:

C-2282-10-1: 19.95 MMBTU/HR SUPERIOR MODEL SX8-X-1500-PFCF-G NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER

**ATC C-2282-11-1**

Pre-Project Equipment Description:

C-2282-11-0: 250 BHP JOHN DEERE (INTERMITTENT) MODEL 6068HF485TU TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING A FIREWATER PUMP

Proposed Modification:

Add conditions limiting the total potential to emit from the facility to no more than 19,999 lb-NO<sub>x</sub>/year and 19,999 lb-VOC/year.

C-2282-11-1: MODIFICATION OF 250 BHP JOHN DEERE (INTERMITTENT) MODEL 6068HF485TU TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING A FIREWATER PUMP: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

Post-Project Equipment Description:

C-2282-11-0: 250 BHP JOHN DEERE (INTERMITTENT) MODEL 6068HF485TU TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING A FIREWATER PUMP

**ATC C-2282-12-0**

C-2282-12-0: MEAT RENDERING OPERATION WITH ONE RAW MATERIAL RECEIVING SYSTEM, CONSISTING OF RAW MATERIAL BINS, AN ENCLOSED SCREW CONVEYOR, AND TWO PRECRUSHERS, TWO DUPPS MODEL 440U SUPERCOOKOR COOKERS, ONE HEAT EXCHANGER, ONE AIR-COOLED CONDENSER SYSTEM, TWO DRAINERS, TWO DRAINER DISCHARGE CONVEYORS, TWO SWECO SCREENS, TWO CENTRIFUGES, SIX SCREW PRESSES, ONE CRAX HOPPER/BIN, TWO SCREENS, TWO CRAX GRINDER/HAMMERMILLS, AN EMISSION/ODOR CONTROL SYSTEM CONSISTING OF A TWO-STAGE VENTURI/PACKED BED SCRUBBER SYSTEM AND A 7.4 MMBTU/HR REGENERATIVE THERMAL OXIDIZER (RTO) IN SERIES (SERVING THE COOKING PROCESS, PRESSES, CENTRIFUGES, CRAX SCREENS AND CONVEYORS, DRAINERS, AND CONDENSERS), AN EMISSION/ODOR CONTROL SYSTEM CONSISTING OF A CYCLONE AND TWO-STAGE VENTURI/PACKED BED SCRUBBER SYSTEM IN SERIES (SERVING MATERIAL HANDLING AND GRINDING OPERATIONS), TWO 100,000 CFM PACKED BED SCRUBBERS (SERVING ROOM AIR), AND PERMIT EXEMPT FAT STORAGE TANKS

**ATC C-2282-13-0**

C-2282-13-0: PROTEIN STORAGE AND MEAT AND BONE MEAL (MBM) LOADOUT OPERATION WITH FOUR 4,700 CUBIC FEET (173,000 LB) STORAGE SILOS, EACH SERVED BY A BIN VENT FILTER

**ATC C-2282-14-0**

C-2282-14-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

**ATC C-2282-15-0**

C-2282-15-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

**ATC C-2282-16-0**

C-2282-16-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

**ATC C-2282-17-0**

C-2282-16-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW-NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

**VI. Emission Control Technology Evaluation**

**ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine**

The existing 1,919 bhp diesel-fired emergency standby IC engine is equipped with a turbocharger, an intercooler or aftercooler, and positive crankcase ventilation.

The permit for the engine requires the engine's injection timing to be retarded four degrees from the manufacturer's recommended setting and requires that only California Air Resources Board (CARB) certified diesel fuel with a maximum sulfur content of 0.0015% by weight be used as fuel in the engine.

The NO<sub>x</sub> emission control devices/technologies and their effect on diesel engine emissions detailed below are from the California Air Resources Board document *Sources and Control of Oxides of Nitrogen Emissions (August 1997)*.<sup>1</sup>

The turbocharger reduces the NO<sub>x</sub> emission rate from the engine by increasing the efficiency and promoting more complete burning of the fuel. The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the inlet air temperature, the peak combustion temperature is lowered, which reduces the formation of thermal NO<sub>x</sub>. The turbocharger in conjunction with an intercooler/aftercooler reduces NO<sub>x</sub> emissions by approximately 3-35%.

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<sup>1</sup> California Environmental Protection Agency, Air Resources Board (August 1997) Sources and Control of Oxides of Nitrogen Emissions. <https://ww3.arb.ca.gov/mandrpts/noxdoc/noxdoc.pdf>

Retarding the fuel injection timing by 4° from standard or having the fuel injection timing advanced to no greater than 16° before top dead center (BTDC) lowers the peak combustion temperature and reduces the formation of thermal NO<sub>x</sub>. Retarding the fuel injection timing by 4° from standard typically reduces NO<sub>x</sub> emissions by approximately 15-25%.

The PCV system reduces crankcase VOC and PM<sub>10</sub> emissions by at least 90% over an uncontrolled crankcase vent.

The use of CARB certified diesel fuel with a maximum sulfur content of 0.0015% by weight reduces SO<sub>x</sub> emissions.

#### ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas-Fired Boilers

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

The existing boilers are equipped with ultra-low NO<sub>x</sub> burners and are only permitted to be fired on PUC regulated natural gas. The current permits for Permit Units C-2282-5 and -7 limit NO<sub>x</sub> emissions to no more than 9 ppmv @ 3% O<sub>2</sub> and limits CO emissions to no more than 100 ppmv @ 3% O<sub>2</sub>. The current permits for Permit Units C-2282-9 and -10 limit NO<sub>x</sub> emissions to no more than 7 ppmv @ 3% O<sub>2</sub> and limits CO emissions to no more than 50 ppmv @ 3% O<sub>2</sub>.

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

The existing boilers comply with the PM and SO<sub>x</sub> control requirements of District Rule 4320 through the exclusive use of PUC regulated natural gas.

#### ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

The existing engine powering a firewater pump is a Tier 3 certified IC engine that is only fueled with CARB certified diesel fuel with a maximum sulfur content of 0.0015% by weight. The existing engine complies with the requirements of the ATCM for Stationary Compression-Ignition Engines (17 CCR §93115.6) for engines powering firewater pumps.

Engines certified to the Tier 3 standards are designed reduce emissions of NO<sub>x</sub>, PM, CO, and hydrocarbons, including VOC, in order to comply with the standards.

The use of CARB certified diesel fuel with a maximum sulfur content of 0.0015% by weight reduces SO<sub>x</sub> emissions.

### ATC C-2282-12-0: Rendering Operation

The raw material that will be received at the rendering operation and processed by the raw material crushers and grinders will have a high moisture content of up to approximately 65%; therefore, PM emissions from these operations are expected to be negligible. The trucks delivering materials to be processed will be unloaded within 4 hours of being weighed to minimize nuisance odors and the materials received will be processed within 24 hours of receipt at the facility to minimize odors and VOC emissions.

Once the raw material is received and crushed, it will be sent to the cookers. Heating the raw material in the cookers results in emissions of PM, VOCs, nitrogen compounds, and compounds containing sulfur. The vapors from the cooking process and the air containing emissions and odors captured from the presses, centrifuges, fat tanks, material screens, crax transfer conveyors, drainers, and condensers will be vented to an 18,000 cfm two-stage scrubber, consisting of a venturi scrubber and a packed bed scrubber connected in series, and further vented to an RTO with two 3.7 MMBtu/hr natural gas burners to control emissions and odors from the rendering operation.

The raw material unloading area, raw material receiving pit, pre-crushers, and any fugitive emissions from the cooker room will be vented to two 100,000-cfm packed bed scrubbers (room air scrubbers) that serve as additional odor control devices to reduce emissions from the cooker room and raw material receiving area. Each of the packed bed scrubbers will be equipped with a blower that will push the air from the rendering plant into the packed bed scrubber. The air from the rendering plant room will enter the packed bed wet scrubbing towers below approximately 10 feet of inert packing material and flow upward through the material. Odorous contaminants in the air from the rendering plant will be removed by an oxidizing solution that will be pumped to near the top of the scrubbing towers and will be sprayed downward, countercurrent to the flow of the rendering plant air. The recycled scrubbing solution will be delivered to the packed bed scrubbers at a rate of approximately 10 gallons per minute per 1,000 cfm. The scrubbing solution will be sprayed evenly over the packing material to ensure proper contact with the air from the rendering plant room. As air flows through the packed bed in the scrubbing towers, odorous contaminants will be absorbed into the scrubbing solution and carried to the tower sumps where these contaminants will be oxidized. The treated air will then flow through a mist eliminator for removal of entrained droplets of liquid before being discharged to the atmosphere through a stack with a height of 50 feet above grade. Each packed bed scrubber will be equipped with analyzers and controllers to maintain recycled scrubbing solution at an optimum concentration of chemicals to absorb and oxidize odorous contaminants.

Because the rendering operation will be a continuous process that cannot be shut down immediately in the event of a malfunction or breakdown of equipment, in the event of a malfunction of the RTO the process air containing emissions and odors normally sent to the RTO after the two-stage scrubber, will be instead sent to the packed bed scrubbers serving the rendering plant room air to minimize emissions and odors normally controlled by the RTO. The facility will be required to correct the malfunction of the RTO and resume using it to control emissions and odors from the rendering operation as soon as practical.

Finished MBM typically has a fat content of approximately 8-12% by weight,<sup>2</sup> with fat evenly distributed throughout the material. Crax that is processed to produce MBM has a similar fat content. The fat content of crax and MBM reduces PM emissions from handling and processing of these materials. As described above, the material handling and processing system will be vented to a cyclone to control PM. The cyclone serving the material handling and processing system and the air from grinding room will then be vented to a 30,000 cfm two-stage scrubber system, consisting of a venturi scrubber and a packed bed scrubber connected in series, to further control PM and potential odors. The first-stage venturi scrubber removes additional PM from the air stream before the air enters the second stage packed bed scrubber. The process gas stream received at the venturi scrubber will accelerate as it passes through a narrow throat section. In the venturi throat, the speed and turbulence of the gas will increase, atomizing the scrubbing liquid recycled from the venture sump and improving gas-liquid contact. The gas will then enter an expanded area that holds staggered rows of impingement trays in which the gas will decelerate. Entrained liquid and PM will be removed by the impingement trays and sent in the sump collection area. The gas will then proceed through a mist eliminator where small liquid droplets are removed before the process air exits the venturi scrubber and is sent to the packed bed scrubber for chemical removal of odorous contaminants, as described above.

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout operation

As mentioned above, the high fat content of the MBM greatly reduces PM<sub>10</sub> emissions from handling the MBM. In addition, PM emissions from the MBM storage silos and loadout operation will be controlled through the use of bin vent filters. The bin vent filters are expected to reduce PM<sub>10</sub> emissions by 99%.

#### ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas-Fired Boilers

The proposed boilers will be equipped with low NO<sub>x</sub> burners with induced flue gas recirculation (FGR) and selective catalytic reduction (SCR) systems to minimize NO<sub>x</sub> emissions. The proposed boilers will only be permitted to be fired on PUC regulated natural gas.

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

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<sup>2</sup> Auvermann, B., Kalbasi, A., & Ahmed, A. (2004). Carcass Disposal: A Comprehensive Review, Chapter 4 - Rendering. National Agricultural Biosecurity Center, Kansas State University. Report prepared for the USDA Animal & Plant Health Inspection Service per Cooperative Agreement 02-1001-0355-CA. <https://krex.k-state.edu/dspace/bitstream/handle/2097/662/Chapter4.pdf?sequence=15&isAllowed=y>.

Also see: Garcia, R., Rosentrater, K., & Flores, R. (2006). Characteristics of North American Meat and Bone Meal Relevant to the Development of Non-Feed Applications. Applied Engineering in Agriculture. 22. 10.13031/2013.21989. [https://works.bepress.com/kurt\\_rosentrater/38/](https://works.bepress.com/kurt_rosentrater/38/)

Flue gas recirculation (FGR) reduces NO<sub>x</sub> emissions by recirculating a percentage of the exhaust gas back into the windbox. This reduces the oxygen concentration in the air-fuel mixture and regulates the combustion process, lowering the combustion temperature. The lowered availability of oxygen in conjunction with lowered combustion temperature reduces the formation of NO<sub>x</sub>.

A selective catalytic reduction system operates as an external control device where flue gases and a reagent, in this case ammonia, are passed through an appropriate catalyst. Ammonia will be injected upstream of the catalyst where it reacts and reduces NO<sub>x</sub> over the catalyst bed to form elemental nitrogen and other by-products. The use of SCR typically reduces the NO<sub>x</sub> emissions by over 90%.

The proposed boilers will comply with the PM and SO<sub>x</sub> control requirements of District Rule 4320 through the exclusive use of PUC regulated natural gas.

## **VII. General Calculations**

### **A. Assumptions**

- As proposed by the applicant, the total post-project potential to emit (SSPE2) for NO<sub>x</sub> and VOC from the facility will each be limited to no more than 19,999 lb/year
- PM<sub>2.5</sub> emissions from fuel combustion are assumed to be equal to PM<sub>10</sub> emissions (District practice)

#### Permit Units C-2282-3 & -11: Existing Diesel Emergency IC Engines

- Maximum Daily emergency operating schedule: 24 hr/day
- Maximum Annual non-emergency operating schedule for Permit Unit C-2282-3: 20 hr/year (current permit and ATCM for Stationary Compression-Ignition Engines)
- Maximum Annual non-emergency operating schedule for Permit Unit C-2282-11: 100 hr/year (current permit and District Rule 4702)
- The IC engines will only be fueled with ultra-low sulfur diesel fuel (0.0015% fuel S by weight), as required by the current permits and applicable regulations
- Density of diesel fuel: 7.05 lb/gal (EPA AP 42, Appendix A – Miscellaneous Data and Conversion Factors (September 1985, Reformatted January 1995), Weights of Selected Substances, density of distillate oil)<sup>3</sup>

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<sup>3</sup> This value may be compared to the density value of 3,206 g/gal (7.07 lb/gal) for California diesel fuel from the U.S. Department of Energy Office of Energy (USDOE) Efficiency and Renewable Energy (EERE) Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) Model ® (October 11, 2021). <https://greet.es.anl.gov/index.php>.

- Typical higher heating value (HHV) of ultra-low sulfur diesel fuel with sulfur content less than 15 parts per million: 137,381 Btu/gal (Based on information from the US Energy Information Administration<sup>4</sup>)
- bhp to Btu/hr conversion: 2,545 Btu/hp·hr
- Mechanical efficiency of diesel IC engines: commonly  $\approx 35\%$
- F Factor for diesel fuel, corrected to 60°F (15.6°C) (District standard temperature): 9,051 dscf/MMBtu (corrected from oil F Factor of 9,190 dscf/MMBtu at 20 °C (68 °F) given in 40 CFR 60, Appendix B)

#### Permit Units C-2282-5, -7, -9, & -10: Existing Natural Gas-Fired Boilers

- Maximum operating schedule: 24 hour/day and 365 day/year
- The existing boilers are only fueled with PUC regulated natural gas (current permits)
- The typical higher heating value (hhv) of natural gas is 1,000 Btu/scf (District Practice and District Policy APR 1720 - Generally Accepted SO<sub>x</sub> Emission Factor for Combustion of PUC-quality Natural Gas (12/20/2001))
- F Factor (ratio of combustion exhaust volume to higher heating value of fuel) for natural gas, corrected to 60°F (15.6°C) (District standard temperature): 8,578 dscf/MMBtu (corrected from natural gas F Factor of 8,710 dscf/MMBtu at 20 °C (68 °F) given in 40 CFR 60, Appendix B)
- Boiler manufacturers have indicated that ultra-low NO<sub>x</sub> burners achieve their rated emissions within one to two minutes of initial start-up and do not require a special shutdown procedure; therefore, the emissions factors for the existing boilers during start-up and shutdown will be assumed to be the same as the steady state emission factors

#### ATC C-2282-12-0: Proposed Meat Rendering Operation

- Maximum operating schedule: 24 hour/day and 365 day/year
- Maximum total daily and annual throughput of raw material received: 2,333 ton/day and 425,730 ton/year (proposed by applicant)
- F Factor for natural gas, corrected to 60°F (15.6°C) (District standard temperature): 8,578 dscf/MMBtu

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<sup>4</sup> US Energy Information Administration Units and Calculators Explained webpage, *last updated: May 12, 2021*, Source: US Energy Information Administration *Monthly Energy Review*, April 2021. <https://www.eia.gov/energyexplained/units-and-calculators/>



- Maximum exhaust flowrate of the RTO for the rendering operation: 20,000 cfm (provided by applicant)
- Total combined PM<sub>10</sub> emissions from the two 100,000 scfm packed bed room scrubbers will be limited to no more than 20.6 lb-PM<sub>10</sub>/day (proposed by applicant)
- To ensure that the total combined PM<sub>10</sub> emissions from the two 100,000 scfm packed bed room air scrubbers serving the rendering plant room air will not exceed 20.6 lb-PM<sub>10</sub>/day, the total combined flowrate from both of the room air scrubbers will be limited to no more than 100,000 scfm until source testing has demonstrated that the packed bed scrubbers can comply with the daily PM<sub>10</sub> emission limit with a higher total combined exhaust flow rate (proposed by applicant)
- The crax handled by the material handling, grinding, and screening operations and the MBM produced are assumed to have a fat content of approximately 8-12% by weight.
- The PM emissions from the solids processing operations, including the grinding and screening operations, will be vented to a cyclone and then to a two-stage venturi/packed bed scrubber system. The cyclone will conservatively be assumed to be a low-efficiency cyclone with a control efficiency of 70% for PM<sub>10</sub>.
- The applicant indicates that the manufacturer of the two-stage venturi/packed bed scrubber system serving the solids processing room guarantees that the system will have a minimum control efficiency of 90% for PM<sub>10</sub>. The EPA Air Pollution Control Technology Fact Sheets Venturi Scrubber (EPA-452/F-03-017, 2003)<sup>5</sup> and Packed-Bed/Packed-Tower Wet Scrubber (EPA-452/F-03-015, 2003)<sup>6</sup> give typical PM control efficiencies ranging from 70% to greater than 99% for venturi scrubbers and 50% to 95% for packed bed scrubbers. Using the average PM control efficiencies from these EPA Air Pollution Control Technology Fact Sheets of 84.5% for the venturi scrubber and 72.5% for the packed bed scrubber, results in an expected PM control efficiency of 95.7% for a two-stage venturi/packed bed scrubber system; therefore, the manufacturer's guaranteed PM<sub>10</sub> control efficiency of 90% is reasonable.
- The total PM<sub>10</sub> control efficiency for the cyclone followed by the two-stage venturi/packed bed scrubber system controlling PM emissions from the solids processing is assumed to be 97% ( $1 - (1-0.70)(1-0.90) = 0.97$ )
- Maximum exhaust flowrate of the two-stage scrubber system, consisting of a venturi scrubber and a packed bed scrubber, controlling emissions and odors from the rendering operation material handling and processing system and grinding room: 30,000 cfm (provided by applicant)

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<sup>5</sup> US EPA Air Pollution Control Technology Fact Sheet - Venturi Scrubber (July 15, 2003) EPA-452/F-03-017. <https://www3.epa.gov/ttnchie1/mkb/documents/fventuri.pdf>

<sup>6</sup> US EPA Air Pollution Control Technology Fact Sheet - Packed-Bed/Packed-Tower Wet Scrubber (July 15, 2003) EPA-452/F-03-015. <https://www3.epa.gov/ttnecat1/cica/files/fpack.pdf>

- The ratio of PM<sub>2.5</sub> to PM<sub>10</sub> for the particulate from the rendering operations is assumed to be 28.6% based on the California Air Resources Board (CARB) Fraction Data for Source Categories Spreadsheet<sup>7</sup> (November 2021) for Emission Inventory Code (EIC) 420-995-6004-0000 - Food and Agricultural, Other, Animal/Poultry, Sub-Category - Unspecified<sup>8</sup>
- When there is no data to indicate the proportion of total suspended particulate (TSP) that is PM<sub>10</sub>, 50% of TSP is assumed to be PM<sub>10</sub> based on District Rule 2201, Section 4.11.2

#### ATC C-2282-13-0: Proposed Meat and Bone Meal (MBM) Loadout Operation

- Maximum operating schedule: 24 hour/day and 365 day/year
- Maximum total daily and annual throughput of MBM: 663 ton/day and 120,989 ton/year (proposed by applicant)
- The bin vent filters serving the MBM loadout operation are assumed to have a PM control efficiency of 99% (District practice)

#### ATCs C-2282-14-0, -15-0, -16-0, & -17-0: Proposed Natural Gas-Fired Boilers with SCR

- Maximum operating schedule: 24 hour/day and 365 day/year
- The proposed boilers will only be fueled with PUC regulated natural gas (proposed by applicant)
- Maximum total amount of time for start-up and shutdown of each boiler each day: 1.5 hour/day (proposed by applicant)

### **B. Emission Factors**

#### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

The emission factors for NO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC for the existing IC engine are taken from the engineering evaluation for District Project C-980476 from when the District originally permitted the engine. The SO<sub>x</sub> emission factor for the IC engine is based on the use of ultra-low sulfur diesel (0.0015% fuel S by weight).

<sup>7</sup> California Air Resources Board (CARB) Fraction Data for Source Categories Spreadsheet (November 3, 2021). <https://ww2.arb.ca.gov/sites/default/files/2021-11/webfraction03nov21.xlsx>

<sup>8</sup> The California Air Resources Board Point Source Process SIC/SCC Combinations to EIC and REIC Tool database (January 21, 2021) (available on the ARB website at <https://ww3.arb.ca.gov/ei/drei/create/reference.htm> and [https://ww3.arb.ca.gov/ei/drei/create/category\\_tool.accdb](https://ww3.arb.ca.gov/ei/drei/create/category_tool.accdb)) indicates that the Emission Inventory Code (EIC) is 420-995-6004-0000 for Source Classification Code 30203801 – Industrial Processes, Food and Agriculture, Animal/Poultry Rendering - General

Emission Factors for C-2282-3		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	8.85	District Project C-980476
*SO <sub>x</sub>	0.0051	Ultra-Low Sulfur Fuel See Mass Balance Equation Below
PM <sub>10</sub>	0.417	District Project C-980476
CO	4.26	District Project C-980476
VOC	0.35	District Project C-980476

\*The SO<sub>x</sub> EF is based on the use of ultra-low sulfur diesel fuel with 0.0015% sulfur by weight, as shown in the equation below.

$$\frac{0.0015 \text{ lb} - \text{S}}{100 \text{ lb} - \text{Diesel}} \times \frac{64 \text{ lb} - \text{SO}_2}{32 \text{ lb} - \text{S}} \times \frac{7.05 \text{ lb} - \text{Diesel}}{\text{gal} - \text{Diesel}} \times \frac{1 \text{ gal} - \text{Diesel}}{137,381 \text{ Btu}} \times \frac{1 \text{ Btu}_{\text{in}}}{0.35 \text{ Btu}_{\text{out}}} \times \frac{2,545 \text{ Btu}}{1 \text{ bhp} - \text{hr}} \times \frac{453.59 \text{ g}}{1 \text{ lb}} = 0.0051 \frac{\text{g} - \text{SO}_x}{\text{bhp} - \text{hr}}$$

**ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas-Fired Boilers**

For the existing natural gas-fired boilers, the pre-project and post-project emission factors for NO<sub>x</sub>, SO<sub>x</sub>, CO, and VOC are based on the current permits. The emission factor for SO<sub>x</sub> is based on the use of PUC regulated natural gas (maximum sulfur content of 1 grain/100 scf).

The PM<sub>10</sub> emission factor for Permit Unit C-2282-10 is based on the current permit. The PM<sub>10</sub> emission factor in current Permits C-2282-5-1, -7-1, and -9-0 of 0.0076 lb-PM<sub>10</sub>/MMBtu was based on EPA AP-42, Table 1.4-2 (July 1998). Based on source testing data, the District has determined boilers and process heaters fired on PUC-quality natural gas will have PM<sub>10</sub> emissions no greater than 0.003 lb-PM<sub>10</sub>/MMBtu. Pursuant to District Policy APR 1110 - *Use of Revised Generally Accepted Emission Factors*, the emission factor based on source testing has a higher data quality than AP-42. Therefore, the PM<sub>10</sub> emission factor for Permit Units C-2282-5, -7, and -9 will be updated to 0.003 lb-PM<sub>10</sub>/MMBtu and this emission factor will be used to calculate both the pre-project and post-project PE for PM<sub>10</sub> from the units.

The pre-project emission factors are shown in the table below.

Emission Factors for C-2282-5 & -7: Natural Gas-Fired Boilers			
Pollutant	ppmvd (@ 3%O <sub>2</sub> )	lb/MMBtu	Source
NO <sub>x</sub>	9 ppmvd	0.011	Current Permit See Equation Below
SO <sub>x</sub>	--	0.00285	Current Permit/ District Policy APR 1720 (12/20/2001)
PM <sub>10</sub>	--	0.003	District practice based on source testing of similar units fired on PUC quality natural gas
CO	100 ppmvd	0.074	Current Permit See Equation Below
VOC	9.5 ppmvd as CH <sub>4</sub>	0.004	Current Permit See Equation Below

NO<sub>x</sub> – 9 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{9 \text{ ppmv NO}_x @ 3\% \text{ O}_2}{10^6} \times \frac{46 \text{ lb NO}_x}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.011 \frac{\text{lb NO}_x}{\text{MMBtu}}$$

CO – 100 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{100 \text{ ppmv CO @ 3\% O}_2}{10^6} \times \frac{28 \text{ lb CO}}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.074 \frac{\text{lb CO}}{\text{MMBtu}}$$

VOC (as CH<sub>4</sub>) – 0.004 lb-VOC/MMBtu

$$0.004 \frac{\text{lb VOC}}{\text{MMBtu}} \times \frac{(20.95 - 15)\% \text{ O}_2}{20.95\% \text{ O}_2} \times \frac{1 \text{ MMBtu}}{8,578 \text{ ft}^3} \times \frac{379.5 \text{ ft}^3}{\text{lb - mole}} \times \frac{\text{lb - mole}}{16 \text{ lb VOC}} \times \frac{10^6 \text{ ppmv}}{1} = 9.5 \text{ ppmv VOC @ 3\% O}_2$$

<b>Emission Factors for C-2282-9 &amp; -10: Natural Gas-Fired Boilers</b>			
<b>Pollutant</b>	<b>ppmvd (@ 3%O<sub>2</sub>)</b>	<b>lb/MMBtu</b>	<b>Source</b>
NO <sub>x</sub>	7 ppmvd	0.0085	Current Permit See Equation Below
SO <sub>x</sub>	--	0.00285	Current Permit/ District Policy APR 1720 (12/20/2001)
PM <sub>10</sub>	--	0.003	District practice based on source testing of similar units fired on PUC quality natural gas & Current Permit for C-2282-10-0
CO	50 ppmvd	0.037	Current Permit See Equation Below
VOC	13 ppmvd as CH <sub>4</sub>	0.0055	Current Permit / AP-42 Table 1.4-2 (July 1998) See Equation Below

NO<sub>x</sub> – 7 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{7 \text{ ppmv NO}_x @ 3\% \text{ O}_2}{10^6} \times \frac{46 \text{ lb NO}_x}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.0085 \frac{\text{lb NO}_x}{\text{MMBtu}}$$

CO – 50 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{50 \text{ ppmv CO @ 3\% O}_2}{10^6} \times \frac{28 \text{ lb CO}}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.037 \frac{\text{lb CO}}{\text{MMBtu}}$$

VOC (as CH<sub>4</sub>) – 0.0055 lb-VOC/MMBtu

$$0.0055 \frac{\text{lb VOC}}{\text{MMBtu}} \times \frac{(20.95 - 15)\% \text{ O}_2}{20.95\% \text{ O}_2} \times \frac{1 \text{ MMBtu}}{8,578 \text{ ft}^3} \times \frac{379.5 \text{ ft}^3}{\text{lb - mole}} \times \frac{\text{lb - mole}}{16 \text{ lb VOC}} \times \frac{10^6 \text{ ppmv}}{1} = 13 \text{ ppmv VOC @ 3\% O}_2$$

ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

Emission Factors for C-2282-11		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	2.7	Current Permit
SO <sub>x</sub>	0.0051	Ultra-Low Sulfur Fuel See Mass Balance Equation Above
PM <sub>10</sub>	0.06	Current Permit
CO	0.4	Current Permit
VOC	0.1	Current Permit

ATC C-2282-12-0: Rendering Operation

Emission Factors for Emissions from Rendering Operation Room Air Scrubbers:

Fugitive emissions of PM<sub>10</sub>, VOC, ammonia (NH<sub>3</sub>), and hydrogen sulfide (H<sub>2</sub>S) are expected from various emissions points within the processing building, including the raw material receiving pit, conveyors, transfer points, pumps, grinders, and any emissions escaping the closed ventilation system served by the venturi/packed bed scrubber system and RTO. The concentration limits for the emissions that are vented through the packed bed scrubbers, which were based on source tests at another rendering operation are presented in the table below.

Because of the difficulty in measuring the low PM<sub>10</sub> concentrations that result from the high flowrates of the room air scrubbers, the applicant has requested the option to demonstrate compliance with the daily PM<sub>10</sub> emission limit using a PM<sub>10</sub> emission factor that is based on the amount of material processed. The process rate-based PM<sub>10</sub> emission factor was calculated based on the maximum daily PM<sub>10</sub> emissions allowed, which were calculated using the concentration limit and the maximum combined flowrate allowed for the scrubbers of 100,000 scfm (until source testing demonstrates compliance with the daily PM<sub>10</sub> limit with a higher flowrate), and the maximum daily material process rate of 2,333 ton/day.

The process rate-based PM<sub>10</sub> emission factor is calculated as follows:

$$\text{Process rate PM}_{10} \text{ EF} = \frac{0.001 \text{ gr-PM}_{10}}{1 \text{ ft}^3} \times \frac{1 \text{ lb}}{7,000 \text{ gr}} \times \frac{100,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} \div \frac{2,333 \text{ ton}}{\text{day}} = 0.0088 \frac{\text{lb-PM}_{10}}{\text{ton}}$$

Emission Factors for Emissions from Room Air Scrubbers		
Pollutant	Emission Factor	Source
PM <sub>10</sub>	0.001 gr/dscf	Project C-1172884 based on average of selected source test results for a room air scrubber for a meat rendering operation permitted as N-1252-30
	0.0088 lb/ton	Based on the maximum daily PM <sub>10</sub> emissions calculated from the maximum concentration and flowrate of room air scrubbers; see equation above

<b>Emission Factors for Emissions from Room Air Scrubbers</b>		
<b>Pollutant</b>	<b>Emission Factor</b>	<b>Source</b>
VOC	3.0 ppmv (as CH <sub>4</sub> )	Project C-1172884 based on average of selected source test results for room air scrubber for a meat rendering operation permitted as N-1252-30; rounded down from 3.2 ppmv since applicant states that they expect lower VOC emissions based on the control equipment for the proposed operation
NH <sub>3</sub>	1 ppmv	Based on the NH <sub>3</sub> concentration detection limit during a source test of a building scrubber at a rendering plant in San Francisco with the concentration adjusted based on a conservative estimate of the process rate and scrubber flowrate <sup>9</sup>
H <sub>2</sub> S	0.8 ppmv	Project C-1172884 based on average of selected source test results for room air scrubber for a meat rendering operation permitted as N-1252-30; rounded from 0.75 ppmv to 0.8 ppmv

Emission Factors for Rendering Operation RTO:

<b>Emissions from Combustion of Natural Gas in RTO</b>			
<b>Pollutant</b>	<b>ppmvd (@ 3%O<sub>2</sub>)</b>	<b>lb/MMBtu</b>	<b>Source</b>
NO <sub>x</sub>	30 ppmvd	0.036	Proposed by Applicant based on Vendor Guarantee
SO <sub>x</sub>	--	0.00285	Proposed by Applicant / District Policy APR 1720 (12/20/2001)
PM <sub>10</sub>	--	0.0076	Proposed by Applicant / AP-42 Table 1.4-2 (July 1998)
CO	114 ppmvd	0.084	Proposed by Applicant / AP-42 Table 1.4-2 (July 1998)
VOC	13 ppmvd as CH <sub>4</sub>	0.0055	Proposed by Applicant / AP-42 Table 1.4-2 (July 1998)

<b>RTO Exhaust Emissions from Rendering Material Processed</b>		
<b>Pollutant</b>	<b>lb/ton</b>	<b>Source</b>
NO <sub>x</sub>	0.015	December 8, 2011 Source Test for N-1252-30 with 20% added for compliance margin (includes NO <sub>x</sub> from combustion of Natural Gas)
SO <sub>x</sub>	0.0335	Proposed by Applicant based on District Project C-1172884
PM <sub>10</sub>	0.0033	Proposed by Applicant based on District Project C-1172884
VOC	0.0052	Proposed by Applicant based on District Project C-1172884
NH <sub>3</sub>	0.00087	Based on NH <sub>3</sub> a source test of a RTO at a rendering plant in San Francisco with the emission factor for the estimated process rate increased to 2.0 lb-NH <sub>3</sub> /day to be more conservative

<sup>9</sup> SCEC Air Quality Specialists (March 2010) Health Risk Assessment Report for Darling International, Inc. San Francisco Facility

Emission Factors for Solids Processing (Material Transfer, Grinding, Screening)

The PM<sub>10</sub> emission factors for the transfer, grinding, and screening of the crax and the screening and transfer of the MBM are based on emission factors from AP-42, Chapter 9.9.1 - Grain Elevators and Processes (2003), which includes emission factors for similar processes and equipment used to process grain. The PM emission factors for grain processes from AP-42 will be adjusted to account for the higher fat content of the crax and MBM and the PM<sub>10</sub> control efficiencies of the cyclone and scrubber systems. AP-42 Chapter 9.9.1 states that studies have indicated that the application of oil to grain processing operations may achieve PM reductions of 60% - 80% and that laboratory testing and that industry experience have shown that oil additives applied at a rate of 60 to 200 parts per million by weight of grain (0.006%-0.02% by weight) can provide effective dust control. As mentioned above, the crax and MBM processed will typically have fat contents of 8-12% by weight, which is much higher than the amount of oil applied by oil suppression systems for grain processes; therefore, it will be conservatively assumed that the PM emission factors for processing and transfer of crax and MBM will be reduced by at least 80% compared to the PM emission factors in AP-42 for grain processing.

The PM<sub>10</sub> emission factors for the transfer, grinding, and screening of the crax and MBM are shown in the table below.

<b>PM<sub>10</sub> Emission Factors for Solids Processing</b>		
<b>Emission Unit</b>	<b>Emission Factor (lb/ton)</b>	<b>Source</b>
Conveyor to Crax Bin	0.0000048	Based on AP-42, Table 9.9.1-2 (March 2003) for animal feed mill shipping; reduced by 80% because of the fat content of the material and adjusted for the 70% PM <sub>10</sub> control of the cyclone and 90% PM <sub>10</sub> control for the scrubber system; See equation below
Crax Bin to Grinding Process	0.0000048	
Grinding	0.00067	Based on AP-42, Table 9.9.1-2 (March 2003) for animal feed mills, hammermill controlled by cyclone; reduced by 80% because of the fat content of the material and 90% PM <sub>10</sub> control for scrubber system; and assuming 50% of PM is PM <sub>10</sub> ; See equation below
Screening	0.00038	Based on AP-42, Table 9.9.1-1 (March 2003) for grain elevators, grain cleaning controlled by cyclone; reduced by 80% because of the fat content of the material and 90% PM <sub>10</sub> control for scrubber system; See equation below
Recycle Line to Hammermill	0.0000048	Based on AP-42, Table 9.9.1-2 (March 2003) for animal feed mill shipping; reduced by 80% because of the fat content of the material and adjusted for the 70% PM <sub>10</sub> control of the cyclone and 90% PM <sub>10</sub> control for the scrubber system; See equation below
Conveyor to Storage Silos	0.0000048	

Controlled PM<sub>10</sub> EF for Crax and MBM Material Transfer

$$\text{Uncontrolled PM}_{10} \text{ EF} \times (1 - \text{Fat Content CE}) \times (1 - \text{Cyclone CE}) \times (1 - \text{Scrubber CE}) = 0.0008 \text{ lb-PM}_{10}/\text{ton} \times (1 - 0.8) \times (1 - 0.7) \times (1 - 0.9) = 0.0000048 \text{ lb-PM}_{10}/\text{ton}$$

Controlled PM<sub>10</sub> EF for Grinding

$$\text{Uncontrolled PM EF} \times 1 \text{ lb-PM}_{10}/2 \text{ lb-PM} \times (1 - \text{Fat Content CE}) \times (1 - \text{Scrubber CE}) = 0.067 \text{ lb-PM}/\text{ton} \times 1 \text{ lb-PM}_{10}/2 \text{ lb-PM} \times (1 - 0.8) \times (1 - 0.9) = 0.00067 \text{ lb-PM}_{10}/\text{ton}$$

Controlled PM<sub>10</sub> EF for Screening

$$\text{Uncontrolled PM}_{10} \text{ EF} \times (1 - \text{Fat Content CE}) \times (1 - \text{Scrubber CE}) = 0.019 \text{ lb-PM}_{10}/\text{ton} \times (1 - 0.8) \times (1 - 0.9) = 0.00038 \text{ lb-PM}_{10}/\text{ton}$$

ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

The PM<sub>10</sub> emission factors for loading and unloading the MBM silo are shown in the table below.

<b>PM<sub>10</sub> Emission Factors for C-2282-13: MBM Loadout Operation</b>		
<b>Emission Unit</b>	<b>Emission Factor (lb/ton)</b>	<b>Source</b>
Silo Loading	0.0000016	Based on AP-42, Table 9.9.1-2 (March 2003) for animal feed mill shipping; reduced by 80% because of the fat content of the material and 99% PM <sub>10</sub> control of bin vent filter; See equation below
Silo Unloading	0.00016	Based on AP-42, Table 9.9.1-2 (March 2003) for animal feed mill shipping reduced by 80% because of the fat content of the material; See equation below

Controlled PM<sub>10</sub> EF Silo Loading

$$\text{Uncontrolled PM}_{10} \text{ EF} \times (1 - \text{Fat Content CE}) \times (1 - \text{Bin Vent Filter CE}) = 0.0008 \text{ lb-PM}_{10}/\text{ton} \times (1 - 0.8) \times (1 - 0.99) = 0.0000016 \text{ lb-PM}_{10}/\text{ton}$$

Controlled PM<sub>10</sub> EF Silo Unloading

$$\text{Uncontrolled PM}_{10} \text{ EF} \times (1 - \text{Fat Content CE}) = 0.0008 \text{ lb-PM}_{10}/\text{ton} \times (1 - 0.8) = 0.00016 \text{ lb-PM}_{10}/\text{ton}$$



ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas-Fired Boilers

<b>Emission Factors for C-2282-14-0, -15-0, -16-0, &amp; -17-0 (Natural Gas Boilers)</b>			
<b>Pollutant</b>	<b>ppmvd (@ 3%O<sub>2</sub>)</b>	<b>lb/MMBtu</b>	<b>Source</b>
NO <sub>x</sub> (steady-state)	2.5 ppmvd	0.003	BACT Requirement/Proposed by Applicant & Boiler Supplier's Guarantee with SCR; See equation below
NO <sub>x</sub> (start-up/shutdown)	30 ppmvd	0.0364	BACT Requirement/Proposed by Applicant & Boiler Supplier's Guarantee; See equation below
SO <sub>x</sub>	--	0.00285	District Policy APR 1720 (12/20/2001)
PM <sub>10</sub>	--	0.003	District Practice Based on Source Tests from Similar Units fired on PUC-quality natural gas
CO (steady-state)	50 ppmvd	0.037	Proposed by Applicant & Boiler Supplier's Guarantee See equation below
CO (start-up/shutdown)	100 ppmvd	0.074	Proposed by Applicant & Boiler Supplier's Guarantee See equation below
VOC	13 ppmvd as CH <sub>4</sub>	0.0055	EPA AP-42, Table 1.4-2 (07/1998)
NH <sub>3</sub>	10 ppmvd	0.0045	Proposed by Applicant; See equation below

NO<sub>x</sub> (Steady State) – 2.5 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{2.5 \text{ ppmv NO}_x \text{ @ } 3\% \text{ O}_2}{10^6} \times \frac{46 \text{ lb NO}_x}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.003 \frac{\text{lb NO}_x}{\text{MMBtu}}$$

NO<sub>x</sub> (Start-up/Shutdown) – 30 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{30 \text{ ppmv NO}_x \text{ @ } 3\% \text{ O}_2}{10^6} \times \frac{46 \text{ lb NO}_x}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.0364 \frac{\text{lb NO}_x}{\text{MMBtu}}$$

CO (Steady State) – 50 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{50 \text{ ppmv CO @ } 3\% \text{ O}_2}{10^6} \times \frac{28 \text{ lb CO}}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.037 \frac{\text{lb CO}}{\text{MMBtu}}$$

CO (Start-up/Shutdown) – 100 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{100 \text{ ppmv CO @ } 3\% \text{ O}_2}{10^6} \times \frac{28 \text{ lb CO}}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 3)\% \text{ O}_2} = 0.074 \frac{\text{lb CO}}{\text{MMBtu}}$$

NH<sub>3</sub> – 10 ppmvd @ 3% O<sub>2</sub> in exhaust

$$\frac{10 \text{ ppmv NH}_3 \text{ @ } 3\% \text{ O}_2}{10^6} \times \frac{17 \text{ lb NH}_3}{\text{lb - mole}} \times \frac{\text{lb - mole}}{379.5 \text{ ft}^3} \times \frac{8,578 \text{ ft}^3}{1 \text{ MMBtu}} \times \frac{20.95\% \text{ O}_2}{(20.95 - 15)\% \text{ O}_2} = 0.0045 \frac{\text{lb NH}_3}{\text{MMBtu}}$$

### C. Calculations

#### 1. Pre-Project Potential to Emit (PE1)

PE1 for C-2282-3: 1,919 bhp Emergency Standby Diesel IC Engine

Daily PE1 for C-2282-3 (Emergency IC Engine)							
Pollutant	EF (g/bhp-hr)	x	Engine bhp	x	(hr/day)	÷ 453.59 (g/lb) =	lb/day
NO <sub>x</sub>	8.85	x	1,919	x	24	÷ 453.59 (g/lb) =	<b>898.6</b>
SO <sub>x</sub>	0.0051	x	1,919	x	24	÷ 453.59 (g/lb) =	<b>0.5</b>
PM <sub>10</sub>	0.417	x	1,919	x	24	÷ 453.59 (g/lb) =	<b>42.3</b>
CO	4.26	x	1,919	x	24	÷ 453.59 (g/lb) =	<b>432.5</b>
VOC	0.35	x	1,919	x	24	÷ 453.59 (g/lb) =	<b>35.5</b>

Annual PE1 for C-2282-3 (Emergency IC Engine)							
Pollutant	EF (g/bhp-hr)	x	Engine bhp	x	(hr/yr)	÷ 453.59 (g/lb) =	lb/yr
NO <sub>x</sub>	8.85	x	1,919	x	20	÷ 453.59 (g/lb) =	<b>749</b>
SO <sub>x</sub>	0.0051	x	1,919	x	20	÷ 453.59 (g/lb) =	<b>0</b>
PM <sub>10</sub>	0.417	x	1,919	x	20	÷ 453.59 (g/lb) =	<b>35</b>
CO	4.26	x	1,919	x	20	÷ 453.59 (g/lb) =	<b>360</b>
VOC	0.35	x	1,919	x	20	÷ 453.59 (g/lb) =	<b>30</b>

PE1 for C-2282-5 & -7: 19.95 MMBtu/hr Natural Gas Boilers

Daily PE1 for C-2282-5 & -7 (19.95 MMBtu/hr Boilers)							
Pollutant	Emission Factor (lb/MMBtu)	x	Hourly Heat Input of Boiler (MMBtu/hr)	x	Daily Hours of Operation (hr/day)	=	PE2 (lb/day)
NO <sub>x</sub>	0.011	x	19.95	x	24	=	<b>5.3</b>
SO <sub>x</sub>	0.00285	x	19.95	x	24	=	<b>1.4</b>
PM <sub>10</sub>	0.003	x	19.95	x	24	=	<b>1.4</b>
CO	0.074	x	19.95	x	24	=	<b>35.4</b>
VOC	0.004	x	19.95	x	24	=	<b>1.9</b>

Annual PE1 for C-2282-5 & -7 (19.95 MMBtu/hr Boilers)							
Pollutant	Emission Factor (lb/MMBtu)	x	Hourly Heat Input of Boiler (MMBtu/hr)	x	Annual Hours of Operation (hr/year)	=	PE2 (lb/year)
NO <sub>x</sub>	0.011	x	19.95	x	8,760	=	<b>1,922</b>
SO <sub>x</sub>	0.00285	x	19.95	x	8,760	=	<b>498</b>
PM <sub>10</sub>	0.003	x	19.95	x	8,760	=	<b>524</b>
CO	0.074	x	19.95	x	8,760	=	<b>12,932</b>
VOC	0.004	x	19.95	x	8,760	=	<b>699</b>

PE1 for C-2282-9 & -10: 19.95 MMBtu/hr Natural Gas Boilers

<b>Daily PE1 for C-2282-9 &amp; -10 (19.95 MMBtu/hr Boilers)</b>						
Pollutant	Emission Factor (lb/MMBtu)	x	Hourly Heat Input of Boiler (MMBtu/hr)	x	Daily Hours of Operation (hr/day)	= PE2 (lb/day)
NO <sub>x</sub>	0.0085	x	19.95	x	24	= <b>4.1</b>
SO <sub>x</sub>	0.00285	x	19.95	x	24	= <b>1.4</b>
PM <sub>10</sub>	0.003	x	19.95	x	24	= <b>1.4</b>
CO	0.037	x	19.95	x	24	= <b>17.7</b>
VOC	0.0055	x	19.95	x	24	= <b>2.6</b>

<b>Annual PE1 for C-2282-9 &amp; -10 (19.95 MMBtu/hr Boilers)</b>						
Pollutant	Emission Factor (lb/MMBtu)	x	Hourly Heat Input of Boiler (MMBtu/hr)	x	Annual Hours of Operation (hr/year)	= PE2 (lb/year)
NO <sub>x</sub>	0.0085	x	19.95	x	8,760	= <b>1,485</b>
SO <sub>x</sub>	0.00285	x	19.95	x	8,760	= <b>498</b>
PM <sub>10</sub>	0.003	x	19.95	x	8,760	= <b>524</b>
CO	0.037	x	19.95	x	8,760	= <b>6,466</b>
VOC	0.0055	x	19.95	x	8,760	= <b>961</b>

PE1 for C-2282-11: 250 bhp Emergency IC Engine Powering a Firewater Pump

<b>Daily PE1 for C-2282-11 (Emergency IC Engine)</b>						
Pollutant	EF (g/bhp-hr)	x	Engine bhp	x	(hr/day)	÷ 453.59 (g/lb) = lb/day
NO <sub>x</sub>	2.7	x	250	x	24	÷ 453.59 (g/lb) = <b>35.7</b>
SO <sub>x</sub>	0.0051	x	250	x	24	÷ 453.59 (g/lb) = <b>0.1</b>
PM <sub>10</sub>	0.06	x	250	x	24	÷ 453.59 (g/lb) = <b>0.8</b>
CO	0.4	x	250	x	24	÷ 453.59 (g/lb) = <b>5.3</b>
VOC	0.1	x	250	x	24	÷ 453.59 (g/lb) = <b>1.3</b>

<b>Annual PE1 for C-2282-11 (Emergency IC Engine)</b>						
Pollutant	EF (g/bhp-hr)	x	Engine bhp	x	(hr/yr)	÷ 453.59 (g/lb) = lb/yr
NO <sub>x</sub>	2.7	x	250	x	100	÷ 453.59 (g/lb) = <b>149</b>
SO <sub>x</sub>	0.0051	x	250	x	100	÷ 453.59 (g/lb) = <b>0</b>
PM <sub>10</sub>	0.06	x	250	x	100	÷ 453.59 (g/lb) = <b>3</b>
CO	0.4	x	250	x	100	÷ 453.59 (g/lb) = <b>22</b>
VOC	0.1	x	250	x	100	÷ 453.59 (g/lb) = <b>6</b>

PE1 for ATC C-2282-12-0: Rendering Operation

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

PE1 for ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

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

PE1 for ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

Since these are new units, PE1 = 0 for all affected pollutants.

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

PE2 for ATC C-2282-3-1: 1,919 bhp Emergency Standby Diesel IC Engine

The daily and annual PE2 for this unit is the same as PE1 calculated above and summarized in the table below.

<b>PE2 for ATC C-2282-3-1</b>		
<b>Pollutant</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/year)</b>
NO <sub>x</sub>	898.6	749
SO <sub>x</sub>	0.5	0
PM <sub>10</sub>	42.3	35
CO	432.5	360
VOC	35.5	30

PE2 for ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

The daily and annual PE2 for these units is the same as PE1 calculated above and summarized in the table below.

<b>PE2 for ATCs C-2282-5-2 &amp; -7-2</b>		
<b>Pollutant</b>	<b>Daily PE2 (lb/day)</b>	<b>Annual PE2 (lb/year)</b>
NO <sub>x</sub>	5.3	1,922
SO <sub>x</sub>	1.4	498
PM <sub>10</sub>	1.4	524
CO	35.4	12,932
VOC	1.9	699

PE2 for ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

The daily and annual PE2 for these units is the same as PE1 calculated above and summarized in the table below.

PE2 for ATCs C-2282-9-1 & -10-1		
Pollutant	Daily PE2 (lb/day)	Annual PE2 (lb/year)
NO <sub>x</sub>	4.1	1,485
SO <sub>x</sub>	1.4	498
PM <sub>10</sub>	1.4	524
CO	17.7	6,466
VOC	2.6	961

PE2 for ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

The daily and annual PE2 for these units is the same as PE1 calculated above and summarized in the table below.

PE2 for ATC C-2282-11-1		
Pollutant	Daily PE2 (lb/day)	Annual PE2 (lb/year)
NO <sub>x</sub>	35.7	149
SO <sub>x</sub>	0.1	0
PM <sub>10</sub>	0.8	3
CO	5.3	22
VOC	1.3	6

PE2 for ATC C-2282-12-0: Rendering Operation

PE2 for Emissions from Rendering Operation Room Air Scrubbers

PE2 for PM<sub>10</sub> from Room Air Scrubbers

As discussed above, to ensure that the total combined PM<sub>10</sub> emissions from the two 100,000 scfm packed bed room scrubbers will not exceed 20.6 lb-PM<sub>10</sub>/day, the total combined flowrate from both of the room air scrubbers will be limited to no more than 100,000 scfm, one half of the maximum combined flowrate, until source testing has demonstrated that the packed bed scrubbers serving the rendering plant room air can comply with the daily emission limit for PM<sub>10</sub> with a higher total combined exhaust flow rate. Therefore, a total flowrate of 100,000 scfm, rather than the maximum total combined flowrate of 200,000 scfm for the two room air scrubbers, will be used to calculate the PE2 for PM<sub>10</sub> from the room air scrubbers.

$$\text{Daily PE2} = \frac{0.001 \text{ gr-PM}_{10}}{1 \text{ ft}^3} \times \frac{1 \text{ lb}}{7,000 \text{ gr}} \times \frac{100,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} = 20.6 \frac{\text{lb-PM}_{10}}{\text{day}}$$

$$\text{Annual PE2} = \frac{0.001 \text{ gr-P}_{10}}{1 \text{ ft}^3} \times \frac{1 \text{ lb}}{7,000 \text{ gr}} \times \frac{100,000 \text{ ft}^3}{\text{min}} \times \frac{24 \text{ hr}}{\text{day}} \times \frac{365 \text{ day}}{\text{year}} = 7,509 \frac{\text{lb-P}_{10}}{\text{year}}$$

PE2 for VOC from Room Air Scrubbers

$$\text{Daily PE2} = \frac{3.0 \text{ ft}^3 \text{ VOC}}{10^6 \text{ ft}^3} \times \frac{16 \text{ lb-VOC}}{\text{lb-mol VOC}} \times \frac{\text{lb-mol}}{379.5 \text{ ft}^3} \times \frac{200,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} = 36.4 \frac{\text{lb-VOC}}{\text{day}}$$

$$\text{Annual PE2} = \frac{3.0 \text{ ft}^3 \text{ VOC}}{10^6 \text{ ft}^3} \times \frac{16 \text{ lb-VOC}}{\text{lb-mol VOC}} \times \frac{\text{lb-mol}}{379.5 \text{ ft}^3} \times \frac{200,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} \times \frac{365 \text{ day}}{\text{year}} = 13,296 \frac{\text{lb-VOC}}{\text{year}}$$

PE2 for NH<sub>3</sub> from Room Air Scrubbers

$$\text{Daily PE2} = \frac{1 \text{ ft}^3 \text{ NH}_3}{10^6 \text{ ft}^3} \times \frac{17 \text{ lb-NH}_3}{\text{lb-mol NH}_3} \times \frac{\text{lb-mol}}{379.5 \text{ ft}^3} \times \frac{200,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} = 12.9 \frac{\text{lb-NH}_3}{\text{day}}$$

$$\text{Annual PE2} = \frac{1 \text{ ft}^3 \text{ NH}_3}{10^6 \text{ ft}^3} \times \frac{17 \text{ lb-NH}_3}{\text{lb-mol NH}_3} \times \frac{\text{lb-mol}}{379.5 \text{ ft}^3} \times \frac{200,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} \times \frac{365 \text{ day}}{\text{year}} = 4,709 \frac{\text{lb-NH}_3}{\text{year}}$$

PE2 for H<sub>2</sub>S from Room Air Scrubbers

$$\text{Daily PE2} = \frac{0.8 \text{ ft}^3 \text{ H}_2\text{S}}{10^6 \text{ ft}^3} \times \frac{34 \text{ lb-H}_2\text{S}}{\text{lb-mol H}_2\text{S}} \times \frac{\text{lb-mol}}{379.5 \text{ ft}^3} \times \frac{200,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} = 20.6 \frac{\text{lb-H}_2\text{S}}{\text{day}}$$

$$\text{Annual PE2} = \frac{0.8 \text{ ft}^3 \text{ H}_2\text{S}}{10^6 \text{ ft}^3} \times \frac{34 \text{ lb-H}_2\text{S}}{\text{lb-mol H}_2\text{S}} \times \frac{\text{lb-mol}}{379.5 \text{ ft}^3} \times \frac{200,000 \text{ ft}^3}{\text{min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}} \times \frac{365 \text{ day}}{\text{year}} = 7,534 \frac{\text{lb-H}_2\text{S}}{\text{year}}$$

PE2 from Rendering Operation RTO:

PE2 from Combustion of Natural Gas in RTO

Daily PE2 for Combustion of Natural Gas in 7.4 MMBtu/hr RTO							
Pollutant	EF (lb/MMBtu)	x	Max Heat Input (MMBtu/hr)	x	Max hr/day	=	PE2 (lb/day)
NO <sub>x</sub>	Included with Emissions from Rendering Material Processed						
SO <sub>x</sub>	0.00285	x	7.4	x	24	=	<b>0.5</b>
PM <sub>10</sub>	0.0076	x	7.4	x	24	=	<b>1.3</b>
CO	0.084	x	7.4	x	24	=	<b>14.9</b>
VOC	0.0055	x	7.4	x	24	=	<b>1.0</b>

Annual PE2 for Combustion of Natural Gas in 7.4 MMBtu/hr RTO									
Pollutant	EF (lb/MMBtu)	x	Max Heat Input (MMBtu/hr)	x	Max hr/day	x	Max day/yr	=	PE2 (lb/yr)
NO <sub>x</sub>	Included with Emissions from Rendering Material Processed								
SO <sub>x</sub>	0.00285	x	7.4	x	24	x	365	=	<b>185</b>
PM <sub>10</sub>	0.0076	x	7.4	x	24	x	365	=	<b>493</b>
CO	0.084	x	7.4	x	24	x	365	=	<b>5,445</b>
VOC	0.0055	x	7.4	x	24	x	365	=	<b>357</b>

PE2 from RTO from Rendering Material Processed

<b>Daily PE2 for RTO from Rendering Material Processed</b>					
Pollutant	EF (lb/ton)	x	Max Throughput (ton/day)	=	PE2 (lb/day)
NO <sub>x</sub>	0.015	x	2,333	=	<b>35.0</b>
SO <sub>x</sub>	0.0335	x	2,333	=	<b>78.2</b>
PM <sub>10</sub>	0.0033	x	2,333	=	<b>7.7</b>
VOC	0.0052	x	2,333	=	<b>12.1</b>
NH <sub>3</sub>	0.00087	x	2,333	=	<b>2.0</b>

<b>Annual PE2 for RTO from Rendering Material Processed</b>					
Pollutant	EF (lb/ton)	x	Max Throughput (ton/yr)	=	PE2 (lb/yr)
NO <sub>x</sub>	0.015	x	425,730	=	<b>6,386</b>
SO <sub>x</sub>	0.0335	x	425,730	=	<b>14,262</b>
PM <sub>10</sub>	0.0033	x	425,730	=	<b>1,405</b>
VOC	0.0052	x	425,730	=	<b>2,214</b>
NH <sub>3</sub>	0.00087	x	425,730	=	<b>370</b>

PE2 for PM<sub>10</sub> for Solids Processing Room (Material Transfer, Grinding, Screening)

<b>Daily PE2 for PM<sub>10</sub> from Solids Processing</b>					
Operation	EF (lb-PM <sub>10</sub> /ton)	x	Max Throughput (ton/day)	=	PE2 (lb/day)
Conveyor to Crax Bin	0.0000048	x	663	=	0.0
Crax Bin to Grinding Process	0.0000048	x	663	=	0.0
Grinding	0.00067	x	663	=	0.4
Screening	0.00038	x	663	=	0.3
Recycle Line to Hammermill	0.0000048	x	663	=	0.0
Conveyor to Storage Silos	0.0000048	x	663	=	0.0
<b>Total Daily PE2 for PM<sub>10</sub></b>					<b>= 0.7</b>

<b>Annual PE2 for PM<sub>10</sub> from Solids Processing</b>					
Operation	EF (lb-PM <sub>10</sub> /ton)	x	Max Throughput (ton/year)	=	PE2 (lb/year)
Conveyor to Crax Bin	0.0000048	x	120,989	=	0.6
Crax Bin to Grinding Process	0.0000048	x	120,989	=	0.6
Grinding	0.00067	x	120,989	=	81.1
Screening	0.00038	x	120,989	=	46.0
Recycle Line to Hammermill	0.0000048	x	120,989	=	0.6
Conveyor to Storage Silos	0.0000048	x	120,989	=	0.6
<b>Total Annual PE2 for PM<sub>10</sub></b>					<b>= 129</b>

Total PE2 for ATC C-2282-12-0 (Rendering Operation)

The total PE2 for the proposed rendering operation is summarized in the table below. As discussed above, the PE for PM<sub>2.5</sub> for the combustion of fuel in the RTO is assumed to be the same as the PE for PM<sub>10</sub> and the PE for PM<sub>2.5</sub> from rendering operations is assumed to be 28.6% of the PE for PM<sub>10</sub> based on the CARB Particulate Matter Chemical Profiles for Source Categories Spreadsheet (April 2021).

The total Daily and Annual PE2 for the proposed rendering operation is shown in the tables below.

Total Daily PE2 for ATC C-2282-12-0 (Rendering Operation)								
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
Room Air Scrubbers	0.0	0.0	20.6	5.9	0.0	36.4	12.9	20.6
Combustion of Natural Gas in RTO	0.0*	0.5	1.3	1.3	14.9	1.0	0.0	0.0
RTO Emissions from Material Processed	35.0	78.2	7.7	2.2	0.0	12.1	2.0	0.0
Emissions from Solids Processing	0.0	0.0	0.7	0.2	0.0	0.0	0.0	0.0
<b>Total Daily PE2</b>	<b>35.0</b>	<b>78.7</b>	<b>30.3</b>	<b>9.6</b>	<b>14.9</b>	<b>49.5</b>	<b>14.9</b>	<b>20.6</b>

\* NO<sub>x</sub> emissions from combustion of natural gas included in NO<sub>x</sub> emissions from material processed

Total Annual PE2 for ATC C-2282-12-0 (Rendering Operation)								
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
Room Air Scrubbers	0.0	0.0	7,508.6	2,147.5	0.0	13,295.8	4,708.9	7,534.3
Combustion of Natural Gas in RTO	0.0*	184.7	492.7	492.7	5,445.2	356.5	0.0	0.0
RTO Emissions from Material Processed	6,386.0	14,262.0	1,404.9	401.8	0.0	2,213.8	370.4	0.0
Emissions from Solids Processing	0.0	0.0	129.4	37.0	0.0	0.0	0.0	0.0
<b>Total Annual PE2</b>	<b>6,386</b>	<b>14,447</b>	<b>9,536</b>	<b>3,079</b>	<b>5,445</b>	<b>15,866</b>	<b>5,079</b>	<b>7,534</b>

\* NO<sub>x</sub> emissions from combustion of natural gas included in NO<sub>x</sub> emissions from material processed

PE2 for ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

Daily PE2 for PM <sub>10</sub> from MBM Storage and Loadout					
Pollutant	EF (lb/ton)	x	Max Throughput (ton/day)	=	PE2 (lb/day)
PM <sub>10</sub> -Loading	0.0000016	x	663	=	0.0
PM <sub>10</sub> -Unloading	0.00016	x	663	=	0.1
			PM <sub>10</sub> -Total	=	<b>0.1</b>
			PM <sub>2.5</sub> -Total*	=	<b>0.0</b>

\* PM<sub>2.5</sub>-Total = PM<sub>10</sub>-Total X 0.286



Annual PE2 for PM <sub>10</sub> from MBM Storage and Loadout						
Pollutant	EF (lb/ton)	x	Max Throughput (ton/day)	=	PE2 (lb/yr)	
PM <sub>10</sub> -Loading	0.0000016	x	120,989	=	0.2	
PM <sub>10</sub> -Unloading	0.00016	x	120,989	=	19.4	
PM <sub>10</sub> -Total					=	<b>20</b>
PM <sub>2.5</sub> -Total*					=	<b>6</b>

\* PM<sub>2.5</sub>-Total = PM<sub>10</sub>-Total x 0.286

PE2 for ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

As discussed above, the applicant has requested that each of the proposed 61.991 MMBtu/hr natural gas-fired boilers be allowed up to 1.5 hours per day of start-up and shutdown time during which they will be allowed to have higher NO<sub>x</sub> and CO emissions. Therefore, the PE2 calculated for these units will account for the periods of higher NO<sub>x</sub> and CO emissions during start-up and shutdown.

Daily PE2 for Each 61.991 MMBtu/hr Natural Gas-Fired Boiler						
Pollutant	Emission Factor (lb/MMBtu)	x	Max Heat Input (MMBtu/hr)	x	Daily Hours of Operation (hr/day)	= PE2 (lb/day)
NO <sub>x</sub> steady	0.003	x	61.991	x	22.5	= 4.2
NO <sub>x</sub> start-up/shutdown	0.0364	x	61.991	x	1.5	= 3.4
<b>NO<sub>x</sub> Total Daily</b>	-					= <b>7.6</b>
<b>SO<sub>x</sub></b>	0.00285	x	61.991	x	24	= <b>4.2</b>
<b>PM<sub>10</sub>/PM<sub>2.5</sub></b>	0.003	x	61.991	x	24	= <b>4.5</b>
CO steady	0.037	x	61.991	x	22.5	= 51.6
CO start-up/shutdown	0.074	x	61.991	x	1.5	= 6.9
<b>CO Total Daily</b>	-					= <b>58.5</b>
<b>VOC</b>	0.0055	x	61.991	x	24	= <b>8.2</b>
<b>NH<sub>3</sub></b>	0.0045	x	61.991	x	24	= <b>6.7</b>

Annual PE2 for Each 61.991 MMBtu/hr Natural Gas-Fired Boiler								
Pollutant	Emission Factor (lb/MMBtu)	x	Max Heat Input (MMBtu/hr)	x	hr/day	x	day/yr	= PE2 (lb/yr)
NO <sub>x</sub> steady	0.003	x	61.991	x	22.5	x	365	= 1,527
NO <sub>x</sub> start-up/shutdown	0.0364	x	61.991	x	1.5	x	365	= 1,235
<b>NO<sub>x</sub> Total Annual</b>	-							= <b>2,762</b>
<b>SO<sub>x</sub></b>	0.00285	x	61.991	x	24	x	365	= <b>1,548</b>
<b>PM<sub>10</sub>/PM<sub>2.5</sub></b>	0.003	x	61.991	x	24	x	365	= <b>1,629</b>
CO steady	0.037	x	61.991	x	22.5	x	365	= 18,837
CO start-up/shutdown	0.074	x	61.991	x	1.5	x	365	= 2,512
<b>CO Total Annual</b>	-							= <b>21,349</b>
<b>VOC</b>	0.0055	x	61.991	x	24	x	365	= <b>2,987</b>
<b>NH<sub>3</sub></b>	0.0045	x	61.991	x	24	x	365	= <b>2,444</b>

### 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)								
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
PTO C-2282-3-0 (1,919 bhp Diesel Emergency Engine)	749	0	35	35	360	30	0	0
PTO C-2282-5-1 (19.95 MMBtu/hr Natural Gas Boiler)	1,922	498	524	524	12,932	699	0	0
PTO C-2282-7-1 (19.95 MMBtu/hr Natural Gas Boiler)	1,922	498	524	524	12,932	699	0	0
PTO C-2282-9-0 (19.95 MMBtu/hr Natural Gas Boiler)	1,485	498	524	524	6,466	961	0	0
PTO C-2282-10-0 (19.95 MMBtu/hr Natural Gas Boiler)	1,485	498	524	524	6,466	961	0	0
PTO C-2282-11-0 (250 bhp Diesel Emergency Engine)	149	0	3	3	22	6	0	0
<b>SSPE1</b>	<b>7,712</b>	<b>1,992</b>	<b>2,134</b>	<b>2,134</b>	<b>39,178</b>	<b>3,356</b>	<b>0</b>	<b>0</b>

### 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 <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
ATC C-2282-3-1 (1,919 bhp Diesel Emergency Engine)	749	0	35	35	360	30	0	0
ATC C-2282-5-2 (19.95 MMBtu/hr Natural Gas Boiler)	1,922	498	524	524	12,932	699	0	0
ATC C-2282-7-2 (19.95 MMBtu/hr Natural Gas Boiler)	1,922	498	524	524	12,932	699	0	0

SSPE2 (lb/year)								
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
ATC C-2282-9-1 (19.95 MMBtu/hr Natural Gas Boiler)	1,485	498	524	524	6,466	961	0	0
ATC C-2282-10-1 (19.95 MMBtu/hr Natural Gas Boiler)	1,485	498	524	524	6,466	961	0	0
ATC C-2282-11-1 (250 bhp Diesel Emergency Engine)	149	0	3	3	22	6	0	0
ATC C-2282-12-0 (Meat Rendering Operation)	6,386	14,447	9,536	3,079	5,445	15,866	5,079	7,534
ATC C-2282-13-0 (Meat and Bone Meal Storage and Loadout)	0	0	20	6	0	0	0	0
ATC C-2282-14-0 (61.991 MMBtu/hr NG Boiler with SCR)	2,762	1,548	1,629	1,629	21,349	2,987	2,444	0
ATC C-2282-15-0 (61.991 MMBtu/hr NG Boiler with SCR)	2,762	1,548	1,629	1,629	21,349	2,987	2,444	0
ATC C-2282-16-0 (61.991 MMBtu/hr NG Boiler with SCR)	2,762	1,548	1,629	1,629	21,349	2,987	2,444	0
ATC C-2282-17-0 (61.991 MMBtu/hr NG Boiler with SCR)	2,762	1,548	1,629	1,629	21,349	2,987	2,444	0
<b>SSPE2</b>	<b>19,999*</b>	<b>22,631</b>	<b>18,206</b>	<b>11,735</b>	<b>130,019</b>	<b>19,999*</b>	<b>14,855</b>	<b>7,534</b>

\* The applicant has proposed to limit the total SSPE2 for NO<sub>x</sub> and VOC each to no more than 19,999 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), 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

<b>Rule 2201 Major Source Determination (lb/year)</b>						
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>CO</b>	<b>VOC</b>
SSPE1	7,712	1,992	2,134	2,134	39,178	3,356
SSPE2	19,999	22,631	18,206	11,735	130,019	19,999
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

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 tons per year (tpy) for any regulated NSR pollutant and fugitive emissions are not considered when determining if the operation is a PSD Major Source.

<b>PSD Major Source Determination (tons/year)</b>						
	<b>NO<sub>2</sub></b>	<b>VOC</b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>PM</b>	<b>PM<sub>10</sub></b>
Estimated Facility PE before Project Increase	3.9	1.7	1.0	19.6	1.1	1.1
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.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore BE = PE1.

ATC C-2282-3-1: 1,919 bhp Emergency Standby Diesel IC Engine

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
C-2282-3-1	749	0	35	35	360	30

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
C-2282-5-2 & -7-2	1,922	498	524	524	12,932	699

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
C-2282-9-1 & -10-1	1,485	498	524	524	6,466	961

ATC C-2282-11-1: 250 bhp Emergency Diesel IC Engine Powering a Firewater Pump

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
C-2282-11-1	149	0	3	3	22	6

ATC C-2282-12-0 (Rendering Operation)

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

ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

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

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

Since these are new emissions units, BE = PE1 = 0 for all pollutants.

## **7. SB 288 Major Modification**

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

Since this facility is not a major source for any of the pollutants addressed in 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.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification and no further discussion is required.

### **New Major Source**

As demonstrated above, this facility is not becoming a Major Source as a result of this project, therefore, this facility is not a New Major Source pursuant to 40 CFR 51.165 a(1)(iv)(A)(3).

## **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)

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Hydrogen sulfide (H<sub>2</sub>S)
- Total reduced sulfur (including H<sub>2</sub>S)

- Reduced sulfur compounds

Additionally, when evaluating if a facility is a PSD major source all regulated NSR pollutants, including VOC, must be considered regardless of attainment status.

### 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 tons per year (tpy) for any regulated NSR pollutant and fugitive emissions are not considered when determining if the operation is a PSD Major Source.

#### PM Emissions for PSD Applicability

Consistent with District practice, PM emissions from combustion of fuel are assumed to be the same as the PM<sub>10</sub> emissions. As discussed above, based on District Rule 2201, Section 4.11.2, PM emissions from the rendering operations are assumed to be twice the PM<sub>10</sub> emissions. The PM emissions for the rendering operations are calculated as follows:

#### Annual PE2 for PM from ATC C-2282-12-0 (Rendering Operation)

Annual PE2 for PM = (Annual PE2 for PM<sub>10</sub> from scrubber) x (2 lb-PM/1lb-PM<sub>10</sub>) + (Annual PE2 for PM<sub>10</sub> from Natural Gas combustion in RTO) x (1 lb-PM/1lb-PM<sub>10</sub>) + (Annual PE2 for PM<sub>10</sub> in RTO exhaust from material processed) x (2 lb-PM/1lb-PM<sub>10</sub>) + (Annual PE2 for PM<sub>10</sub> solids processing) x (2 lb-PM/1lb-PM<sub>10</sub>)

Annual PE2 for PM = (7,509 lb-PM<sub>10</sub>/year) x (2 lb-PM/1lb-PM<sub>10</sub>) + (493 lb-PM<sub>10</sub>/year) x (1 lb-PM/1lb-PM<sub>10</sub>) + (1,405 lb-PM<sub>10</sub>/year) x (2 lb-PM/1lb-PM<sub>10</sub>) + (129 lb-PM<sub>10</sub>/year) x (2 lb-PM/1lb-PM<sub>10</sub>) = 18,579 lb-PM/year

#### Annual PE2 for PM from ATC C-2282-13-0 (MBM Loadout Operation)

Annual PE2 for PM = (Annual PE2 for PM<sub>10</sub>) x (2 lb-PM/1lb-PM<sub>10</sub>)

Annual PE2 for PM = (20 lb-PM<sub>10</sub>/year) x (2 lb-PM/1lb-PM<sub>10</sub>) = 40 lb-PM/year

For purposes of PSD applicability, the total PE2 for PM emissions for all units included in this project are calculated as follows:

#### Total Annual PE2 for All Units in Project

Total PE2 for PM for units in Project = (ATC -3-2 Annual PE<sub>PM</sub>) + (ATC -5-2 Annual PE<sub>PM</sub>) + (ATC -7-2 Annual PE<sub>PM</sub>) + (ATC -9-1 Annual PE<sub>PM</sub>) + (ATC -10-1 Annual

$PE_{PM}) + (ATC -11-1 \text{ Annual } PE_{PM}) + (ATC -12-0 \text{ Annual } PE_{PM}) + (ATC -13-0 \text{ Annual } PE_{PM}) + (ATC -14-0 \text{ Annual } PE_{PM}) + (ATC -15-0 \text{ Annual } PE_{PM}) + (ATC -16-0 \text{ Annual } PE_{PM}) + (ATC -17-0 \text{ Annual } PE_{PM})$

Total PE<sub>2</sub> for PM for units in Project = (35 lb-PM/year) + (524 lb-PM/year) + (524 lb-PM/year) + (524 lb-PM/year) + (524 lb-PM/year) + (3 lb-PM/year) + (18,579 lb-PM/year) + (40 lb-PM/year) + (1,629 lb-PM/year) + (1,629 lb-PM/year) + (1,629 lb-PM/year) + (1,629 lb-PM/year) = 18,579 lb-PM/year x 1 ton/2,000 lb = 9.3 ton-PM/year

Estimation of Maximum H<sub>2</sub>S and Total Reduced Sulfur (TRS) for PSD Applicability

As discussed above, H<sub>2</sub>S will be emitted with the air from the rendering operation room air scrubbers. In addition, sulfur compounds may be emitted from the materials processed by the rendering operation. Sulfur (primarily in the form of H<sub>2</sub>S) is also included in the natural gas that will fuel the RTO and proposed boilers. However, any sulfur compounds emitted from the materials processed by the rendering operation are expected to be converted almost entirely to SO<sub>x</sub> in the proposed RTO and the sulfur in the fuel is also expected to be converted entirely to SO<sub>x</sub> during combustion. A previous EPA study indicated very high destruction efficiencies of 99.7% to greater than 99.9% for H<sub>2</sub>S that was flared when the heating values of the gas flared exceeded the flame stability limit.<sup>10</sup> The RTO and boilers are expected to have H<sub>2</sub>S destruction efficiencies that are at least equal to that of a properly operated flare. Therefore, for purposes of the PSD applicability determination, the maximum amount of non-fugitive H<sub>2</sub>S and total reduced sulfur compounds emitted from the proposed equipment will be estimated based on the H<sub>2</sub>S emissions from the room air scrubbers and conservatively assuming that a maximum of 0.3% of the sulfur compounds emitted from the material processed and from the fuel used in the RTO and boilers will be emitted as H<sub>2</sub>S rather than converted to SO<sub>x</sub>. Therefore, for purposes of the PSD applicability the maximum non-fugitive H<sub>2</sub>S and total reduced sulfur (TRS) emissions from the proposed equipment will be conservatively estimated as follows:

Maximum H<sub>2</sub>S/TRS Emissions

$7,534 \text{ lb-H}_2\text{S/yr} + (14,447 \text{ lb-SO}_x\text{/yr} + 4 \times 1,548 \text{ lb-SO}_x\text{/yr}) \times 1 \text{ mol-H}_2\text{S/mol-SO}_x \times (34 \text{ lb-H}_2\text{S/mol-H}_2\text{S}) / (64 \text{ lb-SO}_x\text{/mol-SO}_x) \times 0.003 = 7,567 \text{ lb-H}_2\text{S/yr} (3.8 \text{ ton-H}_2\text{S/yr})$

Total Project PE for PSD Applicability

The potential to emit for the project is compared to the applicable PSD major source thresholds in the table below.

<sup>10</sup> Pohl, J. H. and Soelberg, N. R. (September 1986) Evaluation of the Efficiency of Industrial Flares: H<sub>2</sub>S Gas Mixtures and Pilot Assisted Flares. Prepared for US EPA Office of Air Quality Planning and Standards. EPA/600/2-86/080.



PSD Major Source Determination: Potential to Emit (tons/year)							
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	H <sub>2</sub> S/TRS
Total PE from New and Modified Units	10.0*	10.0*	11.3	65.0	13.6**	9.1	3.8
PSD Major Source threshold	250	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No	No

\* As discussed above, the applicant has proposed to limit the total SSPE2 for NO<sub>x</sub> and VOC, which includes the PE for all new and modified units in this project, to no more than 19,999 lb-VOC/year

\*\* As discussed above, PM emissions from rendering operations assumed to be twice the PM<sub>10</sub> emissions

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 1070 Inspections

The purpose of Rule 1070 is to explain the District's authority in determining compliance with the requirements of District rules and regulations. This rule applies to any source operation, which emits or may emit air contaminants. This rule allows the District to perform inspections for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations. The rule also allows the District to require record keeping, to make inspections, and to conduct tests of air pollution sources.

The conditions below will be included on the ATC permits.

#### ATC C-2282-3-1: 1,919 bhp Emergency Standby Diesel IC Engine

- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rules 1070, 2201, and 4702, and 17 CCR 93115]
- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]

- On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

ATC C-2282-11-1: 250 bhp Emergency Diesel IC Engine Powering a Firewater Pump

- On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

#### ATC C-2282-12-0 (Rendering Operation)

- The differential pressure across each of the packed bed scrubbers and venturi scrubbers shall be maintained in the range recommended by the manufacturer. Documentation of the manufacturer's recommended differential pressure range for each scrubber shall be maintained and the acceptable differential pressure range for each scrubber shall be established at the initial inspection. [District Rules 1070, 2201, and 4102]
- The total PM10 emissions from the packed bed scrubbers serving the rendering plant room air shall not exceed 20.6 lb-PM10/day. To ensure compliance with the daily emission limit for PM10 from the packed bed scrubbers serving the rendering plant room, the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall not exceed 100,000 standard cubic feet per minute (scfm) until source testing has demonstrated that the packed bed scrubbers serving the rendering plant room air can comply with the daily emission limit for PM10 with a higher total combined exhaust flow rate. Records of the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall be maintained for each day that the scrubbers operate. [District Rules 1070 and 2201]
- During source testing of emissions from the RTO, the rate of the use of natural gas as fuel in the RTO shall be monitored and recorded in standard cubic feet per hour (scf/hr) and MMBtu/hr. [District Rules 1070 and 2201]
- The permittee shall take monthly readings with a portable anemometer to verify that the main processing building is under negative pressure during periods of normal plant operation. The anemometer shall be calibrated per the manufacturer's recommendations. Additionally, the anemometer shall be made available to District inspection staff upon request. Records of anemometer measurements and calibrations shall be kept, maintained, and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4102]
- The permittee shall keep records of the daily and annual quantity of raw material processed and the meat and bone meal (MBM)/protein solids produced, in tons. [District Rules 1070 and 2201]
- The permittee shall keep records of the amount of natural gas fuel combusted, in scf and MMBtu, for each month that the RTO is operated. [District Rules 1070 and 2201]
- The permittee shall keep daily records of the maximum exhaust flow rate in scfm and the hours of operation of each of the packed bed scrubbers serving the rendering plant room air and shall keep daily and monthly records of the total combined amount of air exhausted from the packed bed scrubbers serving the rendering plant room air in scf. If more accurate measurements are not available to calculate the total amount of air exhausted (scf) from each packed bed scrubber each day, then the total amount of air exhausted from each packed bed scrubber each day shall be calculated as the maximum exhaust flow rate in scfm for the

particular day multiplied by 60 min/hr multiplied by the total hours of operation of the packed bed scrubber for that day. The total combined amount of air exhausted from the packed bed scrubbers in each month shall be calculated as the sum of the total amount of air exhausted from the packed bed scrubbers for each day during the particular month. [District Rules 1070 and 2201]

- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

- The permittee shall keep records of the daily and annual amount of product loaded out, in tons. [District Rules 1070 and 2201]
- Records of all maintenance of the bin vent filters, including all change outs of filter media, shall be maintained. [District Rules 1070 and 2201]
- All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

#### ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

- The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records shall be maintained of the of the amount of fuel used in this unit, in standard cubic feet (scf), during each start-up and shutdown period as determined using the fuel flow meter, and of the total amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), during start-up and shutdown for each month in which the unit is operated. [District Rules 1070 and 2201]

- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

### **Rule 1100 Equipment Breakdown**

This rule defines a breakdown condition and the procedures to follow if one occurs. The corrective action, the issuance of an emergency variance, and the reporting requirements are also specified.

Section 3.1 gives the following definition for a breakdown condition:

*Breakdown Condition: an unforeseeable failure or malfunction of any air pollution control equipment, or related operating equipment, which causes a violation of any emission limitation or restriction prescribed by these Rules and Regulations, or by State Law; or any in-stack continuous monitoring equipment, where such failure or malfunction:*

- 1) *Is not the result of neglect or disregard of any air pollution control law, rule or regulation; and*
- 2) *Is not intentional or the result of negligence; and*
- 3) *Is not the result of improper maintenance; and*
- 4) *Does not constitute a nuisance; and*
- 5) *Is not a recurrent breakdown of the same equipment*

Section 4.1 stipulates that the APCO may take no enforcement action if the owner or operator demonstrates to the APCO's satisfaction that a breakdown condition, as defined in this rule, exists.

Section 6.1 states that an owner or operator seeking a breakdown relief shall notify the District as soon as possible, but no longer than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. Therefore, the following condition will be included on ATC C-2282-12-0 for the rendering operation:

- If permittee wishes to seek breakdown relief under District Rule 1100, permittee shall notify the District of any breakdown condition as defined in the rule as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to

the District's satisfaction that the longer reporting period was necessary. Conditions that constitute or cause a nuisance shall not be eligible for breakdown relief under District Rule 1100. [District Rule 1100]

### **Rule 2010 Permits Required**

Rule 2010 requires any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct (ATC) or a Permit to Operate (PTO). This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting or falsifying any Permit to Operate.

Pursuant to Section 2.0, the provisions of this rule apply to any person who plans to or does operate, construct, alter, or replace any source operation which may emit air contaminants or may reduce the emission of air contaminants.

As mentioned above, Central Valley Meat Co. is proposing to install tanks for the storage of beef fat/tallow as part of the rendering operation. At typical ambient temperatures, the fat/tallow will tend to solidify. Therefore, each of the fat/tallow storage tanks will be heated to maintain the tank contents above a point at which the stored fat would become solid. The temperature to which the tanks will be heated typically will not exceed 140 °F. As discussed in District project C-1172884, the vapor pressure of the beef fat/tallow that will be stored in the tanks is expected to be less than diesel fuel, which the District considers to be non-volatile. The US Department of Energy National Renewable Energy Laboratory (NERL) report Production of Biodiesels from Multiple Feedstocks and Properties of Biodiesels and Biodiesel/Diesel Blends (March 2003)<sup>11</sup> also indicates that biodiesel from tallow solidifies at a lower temperature than diesel fuel, is more viscous than diesel fuel, and is non-volatile at ambient temperatures. Therefore, the beef fat/tallow that will be stored in the tanks will also be non-volatile at the expected typical storage temperature of no greater than 140 °F and there will be no emissions of air contaminants from these tanks.

Because no emissions are expected from the beef fat/tallow storage tanks, the storage tanks are not subject to Rule 2010 and do not require a District permit. However, since the beef fat/tallow storage tanks will be served by the rendering plant odor control system, they will be identified on the permit.

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<sup>11</sup> Kinast, J A. (2003) Production of Biodiesels from Multiple Feedstocks and Properties of Biodiesels and Biodiesel/Diesel Blends: Final Report; Report 1 in a Series of 6". US Department of Energy National Renewable Energy Laboratory (NERL). <https://www.nrel.gov/docs/fy03osti/31460.pdf>

**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 rendering operation (ATC C-2282-12-0), a new meat and bone meal (MBM) loadout operation (ATC C-2282-13-0), and four new 61.991 MMBtu/hr natural gas-fired boilers (ATCs C-2282-14-0, -15-0, -16-0, & -17-0). The potential to emit for the emission units included in these operations is shown below.

ATC C-2282-12-0: Rendering Operation

Daily PE2 for Emissions Controlled by the Regenerative Thermal Oxidizer (RTO)

ATC C-2282-12-0: Daily PE2 from RTO							
NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
35.0	78.7	9.0	3.5	14.9	13.1	2.0	0

As seen above, the PE2 for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, and VOC emissions from the rendering operation controlled by the proposed Regenerative Thermal Oxidizer (RTO) are greater than 2.0 lb/day. However, the RTO is an emissions control device for the rendering operation. The District has determined that an emissions control device is not a source operation that is subject to BACT. Because of this, only direct emissions from the rendering operation may trigger District BACT requirements, not secondary emissions from the RTO (i.e. NO<sub>x</sub>, SO<sub>x</sub>, and CO). PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC are the only affected pollutants emitted directly by the rendering operation that have a PE2 greater

than 2.0 lb/day; therefore, BACT will only be triggered for PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC emissions from the rendering operation controlled by the RTO.

Daily PE2 for Emissions from Room Air Scrubbers

ATC C-2282-12-0: Daily PE2 from Room Air Scrubbers							
NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
0	0	20.6	5.9	0	36.4	12.9	20.6

As seen above, the PE2 for PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the rendering operation vented through the packed bed room air scrubbers are greater than 2.0 lb/day; therefore, BACT is triggered for PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the rendering operation that are vented through the packed bed room air scrubbers.

Daily PE2 for PM for Solids Processing (Material Transfer, Grinding, Screening)

ATC C-2282-12-0: Daily PE2 from Solids Processing								
Operation	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
Conveyor to Crax Bin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crax Bin to Grinding Process	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grinding	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0
Screening	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0
Recycle Line to Hammermill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Conveyor to Storage Silos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

As seen above, the PE2 for PM<sub>10</sub> emissions is not greater than 2.0 lb/day for any affected pollutant emitted by any of the emission units of the rendering plant solids processing operations; therefore, BACT is not triggered for any of the rendering plant solids processing operations.

Daily PE2 ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

ATC C-2282-13-0: Daily PE2 from MBM Loadout Operation								
Operation	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
Silo Loading	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Silo Unloading	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

As seen above, the PE2 from the MBM silo loading and unloading operations is not greater than 2.0 lb/day for any affected pollutant emitted by the MBM silo loading and unloading emission units; therefore, BACT is not triggered for the MBM silo loading and unloading operations.



Daily PE2 for ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: Daily PE2 from 61.991 MMBtu/hr Natural Gas Boilers							
NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC	NH <sub>3</sub>	H <sub>2</sub> S
7.6	4.2	4.5	4.5	58.5	8.2	6.7	0

As seen above, the PE2 for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, VOC, and NH<sub>3</sub> emissions from each of the proposed 61.991 MMBtu/hr boilers will exceed 2.0 lb/day. BACT is triggered for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and VOC. 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. In addition, BACT is not triggered for NH<sub>3</sub> because the NH<sub>3</sub> emissions are the result of the use of an emissions control device (the SCR system) and the District has determined that emissions control devices do not trigger BACT.

**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 for the relocation of an emissions unit.

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

As discussed above, the facility has proposed to limit the SSPE2 from the facility to no more than 19,999 lb/year each for of NO<sub>x</sub> and VOC, which will require modification of the facility's permits for the existing 1,919 bhp emergency standby IC engine (ATC C-2282-3-1), the four 19.95 MMBtu/hr natural gas-fired boilers (ATCs C-2282-5-2, -7-2, -9-1, and -10-1), and the 250 bhp emergency IC engine powering a firewater pump (ATC C-2282-11-1). The modifications to these units will not result in any changes in emission factors or PE for these units and will not result in any changes in the Adjusted Increase in Permitted Emissions (AIPE) as shown below.

$$AIPE = PE2 - HAPE$$

Where,

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

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

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

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

Where,

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

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

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

$$\text{AIPE} = \text{PE2} - (\text{PE1} \times (\text{EF2} / \text{EF1}))$$

AIPE for ATC C-2282-3-1: 1,919 bhp Emergency Standby Diesel IC Engine

<b>AIPE for ATC C-2282-3-1 (Emergency IC Engine)</b>										
Pollutant	Daily PE2 (lb/day)	-	Daily PE1 (lb/day)	x (	EF2 (g/bhp-hr)	x	EF1 (g/bhp-hr)	) =	EF2/EF1	AIPE (lb/day)
NO <sub>x</sub>	898.6	-	898.6	x (	8.85	x	8.85	) =	1	<b>0.0</b>
SO <sub>x</sub>	0.5	-	0.5	x (	0.0051	x	0.0051	) =	1	<b>0.0</b>
PM <sub>10</sub>	42.3	-	42.3	x (	0.417	x	0.417	) =	1	<b>0.0</b>
CO	432.5	-	432.5	x (	4.26	x	4.26	) =	1	<b>0.0</b>
VOC	35.5	-	35.5	x (	0.35	x	0.35	) =	1	<b>0.0</b>

AIPE for ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

<b>AIPE for ATCs C-2282-5-2 &amp; -7-2 (19.95 MMBtu/hr Boilers)</b>										
Pollutant	Daily PE2 (lb/day)	-	Daily PE1 (lb/day)	x (	EF2 (lb/MMBtu)	x	EF1 (lb/MMBtu)	) =	EF2/EF1	AIPE (lb/day)
NO <sub>x</sub>	5.3	-	5.3	x (	0.011	x	0.011	) =	1	<b>0.0</b>
SO <sub>x</sub>	1.4	-	1.4	x (	0.00285	x	0.00285	) =	1	<b>0.0</b>
PM <sub>10</sub>	1.4	-	1.4	x (	0.003	x	0.003	) =	1	<b>0.0</b>
CO	35.4	-	35.4	x (	0.074	x	0.074	) =	1	<b>0.0</b>
VOC	1.9	-	1.9	x (	0.004	x	0.004	) =	1	<b>0.0</b>

AIPE for ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

<b>AIPE for ATCs C-2282-9-1 &amp; -10-1 (19.95 MMBtu/hr Boilers)</b>										
Pollutant	Daily PE2 (lb/day)	-	Daily PE1 (lb/day)	x (	EF2 (lb/MMBtu)	x	EF1 (lb/MMBtu)	) =	EF2/EF1	AIPE (lb/day)
NO <sub>x</sub>	4.1	-	4.1	x (	0.0085	x	0.0085	) =	1	<b>0.0</b>
SO <sub>x</sub>	1.4	-	1.4	x (	0.00285	x	0.00285	) =	1	<b>0.0</b>
PM <sub>10</sub>	1.4	-	1.4	x (	0.003	x	0.003	) =	1	<b>0.0</b>
CO	17.7	-	17.7	x (	0.037	x	0.037	) =	1	<b>0.0</b>
VOC	2.6	-	2.6	x (	0.0055	x	0.0055	) =	1	<b>0.0</b>

AIPE for ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering Firewater Pump

AIPE for ATC C-2282-11-1 (Emergency IC Engine)										
Pollutant	Daily PE2 (lb/day)	-	Daily PE1 (lb/day)	x (	EF2 (g/bhp-hr)	x	EF1 (g/bhp-hr)	) =	EF2/EF1	AIPE (lb/day)
NO <sub>x</sub>	35.7	-	35.7	x (	2.7	x	2.7	) =	1	<b>0.0</b>
SO <sub>x</sub>	0.1	-	0.1	x (	0.0051	x	0.0051	) =	1	<b>0.0</b>
PM <sub>10</sub>	0.8	-	0.8	x (	0.06	x	0.06	) =	1	<b>0.0</b>
CO	5.3	-	5.3	x (	0.4	x	0.4	) =	1	<b>0.0</b>
VOC	1.3	-	1.3	x (	0.1	x	0.1	) =	1	<b>0.0</b>

As shown above, the AIPE is not greater than 2.0 lb/day for emissions of any affected pollutant from ATCs C-2282-3-1, -5-2, -7-2, -9-1, -10-1, or -11-1. Therefore, BACT is not triggered for the modification of an emissions unit.

**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 or Federal Major Modification for any pollutant. Therefore, BACT is not triggered for an SB 288 or Federal Major Modification.

**2. BACT Guideline**

ATC C-2282-12-0 (Rendering Operation)

For the rendering operation, BACT is triggered for PM<sub>10</sub>/PM<sub>2.5</sub>, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the rendering operation room air that will be vented through the packed bed room air scrubbers and PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions that will be captured from the rendering operation equipment and controlled by the RTO.

District BACT Guideline 8.3.2 – Animal Matter Rendering Plant, which applied to rendering operations, was originally established in 1998 is now considered to be outdated. District BACT Guideline 8.3.2 only applied to the emissions that are captured from rendering operation processing equipment and vented to a primary emissions and odor control system, but did not address rendering operation room air emissions that are not captured by the primary emissions and odor control system. Updates to District BACT Guideline 8.3.2 were proposed under District Project C-1172884; however, although the project was finalized, the BACT requirements from that project have not been approved as a general BACT guideline for rendering operations. Therefore, because District BACT Guideline 8.3.2 is outdated and did not address room air emissions from the rendering operations that are not captured by the primary emissions and odor control system, project-specific BACT analyses were performed to address emissions captured from the proposed rendering operation processing equipment and the rendering operation room air emissions based on the District’s review of information that was available during the evaluation of this project. (See Appendix E)

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

The District does not currently have an approved BACT Guideline for this source category (fossil fuel-fired boilers rated greater than 20.0 MMBtu/hr). Therefore, a project-specific BACT analysis was performed for the proposed 61.991 MMBtu/hr natural gas-fired boilers based on the District's review of information that was available when the application for this project was deemed complete. (See Appendix F)

**3. Top-Down BACT Analysis**

Pursuant to 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.

ATC C-2282-12-0 (Rendering Operation)

Pursuant to the attached Top-Down BACT Analysis (see Appendix E), BACT will be been satisfied with the following:

Rendering Plant Processing Equipment

PM<sub>10</sub>: Use of a particulate removal system that consists of a venturi scrubber, condenser(s), and a packed bed scrubber in series with a thermal oxidizer operating with a minimum chamber temperature of at least 1,400 °F and minimum retention time of 1.0 seconds

VOC: Use of a scrubbing system in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds

Rendering Plant Room Air

PM<sub>10</sub>: Rendering operations in a building kept under negative pressure and vented to packed bed scrubber(s)

VOC: Rendering operations in a building kept under negative pressure and vented to packed bed scrubber(s)

NH<sub>3</sub>: Rendering operations in a building kept under negative pressure and vented to packed bed scrubber(s)

H<sub>2</sub>S: Rendering operations in a building kept under negative pressure and vented to packed bed scrubber(s)

In order to enforce the BACT requirements, the following conditions will be included on the ATC for the rendering operation:

- The processing building shall be kept under negative pressure at all times when receiving or storing raw material or in the process of rendering, except during limited periods when the receiving area doors are open to allow for entry/exit of raw material delivery trucks or during an equipment breakdown as defined in Rule District 1100. [District Rules 2201 and 4102]

- Vapors from the cookers shall be captured and vented to the shell-and-tube or air-cooled condenser(s), the two-stage scrubber system, and the Regenerative Thermal Oxidizer (RTO), in series. [District Rules 2201, 4102, and 4104]
- Vapors from the drainer, drainer discharge conveyor(s), screw presses, screen(s), and centrifuge(s) shall be captured and vented to the two-stage scrubber system, and RTO, in series. [District Rules 2201, 4102 and 4104]
- The RTO shall be operated with a combustion chamber temperature of no less than 1,400 degrees F and the retention time shall be no less than 1.0 seconds. The RTO temperature shall be monitored and recorded utilizing a continuous monitoring and recording device. The monitoring and recording device shall be maintained in proper operating condition at all times. [District Rules 2201, 4102, and 4104]

In addition, in order to enforce the BACT requirements, the equipment description for the rendering operation will include and require the use of a condenser system and a two-stage venturi/packed bed scrubber system in series with an RTO to control emissions from the processing equipment for the rendering operation, and will include and require the use of packed bed scrubbers to control emissions from the rendering plant room air.

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

As discussed above, the proposed 61.991 MMBtu/hr natural gas-fired boilers in this project trigger BACT for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC. Pursuant to the attached Top-Down BACT Analysis (See Appendix F), BACT for these proposed units will be satisfied with the following:

- NO<sub>x</sub>: 2.5 ppmvd @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu during steady state and 30 ppmvd @ 3% O<sub>2</sub> or 0.036 lb-NO<sub>x</sub>/MMBtu during start-up and shutdown and compliance with District Rule 4320 requirements for start-up and shutdown
- SO<sub>x</sub>: Use of only PUC regulated natural gas as fuel (0.00285 lb-SO<sub>x</sub>/MMBtu)
- PM<sub>10</sub>: Use of only PUC regulated natural gas as fuel
- VOC: Use of only PUC regulated natural gas as fuel

The following conditions will be included on the ATCs for each of the proposed boilers to incorporate the applicable BACT requirements:

- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
- During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu);

0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
- The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]

## 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, Section 4.5.

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

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	19,999	22,631	18,206	130,019	19,999
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

### 2. Quantity of District Offsets Required

As shown above, the SSPE2 is not greater than the offset thresholds for any pollutants, therefore, District offsets are not triggered. In addition, as demonstrated above, this project does not trigger Federal Major Modification or New Major Source requirements. Therefore, offsets are not required for this project.

Although offsets are not required for this project for exceeding the offset thresholds of Table 4-1 of Rule 2201, the applicant has proposed to provide offsets to mitigate the increase in PM emissions to satisfy Rule 2201, Section 4.14 – Ambient Air Quality Analysis, as discussed in Section Rule 2201.F of this document below.

**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 shown in Section VII.C.5 above, this existing minor source facility is not becoming a Major Source as a result of this project. Therefore, this facility is not a New Major Source and this project does not constitute an SB 288 or a Federal Major Modification. Consequently, public noticing for this project for New Major Source, Federal Major Modification, or SB 288 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 that has a PE greater than 100 lb/day for any pollutant; therefore, public noticing is not required for a new emissions unit with a PE > 100 lb/day.

**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 <sub>x</sub>	7,712	19,999	20,000 lb/year	No
SO <sub>x</sub>	1,992	22,631	54,750 lb/year	No
PM <sub>10</sub>	2,134	18,206	29,200 lb/year	No
CO	39,178	130,019	200,000 lb/year	No
VOC	3,356	19,999	20,000 lb/year	No

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

**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 <sub>x</sub>	19,999	7,712	12,287	20,000 lb/year	No
SO <sub>x</sub>	22,631	1,992	20,639	20,000 lb/year	Yes
PM <sub>10</sub>	18,206	2,134	16,072	20,000 lb/year	No
CO	130,019	39,178	90,841	20,000 lb/year	Yes
VOC	19,999	3,356	16,643	20,000 lb/year	No
NH <sub>3</sub>	14,855	0	14,855	20,000 lb/year	No
H <sub>2</sub> S	7,534	0	7,534	20,000 lb/year	No

As demonstrated above, the SSIPEs for SO<sub>x</sub> and CO were greater than 20,000 lb/year; therefore, public noticing for SSIPE purposes is required.

**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 for a Title V significant modification.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for SSIPEs for SO<sub>x</sub> and CO emissions in excess of 20,000 lb/year. 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 ATCs 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:**

**ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine**

For the diesel-fired emergency IC engine, the DELs for NO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC are stated in the form of emission factors (g/bhp-hr), the maximum horsepower rating of the engine (1,919 bhp), and the maximum operational time of 24 hours per day. The DEL for SO<sub>x</sub> is based on the maximum sulfur content of the diesel fuel used.

The following conditions will be included on the ATC permit.

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
- Emissions from this IC engine shall not exceed any of the following limits: 8.85 g-NO<sub>x</sub>/bhp-hr, 4.26 g-CO/bhp-hr, or 0.35 g-VOC/bhp-hr. [District Rule 2201]
- Emissions from this IC engine shall not exceed 0.417 g-PM<sub>10</sub>/bhp-hr based on ISO 8178 test procedure. [District Rule 2201]

In addition, the following conditions will be included on the ATC permit to enforce the annual emission limits and the facility-wide annual NO<sub>x</sub> and VOC emission limits.

- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]
- Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> and VOC emission factors given in this permit: NO<sub>x</sub> (lb in month) = [fuel use in month (gal)] x [137,381 Btu/gal] x [1 bhp-hr/7,000 Btu] x 8.85 g-NO<sub>x</sub>/bhp-hr ÷ 453.59 g/lb, and VOC (lb in month) = [fuel use in month (gal)] x [137,381 Btu/gal] x [1 bhp-hr/7,000 Btu] x 0.35 g-VOC/bhp-hr ÷ 453.59 g/lb. [District Rule 2201]

**ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers**

For the natural gas-fired boilers, the DELs for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC are stated in the form of emission factors (lb/MMBtu), the maximum heat input rating of the boilers (19.95 MMBtu/hr), and the maximum operational time of 24 hours per day. The DEL for SO<sub>x</sub> is based on the use of PUC regulated natural gas. The following conditions will be included on the ATC permits.

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

- {271} 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]
- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Emissions rates from this unit shall not exceed any of the following limits: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- {271} 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]
- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Emissions rates from this unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0085 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

In addition, the following conditions will be included on ATCs C-2282-5-2, -7-2, -9-1, and -10-1 permit to enforce the facility-wide annual NO<sub>x</sub> and VOC emission limits.

- Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factor given in this permit or from the most recent source test, and the VOC emission factor given in this permit: lb-pollutant in month = [HHV Heat Input in Month (MMBtu)] x [Emission Factor (lb-pollutant/MMBtu)]. [District Rule 2201]

ATC C-2282-11-1: 250 bhp Emergency Diesel IC Engine Powering a Firewater Pump

For the diesel-fired emergency IC engine, the DELs for NO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC are stated in the form of maximum emission factors (g/bhp-hr), the maximum horsepower rating of the engine (250 bhp), and the maximum operational time of 24 hours per day. The DEL for SO<sub>x</sub>

is based on the maximum sulfur content of the diesel fuel used. The following conditions will be included on the ATC permit.

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
- Emissions from this IC engine shall not exceed any of the following limits: 2.7 g-NO<sub>x</sub>/bhp-hr, 0.4 g-CO/bhp-hr, or 0.1 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.06 g-PM<sub>10</sub>/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

In addition, the following conditions will be included on the ATC permit to enforce the annual emission limits and the facility-wide annual NO<sub>x</sub> and VOC emission limits.

- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and to preserve or protect property, human life, or public health during a fire. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
- Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> and VOC emission factors given in this permit: lb-pollutant in month = [Maximum Rated bhp (250 bhp)] x [Emission Factor (g-pollutant/bhp-hr)] x (1 lb/453.59 g) x [Hours of Operation in month (hours)]. [District Rule 2201]

#### ATC C-2282-12-0: Rendering Operation

The DELs for the rendering operation are stated in the form of emission factors, the maximum amount of material processed, and the maximum operational time of 24 hours per day for the RTO. The DEL for SO<sub>x</sub> from the RTO is based on the use of PUC regulated natural gas. As discussed above, for the PM<sub>10</sub> emissions from the room air scrubber the applicant has requested the option to comply with a process rate-based emission factor rather than the PM concentration limit; therefore, this option will be included in the condition limiting PM<sub>10</sub> emissions from the room air scrubbers.

The following conditions will be included on the ATC permit.

- {271} 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]
- The processing building shall be kept under negative pressure at all times when receiving or storing raw material or in the process of rendering, except during limited periods when the receiving area doors are open to allow for entry/exit of raw material delivery trucks or during an equipment breakdown as defined in Rule District 1100. [District Rules 2201 and 4102]
- All material received shall be processed within 24 hours of receipt. Each delivery of material shall be monitored and records shall be maintained to ensure that processing is performed within this time limit. [District Rules 2201 and 4102]
- Vapors from the cookers shall be captured and vented to the shell-and-tube or air-cooled condenser(s), the two-stage scrubber system, and the Regenerative Thermal Oxidizer (RTO), in series. [District Rules 2201, 4102, and 4104]
- Vapors from the drainer, drainer discharge conveyor(s), screw presses, screen(s), and centrifuge(s) shall be captured and vented to the two-stage scrubber system, and RTO, in series. [District Rules 2201, 4102 and 4104]
- The material handling and processing system, including the screen(s), hammermill, and crax transfer conveyor, shall be vented to a cyclone to control particulate matter (PM). The cyclone serving the material handling and processing system and air from the grinding room shall be vented to a two-stage scrubber system, consisting of a venturi scrubber and a packed bed scrubber connected in series. [District Rules 2201 and 4102]
- Only Public Utility Commission (PUC) regulated natural gas shall be used as supplemental fuel in the RTO. [District Rule 2201]
- In the event the RTO malfunctions during raw material processing, cooker emissions shall be routed to the two-stage scrubber system and then to a packed bed scrubber serving the rendering plant room air, in series. The RTO shall be restarted as soon as practical and upon reaching operating temperature the contaminated air stream shall be immediately re-routed to the RTO. [District Rules 2201 and 4102]
- For each of the packed bed scrubbers, the scrubbing solution shall be delivered at a minimum rate of 10 gallons per minute for every 1,000 cubic feet per minute (cfm) of exhaust flowrate. [District Rules 2201 and 4102]
- For each of the venturi scrubbers, the scrubbing solution shall be delivered at a minimum rate of 4 gallons per minute for every 1,000 cubic feet per minute (cfm) of exhaust flowrate. [District Rules 2201 and 4102]

- The differential pressure across each of the packed bed scrubbers and venturi scrubbers shall be maintained in the range recommended by the manufacturer. Documentation of the manufacturer's recommended differential pressure range for each scrubber shall be maintained and the acceptable differential pressure range for each scrubber shall be established at the initial inspection. [District Rules 1070, 2201, and 4102]
- The RTO shall be operated with a combustion chamber temperature of no less than 1,400 degrees F and the retention time shall be no less than 1.0 seconds. The RTO temperature shall be monitored and recorded utilizing a continuous monitoring and recording device. The monitoring and recording device shall be maintained in proper operating condition at all times. [District Rules 2201, 4102, and 4104]
- The RTO shall be heated to the proper operating temperature prior to introducing the contaminated air stream. [District Rules 2201, 4102, and 4104]
- The total raw material process rate for this rendering operation shall not exceed either of the following limits: 2,333 tons in any day and 425,730 tons in any year. [District Rule 2201]
- The total amount of meat and bone meal (MBM)/protein solids produced by the rendering operation shall not exceed either of the following limits: 663 tons in any day and 120,989 tons in any year. [District Rule 2201]
- The emissions rates from the exhaust of the RTO that result from the raw material processed, not including SO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions from the combustion of natural gas as supplemental fuel in the RTO, shall not exceed any of the following limits, in pounds per ton of raw material processed: 0.015 lb-NO<sub>x</sub>/ton, 0.0335 lb-SO<sub>x</sub>/ton, 0.0033 lb-PM<sub>10</sub>/ton, 0.0052 lb-VOC/ton, or 0.00087 lb-NH<sub>3</sub>/ton. [District Rules 2201 and 4801]
- The SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions rates from the combustion of natural gas in the RTO as supplemental fuel, shall not exceed any of the following limits: 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201 and 4801]
- The controlled emissions rate from the exhaust of the packed bed scrubbers serving the rendering plant room air shall not exceed any of the following limits: PM<sub>10</sub>: 0.001 gr/dscf or 0.0088 lb/ton (compliance may be shown for either the PM<sub>10</sub> concentration limit or process rate based PM<sub>10</sub> limit), VOC: 3.0 ppmv as CH<sub>4</sub>, NH<sub>3</sub>: 1.0 ppmv, or H<sub>2</sub>S: 0.8 ppmv. [District Rule 2201]
- The total PM<sub>10</sub> emissions from the packed bed scrubbers serving the rendering plant room air shall not exceed 20.6 lb-PM<sub>10</sub>/day. To ensure compliance with the daily emission limit for PM<sub>10</sub> from the packed bed scrubbers serving the rendering plant room, the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall not exceed 100,000 standard cubic feet per minute (scfm) until source testing has demonstrated that the packed bed scrubbers serving the rendering plant room

air can comply with the daily emission limit for PM10 with a higher total combined exhaust flow rate. Records of the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall be maintained for each day that the scrubbers operate. [District Rules 1070 and 2201]

- The total controlled PM10 emission rate from the scrubber(s) serving the material handling and processing system and air from the grinding room shall not exceed 0.0010692 lb-PM10/ton of MBM/protein solids produced. [District Rule 2201]

In addition, the following conditions will be included on the ATC permit to enforce the facility-wide annual NO<sub>x</sub> and VOC emission limits.

- Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- The total NO<sub>x</sub> emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factor from the most recent source test of exhaust emissions from the RTO: lb-NO<sub>x</sub> in month = [tons material processed in month (ton)] x [NO<sub>x</sub> emission factor (lb-NO<sub>x</sub>/ton)]. [District Rule 2201]
- The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor from the most recent source test of exhaust emissions from the RTO, the VOC emission factor given in this permit for the combustion of natural gas as supplemental fuel in the RTO, and the VOC concentration from the most recent source test of exhaust emissions from the packed bed scrubbers serving the rendering plant room air: lb-VOC in month = [tons material processed in month (ton)] x [VOC emission factor (lb-VOC/ton)] + [HHV Heat Input in Month (MMBtu)] x [Supplemental Fuel VOC Emission Factor (0.0055 lb-VOC/MMBtu)] + [Total amount of air exhausted from packed bed scrubbers serving room in air in month (scf)] x [VOC concentration (ppmv)] x [0.000001 x (1 lb-mol)/(379.5 scf) x (16 lb-VOC)/(1 lb-mol)]. [District Rule 2201]

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

The DELs for the MBM loadout operation are stated in the form of emission factors and the maximum amount of material unloaded. The following conditions will be included on the ATC permit.

- {271} 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]

- Visible emissions from the bin vent filters serving the meat and bone meal (MBM) storage silos shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rules 2201 and 4101]
- The bin vent filters shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
- The cleaning frequency and duration of cleaning of the bin vent filters shall be adjusted to optimize the PM control efficiency. [District Rule 2201]
- A spare set of filters shall be maintained for each bin vent filter at all times. [District Rule 2201]
- Material removed from the filters shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
- The amount of meat and bone meal (MBM)/protein loaded out shall not exceed either of the following limits: 663 tons in any day and 120,989 tons in any year. [District Rule 2201]
- PM10 emissions from the MBM/protein solids loadout operation shall not exceed 0.0001616 lb/ton of protein loaded out. [District Rule 2201]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

For the natural gas-fired boilers, the DELs for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC are stated in the form of emission factors (lb/MMBtu) during start-up and shutdown and steady state operation, the maximum heat input rating of the boilers (61.991 MMBtu/hr), and the maximum operational time of 24 hours per day, and the maximum amount of stratup and shutdown time allowed during each day of operation. The DEL for SO<sub>x</sub> is based on the use of PUC regulated natural gas and the DEL for ammonia (NH<sub>3</sub>) slip from the SCR systems is based on the maximum allowed concentration of NH<sub>3</sub> slip.

The following conditions will be included on the ATC permits.

- {271} 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]
- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
- During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-

SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
- The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]
- Ammonia (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 3% O<sub>2</sub>. [District Rules 2201 and 4102]

In addition, the following conditions will be included on the ATC permit to enforce the facility-wide annual NO<sub>x</sub> and VOC emission limits.

- Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
- The total NO<sub>x</sub> emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factors given in this permit or from the most recent source test: lb-NO<sub>x</sub> in month = [start-up and shutdown NO<sub>x</sub> emissions in month (lb-NO<sub>x</sub>)] + [steady state NO<sub>x</sub> emissions in month (lb-NO<sub>x</sub>)], where the start-up and shutdown NO<sub>x</sub> emissions in month and steady state NO<sub>x</sub> emissions in month are calculated as follows: [start-up and shutdown NO<sub>x</sub> emissions in month (lb-NO<sub>x</sub>)] = [start-up and shutdown HHV Heat Input in Month (MMBtu)] x [0.036 lb-NO<sub>x</sub>/MMBtu] and [steady state NO<sub>x</sub> emissions in month (lb-NO<sub>x</sub>)] = [steady state HHV Heat Input in Month (MMBtu)] x [Emission Factor (lb-NO<sub>x</sub>/MMBtu)], where [steady state HHV Heat Input in Month (MMBtu)] = [total HHV Heat Input in Month (MMBtu)] - [start-up and shutdown HHV Heat Input in Month (MMBtu)]. [District Rule 2201]
- The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor given in this permit: lb-VOC in month = [HHV Heat Input in Month (MMBtu)] x [Emission Factor (lb-VOC/MMBtu)]. [District Rule 2201]



## E. Compliance Assurance

### 1. Source Testing

#### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

Pursuant to District Policy APR 1705 - Source Testing Frequency, source testing of this unit is not required to demonstrate compliance with Rule 2201.

#### ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

These units are 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 are summarized below and will also be discussed in Section VIII, District Rule 4320 of this evaluation.

District Rule 4320 requires NO<sub>x</sub> and CO emission testing not less than once every 12 months. Gaseous fuel-fired units demonstrating compliance on two consecutive compliance source tests may defer the following source test for up to 36 months. Therefore, source testing for NO<sub>x</sub> and CO will continue to be required at least once every 12 months and upon demonstrating compliance on two consecutive source tests, the following source test may be deferred for up to 36 months. District Rule 4320 also requires annual certification or testing of the sulfur content of the fuel used in boilers to demonstrate compliance with the PM and SO<sub>x</sub> requirements of the rule. However, these boilers will only be allowed to use PUC regulated gas as fuel; therefore, source testing of the sulfur content of the fuel will not be required.

The following conditions will be included on the ATC permits:

- 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 2201, 4305, 4306, and 4320]
- Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]

- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
- {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]
- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
- {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
- {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 (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
- {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]
- The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]

#### ATC C-2282-11-1: 250 bhp Emergency Diesel IC Engine Powering a Firewater Pump

Pursuant to District Policy APR 1705, source testing of this unit is not required to demonstrate compliance with Rule 2201.

#### ATC C-2282-12-0: Rendering Operation

##### Emissions Controlled by the Regenerative Thermal Oxidizer (RTO)

Emissions and vapors from the cooking process and the air from the rooms that contain the presses, centrifuges, material screens, crax transfer conveyors, drainers, and condensers for the new rendering operation will be vented to a two-stage scrubber, consisting of a venturi scrubber and a packed bed scrubber connected in series, and further vented to an RTO to control emissions and odors from the rendering operation. NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, VOC emissions are expected in the exhaust of the thermal oxidizer. There exhaust of the thermal oxidizer may also contain a small amount of NH<sub>3</sub>.

District Policy APR 1705 - Source Testing Frequency requires units equipped with an afterburner, thermal incinerator, or catalytic incinerator to be tested upon initial start-up and annually thereafter. Therefore, initial and annual testing of PM<sub>10</sub> and VOC testing will be required. In addition, because results of previous source tests of RTOs controlling emissions from rendering operations have shown considerable variation in the NO<sub>x</sub> emissions during operation, initial and annual testing of NO<sub>x</sub> emissions will be required. Initial testing of CO emissions will also be required to demonstrate compliance with the CO emission limit. The proposed SO<sub>x</sub> and NH<sub>3</sub> emissions factors for the RTO exhaust that are not generally accepted emission factors; therefore, initial testing will also be required to verify compliance with the proposed SO<sub>x</sub> and NH<sub>3</sub> emission rates for the RTO.

#### Emissions from Rendering Operation Room Air Scrubbers

The raw material unloading area, raw material receiving pit, pre-crushers, and any fugitive emissions from the cooker room will be vented to two 100,000-cfm packed bed scrubbers (room air scrubbers). VOC, PM<sub>10</sub>, NH<sub>3</sub>, and H<sub>2</sub>S emissions are expected in the exhaust of the packed bed scrubbers.

The proposed VOC, PM<sub>10</sub>, NH<sub>3</sub>, and H<sub>2</sub>S emission factors for the exhaust of the room air scrubbers are not based on manufacturer's data, nor general accepted emission factors; therefore, initial testing will also be required to verify compliance with the proposed VOC, PM<sub>10</sub>, NH<sub>3</sub>, and H<sub>2</sub>S emission factors. In addition, there is potential for the performance of the room air scrubbers to deteriorate over time, especially if the scrubbers are not monitored and maintained properly. As discussed below, the applicant will be required to periodically monitor, inspect, and clean the scrubbers as needed to ensure that they operate properly. Therefore, source testing of VOC, PM<sub>10</sub>, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the exhaust of the room air scrubbers will be required at least once every 24 months.

The following conditions will be included on the ATC for the rendering operation:

- Source testing to measure the NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, VOC, and NH<sub>3</sub> emission rates from the exhaust of the RTO shall be conducted within 60 days of start-up. [District Rule 2201]
- Source testing to measure the NO<sub>x</sub>, PM<sub>10</sub>, and VOC emission rates from the exhaust of the RTO shall be conducted least once every 12 months. [District Rule 2201]
- Source testing to measure the PM<sub>10</sub>, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the exhaust of the packed bed scrubbers serving the rendering plant room air shall be conducted within 60 days of start-up. [District Rule 2201]
- Source testing to measure the PM<sub>10</sub>, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the exhaust of the packed bed scrubbers serving the rendering plant room air shall be conducted least once every 24 months. [District Rule 2201]

- Source testing shall be performed while processing raw material at or near the maximum capacity of the rendering operation or under at another capacity that the District has previously approved in writing. [District Rules 1081 and 2201]
- Source testing to measure NOx emissions shall be conducted using EPA Method 7E or ARB Method 100, or an alternative method approved in writing by the District. [District Rules 1081 or 2201]
- Source testing to measure SOx emissions shall be conducted using EPA Method 6C, EPA Method 8, ARB Method 100, or SCAQMD Method 307-91, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
- Source testing to measure CO emissions shall be conducted using EPA Method 10 or ARB Method 100, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
- Source testing to measure PM10 emissions (filterable and condensable) shall be conducted using EPA Method 201 and 202, EPA Method 201a and 202, or ARB Method 5 in combination with Method 501, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
- Source testing to measure the VOC emissions shall be conducted using EPA Methods 18, 25, 25A, or 25B, ARB Method 100, or SCAQMD Method 25.3, or an alternative method approved in writing by the District. For EPA Methods 25, 25A, and 25B, and ARB Method 100, EPA Method 18 may be used to remove methane and ethane in order to determine the VOC concentration. [District Rules 1081 and 2201]
- Source testing to measure NH3 emissions shall be conducted using SCAQMD Method 207.1 or BAAQMD ST-1B, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
- Source testing to measure H2S emissions shall be conducted using ARB Method 15 or 16A, EPA Method 11, or SCAQMD Method 307-91, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
- Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100, or an alternative method approved in writing by the District. [District Rule 2201]
- For source testing purposes the following test methods, or alternative test methods approved by the District in writing, shall be used to determine stack gas velocity and stack gas moisture content: stack gas velocity - EPA Method 2 or ARB Method 2; stack gas moisture content - EPA Method 4 or ARB Method 4. [District Rules 1081 and 2201]
- {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]

- During source testing of emissions from the rendering operation, the raw material process rate shall be monitored and recorded in tons per hour, and during source testing of emissions from the RTO, the rate of the use of natural gas as fuel in the RTO shall also be monitored and recorded in standard cubic feet per hour (scf/hr) and MMBtu/hr. [District Rule 2201]
- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

Pursuant to District Policy APR 1705, source testing of this unit is not required to demonstrate compliance with Rule 2201.

#### ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

These units are subject to District Rules 4305, 4306, 4320. Source testing requirements, in accordance with District Rules 4305, 4306, and 4320 are summarized below and will also be discussed in Section VIII, District Rule 4320 of this evaluation.

District Rule 4320 requires NO<sub>x</sub> and CO emission testing not less than once every 12 months. Gaseous fuel-fired units demonstrating compliance on two consecutive compliance source tests may defer the following source test for up to 36 months. Therefore, source testing for NO<sub>x</sub> and CO will continue to be required at least once every 12 months. Upon demonstrating compliance on two consecutive source tests, the following source test may be deferred for up to 36 months. District Rule 4320 also requires annual certification or testing of the sulfur content of the fuel used in boilers to demonstrate compliance with the PM and SO<sub>x</sub> requirements of the rule. However, these boilers will only be allowed to use PUC regulated gas as fuel; therefore, source testing of the sulfur content of the fuel will not be required. Since the boilers will use SCR systems to control NO<sub>x</sub>, periodic testing of ammonia (NH<sub>3</sub>) slip will also be required at the same frequency as testing of NO<sub>x</sub> emissions from the boilers.

The following conditions will be included on the ATC permits:

- 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 2201, 4305, 4306, and 4320]

- Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
- Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
- {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]
- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
- {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
- {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
- NH<sub>3</sub> emissions for source test purposes shall be determined using BAAQMD ST-1B or SCAQMD Method 207-1. [District Rules 1081 and 2201]
- {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
- {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]
- The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]

## 2. Monitoring

### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

No monitoring is required to demonstrate compliance with District Rule 2201. Monitoring required by District Rule 4702 is discussed in the section on Rule 4702 below.

### ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

As mentioned above, the boilers are subject to District Rules 4305, 4306, and 4320. Rule 4320 requires that the operator of any unit subject to the emission limits of Rule 4320 shall either install and maintain continuous emissions monitoring equipment for NO<sub>x</sub>, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved alternate monitoring plan. As discussed in Section VIII, District Rule 4320 of this evaluation, the boilers are subject to the emission limits of Rule 4320; therefore, this requirement applies.

The applicant has proposed to continue to utilize pre-approve alternate monitoring plan "A" (Periodic Monitoring NO<sub>x</sub>, CO, and O<sub>2</sub> Emissions Concentrations) to meet the requirements of District Rule 4320. Monitoring for Rule 4320 also satisfies the NO<sub>x</sub> and CO monitoring requirements for Rule 2201.

The following conditions will be placed on the ATC permits:

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
- If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply

with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]

- 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]

#### ATC C-2282-11-1: 250 bhp Emergency Diesel IC Engine Powering a Firewater Pump

No monitoring is required to demonstrate compliance with District Rule 2201.

#### ATC C-2282-12-0: Rendering Operation

The following conditions will be included on the ATC permit for the proposed rendering operation to ensure compliance with the monitoring requirements of District Rule 2201:

- The RTO shall be operated with a combustion chamber temperature of no less than 1,400 degrees F and the retention time shall be no less than 1.0 seconds. The RTO temperature shall be monitored and recorded utilizing a continuous monitoring and recording device. The monitoring and recording device shall be maintained in proper operating condition at all times. [District Rules 2201, 4102, and 4104]
- For each of the packed bed scrubbers, if the scrubbing solution is delivered at a rate less than 10 gallon/minute for every 1,000 cfm of exhaust flowrate or the differential pressure across the scrubber is outside of the range recommended by the manufacturer, as measured by the permittee, the permittee shall correct the delivery rate of the scrubbing solution and/or the differential pressure across the scrubber to acceptable levels as soon as possible, but no longer than 1 hour of operation after detection. If the delivery rate of the scrubbing solution or differential pressure across the scrubber continues to be outside of acceptable ranges after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. Monitoring parameters found by District staff to be outside of established ranges constitute a violation of this permit. [District Rules 2201 and 4102]
- For each of the venturi scrubbers, if the scrubbing solution is delivered at a rate less than 4 gallon/minute for every 1,000 cfm of exhaust flowrate or the differential pressure across the scrubber is outside of the range recommended by the manufacturer, as measured by the permittee, the permittee shall correct the delivery rate of the scrubbing solution and/or the differential pressure across the scrubber to



acceptable levels as soon as possible, but no longer than 1 hour of operation after detection. If the delivery rate of the scrubbing solution or differential pressure across the scrubber continues to be outside of acceptable ranges after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. Monitoring parameters found by District staff to be outside of established ranges constitute a violation of this permit. [District Rules 2201 and 4102]

- Continuous monitoring equipment shall be used in each packed bed scrubber and each venturi scrubber to monitor the recirculation rate of the scrubbing solution and the differential pressure across each scrubber, and to monitor the oxidation reduction potential of the scrubbing solution in each packed bed scrubber. The recirculation rates of the scrubbing solution shall be measured in gallons per minute. The recirculation rate and differential pressure across each packed bed scrubber and each venturi scrubber, and the oxidation reduction potential of the scrubbing solution in each packed bed scrubber shall be recorded at least once per day while the scrubbers are in operation. The continuous monitoring equipment shall be maintained in proper operating condition at all times. [District Rules 2201 and 4102]
- The condenser(s) and each scrubber shall be inspected at least once per week and cleaned as needed based on inspection results. Cleaning of condenser(s) and scrubbers shall be scheduled during times when raw materials are not being received or processed. Liquids and any solids shall be disposed of in a manner to prevent release which may constitute a nuisance odor. [District Rules 2201 and 4102]
- The permittee shall take monthly readings with a portable anemometer to verify that the main processing building is under negative pressure during periods of normal plant operation. The anemometer shall be calibrated per the manufacturer's recommendations. Additionally, the anemometer shall be made available to District inspection staff upon request. Records of anemometer measurements and calibrations shall be kept, maintained, and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4102]

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

No monitoring is required to demonstrate compliance with District Rule 2201.

#### ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

As mentioned above, the boilers are subject to District Rules 4305, 4306, and 4320. Rule 4320 requires that the operator of any unit subject to the emission limits of Rule 4320 shall either install and maintain continuous emissions monitoring equipment for NO<sub>x</sub>, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved alternate monitoring plan. As discussed in Section VIII, District Rule 4320 of this evaluation, the boilers are subject to the emission limits of Rule 4320; therefore, this requirement applies.

The applicant has proposed to continue to utilize pre-approve alternate monitoring plan “A” (Periodic Monitoring NO<sub>x</sub>, CO, and O<sub>2</sub> Emissions Concentrations) to meet the requirements of District Rule 4320. Monitoring for Rule 4320 also satisfies the NO<sub>x</sub> and CO monitoring requirements for Rule 2201. Since the boilers will use SCR systems to control NO<sub>x</sub>, periodic monitoring of ammonia slip will also be required.

The following conditions will be placed on the ATC permits:

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
- If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
- 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission

readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]

### **3. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

#### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

The following conditions will be included on the ATC permit:

- This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]
- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- The permittee shall maintain monthly records of the type of fuel purchased and the amount of fuel used in the engine each month in gallons. [District Rules 2201 and 4702, and 17 CCR 93115]
- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

The following conditions will be included on the ATC permits:

- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
- The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

ATC C-2282-11-1: 250 bhp Emergency Diesel IC Engine Powering a Firewater Pump

The following conditions will be included on the ATC permit:

- This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours. [District Rules 2201 and 4702, and 17 CCR 93115]

- The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, emergency firefighting, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 2201 and 4702, and 17 CCR 93115]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
- On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

#### ATC C-2282-12-0: Rendering Operation

The following conditions will be included on the ATC permit:

- All material received shall be processed within 24 hours of receipt. Each delivery of material shall be monitored and records shall be maintained to ensure that processing is performed within this time limit. [District Rules 2201 and 4102]
- The total PM10 emissions from the packed bed scrubbers serving the rendering plant room air shall not exceed 20.6 lb-PM10/day. To ensure compliance with the daily emission limit for PM10 from the packed bed scrubbers serving the rendering plant room, the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall not exceed 100,000 standard cubic feet per minute (scfm) until source testing has demonstrated that the packed bed scrubbers serving the rendering plant room air can comply with the daily emission limit for PM10 with a higher total combined exhaust flow rate. Records of the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall be maintained for each day that the scrubbers operate. [District Rules 1070 and 2201]

- During source testing of emissions from the RTO, the rate of the use of natural gas as fuel in the RTO shall be monitored and recorded in standard cubic feet per hour (scf/hr) and MMBtu/hr [District Rules 1070 and 2201]
- The permittee shall keep records of the daily and annual quantity of raw material processed and the meat and bone meal (MBM)/protein solids produced, in tons. [District Rules 1070 and 2201]
- The permittee shall keep records of the amount of natural gas fuel combusted, in scf and MMBtu, for each month that the RTO is operated. [District Rules 1070 and 2201]
- The permittee shall keep daily records of the maximum exhaust flow rate in scfm and the hours of operation of each of the packed bed scrubbers serving the rendering plant room air and shall keep daily and monthly records of the total combined amount of air exhausted from the packed bed scrubbers serving the rendering plant room air in scf. If more accurate measurements are not available to calculate the total amount of air exhausted (scf) from each packed bed scrubber each day, then the total amount of air exhausted from each packed bed scrubber each day shall be calculated as the maximum exhaust flow rate in scfm for the particular day multiplied by 60 min/hr multiplied by the total hours of operation of the packed bed scrubber for that day. The total combined amount of air exhausted from the packed bed scrubbers in each month shall be calculated as the sum of the total amount of air exhausted from the packed bed scrubbers for each day during the particular month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

The following conditions will be included on the ATC permit:

- The permittee shall keep records of the daily and annual amount of product loaded out, in tons. [District Rules 1070 and 2201]
- Records of all maintenance of the bin vent filters, including all change outs of filter media, shall be maintained. [District Rules 1070 and 2201]

- All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

The following conditions will be included on the ATC permits:

- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
- The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records shall be maintained of the amount of fuel used in this unit, in standard cubic feet (scf), during each start-up and shutdown period as determined using the fuel flow meter, and of the total amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), during start-up and shutdown for each month in which the unit is operated. [District Rules 1070 and 2201]
- On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]

- On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

#### 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 G of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location is in a non-attainment area for the state’s PM<sub>10</sub> standard as well as the federal and state PM<sub>2.5</sub> standards. The modeling results for PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the proposed rendering operation indicated that the proposed increase in the ambient PM<sub>10</sub> and PM<sub>2.5</sub> concentrations due to the proposed exceeded the District levels, which are shown in the table below.

District PM <sub>10</sub> and PM <sub>2.5</sub> Significance Levels		
Pollutant	District Significant Impact Levels (SIL) for PM Emissions (µg/m <sup>3</sup> )	
	24 Hour Average	Annual Average
PM <sub>10</sub>	5	1
PM <sub>2.5</sub>	1.2	0.2

Because the AAQA modeling results indicated that the calculated increase in the ambient PM<sub>10</sub> and PM<sub>2.5</sub> concentrations due to the project would exceed the District significance level, the PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the project must be mitigated.

District Rule 2201 allows the District to consider offsets as mitigation when determining if there is a violation of the Ambient Air Quality Standard.



Section 4.14.1 of District Rule 2201 states:

*Emissions from a new or modified Stationary Source shall not cause or make worse the violation of an Ambient Air Quality Standard. In making this determination, the APCO shall take into account the increases in minor and secondary source emissions as well as the mitigation of emissions through offsets obtained pursuant to this rule...*

Additionally, Section 4.8 of District Rule 2201 requires a distance offset ratio to be applied for offset calculations.

To mitigate potential adverse effects to Ambient Air Quality, the applicant has proposed to provide a sufficient amount of PM<sub>10</sub> and PM<sub>2.5</sub> Emission Reduction Credits (ERCs) to fully offset the PM emission increases from the project as presented in Section VII.C.2 of this evaluation.

Total Offsets Required (lb/year) =  $\sum(\text{PE}_2 \text{ for each permit unit} \times \text{Distance Offset Ratio})$

The applicant has indicated has proposed to use PM<sub>10</sub> and PM<sub>2.5</sub> offsets from two ERC certificates, C-1528-4 and N-1552-4. The offsets from ERC certificate C-1528-4 are for emission reductions that occurred within 15 miles of the proposed operation; therefore, an offset ratio of 1:1.2 will apply to ERC certificate C-1528-4. The offsets from ERC certificate N-1552-4 are for emission reductions that occurred 15 miles or more from the proposed operation; therefore, an offset ratio of 1:1.5 will apply to ERC certificates N-1552-4. Because the two certificates have different offset ratios, the amount PM<sub>10</sub> and PM<sub>2.5</sub> ERCs used from each certificate will be divided by the appropriate distance offset ratio to determine if sufficient PM<sub>10</sub> and PM<sub>2.5</sub> ERCs are provided for the project.

The amount of PM<sub>10</sub> and PM<sub>2.5</sub> ERCs that need to be provided is calculated below, not including the required distance offset ratio.

ATC C-2282-12-0: Rendering Operation

Annual PM<sub>10</sub> Offsets Required:

9,536 lb-PM<sub>10</sub>/year

Quarterly PM<sub>10</sub> Offsets Required:

9,536 lb-PM<sub>10</sub>/year ÷ 4 = 2,384 lb-PM<sub>10</sub>/qtr

Annual PM<sub>2.5</sub> Offsets Required:

3,079 lb-PM<sub>2.5</sub>/year

Quarterly PM<sub>2.5</sub> Offsets Required:

3,079 lb-PM<sub>2.5</sub>/year ÷ 4 = 769.75 lb-PM<sub>2.5</sub>/qtr

ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

Annual PM<sub>10</sub> Offsets Required:  
20 lb-PM<sub>10</sub>/year

Quarterly PM<sub>10</sub> Offsets Required:  
20 lb-PM<sub>10</sub>/year ÷ 4 = 5 lb-PM<sub>10</sub>/qtr

Annual PM<sub>2.5</sub> Offsets Required:  
6 lb-PM<sub>2.5</sub>/year

Quarterly PM<sub>2.5</sub> Offsets Required:  
6 lb-PM<sub>2.5</sub>/year ÷ 4 = 1.5 lb-PM<sub>2.5</sub>/qtr

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

Annual PM<sub>10</sub> Offsets Required:  
1,629 lb-PM<sub>10</sub>/year

Quarterly PM<sub>10</sub> Offsets Required:  
1,629 lb-PM<sub>10</sub>/year ÷ 4 = 407.25 lb-PM<sub>10</sub>/qtr

Annual PM<sub>2.5</sub> Offsets Required:  
1,629 lb-PM<sub>2.5</sub>

Quarterly PM<sub>2.5</sub> Offsets Required:  
1,629 lb-PM<sub>2.5</sub>/year ÷ 4 = 407.25 lb-PM<sub>10</sub>/qtr

Total PM<sub>10</sub> and PM<sub>2.5</sub> Offsets Required for Project

Total Annual PM<sub>10</sub> Offsets Required:  
16,072 lb-PM<sub>10</sub>/year

Total Quarterly PM<sub>10</sub> Offsets Required:  
16,072 lb-PM<sub>10</sub>/year ÷ 4 = 4,018 lb-PM<sub>10</sub>/qtr

Total Annual PM<sub>2.5</sub> Offsets Required:  
9,601 lb-PM<sub>2.5</sub>/year

Total Quarterly PM<sub>2.5</sub> Offsets Required:  
9,601 lb-PM<sub>2.5</sub>/year ÷ 4 = 2,400.25 lb-PM<sub>10</sub>/qtr

The total annual PM<sub>10</sub> and PM<sub>2.5</sub> offsets required for the project are summarized in the tables below.

<b>Quarterly and Annual PM<sub>10</sub> Offsets Required Not Including Distance Offset Ratio</b>					
<b>Permit Unit</b>	<b>1<sup>st</sup> Qtr (lb/qtr)</b>	<b>2<sup>nd</sup> Qtr (lb/qtr)</b>	<b>3<sup>rd</sup> Qtr (lb/qtr)</b>	<b>4<sup>th</sup> Qtr (lb/qtr)</b>	<b>Annual (lb/yr)</b>
ATC C-2282-12-0 (Rendering Operation)	2,384	2,384	2,384	2,384	9,536
ATC C-2282-13-0 (Meat and Bone Meal Storage and Loadout)	5	5	5	5	20
ATC C-2282-14-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
ATC C-2282-15-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
ATC C-2282-16-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
ATC C-2282-17-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
<b>Project Total</b>	<b>4,018</b>	<b>4,018</b>	<b>4,018</b>	<b>4,018</b>	<b>16,072</b>

<b>Quarterly and Annual PM<sub>2.5</sub> Offsets Required Not Including Distance Offset Ratio</b>					
<b>Permit Unit</b>	<b>1<sup>st</sup> Qtr (lb/qtr)</b>	<b>2<sup>nd</sup> Qtr (lb/qtr)</b>	<b>3<sup>rd</sup> Qtr (lb/qtr)</b>	<b>4<sup>th</sup> Qtr (lb/qtr)</b>	<b>Annual (lb/yr)</b>
ATC C-2282-12-0 (Rendering Operation)	769.75	769.75	769.75	769.75	3,079
ATC C-2282-13-0 (Meat and Bone Meal Storage and Loadout)	1.5	1.5	1.5	1.5	6
ATC C-2282-14-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
ATC C-2282-15-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
ATC C-2282-16-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
ATC C-2282-17-0 (61.991 MMBtu/hr NG Boiler with SCR)	407.25	407.25	407.25	407.25	1,629
<b>Project Total</b>	<b>2,400.25</b>	<b>2,400.25</b>	<b>2,400.25</b>	<b>2,400.25</b>	<b>9,601</b>

As demonstrated shown in the table above, the quarterly amount of PM<sub>2.5</sub> offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of offsets being required each quarter.

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

<b>Redistribution of Required Quarterly Offsets</b> (where X is the annual amount of offsets, and $X \div 4 = Y.z$ )				
<b>Value of z</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
0.0	Y	Y	Y	Y
0.25	Y	Y	Y	Y+1
0.5	Y	Y	Y+1	Y+1
0.75	Y	Y+1	Y+1	Y+1

The appropriate amount of quarterly PM<sub>2.5</sub> emissions to be offset are as follows:

<b>Total Quarterly and Annual PM<sub>2.5</sub> Offsets Required Not Including Distance Offset Ratio</b>					
	<b>1<sup>st</sup> Qtr (lb/qtr)</b>	<b>2<sup>nd</sup> Qtr (lb/qtr)</b>	<b>3<sup>rd</sup> Qtr (lb/qtr)</b>	<b>4<sup>th</sup> Qtr (lb/qtr)</b>	<b>Annual (lb/yr)</b>
<b>Project Total</b>	<b>2,400</b>	<b>2,400</b>	<b>2,400</b>	<b>2,401</b>	<b>9,601</b>

As discussed above, the applicant has stated that the facility plans to use ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificate) to offset the increases in PM<sub>10</sub> and PM<sub>2.5</sub> emissions associated with this project.

The ERC certificates have available quarterly PM<sub>10</sub> and PM<sub>2.5</sub> credits as follows:

<b>Total PM<sub>10</sub> and PM<sub>2.5</sub> ERCs for C-1528-4 (lbs)</b>				
	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
PM <sub>10</sub> ERCs	0	0	0	20,211
PM <sub>10</sub> /PM <sub>10</sub> Ratio <sup>12</sup>	16%	16%	16%	16%
PM <sub>2.5</sub> ERCs	0	0	0	3,234

As shown in the table above, ERC Certificate C-1528-4 only includes PM<sub>10</sub> and PM<sub>2.5</sub> ERCs from the 4<sup>th</sup> quarter of the year (October – December). The applicant has proposed to use ERC certificate C-1528-4 to offset PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the project throughout the year. Pursuant to Rule 2201, Section 4.13.7, Actual Emission Reductions for PM that occurred from October through March, inclusive, may be used to offset increases in PM during any period of the year. Therefore, the PM<sub>10</sub> and PM<sub>2.5</sub> ERCs from the 4<sup>th</sup> quarter of the year can be used to offset the PM emissions increases for the project that occur any time in the year.

<sup>12</sup> ERC Certificate C-1528-4 is from the shutdown of a cotton ginning operation. Information in the District’s 2018 PM<sub>2.5</sub> Attainment Plan (November 15, 2018) based on the National Cotton Ginning Particulate Matter Emissions Study indicates that the PM<sub>2.5</sub> to PM<sub>10</sub> ratio for PM emissions from cotton ginning is approximately 16%. (See: <https://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/C.pdf>)

<b>Total PM<sub>10</sub> and PM<sub>2.5</sub> ERCs for N-1552-4 (lbs)</b>				
	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
PM <sub>10</sub> ERCs	7,573	6,404	6,659	8,182
PM <sub>10</sub> /PM <sub>10</sub> Ratio <sup>13</sup>	95.8%	95.8%	95.8%	95.8%
PM <sub>2.5</sub> ERCs	7,255	6,135	6,379	7,838

As discussed above, the PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the project must be offset at the appropriate distance offset ratios, 1 to 1.2 for ERC certificate C-1528-4 and 1 to 1.5 for ERC certificate N-1552-4. Therefore, quantity of the PM<sub>10</sub> and PM<sub>2.5</sub> ERCs in the certificates will be divided by the appropriate offset ratio to determine the amount of offsets required for the project.

<b>Amount of Project PM<sub>10</sub> and PM<sub>2.5</sub> that Can be Offset by C-1528-4 (lbs)</b>				
	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
PM <sub>10</sub> ERCs	0	0	0	20,211
PM <sub>2.5</sub> ERCs	0	0	0	3,234
Offset Ratio	1.2			
Amount of Project PM <sub>10</sub> Emissions that Can be Offset	0	0	0	16,843
Amount of Project PM <sub>2.5</sub> Emissions that Can be Offset	0	0	0	2,695

<b>Amount of Project PM<sub>10</sub> and PM<sub>2.5</sub> that Can be Offset by N-1552-4 (lbs)</b>				
	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
PM <sub>10</sub> ERCs	7,573	6,404	6,659	8,182
PM <sub>2.5</sub> ERCs	7,255	6,135	6,379	7,838
Offset Ratio	1.5			
Amount of Project PM <sub>10</sub> Emissions that Can be Offset	5,049	4,269	4,439	5,455
Amount of Project PM <sub>2.5</sub> Emissions that Can be Offset	4,837	4,090	4,253	5,225

The total amount of PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the project that can be offset by ERC certificates C-1528-4 and N-1552-4 are shown in the following tables.

<b>Total Amount of Project PM<sub>10</sub> that Can be Offset by C-1528-4 &amp; N-1552-4 (lbs)</b>				
	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
Project PM <sub>10</sub> Emissions that Can be Offset by C-1528-4	0	0	0	16,843
Project PM <sub>10</sub> Emissions that Can be Offset by N-1552-4	5,049	4,269	4,439	5,455
<b>Total Project PM<sub>10</sub> Emissions that Can be Offset</b>	<b>5,049</b>	<b>4,269</b>	<b>4,439</b>	<b>22,298</b>

<sup>13</sup> ERC Certificate N-1552-4 is from the shutdown of a glass furnace and lists a previously determined PM<sub>2.5</sub> to PM<sub>10</sub> ratio of 95.8% and the resulting value of the PM<sub>2.5</sub> ERCs on the ERC certificate.

<b>Total Amount of Project PM<sub>2.5</sub> that Can be Offset by C-1528-4 &amp; N-1552-4 (lbs)</b>				
	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
Project PM <sub>2.5</sub> Emissions that Can be Offset by C-1528-4	0	0	0	2,695
Project PM <sub>2.5</sub> Emissions that Can be Offset by N-1552-4	4,837	4,090	4,253	5,225
<b>Total Project PM<sub>2.5</sub> Emissions that Can be Offset</b>	<b>4,837</b>	<b>4,090</b>	<b>4,253</b>	<b>7,920</b>

The amount of PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the project that must be offset were calculated above and are summarized in the following table.

<b>Total Project PM<sub>10</sub> and PM<sub>2.5</sub> Emissions that Must be Offset (lbs) (Not Including Distance Offset Ratio)</b>				
<b>ERC Certificate</b>	<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
Project PM <sub>10</sub> Emissions that Must be Offset	4,018	4,018	4,018	4,018
Project PM <sub>2.5</sub> Emissions that Must be Offset	2,400	2,400	2,400	2,401

As shown in the tables above, ERC certificates C-1528-4 and N-1552-4 contain sufficient PM<sub>10</sub> and PM<sub>2.5</sub> ERCs to fully offset the PM<sub>10</sub> and PM<sub>2.5</sub> emissions increases for the project.

For the applicant has proposed to use the following amount of PM<sub>10</sub> and PM<sub>2.5</sub> ERCs from ERC certificates C-1528-4 and N-1552-4 to offset the project emissions.

PM<sub>10</sub> ERCs to be surrendered from C-1528-4:

8,717 lb/yr (Able to offset 7,264 lb/yr of project PM<sub>10</sub> emissions at 1.2 to 1 offset ratio)

PM<sub>10</sub> ERCs to be surrendered from N-1552-4:

13,212 lb/yr (Able to offset 8,808 lb/yr of project PM<sub>10</sub> emissions at 1.5 to 1 offset ratio)

PM<sub>2.5</sub> ERCs to be surrendered from C-1528-4:

1,395 lb/yr (Able to offset 1,163 lb/yr of project PM<sub>2.5</sub> emissions at 1.2 to 1 offset ratio)

PM<sub>2.5</sub> ERCs to be surrendered from N-1552-4:

12,657 lb/yr (Able to offset 8,438 lb/yr of project PM<sub>2.5</sub> emissions at 1.5 to 1 offset ratio)

The quantity of quarterly PM<sub>10</sub> and PM<sub>2.5</sub> ERCs that will be surrendered to offset the increases from the project are summarized in the table below:

<b>Proposed Amount of PM<sub>10</sub> and PM<sub>2.5</sub> ERCs to be Surrendered (lbs) (Including Distance Offset Ratio)</b>					
	<b>1<sup>st</sup> Quarter (lb/qtr)</b>	<b>2<sup>nd</sup> Quarter (lb/qtr)</b>	<b>3<sup>rd</sup> Quarter (lb/qtr)</b>	<b>4<sup>th</sup> Quarter (lb/qtr)</b>	<b>Annual (lb/yr)</b>
Proposed PM <sub>10</sub> ERCs	3,303	3,303	3,303	12,020	21,929
Proposed PM <sub>2.5</sub> ERCs	3,164	3,164	3,164	4,560	14,052

The following conditions will be placed on the ATCs to ensure that adequate offsets are surrendered prior to operating the units approved in this project.

ATC C-2282-12-0: Rendering Operation

- Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter – 1,959 lb, 2nd quarter – 1,959 lb, 3rd quarter – 1,959 lb, and 4th quarter – 7,133 lb, and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter – 1,014 lb, 2nd quarter – 1,014 lb, 3rd quarter – 1,014 lb, and 4th quarter – 1,461 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
- ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]

ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

- Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 4 lb, 2nd quarter - 4 lb, 3rd quarter - 4 lb, and 4th quarter - 15 lb, and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 2 lb, 2nd quarter - 2 lb, 3rd quarter - 2 lb, and 4th quarter – 3 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
- ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter – 335 lb, 2nd quarter – 335 lb, 3rd quarter – 335 lb, and 4th quarter – 1,218 lb and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 537 lb, 2nd quarter - 537 lb, 3rd quarter - 537 lb, and 4th quarter – 774 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
- ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal

is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]

Since sufficient offsets will be provided to fully mitigate the PM<sub>10</sub> and PM<sub>2.5</sub> emissions from this project, it is not expected to cause or make worse a violation of an air quality standard.

### **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 new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

The following subparts of 40 CFR Part 60 are potentially applicable to the units addressed in this project.

#### ATCs C-2282-3-2 and -11-1 (Emergency IC Engines)

As discussed below, the requirements of 40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines are potentially applicable to the existing emergency IC engines.

#### ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, and -17-0 (Natural Gas-Fired Boilers)

As discussed below, the requirements of 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units are potentially applicable to the existing and proposed natural-gas-fired boilers.

#### ATCs C-2282-12-0 and -13-0 (Rendering and MBM Loadout Operations)

There are no subparts of 40 CFR Part 60 that apply to the proposed rendering and meat and bone meal (MBM) loadout operations.



**ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, and -17-0 (Natural Gas-Fired Boilers)**

**40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

40 CFR 60, Subpart Dc applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 million British thermal units per hour (MMBtu/hr) or less, but greater than or equal to 10 MMBtu/hr.

The existing 19.95 MMBtu/hr boilers (Permit Units C-2282-5, -7, -9, and -10) have maximum heat input ratings greater than or equal to 10 MMBtu/hr and less than 100 MMBtu/hr, and were constructed after June 9, 1989. The proposed 61.991 MMBtu/hr boilers (Permit Units C-2282-14, -15, -16, and -17) also will have maximum heat input ratings greater than or equal to 10 MMBtu/hr and less than 100 MMBtu/hr, and will be constructed after June 9, 1989. Therefore, these units are subject to the applicable requirements of 40 CFR 60, Subpart Dc.

40 CFR 60, Subpart Dc contains SO<sub>2</sub> and Particulate Matter (PM) emissions limits and opacity standards for affected units that combust coal, coal refuse, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

The existing 19.95 MMBtu/hr boilers and proposed 61.991 MMBtu/hr boilers at this facility will only be permitted to combust PUC regulated natural gas; therefore, the SO<sub>2</sub> and PM emissions limits of Subpart Dc do not apply to the existing and proposed boilers.

40 CFR 60, Section 60.48c - Reporting and Recordkeeping Requirements includes the following requirements of 60.48c(g) that are potentially applicable to the existing 19.95 MMBtu/hr natural gas-fired boilers and the proposed 61.991 MMBtu/hr natural gas-fired boilers:

- (g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.
- (g)(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in § 60.48c(f) to demonstrate compliance with the SO<sub>2</sub> standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.
- (g)(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in Section 60.42c to use fuel certification to demonstrate compliance with the SO<sub>2</sub> standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

The existing and proposed boilers at this facility will only be permitted to combust PUC regulated natural gas and will not be subject to an emission standard; therefore, records of the amount of fuel combusted may be kept for each calendar month rather than for each operating day.

The following conditions will be included on the ATC permits to ensure compliance:

- The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
- Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]

40 CFR 60, Section 60.48c(i) requires 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 4305, 4306, and 4320 and current practice requires that all records be maintained for a period of five years; therefore the following condition will be included on the ATC permits:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

### **ATCs C-2282-3-2 and -11-1 (Emergency IC Engines)**

#### **40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

The purpose of 40 CFR 60 Subpart IIII is to establish New Source Performance Standards (NSPS) to reduce emissions of NO<sub>x</sub>, SO<sub>x</sub>, PM, CO, and VOC from new stationary compression ignition (CI) internal combustion (IC) engines.

Pursuant to Section 60.4200(a), the provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in Section 60.4200, paragraphs (a)(1) through (4). 40 CFR 60 Subpart IIII generally requires that CI IC engines be certified to specific emission standards based on the model year of the engines and the dates that they were purchased or installed.

Section 60.4200(a)(2)(i) & (ii) state that the provisions of this subpart apply to owners and operators of stationary compression ignition (CI) IC engines that (i) commence construction after July 11, 2005 where the engines are manufactured after April 1, 2006 and are not fire pump engines, or (ii) manufactured as certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. This subpart also applies to owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005. The provisions of Section 60.4208 of this subpart – “What is the deadline for importing or installing stationary CI

ICE produced in previous model years?” are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

Permit Unit C-2282-3 (1,919 bhp diesel-fired emergency standby IC engine) was manufactured and installed prior to July 11, 2005; therefore, the provisions of this regulation are not applicable to this unit.

Permit Unit C-2282-11 (250 bhp diesel-fired emergency IC engine powering a firewater pump) was manufactured and installed after July 1, 2006; therefore, the provisions of this regulation are applicable to this unit. However, the District has not been delegated the authority to implement the requirements 40 CFR 60, Subpart IIII for non-major sources; therefore, the requirements from this subpart will not be referenced in the ATC permit. The applicant will be responsible for compliance with the applicable requirements of this regulation. Compliance with the applicable requirements of District Rule 4702 and the California Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition Engines will generally also ensure compliance with the applicable requirements of this subpart.

#### **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 following subparts of 40 CFR Part 61 and 40 CFR Part 63 are potentially applicable to the units addressed in this project.

#### **ATCs C-2282-3-2 and -11-1 (Emergency IC Engines)**

As discussed below, the requirements of 40 CFR Part 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants (NEHAPs) for Stationary Internal Combustion Engines of that are potentially applicable to the existing emergency IC engines.

#### **ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, and -17-0 (Natural Gas-Fired Boilers)**

As discussed below, 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 and 40 CFR Part 63 - Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources that are potentially applicable to the existing and proposed boilers (ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, and -17-0).

#### **ATCs C-2282-12-0 and -13-0 (Rendering and MBM Loadout Operations)**

There are no subparts of 40 CFR Part 61 or Part 63 that apply to the proposed rendering and meat and bone meal (MBM) loadout operations.

## **ATCs C-2282-3-2 and -11-1 (Emergency IC Engines)**

### **40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Internal Combustion Engines**

40 CFR Part 63, Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. A major source of HAP emissions is a facility that has the potential to emit any single HAP at a rate of 10 tons/year or greater or any combinations of HAPs at a rate of 25 tons/year or greater. An area source of HAPs is a facility is not a major source of HAPs. 40 CFR Part 63, Subpart ZZZZ also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

Pursuant to Section 63.6585, 40 CFR Part 63, Subpart ZZZZ applies to owners and operators of stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

Pursuant to Section 63.6590, 40 CFR Part 63, Subpart ZZZZ applies to each affected source as explained below.

Section 63.6590(a) provides the following definitions for affected source, existing stationary RICE, and new stationary RICE.

(a) *Affected source*: An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE*:

- (i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.
- (ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
- (iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
- (iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE*:

- (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

- (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.
- (iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

As shown in the calculations in Appendix H, this facility is an area source of HAP emissions.

Permit Unit C-2282-3 (1,919 bhp diesel-fired emergency standby IC engine) is an existing stationary RICE as defined in this subpart because construction or reconstruction commenced for the engine before June 12, 2006.

Permit Unit C-2282-11 (250 bhp diesel-fired emergency IC engine powering a firewater pump) is a new stationary RICE as defined in this subpart because construction or reconstruction commenced for the engine on or after June 12, 2006.

Pursuant to Section 63.6590(c) - *Stationary RICE subject to Regulations under 40 CFR Part 60*, an affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

- (1) A new or reconstructed stationary RICE located at an area source;
- (2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
- (3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;
- (4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
- (5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;
- (6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
- (7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

Permit Unit C-2282-3 is an existing new stationary RICE located at an area source as defined in this subpart and is subject to the requirements of 40 CFR Part 63, Subpart ZZZZ. However, the District has not been delegated the authority to implement the requirements 40 CFR 63, Subpart ZZZZ for non-major sources; therefore, the requirements from this subpart will not be referenced

in the ATC permit. The applicant will be responsible for compliance with the applicable requirements of this regulation.

Permit Unit C-2282-11 is a new stationary RICE located at an area source as defined in this subpart. As explained above, this unit is subject to 40 CFR 60, Subpart IIII; therefore, the engine must comply with this regulation by complying with 40 CFR 60, Subpart IIII and no further requirements of 40 CFR Part 63, Subpart ZZZZ are applicable to the unit.

**ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, and -17-0 (Natural Gas-Fired Boilers)**

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

40 CFR 63, Subpart DDDDD establishes national emission limitations and work practice standards for hazardous air pollutants (HAPs) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAPs. A major source of HAP emissions is a facility that has the potential to emit any single HAP at a rate of 10 tons/year or greater or any combinations of HAPs at a rate of 25 tons/year or greater. 40 CFR 63, Subpart DDDDD also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

Pursuant to Section 63.7485, 40 CFR 63, Subpart DDDDD applies to owners and operators of an industrial, commercial, or institutional boiler or process heater as defined in Section 63.7575 that is located at, or is part of, a major source of HAPs, except as specified in Section 63.7491. For purposes of this subpart, a major source of HAP is as defined in Section 63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in Section 63.7575.

As shown in the calculations in Appendix H, this facility is not a major source of HAP emissions; therefore, 40 CFR 63, Subpart DDDDD does not apply to any of the boilers at the facility.

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

40 CFR 63, Subpart JJJJJJ establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emitted from existing industrial, commercial, and institutional boilers located at area sources of HAP emissions. An area source of HAPs is a facility is not a major source of HAPs.

Pursuant to Section 63.11194(a), 40 CFR 63, Subpart JJJJJJ applies to each new, reconstructed, or existing affected source as defined in the section. New and reconstructed sources are sources for which construction or reconstruction of the affected source commenced after June 4, 2010 and existing sources are sources for which construction or reconstruction of the affected source commenced on or before June 4, 2010.

Pursuant to Section 63.11195 - *Are any boilers not subject to this subpart?*, the types of boilers listed below are not subject to any requirements 40 CFR 63, Subpart JJJJJJ:

- (a) Any boiler specifically listed as, or included in the definition of, an affected source in another standard(s) under this part.
- (b) Any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act.
- (c) A boiler required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by subpart EEE of this part (e.g., hazardous waste boilers).
- (d) A boiler that is used specifically for research and development. This exemption does not include boilers that solely or primarily provide steam (or heat) to a process or for heating at a research and development facility. This exemption does not prohibit the use of the steam (or heat) generated from the boiler during research and development, however, the boiler must be concurrently and primarily engaged in research and development for the exemption to apply.
- (e) A gas-fired boiler as defined in this subpart.
- (f) A hot water heater as defined in this subpart.
- (g) Any boiler that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler is provided by regulated gas streams that are subject to another standard.
- (h) Temporary boilers as defined in this subpart.
- (i) Residential boilers as defined in this subpart.
- (j) Electric boilers as defined in this subpart.
- (k) An electric utility steam generating unit (EGU) as defined in this subpart.

Section 63.11237 - *What definitions apply to this subpart?*, provides the following definitions for gaseous fuels and gas-fired boilers:

*Gaseous fuels includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas.*

*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 for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.*

The existing 19.95 MMBtu/hr boilers (Permit Units C-2282-5, -7, -9, and -10) and the proposed 61.991 MMBtu/hr boilers (Permit Units C-2282-14, -15, -16, and -17) will only be permitted to be fueled with natural gas; therefore, they are gas-fired boilers as defined in 40 CFR 63, Subpart JJJJJJ and are not subject to any requirements of 40 CFR 63, Subpart JJJJJJ.

#### **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). Provided that the equipment is properly maintained and operated, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity.

The following condition will be included on all of the proposed ATC permits to ensure compliance:

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

#### ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

The proposed meat and bone meal loadout operation will include silos that are controlled by bin vent fabric filters. Generally, there should be no visible emissions from the bin vent filters if they are properly operated. Visible emissions from bin vent filters exceeding 5% opacity are usually indicative of PM bypassing the filter.

Therefore, in addition to the condition listed above, the following condition will be included on the permit to ensure that the bin vent filters are operating properly:

- Visible emissions from the bin vent filters serving the meat and bone meal (MBM) storage silos shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rules 2201 and 4101]

#### **Rule 4102 Nuisance**

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

The following condition will be included on all of the proposed ATC permits to ensure compliance:

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

#### ATC C-2282-12-0: Rendering Operation

Rendering operations are a potential source of odors that may impact surrounding communities. Numerous odorous compounds may be emitted from rendering operations, including odorous VOCs, sulfur containing compounds, and nitrogen containing compounds. The proposed rendering operation will be located in a rural area is zoned for general agriculture and associated uses, such as raising cattle, and heavy industrial uses. The rural location will reduce the potential for nuisance conditions in comparison to more highly populated areas. The rendering operation will also be required to operate and maintain emissions and odor control equipment and implement management practices to reduce the potential for nuisance odors.



As discussed above, to minimize the potential for nuisance odors from the material delivered to the rendering operation, the permit for the rendering operation will require trucks delivering raw materials to be unloaded within 4 hours of being weighed and will require the materials received to be processed within 24 hours of receipt at the facility. The raw material delivery trucks will also be required to be maintained in condition to prevent leakage and must be washed after delivery of the raw material to reduce nuisance odors. The permit will require that the tires of delivery trucks and the raw material receiving area be washed to reduce the potential that materials from the rendering operation will adhere to the trucks and be deposited on open areas and roadways (trackout).

Also as discussed above, to reduce emissions and odors, the rendering operation will be in a building kept under negative pressure. All loading and unloading of raw and finished product will be conducted inside the building with the doors closed. There will be no outside storage of raw material or finished product. The rendering operation building will be vented to two 100,000-cfm packed bed room air scrubbers that serve as odor control devices for the raw material receiving area and the cooker room. The scrubbers will use a scrubbing liquid with an oxidizing agent to remove odorous compounds from the air stream from the rendering operation. The vapors containing high-intensity odors from the cooking process and odors captured from the presses, centrifuges, fat tanks, material screens, crax transfer conveyors, drainers, and condensers will be vented to an 18,000 cfm two-stage scrubber, consisting of a venturi scrubber and a packed bed scrubber connected in series, and further vented to an RTO to control emissions and odors. In the RTO, the majority of odorous compounds from the rendering operation will be oxidized to compounds that do not have offensive odors.

As long as the odor control equipment is properly maintained and operated and the required management practices to reduce nuisance conditions and odors are implemented, the proposed rendering operation is not expected to cause a public nuisance.

The following conditions will be included on the ATC permit for the proposed rendering operation to ensure that it will be operated in a manner that will not cause a public nuisance.

- The rendering operation, associated equipment, and the facility's surrounding property shall be operated and maintained in such a manner as to prevent the generation of odors which may constitute a nuisance. [District Rule 4102]
- The wastewater system shall be operated and maintained such that it does not cause a public nuisance. [District Rule 4102]
- All air pollution control equipment shall be maintained in good operating condition and shall be operated in accordance with the manufacturer's instructions when the process equipment is in operation. [District Rule 4102]
- All air pollution equipment and associated ducting shall be maintained in a leak-free manner to prevent the escape of air contaminants to the outside atmosphere prior to their treatment in the emissions/odor control system. [District Rule 4102]

- The processing building shall be kept under negative pressure at all times when receiving or storing raw material or in the process of rendering, except during limited periods when the receiving area doors are open to allow for entry/exit of raw material delivery trucks or during an equipment breakdown as defined in Rule District 1100. [District Rules 2201 and 4102]
- The rendering operation shall not receive, store, or render raw material unless the odor control system is fully operating, except during periods of equipment breakdown as determined by the District under District Rule 1100. During operation, all process-related potential points of odor shall be contained and/or treated to prevent escape into the atmosphere and shall only be vented to the odor control system. [District Rule 4102]
- Raw material delivery trucks shall be unloaded within 4 hours of being scaled. Raw material delivery trucks shall not be stored or staged without first being scaled. [District Rule 4102]
- If raw material delivery trucks cannot be unloaded within 4 hours of being scaled due to an equipment malfunction, raw material shall be temporarily staged in a covered manner not to exceed 8 hours. [District Rule 4102]
- Incoming raw material trucks shall only be unloaded into the enclosed receiving area that is served by the rendering plant room air scrubbers. [District Rule 4102]
- No outside storage of raw material is allowed, except as otherwise specified in this permit. Trucks waiting their turn to unload within the 4-hour unload time limitation are not considered outside storage. [District Rule 4102]
- All material received shall be processed within 24 hours of receipt. Each delivery of material shall be monitored and records shall be maintained to ensure that processing is performed within this time limit. [District Rules 2201 and 4102]
- If raw material cannot be processed within 24 hours of receipt, raw material shall be diverted to other facilities. No further deliveries shall be received until a 24 hour turnaround for raw material is achievable. [District Rule 4102]
- All raw material trucks shall be maintained in condition to prevent leakage of solid or liquid material. [District Rule 4102]
- Trucks delivering raw material shall be washed clean of raw material and raw material residue prior to exiting the raw material receiving area to minimize nuisance emissions. Truck tires shall be washed as necessary to limit trackout of raw material or raw material residue. [District Rule 4102]
- The raw material receiving area shall be washed as necessary to prevent any trackout of odor-causing materials. [District Rule 4102]
- The building doors shall remain closed except during actual entry or exit of trucks and/or personnel or in case of emergency. [District Rule 4102]

- Vapors from the cookers shall be captured and vented to the shell-and-tube or air-cooled condenser(s), the two-stage scrubber system, and the Regenerative Thermal Oxidizer (RTO), in series. [District Rules 2201, 4102, and 4104]
- Vapors from the drainer, drainer discharge conveyor(s), screw presses, screen(s), and centrifuge(s) shall be captured and vented to the two-stage scrubber system, and RTO, in series. [District Rules 2201, 4102 and 4104]
- The material handling and processing system, including the screen(s), hammermill, and crax transfer conveyor, shall be vented to a cyclone to control particulate matter (PM). The cyclone serving the material handling and processing system and air from the grinding room shall be vented to a two-stage scrubber system, consisting of a venturi scrubber and a packed bed scrubber connected in series. [District Rules 2201 and 4102]
- In the event the RTO malfunctions during raw material processing, cooker emissions shall be routed to the two-stage scrubber system and then to a packed bed scrubber serving the rendering plant room air, in series. The RTO shall be restarted as soon as practical and upon reaching operating temperature the contaminated air stream shall be immediately re-routed to the RTO. [District Rules 2201 and 4102]
- For each of the packed bed scrubbers, the scrubbing solution shall be delivered at a minimum rate of 10 gallons per minute for every 1,000 cubic feet per minute (cfm) of exhaust flowrate. [District Rules 2201 and 4102]
- For each of the venturi scrubbers, the scrubbing solution shall be delivered at a minimum rate of 4 gallons per minute for every 1,000 cubic feet per minute (cfm) of exhaust flowrate. [District Rules 2201 and 4102]
- The differential pressure across each of the packed bed scrubbers and venturi scrubbers shall be maintained in the range recommended by the manufacturer. Documentation of the manufacturer's recommended differential pressure range for each scrubber shall be maintained and the acceptable differential pressure range for each scrubber shall be established at the initial inspection. [District Rules 1070, 2201, and 4102]
- The RTO shall be operated with a combustion chamber temperature of no less than 1,400 degrees F and the retention time shall be no less than 1.0 seconds. The RTO temperature shall be monitored and recorded utilizing a continuous monitoring and recording device. The monitoring and recording device shall be maintained in proper operating condition at all times. [District Rules 2201, 4102, and 4104]
- The RTO shall be heated to the proper operating temperature prior to introducing the contaminated air stream. [District Rules 2201, 4102, and 4104]
- For each of the packed bed scrubbers, if the scrubbing solution is delivered at a rate less than 10 gallon/minute for every 1,000 cfm of exhaust flowrate or the differential pressure across the scrubber is outside of the range recommended by the manufacturer, as measured

by the permittee, the permittee shall correct the delivery rate of the scrubbing solution and/or the differential pressure across the scrubber to acceptable levels as soon as possible, but no longer than 1 hour of operation after detection. If the delivery rate of the scrubbing solution or differential pressure across the scrubber continues to be outside of acceptable ranges after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. Monitoring parameters found by District staff to be outside of established ranges constitute a violation of this permit. [District Rules 2201 and 4102]

- For each of the venturi scrubbers, if the scrubbing solution is delivered at a rate less than 4 gallon/minute for every 1,000 cfm of exhaust flowrate or the differential pressure across the scrubber is outside of the range recommended by the manufacturer, as measured by the permittee, the permittee shall correct the delivery rate of the scrubbing solution and/or the differential pressure across the scrubber to acceptable levels as soon as possible, but no longer than 1 hour of operation after detection. If the delivery rate of the scrubbing solution or differential pressure across the scrubber continues to be outside of acceptable ranges after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. Monitoring parameters found by District staff to be outside of established ranges constitute a violation of this permit. [District Rules 2201 and 4102]
- Continuous monitoring equipment shall be used in each packed bed scrubber and each venturi scrubber to monitor the recirculation rate of the scrubbing solution and the differential pressure across each scrubber, and to monitor the oxidation reduction potential of the scrubbing solution in each packed bed scrubber. The recirculation rates of the scrubbing solution shall be measured in gallons per minute. The recirculation rate and differential pressure across each packed bed scrubber and each venturi scrubber, and the oxidation reduction potential of the scrubbing solution in each packed bed scrubber shall be recorded at least once per day while the scrubbers are in operation. The continuous monitoring equipment shall be maintained in proper operating condition at all times. [District Rules 2201 and 4102]
- The condenser(s) and each scrubber shall be inspected at least once per week and cleaned as needed based on inspection results. Cleaning of condenser(s) and scrubbers shall be scheduled during times when raw materials are not being received or processed. Liquids and any solids shall be disposed of in a manner to prevent release which may constitute a nuisance odor. [District Rules 2201 and 4102]
- The permittee shall take monthly readings with a portable anemometer to verify that the main processing building is under negative pressure during periods of normal plant operation. The anemometer shall be calibrated per the manufacturer's recommendations. Additionally, the anemometer shall be made available to District inspection staff upon request. Records of anemometer measurements and calibrations shall be kept, maintained, and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4102]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

The following condition will be included on the ATC permits for the proposed 61.991 MMBtu/hr natural gas-fired boilers with SCR systems to enforce compliance with the ammonia slip limit for the SCR systems:

- Ammonia (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 3% O<sub>2</sub>. [District Rules 2201 and 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, a Health Risk Assessment (HRA) was required to determine the short-term acute and long-term chronic exposure from this project.

There are no increases in emissions from the existing emergency standby IC engine (Permit Unit C-2282-3), the existing 19.95 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-5, -7, -9, & -10), and the existing emergency IC engine powering a firewater pump (Permit Unit C-2282-11-0); therefore, there was no increase in health risk from these units. An HRA was run for the increase in health risk from the proposed new rendering operation (Permit Unit C-2282-12), the proposed meat and bone meal loadout operation (Permit Unit C-2282-13), and the proposed 61.991 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-14, -15, -16, and -17).

The results of the Risk Management Review (RMR) are summarized in the table below.

RMR Summary						
Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required?	Special Permit Requirements?
ATC C-2282-12-0 (Rendering Operation)	31.10	0.84	0.04	7.24E-09	No	Yes
ATC C-2282-13-0 (Meat and Bone Meal Loadout Operation)	0	0.00	0.00	0.00	No	No
ATC C-2282-14-0 (61.991 MMBtu/hr NG Boiler with SCR)	0.27	0.00	0.00	5.22E-08	No	Yes
ATC C-2282-15-0 (61.991 MMBtu/hr NG Boiler with SCR)	0.27	0.00	0.00	5.22E-08	No	Yes
ATC C-2282-16-0 (61.991 MMBtu/hr NG Boiler with SCR)	0.27	0.00	0.00	5.22E-08	No	Yes
ATC C-2282-17-0 (61.991 MMBtu/hr NG Boiler with SCR)	0.27	0.00	0.00	5.22E-08	No	Yes
<b>Project Totals</b>	> 1	0.84	0.04	2.16E-07		
<b>Facility Totals</b>	> 1	0.90	0.04	2.67E-06		

### 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 G: Health Risk Assessment Summary

The permit conditions listed below will be included on the ATC permits to ensure that the proposed equipment is operated in a manner that is consistent with the assumptions made for the HRA that was performed for the new equipment evaluated under this project and the existing equipment continues to be operated in a manner that is consistent with the assumptions made during the previous risk management reviews that were performed for permitting the existing equipment.

#### ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas-Fired Boilers

- {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]

ATC C-2282-11-1: Emergency IC Engine Powering a Firewater Pump

- Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

ATC C-2282-12-0: Rendering Operation

- The exhaust stacks 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]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- {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 4104 Reduction of Animal Matter**

The purpose of this rule is to limit air contaminants from source operations used for the reduction of animal matter. This rule applies to any source operation used for the reduction of animal matter.

Section 3.0 – Definitions states that for the purpose of this rule, the following definition shall apply:

*Reduction: any heated process, including rendering, cooking, drying, dehydration, digesting, evaporating and protein concentrating.*

Section 5.1 requires that a person shall not operate or use any article, machine, equipment or other contrivance for the reduction of animal matter unless all gases, vapors and gas-entrained effluent from such an article, machine, equipment or other contrivance are:

- 5.1.1 Incinerated at temperatures of not less than 1,200°F for a period of not less than 0.3 seconds; or
- 5.1.2 Processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control than Section 5.1.1 above.

Section 5.2 requires a person incinerating or processing gases, vapors or gas-entrained effluent pursuant to this rule shall provide, properly install, and maintain in calibration, in good working order, and in operation, devices as specified in the Authority to Construct or Permit to Operate or as specified by the APCO, for indicating temperature, pressure, or other operating conditions.

ATC C-2282-12-0: Rendering Operation

The following conditions will be included on the ATC permit for the rendering operation to enforce compliance with the requirements of this rule:

- Vapors from the cookers shall be captured and vented to the shell-and-tube or air-cooled condenser(s), the two-stage scrubber system, and the Regenerative Thermal Oxidizer (RTO), in series. [District Rules 2201, 4102, and 4104]
- Vapors from the drainer, drainer discharge conveyor(s), screw presses, screen(s), and centrifuge(s) shall be captured and vented to the two-stage scrubber system, and RTO, in series. [District Rules 2201, 4102 and 4104]
- The RTO shall be operated with a combustion chamber temperature of no less than 1,400 degrees F and the retention time shall be no less than 1.0 seconds. The RTO temperature shall be monitored and recorded utilizing a continuous monitoring and recording device. The monitoring and recording device shall be maintained in proper operating condition at all times. [District Rules 2201, 4102, and 4104]
- The RTO shall be heated to the proper operating temperature prior to introducing the contaminated air stream. [District Rules 2201, 4102, and 4104]

**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.

ATC C-2282-3-2 (Existing 1,919 bhp Diesel-Fired Emergency IC Engine)

The maximum PM concentration emitted from the existing diesel-fired emergency standby IC engine is calculated below.

$$0.417 \frac{\text{g PM}_{10}}{\text{bhp} - \text{hr}} \times \frac{1 \text{ bhp} - \text{hr}}{2,545 \text{ Btu}} \times \frac{10^6 \text{ Btu}}{9,051 \text{ dscf}} \times \frac{0.35 \text{ Btu}_{\text{out}}}{1 \text{ Btu}_{\text{in}}} \times \frac{15.43 \text{ grain}}{\text{g}} = 0.098 \frac{\text{grain}}{\text{dscf}}$$

Because 0.098 grain/dscf does not exceed 0.1 grain/dscf, compliance with this rule is expected.

ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, & -17-0 (Existing 19.95 MMBtu/hr Natural Gas Boilers and Proposed 61.991 MMBtu/hr Natural Gas Boilers)

The maximum PM concentration emitted from the natural gas-fired boilers is calculated below.

$$0.003 \frac{\text{lb} - \text{PM}}{\text{MMBtu}} \times \frac{1 \text{ MMBtu}}{8,578 \text{ dscf}} \times \frac{7,000 \text{ grain}}{1 \text{ lb}} = 0.002 \frac{\text{grain}}{\text{dscf}}$$

Because 0.002 grain/dscf does not exceed 0.1 grain/dscf, compliance with this rule is expected.



ATCs C-2282-11-1 (Existing 250 bhp Emergency IC Engine Powering a Firewater Pump)

The maximum PM concentration emitted from the existing diesel-fired emergency IC engine powering a firewater pump is calculated below.

$$0.06 \frac{\text{g PM}_{10}}{\text{bhp} - \text{hr}} \times \frac{1 \text{ bhp} - \text{hr}}{2,545 \text{ Btu}} \times \frac{10^6 \text{ Btu}}{9,051 \text{ dscf}} \times \frac{0.35 \text{ Btu}_{\text{out}}}{1 \text{ Btu}_{\text{in}}} \times \frac{15.43 \text{ grain}}{\text{g}} = 0.01 \frac{\text{grain}}{\text{dscf}}$$

Because 0.01 grain/dscf does not exceed 0.1 grain/dscf, compliance with this rule is expected.

ATC C-2282-12-0: Rendering Operation

Rendering Operation RTO Exhaust PM Emission Concentration

For the rendering operation RTO, it is assumed that all PM from the combustion of natural gas in the RTO is PM<sub>10</sub> and 50% of the PM that results from the rendering material processed is PM<sub>10</sub>.

The following equation will be used to calculate the PM concentration from the exhaust of the RTO for the rendering operation using the daily PE2 for PM<sub>10</sub> from the RTO from the combustion of natural gas (PE2<sub>PM10-NG</sub>) and the daily PE2 for PM<sub>10</sub> from the RTO that results from processing of the rendering material (PE2<sub>PM10-Rendering</sub>) and the exhaust flow rate of the RTO provided by the applicant:

$$PM \text{ Conc.} \left( \frac{\text{grain}}{\text{scf}} \right) = \frac{\left( \left( \text{PE2}_{\text{PM10-NG}} \left[ \frac{\text{lb}}{\text{day}} \right] \right) \times 1 \frac{\text{lb} - \text{PM}}{\text{lb} - \text{PM}_{10}} + \left( \text{PE2}_{\text{PM10-Rendering}} \left[ \frac{\text{lb}}{\text{day}} \right] \right) \times 2 \frac{\text{lb} - \text{PM}}{\text{lb} - \text{PM}_{10}} \right) \times 7,000 \frac{\text{grain}}{\text{lb}}}{(\text{Air Flow Rate} [\text{scfm}]) \times \left( 60 \frac{\text{min}}{\text{hr}} \right) \times \left( 24 \frac{\text{hr}}{\text{day}} \right)}$$

Daily PE2 for PM<sub>10</sub> from the RTO from the combustion of natural gas (PE2<sub>PM10-NG</sub>): 1.3 lb/day

Daily PE2 for PM<sub>10</sub> from the RTO from rendering material (PE2<sub>PM10-Rendering</sub>): 7.7 lb/day

RTO Maximum Exhaust Flowrate: 20,000 cfm

$$PM \text{ Conc.} \left( \frac{\text{grain}}{\text{scf}} \right) = \frac{\left( \left( 1.3 \frac{\text{lb} - \text{PM}_{10}}{\text{day}} \right) \times 1 \frac{\text{lb} - \text{PM}}{\text{lb} - \text{PM}_{10}} + \left( 7.7 \frac{\text{lb} - \text{PM}_{10}}{\text{day}} \right) \times 2 \frac{\text{lb} - \text{PM}}{\text{lb} - \text{PM}_{10}} \right) \times 7,000 \frac{\text{grain}}{\text{lb}}}{\left( 20,000 \frac{\text{scf}}{\text{min}} \right) \times \left( 60 \frac{\text{min}}{\text{hr}} \right) \times \left( 24 \frac{\text{hr}}{\text{day}} \right)} = 0.004 \frac{\text{grain}}{\text{scf}}$$

Because 0.004 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected.

Room Air Scrubbers Exhaust PM Emission Concentration

For the rendering operation room air scrubbers, it is assumed that 50% of the PM emitted is PM<sub>10</sub>. The maximum PM concentration in the exhaust if the room air scrubbers is calculated as bellow based on the maximum PM<sub>10</sub> concentration permitted in the exhaust of the room air scrubbers.

Maximum PM<sub>10</sub> concentration allowed in exhaust of room air scrubbers: 0.001 grain/scf

$$PM \text{ Conc.} \left( \frac{\text{grain}}{\text{scf}} \right) = \left( 0.001 \frac{\text{grain} - PM_{10}}{\text{scf}} \right) \times 2 \frac{\text{grain} - PM}{\text{grain} - PM_{10}} = 0.002 \frac{\text{grain}}{\text{scf}}$$

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

Rendering Operation Solids Processing and Material Transfer Exhaust PM Emission Concentration

For the rendering operation solids processing and material transfer operations, it is assumed that 50% of the PM emitted is PM<sub>10</sub>.

The following equation will be used to calculate the PM concentration from the exhaust of the two-stage scrubber for the rendering operation solids processing and material transfer operations using the daily PE2 for PM<sub>10</sub> from these operations and the exhaust flow rate of the two-stage scrubber provided by the applicant:

$$PM \text{ Conc.} \left( \frac{\text{grain}}{\text{scf}} \right) = \frac{\left( PE2_{PM_{10}} \left[ \frac{\text{lb} - PM_{10}}{\text{day}} \right] \right) \times 1 \frac{\text{lb} - PM}{\text{lb} - PM_{10}} \times 7,000 \frac{\text{grain}}{\text{lb}}}{(\text{Air Flow Rate [scfm]}) \times \left( 60 \frac{\text{min}}{\text{hr}} \right) \times \left( 24 \frac{\text{hr}}{\text{day}} \right)}$$

Daily PE2 for PM<sub>10</sub> from solids processing and material transfer operations (PE2<sub>PM10</sub>): 0.7 lb/day

Two-Stage Scrubber Maximum Exhaust Flowrate: 30,000 cfm

$$PM \text{ Conc.} \left( \frac{\text{grain}}{\text{scf}} \right) = \frac{\left( 0.7 \frac{\text{lb} - PM_{10}}{\text{day}} \right) \times 2 \frac{\text{lb} - PM}{\text{lb} - PM_{10}} \times 7,000 \frac{\text{grain}}{\text{lb}}}{\left( 30,000 \frac{\text{scf}}{\text{min}} \right) \times \left( 60 \frac{\text{min}}{\text{hr}} \right) \times \left( 24 \frac{\text{hr}}{\text{day}} \right)} = 0.0002 \frac{\text{grain}}{\text{scf}}$$

Because 0.0002 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected.

ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation

The silos for the proposed meat and bone loadout operation will be equipped with bin vent filters to control PM<sub>10</sub> from the loading and unloading of the silos. The bin vent filters are passive fabric filters that do not utilize blowers or fans, but capture PM emissions during loading and unloading operations. Properly maintained fabric filters are expected to have PM exhaust (grain loading) concentrations that are much less than 0.1 grain/dscf.

The following condition will be included on the proposed ATC permits to enforce compliance with the requirements of this rule:

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

## Rule 4301 Fuel Burning Equipment

The purpose of this rule is to limit the emission of air contaminants from fuel burning equipment. This rule limits the concentration of combustion contaminants and specifies maximum emission rates for sulfur dioxide, nitrogen oxide, and combustion contaminant emissions.

The provisions of District Rule 4301 apply to any fuel burning equipment except air pollution control equipment which is exempted according to Section 4.0. Section 3.1 provides the following definition of fuel burning equipment:

*Fuel Burning Equipment: any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.*

Section 5.1 requires that a person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

Section 5.2 stipulates that a person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

- 5.2.1 200 pounds per hour of sulfur compounds, calculated as sulfur dioxide (SO<sub>2</sub>);
- 5.2.2 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO<sub>2</sub>);
- 5.2.3 Ten pounds per hour of combustion contaminants as defined in Rule 1020 (Definitions) (defined as total PM) and derived from the fuel.

ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, & -17-0 (Existing 19.95 MMBtu/hr Natural Gas Boilers & Proposed 61.991 MMBtu/hr Natural Gas Boilers)

The maximum concentration hourly emission rates for NO<sub>x</sub>, SO<sub>x</sub>, and PM from the existing 19.95 MMBtu/hr natural gas-fired boilers and proposed 61.991 MMBtu/hr natural gas-fired boilers are shown in the table below.

District Rule 4301 Limits (lb/hr)			
Pollutant	NO <sub>x</sub>	SO <sub>x</sub>	Total PM
<b>Rule Limit (lb/hr)</b>	<b>140</b>	<b>200</b>	<b>10</b>
ATC C-2282-5-2 Hourly PE	0.22	0.06	0.06
ATC C-2282-7-2 Hourly PE	0.22	0.06	0.06
ATC C-2282-9-1 Hourly PE	0.17	0.06	0.06
ATC C-2282-10-1 Hourly PE	0.17	0.06	0.06
ATC C-2282-14-0 Hourly PE	2.26	0.18	0.19
ATC C-2282-15-0 Hourly PE	2.26	0.18	0.19
ATC C-2282-16-0 Hourly PE	2.26	0.18	0.19
ATC C-2282-17-0 Hourly PE	2.26	0.18	0.19

As shown above, the existing and proposed natural gas-fired boilers are expected to comply with the maximum emission rates allowed by Rule 4301.

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

The purpose of this rule is to limit emissions of oxides of nitrogen (NO<sub>x</sub>) and carbon monoxide (CO) 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.

Pursuant to Section 2.0 of District Rule 4305, the existing 19.95 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-5, -7, -9, & -10) and proposed 61.991 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-14, -15, -16, & -17) addressed in this project are subject to District Rule 4305. In addition, the units are also subject to 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*. Because the emissions limits of District Rules 4306 and 4320 and all other requirements of these rules are equivalent or more stringent than the requirements of District Rule 4305, compliance with the requirements of District Rules 4306 and 4320 will satisfy the requirements of District Rule 4305. Therefore, compliance with Rule 4305 is expected and no further discussion is required.

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

The purpose of this rule is to limit emissions of oxides of nitrogen (NO<sub>x</sub>) and carbon monoxide (CO) 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.

The existing 19.95 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-5, -7, -9, & -10) and proposed 61.991 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-14, -15, -16, & -17) addressed in this project are subject to District Rule 4306. These units are also subject to District Rule 4320 - *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters greater than 5.0 MMBtu/hr*, which generally has equivalent or more stringent requirements as District Rule 4306 and is discussed in the section on District Rule 4320 below.

### Section 5.0 - Requirements

All ppmv emission limits specified in Section 5.0 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen (O<sub>2</sub>). Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with Section 8.1.

### Section 5.1 - NO<sub>x</sub> and CO Emissions Limits

Section 5.1.1 requires that, except for units subject to Section 5.2, on and after the compliance deadline specified in Section 7, units subject to Section 5.0 shall not be operated in a manner which exceeds the applicable NO<sub>x</sub> and carbon monoxide (CO) emissions limit specified in Table

1 - Tier 1 NO<sub>x</sub> and CO Limits (until December 31, 2023) and Table 2 - Tier 2 NO<sub>x</sub> and CO Limits (on and after December 31, 2023).

The existing 19.95 MMBtu/hr units and proposed 61.991 MMBtu/hr units are fire tube boilers that will only be fueled with PUC regulated natural gas, will not have any permit conditions limiting fuel usage, will not be operated as load-following units, will not be located at a school, and will not be located at an oilfield or refinery; therefore, they are subject to the applicable NO<sub>x</sub> and CO emission limits listed in District Rule 4306, Section 5.1, Table 1, Categories A and B and Table 2, Categories A.1 and B.1, as shown in the tables below.

<b>Rule 4306, Table 1: Tier 1 NO<sub>x</sub> and CO Limits</b>					
<b>Category</b>	<b>Operated on Gaseous Fuel</b>			<b>Operated on Liquid Fuel</b>	
	<b>NO<sub>x</sub> Limit</b>		<b>CO Limit</b>	<b>NO<sub>x</sub> Limit</b>	<b>CO Limit</b>
	<b>Standard Option</b>	<b>Enhanced Option</b>			
A. Units with a rated heat input equal to or less than 20.0 MMBtu/hour, except for Categories C, D, E, F, G, H, and I units	15 ppmv or 0.018 lb/MMBtu	9 ppmv or 0.011 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
B. Units with a rated heat input greater than 20.0 MMBtu/hour, except for Categories C, D, E, F, G, H, and I units	9 ppmv or 0.011 lb/MMBtu	6 ppmv or 0.007 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv

<b>Rule 4306, Table 2: Tier 2 NO<sub>x</sub> and CO Limits</b>				
<b>Category</b>	<b>Operated on Gaseous Fuel</b>		<b>Operated on Liquid Fuel</b>	
	<b>NO<sub>x</sub> Limit</b>	<b>CO Limit (ppmv)</b>	<b>NO<sub>x</sub> Limit</b>	<b>CO Limit (ppmv)</b>
A. Units with a total rated heat input > 5.0 MMBtu/hr to ≤ 20.0 MMBtu/hr, except for Categories C through G units				
1. Fire Tube Boilers	7 ppmv or 0.0085 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
2. Units at Schools	9 ppmv or 0.011 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
3. Units fired on Digester Gas	9 ppmv or 0.011 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
4. Thermal Fluid Heaters	9 ppmv or 0.011 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
5. All other units	9 ppmv or 0.011 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv

Rule 4306, Table 2: Tier 2 NO <sub>x</sub> and CO Limits				
Category	Operated on Gaseous Fuel		Operated on Liquid Fuel	
	NO <sub>x</sub> Limit	CO Limit (ppmv)	NO <sub>x</sub> Limit	CO Limit (ppmv)
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through G units				
1. Fire Tube Boilers with a total rated heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour	7 ppmv or 0.0085 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
2. All other units with a total rated heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour	7 ppmv or 0.0085 lb/MMBtu	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv

The proposed ATC permits will require the units to comply the following NO<sub>x</sub> and CO emission limits, with the exception of during start-up and shutdown for the proposed 61.991 MMBtu/hr boilers equipped with SCR:

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

NO<sub>x</sub>: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu  
CO: 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

NO<sub>x</sub>: 7 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0085 lb-NO<sub>x</sub>/MMBtu  
CO: 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

NO<sub>x</sub>: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu  
CO: 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu

Therefore, compliance with the Tier 1 emission limits in Section 5.1 of Rule 4306 is expected. In addition, with the exception of ATCs C-2282-5-2 and -7-2, the proposed emission limits in the ATC permits will also comply with the Tier 2 emission limits in Section 5.1 of Rule 4306. Pursuant to Section 7.0 – Compliance Schedule, fire tube units with a permitted limit for NO<sub>x</sub> less than or equal to 9 ppmv as of May 17, 2021 must submit an Emission Control Plan and ATC application to comply with the applicable Tier 2 emission limits of Rule 4306 by May 1, 2028 and shall be in full compliance with these limits on and after December 31, 2029. The following conditions will be included on the ATC permits.

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

- Emissions rates from this unit shall not exceed any of the following limits: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

- An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable Tier 2 emission limits of District Rule 4306 by May 1, 2028 and the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the applicable Tier 2 emissions limits of District Rule 4306 on and after December 31, 2029 and in full compliance with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rules 4306 and 4320]

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- Emissions rates from this unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0085 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

Section 5.2 - Units Limited to Less than 9 Billion Btu/year Heat Input

Section 5.2 specifies requirements for units that are limited to less than 9 billion Btu per calendar year heat input pursuant to a Permit to Operate. The units addressed in this project will be permitted to operate as a full-time units. Therefore, this section is not applicable.

Section 5.3 – Start-up and Shutdown Provisions

Section 5.3 states that on and after the full compliance deadline in Section 7.1, the applicable emission limits of Sections 5.1, 5.2.2, and 5.2.3 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.3.1 through 5.3.4. The duration of each start-up or each shutdown shall not exceed two hours unless the APCO has approved an application for a Permit to Operate condition submitted by the operator to allow more than two hours for each start-up or each shutdown. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown.

ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

The existing 19.95 MMBtu/hr natural gas-fired boilers utilize ultra-low NO<sub>x</sub> burners to comply with the proposed emission limits. Ultra-low NO<sub>x</sub> burners will generally achieve their rated emissions within two minutes of initial start-up and do not require a special shutdown procedure; therefore, during start-up and shutdown the existing boilers will be required to comply with same emission limits as during steady state operation and specific provisions allowing higher emission rates during start-up and shutdown are not required.

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

The proposed 61.991 MMBtu/hr natural gas-fired boilers will utilize SCR to comply with the proposed emission limits. SCR systems must reach the proper operating temperature before the introduction of the reagent and the system begins to reduce NO<sub>x</sub> emissions. Therefore, the applicant has requested start-up and shutdown procedures for these units. The following conditions will be included on the ATC permits for these units.

- During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320].
- The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]

Section 5.4 - Monitoring Provisions

Section 5.4.1 specifies requirements for units that simultaneously fire gaseous and liquid fuels. The units addressed in this project will only be fueled with gaseous fuel. Therefore, the requirements of this section are not applicable.

Section 5.4.2 requires that for permit units subject to District Rule 4306, Section 5.1 emissions limits the operator shall either install and maintain an APCO-approved Continuous Emissions Monitoring System (CEMS) for NO<sub>x</sub>, CO and O<sub>2</sub>, or shall implement an APCO-approved Alternate Monitoring System.

In order to satisfy the monitoring requirements of District Rule 4306 the applicant has proposed to use pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO<sub>x</sub>, CO, and O<sub>2</sub> exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer.

The following conditions will be listed on the permits to incorporate the requirements of the proposed alternate monitoring plan.

ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]

- If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
- 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]

- The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
- If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
- 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]

Section 5.4.3 specifies monitoring requirements for units that are limited to less than 9 billion Btu per calendar year heat input. As discussed above, the units addressed in this project will not be limited to less than 9 billion Btu per calendar year heat input. Therefore, the requirements of Section 5.4.3 are not applicable to these units.

Section 5.4.4 requires that the operator of any Section 5.1, Table 1 Category H units and Section 5.1, Table 2 Category E units that are limited to heat inputs of 9 billion Btu to 30 billion Btu/year, and any units that are limited to less than 9 billion Btu per calendar year heat input and subject

to the requirements of Section 5.2 shall install and maintain an operational non-resettable, totalizing mass or volumetric flow meter in each fuel line to each unit or, if approved by the APCO in writing, install and maintain a master meter, which measures fuel to all units in a group of similar units to satisfy these requirements. Volumetric flow measurements shall be periodically compensated for temperature and pressure. As discussed above, the annual heat input of the units addressed in this project will not be limited. Therefore, the requirements of Section 5.4.4 are not applicable.

Section 5.4.5 stipulates that the APCO shall not approve an alternative monitoring system unless it is documented that continued operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits. The operator shall source test over the proposed range of surrogate operating parameters to demonstrate compliance with the applicable emission standards.

### Section 5.5 - Compliance Determination

Section 5.5.1 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 ATC permits for the boilers:

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

Section 5.5.2 requires that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

Therefore, the following condition will be listed on the ATC permits for the boilers:

- All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 2201, 4305, 4306, and 4320]

Section 5.5.3 requires that Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits and stipulates that any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits shall constitute a

violation. The units addressed in this project will not be equipped with CEMS; therefore, this section is not applicable.

Section 5.5.4 requires that for emissions monitoring pursuant to Sections 5.4.2, 5.4.2.1, and 6.3.1 using a portable NO<sub>x</sub> 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 condition will be listed on the ATC permits for the boilers:

- 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

Section 5.5.5 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 ATC permits:

- {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 stipulates that the records required by Sections 6.1.1 through 6.1.4 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 Rule 4306.

The following condition will be included on the ATC permits for the boilers:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

Section 6.1.1 requires that the operator of any unit operated under the exemption of Section 4.2 for firing of fuels other than California PUC quality natural gas during California PUC quality

natural gas curtailment shall monitor and record, for each unit, the cumulative annual hours of operation on each fuel other than natural gas during periods of natural gas curtailment and equipment testing and shall record the NO<sub>x</sub> emission concentration, expressed in ppmv or lb/MMBtu, for each unit that is operated during periods of natural gas curtailment. The facility has not requested to utilize the exemption of Section 4.2 and California PUC quality natural gas curtailment is fairly rare; therefore, conditions for compliance with this section will not be included in the permit.

Section 6.1.2 requires that the operator of any Section 5.1, Table 1 Category H units and Section 5.1, Table 2 Category E units that are limited to heat inputs of 9 billion Btu to 30 billion Btu/year, and any units that are limited to less than 9 billion Btu per calendar year heat input and subject to the requirements of Section 5.2 shall record the amount of fuel use at least on a monthly basis for each unit, or for a group of units as specified in Section 5.4.4. As discussed above, the annual heat input of the units addressed in this project will not be limited. Therefore, the requirements of this section are not applicable.

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 are not applicable.

Section 6.1.4 requires that the operator of a unit with start-up or shutdown provisions keep records of the duration of the start-up or shutdowns.

The following condition will be included on the ATC permits for the proposed boilers that will utilize SCR systems and will have specific conditions for start-up and shutdown periods.

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]

Section 6.2 - Test Methods

Section 6.2 requires the test methods listed in the following table to be used for source testing measurements of the pollutants and parameters listed unless otherwise approved by the APCO and EPA.

<b>Rule 4306 Test Methods</b>	
<b>Compound or Parameter Measured</b>	<b>Approved Test Methods</b>
HHV for liquid hydrocarbon fuels	American Society for Testing and Materials (ASTM) D 240 or D 4809
HHV for gaseous fuels	ASTM D 1826 or D 1945 in conjunction with ASTM D 3588
NO <sub>x</sub> (in ppmv)	EPA Method 7E or ARB Method 100

<b>Rule 4306 Test Methods</b>	
<b>Compound or Parameter Measured</b>	<b>Approved Test Methods</b>
CO (in ppmv)	EPA Method 10 or ARB Method 100
Stack Gas O <sub>2</sub>	EPA Method 3 or 3A, or ARB Method 100
NO <sub>x</sub> Emission Rate (Heat Input Basis)	EPA Method 19
Stack Gas Velocities	EPA Method 2
Stack Gas Moisture Content	EPA Method 4

The following condition will be included on the boiler ATC permits to ensure compliance with the requirements of Section 6.2 of District Rule 4306.

- {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
- {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 (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
- The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 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 5.1 not less than once every 12 months (no more than 30 days before or after the required annual source test date). Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.2.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Sections 5.1 or 5.2.3. Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits specified in Sections 5.1 or 5.2.3, the source testing frequency shall revert to at least once every 12 months. Failure to comply with the requirements Section 6.3.1, or any source test results that exceed the applicable emission limits in Sections 5.1 or 5.2.3 shall constitute a violation of Rule 4306.

The existing 19.95 MMBtu/hr natural gas-fired boilers will continue to be tested as required. Initial source testing will be required for each of the proposed 61.991 MMBtu/hr natural gas-fired boilers within 60 days of initial start-up and at least once every 12 months until compliance has been demonstrated on two consecutive 12-month source tests after which source testing may be performed at least once every 36-months. The following conditions will be listed on the ATC permits.

ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]
- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
- {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]
- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
- Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
- {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]

- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]

Section 6.3.2 specifies the requirements for representative source testing of a group of units. Representative source testing of a group of units has not been proposed for the units addressed in this project. Therefore, the requirements of this sections are not applicable.

#### 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 4306.

The existing units will continue to comply with the applicable Tier 1 NO<sub>x</sub> and CO emissions limits listed in Table 1 of Section 5.1 and the periodic monitoring and source testing requirements required by this rule. The existing units will not be required to submit an emission control plan for compliance with the applicable Tier 2 NO<sub>x</sub> emission limits listed in Rule 4306, Section 5.1, Table 2 until May 1, 2028 and will not be subject to the applicable Tier 2 NO<sub>x</sub> emission limits until December 31, 2029. The proposed units will be required to comply with the applicable Tier 1 and Tier 2 emission limits of Rule 4306 upon initial operation.

The following condition will be included on the ATC permits for existing units C-2282-5 and -7 for compliance with the emission control plan requirements of this section.

#### ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

- An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable Tier 2 emission limits of District Rule 4306 by May 1, 2028 and the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the applicable Tier 2 emissions limits of District Rule 4306 on and after December 31, 2029 and in full compliance with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rules 4306 and 4320]

#### Section 7.0 - Compliance Schedule

Section 7.0 requires that an operator of a unit subject to Rule 4306 must comply with the applicable deadlines for submittal of an Emission Control Plan and ATC application and the applicable deadlines for demonstration of compliance with the rule requirements.

The existing units will continue to comply with the Tier 1 NO<sub>x</sub> and CO emissions limits listed in Table 1 of Section 5.1 and the periodic monitoring and source testing requirements required by this rule. The existing units will not be subject to the NO<sub>x</sub> emission limits listed in Rule 4306, Section 5.1, Table 2 until December 31, 2029. The proposed new units will be required to comply with the applicable Tier 1 and Tier 2 emission limits of Rule 4306 upon initial operation. As discussed above, the operator will be required to submit an emission control plan and any required ATC application by May 1, 2028 describing how the existing units will comply with the



applicable NO<sub>x</sub> emission limits listed in Table 2 of Section 5.1. Therefore, compliance with the requirements of this section is expected.

### Conclusion

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule (see attached draft ATC permits in Appendix B). Therefore, compliance with the requirements of District Rule 4306 is expected.

### **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<sub>x</sub>), carbon monoxide (CO), oxides of sulfur (SO<sub>2</sub>), and particulate matter 10 microns or less (PM<sub>10</sub>) 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.

The existing 19.95 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-5, -7, -9, & -10) and proposed 61.991 MMBtu/hr natural gas-fired boilers (Permit Units C-2282-14, -15, -16, & -17) addressed in this project are subject to District Rule 4320.

### Section 5.0 - Requirements

Section 5.1 requires that units that are subject to District Rule 4320 must:

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

### Section 5.2 - NO<sub>x</sub> and CO Emissions Limits

Section 5.2 requires that units subject to this section shall not be operated in a manner which exceeds the applicable NO<sub>x</sub> emissions limit specified in Table 1 - Tier 1 NO<sub>x</sub> Emissions Limits (until December 31, 2023) and Table 2 - Tier 2 NO<sub>x</sub> Emissions Limits (on and after December 31, 2023). Section 5.2 also requires that units subject to this section shall not be operated in a manner to which exceeds a carbon monoxide (CO) emissions limit of 400 ppmv. All ppmv emission limits specified in Section 5.2 are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen (O<sub>2</sub>). Emission concentrations shall be corrected to 3.00 percent oxygen in accordance with Section 8.1.

The existing 19.95 MMBtu/hr units and proposed 61.991 MMBtu/hr units are fire tube boilers that will only be fueled with PUC regulated natural gas, will not have any permit conditions limiting fuel usage, will not be located at a wastewater treatment plant, will not be located at a school, will not be located at an oilfield or refinery, and will not be operated by a small producer of crude oil as defined in District Rule 1020; therefore, they are subject to the applicable NO<sub>x</sub>

limits listed in District Rule 4320, Section 5.2, Table 1, Categories A and B and Table 2, Categories A.1 and B.1, as shown in the tables below.

<b>Rule 4320, Table 1: Tier 1 NO<sub>x</sub> Emission Limits</b>			
<b>Category</b>	<b>NO<sub>x</sub> Limit</b>	<b>Authority to Construct</b>	<b>Compliance Deadline</b>
A. Units with a total rated heat input > 5.0 MMBtu/hr to < 20.0 MMBtu/hr, except for Categories C through G units	a) Standard Schedule 9 ppmv or 0.011 lb/MMBtu; or	July 1, 2011	July 1, 2012
	b) Enhanced Schedule 6 ppmv or 0.007 lb/MMBtu	January 1, 2013	January 1, 2014
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	July 1, 2011	July 1, 2012
	b) Enhanced Schedule 5 ppmv or 0.0062 lb/MMBtu	January 1, 2013	January 1, 2014

<b>Rule 4320, Table 2: Tier 2 NO<sub>x</sub> Limits</b>				
<b>Category</b>	<b>NO<sub>x</sub> Limit</b>	<b>Emission Control Plan</b>	<b>Authority to Construct</b>	<b>Compliance Deadline</b>
A. Units with a total rated heat input > 5.0 MMBtu/hr to ≤ 20.0 MMBtu/hr, except for Categories C through E units				
1. Fire Tube Boilers	5 ppmv or 0.0061 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
2. Units at Schools	9 ppmv or 0.011 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
3. Units fired on Digester Gas	9 ppmv or 0.011 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
4. Thermal Fluid Heaters	9 ppmv or 0.011 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
5. All other units	5 ppmv or 0.0061 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through E units				
1. Fire Tube Boilers with a total rated heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour	2.5 ppmv or 0.003 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
2. All other units with a total rated heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour	2.5 ppmv or 0.003 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023

The proposed ATC permits will require the units to comply the following NO<sub>x</sub> and CO emission limits, with the exception of during start-up and shutdown for the proposed 61.991 MMBtu/hr boilers that will be equipped with SCR:

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

NO<sub>x</sub>: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu  
CO: 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

NO<sub>x</sub>: 7 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0085 lb-NO<sub>x</sub>/MMBtu  
CO: 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

NO<sub>x</sub>: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu  
CO: 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu

Therefore, the existing 19.95 MMBtu/hr units are expected to comply with the Tier 1 standard schedule NO<sub>x</sub> emission limits in Section 5.2 of Rule 4320. The proposed 61.991 MMBtu/hr units are expected to comply with the Tier 1 and Tier 2 NO<sub>x</sub> emission limits in Section 5.2 of Rule 4320. Pursuant to Table 2, the existing units must submit an Emission Control Plan and ATC application to comply with the applicable Tier 2 emission limits of Rule 4320 by May 1, 2022 and shall be in full compliance with these limits on and after December 31, 2023. The following conditions will be included on the ATC permits.

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

- Emissions rates from this unit shall not exceed any of the following limits: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
- An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable Tier 2 emission limits of District Rule 4306 by May 1, 2028 and District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the applicable Tier 2 emissions limits of District Rule 4306 on and after December 31, 2029 and District Rule 4320 on and after December 31, 2023. [District Rules 4306 and 4320]

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- Emissions rates from this unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0085 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

- An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rule 4320]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

Section 5.3 - Annual Fee Calculation

Section 5.3 requires payment of annual emission fees for units that do not comply with the emission limits in Section 5.2 of Rule 4320. The proposed ATC permits for the existing 19.95 MMBtu/hr units will require the operator to submit an emission control plan and ATC application that identify the method selected to comply with Rule 4320, and must include any applicable requirements for payment of annual emission fees if this method of compliance is chosen. The proposed 61.991 MMBtu/hr units will be required to comply with the applicable emission limits in Section 5.2; therefore, this section is not applicable to these units.

Section 5.4 - Particulate Matter Control Requirements

Section 5.4.1 of this rule requires the operator of a unit to comply with one of the following requirements for control of particulate matter (PM):

- 1) Operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;
- 2) Operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or
- 3) operators shall install and properly operate an emission control system that reduces SO<sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO<sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O<sub>2</sub>

The proposed ATC permits will require that the boilers will only be fired with PUC regulated natural gas. Therefore, compliance with Section 5.4 of District Rule 4320 is expected. The following condition will be included on the ATC permits for the boilers.

- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]

Section 5.5 - Low Use

Section 5.5 specifies requirements for units with maximum annual heat input limits of less than 1.8 billion Btus per calendar year. As discussed above, the annual heat input of the units addressed in this project will not be limited. Therefore, the requirements of this section 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 Table 2, and 5.5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5. The duration of each start-up or each shutdown shall not exceed two hours unless the APCO has approved an application for a Permit to Operate condition submitted by the operator to allow more than two hours for each start-up or each shutdown. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown.

### ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

The existing 19.95 MMBtu/hr natural gas-fired boilers utilize ultra-low NO<sub>x</sub> burners to comply with the proposed emission limits. Ultra-low NO<sub>x</sub> burners will generally achieve their rated emissions within two minutes of initial start-up and do not require a special shutdown procedure; therefore, during start-up and shutdown the existing boilers will be required to comply with same emission limits as during steady state operation and specific provisions allowing higher emission rates during start-up and shutdown are not required.

### ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

The proposed 61.991 MMBtu/hr natural gas-fired boilers will utilize SCR to comply with the proposed emission limits. SCR systems must reach the proper operating temperature before the introduction of the reagent and the system begins to reduce NO<sub>x</sub> emissions. Therefore, the applicant has requested start-up and shutdown procedures for these units. The following conditions will be included on the ATC permits for these units.

- During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
- The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]

## Section 5.7 - Monitoring Provisions

Section 5.7.1 requires that for permit units subject to District Rule 4320, Section 5.2 emissions limits the operator shall either install and maintain an APCO-approved Continuous Emissions

Monitoring System (CEMS) for NO<sub>x</sub>, CO and O<sub>2</sub>, or shall implement an APCO-approved Alternate Monitoring System.

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

The following conditions will be listed on the permits to incorporate the requirements of the proposed alternate monitoring plan.

ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
- If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
- 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO

concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
- The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
- If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
- 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]

Sections 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 units addressed in this project are 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 these units.

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 a CEMS. The units addressed in this project are not operated at a seasonal source. Therefore, these units are not subject to the requirements of this section.

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

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

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

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

As stated above, the applicant has proposed that the boilers will only be fired with PUC regulated natural gas. Suppliers of natural gas that is transported in a PUC regulated pipeline are required to regularly test the sulfur content of the gas to ensure that it does not exceed the sulfur content limits set by the PUC. Therefore compliance with Section 5.7.6 is expected. The following condition will be included on the ATC permits for the boilers.

- The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]



## Section 5.8 - Compliance Determination

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

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

Section 5.8.2 requires that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. Therefore, the following condition will be listed on the ATC permits for the boilers:

- All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 2201, 4305, 4306, and 4320]

Section 5.8.3 requires that Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits and stipulates that any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits shall constitute a violation. The units addressed in this project will not be equipped with CEMS; therefore, this section is not applicable.

Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO<sub>x</sub> 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 condition will be listed on the ATC permits for the boilers:

- 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

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

- {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 stipulates 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 Rule 4320. The following condition will be included on the ATC permits to ensure compliance:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

Section 6.1.1 requires that the operator of any unit operated under the exemption of Section 4.2 for firing of fuels other than California PUC quality natural gas during California PUC quality natural gas curtailment shall monitor and record, for each unit, the cumulative annual hours of operation on each fuel other than natural gas during periods of natural gas curtailment and equipment testing and shall record the NO<sub>x</sub> emission concentration, expressed in ppmv or lb/MMBtu, for each unit that is operated during periods of natural gas curtailment.

The facility has not requested to utilize the exemption of Section 4.2 and California PUC quality natural gas curtailment is fairly rare; therefore, conditions for compliance with this section will not be included in the permits.

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. The units are not subject to Section 5.5; therefore, Section 6.1.2 is not applicable.

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 are not applicable.

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 following conditions will be included on the ATC permits for the proposed boilers that will utilize SCR systems and will have specific conditions for start-up and shutdown periods.

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]

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, the amount of fuel used, and the duration of the natural gas curtailment period. The facility has not proposed the use of liquid fuel during PUC quality natural gas curtailment periods; therefore, the requirements of this section are not applicable.

Section 6.2 - Test Methods

Section 6.2 requires the test methods listed in the following table to be used for source testing measurements of the pollutants and parameters listed unless otherwise approved by the APCO and EPA.

<b>Rule 4320 Test Methods</b>	
<b>Compound or Parameter Measured</b>	<b>Approved Test Methods</b>
HHV for liquid hydrocarbon fuels	American Society for Testing and Materials (ASTM) D 240 or D 4809
HHV for gaseous fuels	ASTM D 1826 or D 1945 in conjunction with ASTM D 3588
NO <sub>x</sub> (in ppmv)	EPA Method 7E or ARB Method 100
CO (in ppmv)	EPA Method 10 or ARB Method 100
Stack Gas O <sub>2</sub>	EPA Method 3 or 3A, or ARB Method 100
NO <sub>x</sub> Emission Rate (Heat Input Basis)	EPA Method 19
Stack Gas Velocities	EPA Method 2
Stack Gas Moisture Content	EPA Method 4
SO <sub>x</sub>	EPA Method 6C, EPA Method 8, or ARB Method 100
Determination of total sulfur as hydrogen sulfide (H <sub>2</sub> S) content	EPA Method 11 or EPA Method 15, as appropriate
Sulfur content of liquid fuel	ASTM D 5453

The following condition will be included on the ATC permits to ensure compliance with the requirements of Section 6.2 of District Rule 4320.

- {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]

- {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 (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
- The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]

### Section 6.3 - Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every 12 months (no more than 30 days before or after the required annual source test date).

Pursuant to Section 6.3.1.1, units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.5.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Section 5.2.

Pursuant to Section 6.3.1.2, tune-ups required by Sections 5.5.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored.

Pursuant to Section 6.3.1.3, if the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits specified in Section 5.2, the source testing frequency shall revert to at least once every 12 months.

The existing 19.95 MMBtu/hr natural gas-fired boilers will continue to be tested as required. Initial source testing will be required for each of the proposed 61.991 MMBtu/hr natural gas-fired boilers within 60 days of initial start-up and at least once every 12 months until compliance has been demonstrated on two consecutive 12-month source tests after which source testing may be performed at least once every 36-months. The following conditions will be listed on the ATC permits:

#### ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]

- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
- {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]
- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
- Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
- {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]
- The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]

Section 6.3.2 specifies the requirements for representative source testing of a group of units. Representative source testing of a group of units has not been proposed for the units addressed in this project. Therefore, the requirements of this sections are not applicable.

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 existing units will continue to comply with the applicable Tier 1 NO<sub>x</sub> and CO emissions limits listed in Table 1 of Section 5.2 and the periodic monitoring and source testing requirements

required by this rule. The existing units will be required to submit an emission control plan for compliance with the applicable Tier 2 NO<sub>x</sub> emission limits listed in Rule 4320, Section 5.2, Table 2 on May 1, 2022, but will not be subject to the applicable Tier 2 NO<sub>x</sub> emission limits until December 31, 2023. The proposed units will be required to comply with the applicable Tier 1 and Tier 2 emission limits of Rule 4320 upon initial operation. The following conditions will be included on the ATC permits for the existing units for compliance with the emission control plan requirements of this section.

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

- An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable Tier 2 emission limits of District Rule 4306 by May 1, 2028 and District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the applicable Tier 2 emissions limits of District Rule 4306 on and after December 31, 2029 and District Rule 4320 on and after December 31, 2023. [District Rules 4306 and 4320]

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the with the applicable requirements of District Rule 4320 on and after December 31, 2023.. [District Rules 4306 and 4320]

Section 7.0 - Compliance Schedule

Section 7.0 requires that an operator of a unit subject to Rule 4320 must comply with the applicable deadlines for submittal of an Emission Control Plan and ATC application and the applicable deadlines for demonstration of compliance with the rule requirements.

The existing units will continue to comply with the Tier 1 NO<sub>x</sub> emissions limits listed in Table 1 of Section 5.2 and the periodic monitoring and source testing requirements required by this rule. The existing units will not be subject to the NO<sub>x</sub> emission limits listed in Table 2 of Section 5.2 until December 31, 2023. The proposed units will be required to comply with the applicable Tier 1 and Tier 2 emission limits of Rule 4320 upon initial operation. As discussed above, the operator will be required to submit an emission control plan and any required ATC application by May 1, 2022 describing how the existing units will comply with the applicable NO<sub>x</sub> emission limits listed in Table 2 of Section 5.2. Therefore, compliance with the requirements of this section is expected.

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 B). Therefore, compliance with the requirements of District Rule 4320 is expected.

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

The purpose of this rule is to limit emissions of oxides of nitrogen (NO<sub>x</sub>) from boilers, steam generators, and process heaters to levels consistent with Reasonably Available Control Technology (RACT).

This rule applies to any boiler, steam generator or process heater, with a rated heat input greater than 5 million Btu per hour that is fired with gaseous and/or liquid fuels, and is included in a major NO<sub>x</sub> source. This rule does not apply to any unit located west of Interstate Highway 5 located in Fresno County, Kern County, or Kings County.

As discussed in Section VII above, the facility is not a major NO<sub>x</sub> source, therefore District Rule 4351 is not applicable to any units at the facility.

### **Rule 4701 Internal Combustion Engines – Phase I**

The purpose of this rule is to limit the emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion (IC) engines.

The requirements of Rule 4702 are equivalent or more stringent than the requirements of this Rule. Since the existing emergency IC engines are subject to both Rules 4701 and 4702, compliance with Rule 4702 is sufficient to demonstrate compliance with this rule.

### **Rule 4702 Internal Combustion Engines**

The purpose of this rule is to limit the emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SO<sub>x</sub>) from IC engines.

This rule applies to any internal combustion engine with a rated brake horsepower of 25 brake horsepower (bhp) or greater.

Rule 4702 applies to the existing diesel-fired emergency standby IC engine (Permit Unit C-2282-3) and existing diesel-fired emergency IC engine powering a firewater pump (Permit Unit C-2282-11) that are being modified in this project to limit the total NO<sub>x</sub> and VOC emissions from the facility.

Pursuant to Rule 4702, Section 4.2, except for the requirements of Sections 5.10 and 6.2.3, the requirements of Rule 4702 shall not apply to an emergency standby engine or a low-use engine, provided that the engine is operated with a functional nonresettable elapsed time meter.

Pursuant to Section 4.2.1, in lieu of operating a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time, provided that the alternative is approved by the APCO and EPA and is allowed by the Permit-to-Operate or Permit-Exempt Equipment Registration. The operator must demonstrate that the alternative device, method, or technique is equivalent to using a nonresettable elapsed time meter.

Section 4.2.2 requires that the operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

Rule 4702, Section 3.0 defines an emergency standby engine as follows:

*3.15 Emergency Standby Engine: an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.*

Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.

The following conditions will be included on the ATC permit for the existing emergency standby IC engine:

ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]
- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]

Operation of emergency standby engines are limited to 100 hours or less per calendar year for non-emergency purposes. However, in order to comply with the requirements of the Air Toxic Control Measure for Stationary Compression Ignition Engines for in-use emergency IC engines, the current permit for the existing emergency IC engine limits operation for non-emergency purposes to more than 20 hours per year. Therefore, the following condition will be included on the ATC permit for the existing emergency standby IC engine:



### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]

Pursuant to Rule 4702, Section 4.3, except for except for the administrative requirements of Section 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following conditions:

- 4.3.1.1 The engine is operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood; and
- 4.3.1.2 Except for operations associated with Section 4.3.1.1, the engine is limited to operate no more than 100 hours per calendar year as determined by an operational nonresettable elapsed time meter, for periodic maintenance, periodic readiness testing, and readiness testing during and after repair work of the engine; and
- 4.3.1.3 The engine is operated with an operational nonresettable elapsed time meter. In lieu of installing a nonresettable elapsed time meter, the operator of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and EPA. The operator of the engine shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

The existing emergency IC engine powering a firewater pump qualifies for the exemption in Section 4.3. Therefore, the following conditions will be included on the ATC permit:

### ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

- This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours. [District Rules 2201 and 4702, and 17 CCR 93115]
- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and to preserve or protect property, human life, or public health during a fire. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

Section 5.10 specifies monitoring requirements that are applicable to emergency standby IC engines.

Section 5.10.1 specifies that the operator of any of the following engines shall comply with the requirements specified in Section 5.9.2 through Section 5.9.5 below:

- 5.10.1.1 An AO spark-ignited engine subject to the requirements of Section 5.2;
- 5.10.1.2 A compression-ignited engine subject to the requirements of Section 5.2; or
- 5.10.1.3 An engine subject to Section 4.2.

Section 5.10.2 requires the operator to properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be listed on the ATC permit for the existing emergency standby IC engine:

ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

Section 5.10.3 requires the operator to monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

The following condition will be included on the ATC permit for the existing emergency standby IC engine:

ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

Section 5.10.4 specifies that the operator must install and operate a nonresettable elapsed operating time meter for each engine.

Section 5.10.4.1 allows that in lieu of installing a nonresettable time meter, the operator of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Stationary Equipment Registration condition.

Section 5.10.4.2 requires the operator of an IC engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

The following condition will be included on the ATC permit for the existing emergency standby IC engine to ensure compliance with Section 5.9.4:

ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]

Section 5.10.5 requires the operator of all agricultural operation (AO) spark-ignited engines and compression-ignited engines that have been retro-fitted with a NO<sub>x</sub> exhaust control, except certified spark-ignited engines, engines certified per Section 9.0, and certified compression-ignited engines, shall comply with Sections 5.10.5.1 through 5.10.5.6. The IC engines evaluated in this project have not been retro-fitted with add-on NO<sub>x</sub> exhaust controls that have not been certified; therefore, this section is not applicable.

Section 6.2.3 requires that an operator claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, the following:

- 6.2.3.1 Total hours of operation,
- 6.2.3.2 The type of fuel used,
- 6.2.3.3 The purpose for operating the engine,
- 6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and
- 6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption

The following conditions will be included on the ATC permits for the emergency IC engines:

ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- The permittee shall maintain monthly records of the type of fuel purchased and the amount of fuel used in the engine each month in gallons. [District Rules 2201 and 4702, and 17 CCR 93115]

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

#### ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

- The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, emergency firefighting, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 2201 and 4702, and 17 CCR 93115]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

#### Conclusion

As shown above, the existing emergency IC engines are expected to continue to comply with the applicable requirements of Rule 4702.

#### **Rule 4801 Sulfur Compounds**

The purpose of District Rule 4801 is to limit the emissions of sulfur compounds. A maximum concentration and test method are specified. The provisions of this rule shall apply to any discharge to the atmosphere of sulfur compounds, which would exist as a liquid or a gas at standard conditions.

Section 3.1 states 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: two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO<sub>2</sub>), on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = \frac{n RT}{P}$$

Where:

N = moles SO<sub>2</sub>

T (Standard Temperature) = 60°F = 520°R

P (Standard Pressure) = 14.7 psi

$$R \text{ (Universal Gas Constant)} = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}}$$

ATCs C-2282-3-2 & -11-1 (Existing Diesel-Fired Emergency IC Engines)

To demonstrate compliance with the sulfur compound emission limit of Rule 4801, the maximum sulfur compound emissions from the IC engines will be calculated based on the maximum sulfur content of the diesel fuel that IC engines are allowed to use (0.0015% by weight).

$$\frac{0.0015 \text{ lb} - \text{S}}{100 \text{ lb} - \text{Diesel}} \times \frac{7.05 \text{ lb} - \text{diesel}}{\text{gal} - \text{diesel}} \times \frac{1 \text{ gal} - \text{diesel}}{0.137 \text{ MMBtu}} \times \frac{1 \text{ MMBtu}}{9,051 \text{ dscf}} \times \frac{64 \text{ lb} - \text{SO}_x}{32 \text{ lb} - \text{S}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb} - \text{SO}_x} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520 ^\circ\text{R}}{14.7 \text{ psi}} \times \frac{10^6 \text{ parts}}{\text{million}} = 1.0 \text{ ppmv}$$

Because 1.0 ppmv is  $\leq$  2000 ppmv, the IC engines are expected to comply with Rule 4801. The following condition will be included on the permits:

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

ATCs C-2282-5-2, -7-2, -9-1, -10-1, -14-0, -15-0, -16-0, & -17-0 (Existing 19.95 MMBtu/hr Natural Gas Boilers & Proposed 61.991 MMBtu/hr Natural Gas Boilers)

To demonstrate compliance with the sulfur compound emission limit of Rule 4801, the maximum concentration of sulfur compound emissions from the boilers is calculated below based on the boilers being fired with PUC regulated natural gas.

$$\frac{0.00285 \text{ lb} - \text{SO}_x}{\text{MMBtu}} \times \frac{1 \text{ MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb} - \text{SO}_x} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520 ^\circ\text{R}}{14.7 \text{ psi}} \times \frac{1,000,000 \text{ parts}}{\text{million}} = 2.0 \text{ ppmv}$$

Because 2.0 ppmv is  $\leq$  2000 ppmv, the boilers are expected to comply with Rule 4801. The following conditions will be included on the permits:

ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers

- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Emissions rates from this unit shall not exceed any of the following limits: 9 ppmv NOx @ 3% O2 or 0.011 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 100 ppmv CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Emissions rates from this unit shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.0085 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu 0.003 lb-PM10/MMBtu, 50 ppmvd CO

@ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers with SCR

- {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
- Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
- During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

ATC C-2282-12-0: Rendering Operation

Rendering Operation RTO Exhaust SO<sub>x</sub> Emission Concentration

The maximum concentration of sulfur compound emissions in the exhaust of the RTO is calculated below the daily PE2 for SO<sub>x</sub> in the exhaust of the RTO and the exhaust flow rate of the RTO provided by the applicant.

Daily PE2 for SO<sub>x</sub> from the exhaust of the RTO: 78.7 lb-SO<sub>x</sub>/day

RTO Maximum Exhaust Flowrate: 20,000 cfm

$$SO_x \text{ Conc. (ppmv)} = \frac{78.7 \frac{\text{lb} - SO_x}{\text{day}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb} - SO_x} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520 ^\circ\text{R}}{14.7 \text{ psi}} \times \frac{1,000,000 \text{ parts}}{\text{million}}}{\left(20,000 \frac{\text{ft}^3}{\text{min}}\right) \times \left(60 \frac{\text{min}}{\text{hr}}\right) \times \left(24 \frac{\text{hr}}{\text{day}}\right)} = 16.2 \text{ ppmv}$$

Because 16.2 ppmv is ≤ 2000 ppmv, the SO<sub>x</sub> concentrations in the RTO exhaust are expected to comply with Rule 4801. The following conditions will be included on the permit:

- The emissions rates from the exhaust of the RTO that result from the raw material processed, not including SO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions from the combustion of natural gas as supplemental fuel in the RTO, shall not exceed any of the following limits, in pounds per ton of raw material processed: 0.015 lb-NO<sub>x</sub>/ton, 0.0335 lb-SO<sub>x</sub>/ton, 0.0033 lb-PM<sub>10</sub>/ton, 0.0052 lb-VOC/ton, or 0.00087 lb-NH<sub>3</sub>/ton. [District Rules 2201 and 4801]
- The SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions rates from the combustion of natural gas in the RTO as supplemental fuel, shall not exceed any of the following limits: 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201 and 4801]

### Room Air Scrubbers Exhaust Sulfur Compound Emission Concentration

For the rendering operation room air scrubbers, The maximum concentration of sulfur compound emissions (as SO<sub>2</sub>) in the exhaust if the room air scrubbers is calculated as bellow based on the maximum H<sub>2</sub>S concentration permitted in the exhaust of the room air scrubbers.

Maximum H<sub>2</sub>S concentration allowed in exhaust of room air scrubbers: 0.8 ppmv H<sub>2</sub>S

$$\text{Sulfur Compound Conc. (ppmv as SO}_2\text{)} = 0.8 \text{ ppmv H}_2\text{S} \times \frac{1 \text{ ppmv SO}_2}{1 \text{ ppmv H}_2\text{S}} = 0.8 \text{ ppmv}$$

Because 0.8 ppmv is ≤ 2000 ppmv, the maximum concentration of sulfur compound emissions (as SO<sub>2</sub>) in the exhaust if the room air scrubbers is expected to comply with Rule 4801.

The following condition will be included on the permit:

- The controlled emissions rate from the exhaust of the packed bed scrubbers serving the rendering plant room air shall not exceed any of the following limits: PM10: 0.001 gr/dscf, VOC: 3.0 ppmv as CH<sub>4</sub>, NH<sub>3</sub>: 1.0 ppmv; or H<sub>2</sub>S: 0.8 ppmv. [District Rule 2201]

### **California Code of Regulations (CCR), Title 17, Division 3, Chapter 1 (Air Resources Board), Subchapter 7.5 (Air Toxic Control Measures), Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engines)**

#### **Section 93115.1 Purpose**

The purpose of this airborne toxic control measure (ATCM) is to reduce diesel particulate matter (PM) and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines.

#### **Section 93115.2 Applicability**

- (a) Except as provided in section 93115.3, this ATCM applies to any person who either sells a stationary CI engine, offers a stationary CI engine for sale, leases a stationary CI engine, or purchases a stationary CI engine for use in California, unless such engine is:
- (1) a portable CI engine,
  - (2) a CI engine used to provide motive power,
  - (3) an auxiliary CI engine used on a marine vessel, or
  - (4) an agricultural wind machine as defined in section 93115.4.
- (b) Except as provided in sections 93115.3 and 93115.9, this ATCM applies to any person who owns or operates a stationary CI engine in California with a rated brake horsepower greater than 50 (>50 bhp).

## Section 93115.4 Definitions

(a) For purposes of this ATCM, the following definitions apply:

- (8) "California Air Resources Board (CARB) Diesel Fuel" means any diesel fuel that meets the specifications of vehicular diesel fuel, as defined in title 13, CCR, sections 2281 and 2282.
- (11) "Certified Engine" means a CI engine that is certified to meet the Tier 1, Tier 2, Tier 3, or Tier 4 Off-Road CI Certification Standards as specified in title 13, California Code of Regulations, section 2423.
- (13) "Compression Ignition (CI) Engine" means an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.
- (29) "Emergency Standby Engine" means a stationary engine that meets the criteria specified in (A), (B), and (C) and any combination of (D) or (E) or (F) below:
  - (A) is installed for the primary purpose of providing electrical power or mechanical work during an emergency use and is not the source of primary power at the facility; and
  - (B) is operated to provide electrical power or mechanical work during an emergency use; and
  - (C) is not operated to supply power to an electric grid or does not supply power as part of a financial arrangement with any entity, except as allowed in sections 93115.6 (a)(2), (b)(1) or (c); and
  - (D) is operated under limited circumstances for maintenance and testing, emissions testing, or initial start-up testing, as specified in sections 93115.6(a),(b), and (c); or
  - (E) is operated under limited circumstances in response to an impending outage, as specified in sections 93115.6(a),(b), and (c); or (F) is operated under limited circumstances under a DRP as specified in section 93115.6(c)
- (30) "Emergency Use" means providing electrical power or mechanical work during any of the following events and subject to the following conditions:
  - (A) the failure or loss of all or part of normal electrical power service or normal natural gas supply to the facility:
    - 1. which is caused by any reason other than the enforcement of a contractual obligation the owner or operator has with a third party or any other party; and
    - 2. which is demonstrated by the owner or operator to the district APCO's satisfaction to have been beyond the reasonable control of the owner or operator;
  - (B) the failure of a facility's internal power distribution system:
    - 1. which is caused by any reason other than the enforcement of a contractual obligation the owner or operator has with a third party or any other party; and



2. which is demonstrated by the owner or operator to the district APCO's satisfaction to have been beyond the reasonable control of the owner or operator;
  - (C) the pumping of water or sewage to prevent or mitigate a flood or sewage overflow;
  - (D) the pumping of water for fire suppression or protection;
  - (E) the powering of ALSF-1 and ALSF-2 airport runway lights under category II or III weather conditions; (F) the pumping of water to maintain pressure in the water distribution system for the following reasons:
    1. a pipe break that substantially reduces water pressure; or
    2. high demand on the water supply system due to high use of water for fire suppression; or
    3. the breakdown of electric-powered pumping equipment at sewage treatment facilities or water delivery facilities; or
  - (G) day-of-rocket launch and day of space plane vehicle re-entry/landing system checks and tracking performed (in parallel with grid power) by the United States Department of Defense at Command Transmitter sites (also known as "CT" sites) that occur within the 24-hour time period associated with the scheduled time of the launch or re-entry/landing.
- (41) "In-Use" means a CI engine that is not a "new" CI engine
- (47) "Maintenance and Testing" means operating an emergency standby CI engine to:
- (A) evaluate the ability of the engine or its supported equipment to perform during an emergency. "Supported Equipment" includes, but is not limited to, generators, pumps, transformers, switchgear, uninterruptible power supply, and breakers; or
  - (B) facilitate the training of personnel on emergency activities; or
  - (C) provide electric power for the facility when the utility distribution company takes its power distribution equipment offline to service that equipment for any reason that does not qualify as an emergency use; or
  - (D) provide additional hours of operation to perform testing on an engine that has experienced a breakdown or failure during maintenance. Upon air district approval, these additional hours of operation will not be counted in the maximum allowable annual hours of operation for the emergency standby CI engine that provided the electrical power.
- (49) "Model Year" means the stationary CI engine manufacturer's annual production period, which includes January 1st of a calendar year, or if the manufacturer has no annual production period, the calendar year.
- (50) "New" or "New CI Engine" means the following: (A) a stationary CI engine installed at a facility after January 1, 2005, including an engine relocated from an off-site location after January 1, 2005, except the following shall be deemed in-use engines:
1. a replacement stationary CI engine that is installed to temporarily replace an in-use engine while the in-use engine is undergoing maintenance and testing, provided the

- replacement engine emits no more than the in-use engine, and the replacement engine is not used more than 180 days cumulatively in any 12-month rolling period;
2. an engine for which a district-approved application for a district permit or engine registration for stationary sources was submitted to the District prior to January 1, 2005, even though the engine was installed after January 1, 2005;
  3. an engine that is one of four or more engines owned by an owner or operator and is relocated prior to January 1, 2008, to an offsite location that is owned by the same owner or operator;
  4. an engine, or replacement for an engine, used in agricultural operations that is relocated within the same facility or to another facility under the same owner or operator for use in agricultural operations, unless the engine is sited where an engine is not currently located and has not been previously located.
  5. an engine installed at a facility prior to January 1, 2005, and relocated within the same facility after January 1, 2005.
  6. a model year 2004 or 2005 engine purchased prior to January 1, 2005, for use in California. The date of purchase is defined by the date shown on the front of the cashed check, the date of the financial transaction, or the date on the engine purchasing agreement, whichever is earliest.
  7. a greater than 50 bhp Tier 1- or Tier 2-certified stationary diesel agricultural engine installed after January 1, 2005, shall be considered a new engine subject to the requirements of section 93115.8(a) until 12 years after the date of initial installation, at which time, it shall be considered an in-use engine subject to the requirements of section 93115.8(b)(3). (B) a stationary CI engine that has been reconstructed after January 1, 2005, shall be deemed a new engine unless the sum of the costs of all individual reconstructions of that engine after January 1, 2005, is less than 50% of the lowest-available purchase price, determined at the time of the most recent reconstruction, of a complete, comparably-equipped new engine (within + 10% of the reconstructed engine's brake horsepower rating).

For purposes of this definition, the cost of reconstruction and the cost of a comparable new engine shall not include the cost of equipment and devices required to meet the requirements of this ATCM.

(52) "Noncertified Engine" means a CI engine that is not certified to Off-Road CI Certification Standards as specified in title 13, California Code of Regulations, section 2423.

Permit Unit C-2282-3 (emergency standby IC engine) was installed prior to January 1, 2005 and is therefore an in-use stationary emergency standby IC engine as defined in this ATCM. Permit Unit C-2282-11 (emergency IC engine powering a firewater pump) was installed after January 1, 2005 and is therefore a new stationary emergency standby IC engine as defined in the ATCM.

### **Section 93115.5 Fuel and Fuel Additive Requirements for New and In-Use Engines**

- (a) As of January 1, 2006, except as provided for in sections 93115.3 and 93115.5(c), no owner or operator of a new stationary CI engine or an in-use prime stationary diesel-fueled CI engine shall fuel the engine with any fuel unless the fuel is one of the following:
- (1) CARB Diesel Fuel; or
  - (2) an alternative diesel fuel that is:
    - (A) biodiesel;
    - (B) a biodiesel blend that does not meet the definition of CARB Diesel Fuel;
    - (C) a Fischer-Tropsch fuel; or
    - (D) an emulsion of water in diesel fuel; or
  - (3) any alternative diesel fuel that is not identified in section 93115.5(a)(2) above and meets the requirements of the Verification Procedure; or
  - (4) an alternative fuel; or
  - (5) CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure; or
  - (6) any combination of 93115.5(a)(1) through (5) above.

As discussed above, the IC engines will be required to use CARB certified diesel fuel; therefore, the requirements of section 93115.10(a) of the ATCM will be satisfied. The following condition will be included on the ATC Permits:

#### ATCs C-2282-3-2 & -11-1 (Diesel-Fired Emergency IC Engines)

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight shall be used. [District Rule 4801 and 17 CCR 93115]

### **Section 93115.6 ATCM for Stationary CI Engines – Emergency Standby Diesel-Fueled CI Engine (>50 bhp) Operating Requirements and Emission Standards.**

- (a) New Emergency Standby Diesel-Fueled CI Engine (>50 bhp) Operating Requirements and Emission Standards.
- (1) At-School and Near-School Provisions. No owner or operator shall operate a new stationary emergency standby diesel-fueled CI engine for non-emergency use, including maintenance and testing, during the following periods:
    - (A) whenever there is a school sponsored activity, if the engine is located on school grounds, and
    - (B) between 7:30 a.m. and 3:30 p.m. on days when school is in session, if the engine is located within 500 feet of school grounds. Section 93115.6(a)(1) does not apply if the engine emits no more than 0.01 g/bhp-hr of diesel PM.

The existing emergency IC engines at this facility are not located on or within 500 feet of school grounds; therefore, this section is not applicable.

- (2) No owner or operator shall operate any new stationary emergency standby diesel-fueled CI engine (>50 bhp) in response to the notification of an impending rotating outage, unless all the following criteria are met:
  - (A) the engine's permit to operate allows operation of the engine in anticipation of a rotating outage, or the District has established a policy or program that authorizes operation of the engine in anticipation of a rotating outage; and
  - (B) the Utility Distribution Company has ordered rotating outages in the control area where the engine is located, or has indicated it expects to issue such an order at a specified time; and
  - (C) the engine is located in a specific location that is subject to the rotating outage; and
  - (D) the engine is operated no more than 30 minutes prior to the time when the Utility Distribution Company officially forecasts a rotating outage in the control area; and
  - (F) the engine operation is terminated immediately after the Utility Distribution Company advises that a rotating outage is no longer imminent or in effect.
  
- (3) New Engines: As of January 1, 2005, except as provided in section 93115.3, no person shall sell, offer for sale, purchase, or lease for use in California any new stationary emergency standby diesel-fueled CI engine that has a rated brake horsepower greater than 50 unless it meets the following applicable emission standards, and no person shall operate any new stationary emergency standby diesel-fueled CI engine that has a rated brake horsepower greater than 50, unless it meets all of the following applicable operating requirements and emission standards specified in 93115.6(a)(3):
  - (A) Emissions Standards and Hours of Operating Requirements.
    1. New stationary emergency standby diesel-fueled engines (>50 bhp) shall:
      - a. meet the applicable emission standards for all pollutants for the same model year and maximum horsepower rating as specified in Table 1 - Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines, in effect on the date of acquisition or submittal, as defined in section 93115.4, and
      - b. after December 31, 2008, be certified to the new nonroad compression-ignition (CI) engine emission standards for all pollutants for 2007 and later model year engines as specified in 40 CFR, Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (2006); and
      - c. not operate more than 50 hours per year for maintenance and testing purposes, except as provided in 93115.6(a)(3)(A)2. This subsection does not limit engine operation for emergency use and for emission testing to show compliance with 93115.6(a)(3).
    2. The District may allow a new stationary emergency standby diesel-fueled CI engine (> 50 hp) to operate up to 100 hours per year for maintenance and testing purposes on a site-specific basis, provided the diesel PM emission rate is less than or equal to 0.01 g/bhp-hr.

As discussed above, Permit Unit C-2282-3 (1,919 bhp emergency standby IC engine) is an in-use stationary emergency standby IC engine as defined in this ATCM; therefore, the requirements of section 93115.6(a) of the ATCM are not applicable.

(4) New Direct-Drive Emergency Standby Fire Pump Engines: Except as provided in section 93115.3, no person shall sell, offer for sale, purchase, or lease for use in California any new stationary emergency standby diesel-fueled direct-drive fire-pump CI engine that has a rated brake horsepower greater than 50 unless the fire-pump engine meets the applicable emission standards and certification requirements specified in section 93115.6(a)(4), and no person shall operate any new stationary emergency standby diesel-fueled direct-drive fire pump CI engine that has a rated brake horsepower greater than 50, unless it meets all of the applicable operating requirements and emission standards specified in 93115.6(a)(4).

(A) Standards and Hours of Operating Requirements.

1. New direct-drive emergency standby diesel-fueled fire-pump engines (>50 bhp) shall,
  - a. meet the applicable emissions standards for all pollutants as specified in Table 2 Emissions Standards for New Stationary Emergency Standby Direct-Drive Fire Pump Engines for the model year and NFPA nameplate power rating; and
  - b. meet the new fire pump engine certification requirements and emission standards required by 40 CFR § 60.4202(d.) Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (2006); and
  - c. not operate more than the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 2002 edition, which is incorporated herein by reference. This subsection does not limit engine operation for emergency use and for emission testing to show compliance with 93115.6(a)(4).

The applicable requirements of Table 2 of the ATCM are shown in the table below.

<b>ATCM Table 2: Emission Standards for New Stationary Emergency Standby Direct-Drive Fire Pump Engines &gt; 50 bhp g/bhp-hr (g/kW-hr)</b>				
<b>Maximum Engine Power</b>	<b>Model Year(s)</b>	<b>PM</b>	<b>NMHC + NOx</b>	<b>CO</b>
50 ≤ hp < 75 (37 ≤ kW < 56)	2010 and earlier 2011+ <sup>1</sup>	0.60 (0.80) 0.30 (0.40)	7.8 (10.5) 3.5 (4.7)	3.7 (5.0)
75 ≤ hp < 100 (56 ≤ kW < 75)	2010 and earlier 2011+ <sup>1</sup>	0.60 (0.80) 0.30 (0.40)	7.8 (10.5) 3.5 (4.7)	3.7 (5.0)
100 ≤ hp < 175 (75 ≤ kW < 130)	2009 and earlier 2010+ <sup>2</sup>	0.60 (0.80) 0.22 (0.30)	7.8 (10.5) 3.0 (4.0)	3.7 (5.0)
175 ≤ hp < 300 (130 ≤ kW < 225)	2008 and earlier 2009+ <sup>3</sup>	0.40 (0.54) 0.15 (0.20)	7.8 (10.5) 3.0 (4.0)	2.6 (3.5)
300 ≤ hp < 600 (225 ≤ kW < 450)	2008 and earlier 2009+ <sup>3</sup>	0.40 (0.54) 0.15 (0.20)	7.8 (10.5) 3.0 (4.0)	2.6 (3.5)
600 ≤ hp < 750 (450 ≤ kW < 560)	2008 and earlier 2009+	0.40 (0.54) 0.15 (0.20)	7.8 (10.5) 3.0 (4.0)	2.6 (3.5)
hp > 750 (kW > 560)	2007 and earlier 2008+	0.40 (0.54) 0.15 (0.20)	7.8 (10.5) 4.8 (6.4)	2.6 (3.5)

1. For model years 2011–2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.
2. For model years 2010–2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.
3. In model years 2009–2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

**ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump**

Permit Unit C-2282-11 is a new stationary emergency standby direct-drive fire pump engine that is subject to the requirements of section 93115.6(a)(4) of the ATCM. The following conditions will be included on ATC C-2282-11-1:

- Emissions from this IC engine shall not exceed any of the following limits: 2.7 g-NOx/bhp-hr, 0.4 g-CO/bhp-hr, or 0.1 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and to preserve or protect property, human life, or public health during a fire. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

(b) In-Use Emergency Standby Diesel-Fueled CI Engine (> 50 bhp) Operating Requirements and Emission Standards.

- (1) No owner or operator shall operate any in-use stationary emergency standby diesel-fueled CI engine in response to the notification of an impending rotating outage unless all the following criteria are met:
  - (A) the engine's permit to operate allows operation of the engine in anticipation of a rotating outage, or the District has established a policy or program that authorizes operation of the engine in anticipation of a rotating outage; and
  - (B) the Utility Distribution Company has ordered rotating outages in the control area where the engine is located, or has indicated it expects to issue such an order at a certain time; and
  - (C) the engine is located in a specific location that is subject to the rotating outage; and
  - (D) the engine is operated no more than 30 minutes prior to the time when the Utility Distribution Company officially forecasts a rotating outage in the control area; and
  - (E) the engine operation is terminated immediately after the Utility Distribution Company advises that a rotating outage is no longer imminent or in effect.
  
- (2) At-School and Near-School Provisions. No owner or operator shall operate an in-use stationary emergency standby diesel-fueled CI engine for non-emergency use, including maintenance and testing, during the following periods:
  - (A) whenever there is a school sponsored activity, if the engine is located on school grounds, and
  - (B) between 7:30 a.m. and 3:30 p.m. on days when school is in session, if the engine is located within 500 feet of school grounds. Section 93115.6(b)(2) does not apply if the engine emits no more than 0.01 g/bhp-hr of diesel PM.

The existing emergency IC engines at this facility are not located on or within 500 feet of school grounds; therefore, requirements of section 93115.6(b) of the ATCM are applicable.

- (3) Except as provided in section 93115.3, no owner or operator shall operate an in-use stationary emergency standby diesel-fueled CI engine (> 50 hp) in California unless it meets, in accordance with the applicable compliance schedules specified in sections 93115.11 and 93115.12, the following requirements (which are summarized in Table 3):

<b>ATCM Table 3: Summary of the Emission Standards and Operating Requirements for In-Use Stationary Emergency Standby Diesel-Fueled CI Engines &gt; 50 BHP (See section 93115.6(b)(3))</b>				
<b>Diesel PM</b>				<b>Other Pollutants</b>
<b>Diesel PM Standards (g/bhp-hr)</b>	<b>Maximum Allowable Annual Hours of Operation for Engines Meeting Diesel PM Standards</b>			<b>HC, NO<sub>x</sub>, NMHC+ NO<sub>x</sub>, and CO Standards (g/bhp-hr)</b>
	<b>Emergency Use</b>	<b>Non-Emergency Use</b>		
		<b>Emission Testing to show compliance<sup>1</sup></b>	<b>Maintenance &amp; Testing (hours/year)</b>	
>0.40 <sup>2</sup>	Not Limited by ATCM <sup>2</sup>	Not Limited by ATCM <sup>2</sup>	20	Not Limited by ATCM <sup>2</sup>
>0.15 and ≤0.40	Not Limited by ATCM <sup>2</sup>	Not Limited by ATCM <sup>2</sup>	21-30	For engines with emission control strategies not verified through the verification procedure: Off-Road CI Engine Certification Standards for an off-road engine of the model year and maximum rated power of the engine installed to meet the applicable PM standard, or Tier 1 standards. <sup>3</sup> OR Both (i) and (ii) must be met: (i) No increase in HC or NO <sub>x</sub> above 10% from baseline levels OR No increase in NMHC+NO <sub>x</sub> emissions above baseline levels (ii) No increase in CO above 10% from baseline levels
>0.01 and ≤0.15	Not Limited by ATCM <sup>2</sup>	Not Limited by ATCM <sup>2</sup>	30 to 50 (Upon Approval by the District)	
≤0.01	Not Limited by ATCM <sup>2</sup>	Not Limited by ATCM <sup>2</sup>	51 to 100 (Upon Approval by the District)	

1. Emission testing limited to testing to show compliance with section 93115.6(b)(3).
2. May be subject to emission or operational restrictions as defined in current applicable district rules, regulations, or policies.
3. The option to comply with the Tier 1 standards is available only if no off-road engine certification standards have been established for an off-road engine of the same model year and maximum rated power as the new stationary emergency standby diesel-fueled CI engine.

(A) Diesel PM Standard and Hours of Operation Limitations.

1. General Requirements:
  - a. No owner or operator shall operate an in-use stationary emergency standby diesel-fueled CI engine (>50 bhp) that emits diesel PM at a rate greater than 0.40 g/bhp-hr more than 20 hours per year for maintenance and testing purposes. The District may approve up to 20 additional hours per year for the maintenance and testing of such in-use emergency standby diesel-fueled CI engines operated at health facilities. This subsection does not limit engine operation for emergency use and for emission testing to show compliance with 93115.6(b)(3).



- b. No owner or operator shall operate an in-use stationary emergency standby diesel-fueled CI engine (>50 bhp) that emits diesel PM at a rate less than or equal to 0.40 g/bhp-hr more than 30 hours per year for maintenance and testing purposes, except as provided in 93115.6(b)(3)(A)2. This subsection does not limit engine operation for emergency use and for emission testing to show compliance with 93115.6(b)(3).
2. The District may allow in-use stationary emergency standby diesel-fueled CI engines (> 50 bhp) to operate more than 30 hours per year for maintenance and testing purposes on a site-specific basis, provided the following limits are met:
  - a. Up to 40 annual hours of operation are allowed for maintenance and testing purposes at a health facility if the diesel PM emission rate is greater than 0.15 g/bhp-hr but less than or equal to 0.40 g/bhp-hr.
  - b. Up to 50 annual hours of operation are allowed for maintenance and testing purposes if the diesel PM emission rate is less than or equal to 0.15 g/bhp-hr.
  - c. Up to 100 annual hours of operation are allowed for maintenance and testing purposes if the diesel PM emission rate is less than or equal to 0.01 g/bhp-hr.

#### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

Permit Unit C-2282-3 is an in-use stationary emergency standby engine that is subject to the requirements of section 93115.6(b)(3) of the ATCM. Based on section 93115.6(b)(3) of the ATCM and the annual limit for operation for testing and maintenance in the current permit, the following condition will be included on ATC C-2282-3-2:

- This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]

#### **Section 93115.10 Recordkeeping, Reporting, and Monitoring Requirements**

- (a) Reporting Requirements for Owners or Operators of New and In-Use Stationary CI Engines, Including Non-Diesel-Fueled CI Engines, Having a Rated Horsepower Greater than 50 (> 50 bhp).
  - (1) Except as provided in section 93115.3 and section 93115.10(a)(5) below, prior to the installation of any new stationary CI engine (> 50 bhp) at a facility, each owner or operator shall provide the information identified in section 93115.10(a)(3) to the District APCO.
  - (2) Except as provided in section 93115.3 and section 93115.10(a)(5) below, no later than July 1, 2005, each owner or operator of an in-use stationary CI engine (>50 bhp) shall provide the information specified in section 93115.10(a)(3) to the District APCO.

- (3) Each owner or operator shall submit to the District APCO the following information for each new and in-use stationary CI engine (>50 bhp) in accordance with the requirements of sections 93115.10(a)(1) and (2) above:
- (A) Owner/Operator Contact Information
1. Company name
  2. Contact name, phone number, address, e-mail address
  3. Address of engine(s)
- (B) Engine Information
1. Make,
  2. Model,
  3. Engine Family,
  4. Serial number,
  5. Year of manufacture (if unable to determine, approximate age),
  6. Rated Brake Horsepower Rating,
  7. Exhaust stack height from ground,
  8. Engine Emission Factors and supporting data for PM, NO<sub>x</sub> and NMHC separately or NMHC+NO<sub>x</sub>, and CO, (if available) from manufacturers data, source tests, or other sources (specify),
  9. Diameter of stack outlet,
  10. Direction of outlet (horizontal or vertical),
  11. End of stack (open or capped),
  12. Control equipment (if applicable)
    - a. Turbocharger,
    - b. Aftercooler,
    - c. Injection Timing Retard,
    - d. Catalyst,
    - e. Diesel Particulate Filter,
    - f. Other;
- (C) Fuel(s) Used
1. CARB Diesel,
  2. Jet fuel,
  3. Diesel,
  4. Alternative diesel fuel (specify),
  5. Alternative fuel (specify),
  6. Combination (Dual fuel) (specify),
  7. Other (specify);
- (D) Operation Information, including:
1. Describe general use of engine,
  2. Typical load (percent of maximum bhp rating),
  3. Typical annual hours of operation,
  4. If seasonal, months of year operated and typical hours per month operated,
  5. Fuel usage rate (if available);
- (E) Receptor Information, including:
1. Nearest receptor description (receptor type),
  2. Distance to nearest receptor (feet or meters),
  3. Distance to nearest school grounds;
- (F) A statement whether the engine is included in an existing AB 2588 emission inventory.

- (4) Except as provided in section 93115.3, no later than 180 days prior to the earliest applicable compliance date specified in sections 93115.11 or 93115.12, each owner or operator of an in-use stationary diesel-fueled CI engine greater than 50 brake horsepower (> 50 bhp) shall provide the following additional information to the District APCO: an identification of the control strategy for each stationary diesel-fueled CI engine that when implemented will result in compliance with sections 93115.6 and 93115.7. If applicable, the information should include the Executive Order number issued by the Executive Officer for a Diesel Emission Control Strategy that has been approved by the Executive Officer through the Verification Procedure.
- (5) An APCO may exempt the owner or operator from providing all or part of the information identified in sections 93115.10(a)(3) or (4) if there is a current record of the information in the owner or operator's permit to operate, permit application, District registration program, or other District records.
- (6) Upon written request by the Executive Officer, an APCO shall provide to the Executive Officer a written report of all information identified in sections 93115.10(a)(3) and (4).

The owner or operator is required to provide the information required by this section. This information is generally submitted with permit applications.

#### (d) Monitoring Equipment

- (1) A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2005, on all engines subject to all or part of the requirements of sections 93115.6 (emergency engines), 93115.7 (prime engines), or 93115.8(a) (Emission Standards for New Stationary Diesel Fueled CI Engines Used in Agricultural Operations) unless the District determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.

The following previously listed conditions be included on the ATCs to incorporate the applicable requirements of section 93115.10(d) of the ATCM:

#### ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]

#### ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

- This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours. [District Rules 2201 and 4702, and 17 CCR 93115]

(f) Reporting Requirements for Emergency Standby Engines.

- (1) Starting January 1, 2005, each owner or operator of an emergency standby diesel-fueled CI engine shall keep records and prepare a monthly summary that shall list and document the nature of use for each of the following:
  - (A) emergency use hours of operation;
  - (B) maintenance and testing hours of operation;
  - (C) hours of operation for emission testing to show compliance with sections 93115.6(a)(3) and 93115.6(b)(3);
  - (D) initial start-up testing hours;
  - (E) if applicable, hours of operation to comply with the requirements of NFPA 25;
  - (F) hours of operation for all uses other than those specified in sections 93115.10(g)(1)(A) through (D) above; and
  - (G) if applicable, DRP engine hours of operation, and
  - (H) the fuel used.
    1. For engines operated exclusively on CARB Diesel Fuel, the owner or operator shall document the use of CARB Diesel Fuel through the retention of fuel purchase records indicating that the only fuel purchased for supply to an emergency standby engine was CARB Diesel Fuel; or
    2. For engines operated on any fuel other than CARB Diesel Fuel, fuel records demonstrating that the only fuel purchased and added to an emergency standby engine or engines, or to any fuel tank directly attached to an emergency standby engine or engines, meets the requirements of section 93115.5(b).
- (2) Records shall be retained for a minimum of 36 months. Records for the prior 24 months shall be retained on-site, either at a central location or at the engine's location, or at an offsite central location within California, and shall be made immediately available to the District staff upon request. Records for the prior 25 to 36 months shall be made available to District staff within 5 working days from request.

The following previously listed conditions that will be included on the ATCs incorporate the applicable requirements of section 93115.10(f) of the ATCM:

ATC C-2282-3-2: 1,919 bhp Emergency Standby IC Engine

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- The permittee shall maintain monthly records of the type of fuel purchased and the amount of fuel used in the engine each month in gallons. [District Rules 2201 and 4702, and 17 CCR 93115]

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

#### ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

- The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, emergency firefighting, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 2201 and 4702, and 17 CCR 93115]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

As demonstrated above, the IC engines are expected to comply with the applicable requirements of this regulation.

#### **California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

#### **California Environmental Quality Act (CEQA)**

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

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

## **Greenhouse Gas (GHG) Significance Determination**

### District is a Responsible Agency

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

### **District CEQA Findings**

The County of Kings (County) is the public agency having principal responsibility for approving the Central Valley Meat Company Facility project under Conditional Use Permit No. 21-01. As such, the County served as the Lead Agency (CCR §15367). In approving the Central Valley Meat Company Facility project, the Lead Agency prepared and adopted a Mitigated Negative Declaration. The Lead agency filed a Notice of Determination, stating that the environmental document was adopted pursuant to the provisions of CEQA and concluding that the project would not have a significant effect on the environment.

Pursuant to CEQA Guidelines section 15250, the District is a Responsible Agency for the Project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines § 15381). As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096).

The District has considered the Lead Agency's environmental document. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

### **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 proposed project has been determined to have a less than significant environmental impact, the proposed project is a potential operation of public concern in the Valley. Therefore, the District determined that an Indemnification Agreement for the ATC project is required

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs C-2282-3-2, -5-2, -7-2, -9-1, -10-1, -11-1, -12-0, -13-0, -14-0, -15-0, -16-0, and -17-0 subject to the permit conditions on the attached draft ATCs in Appendix B.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-2282-3-2	3020-10-F	1,919 bhp IC Engine	\$900
C-2282-5-2	3020-02-H	19.95 MMBtu/hr Boiler	\$1,238
C-2282-7-2	3020-02-H	19.95 MMBtu/hr Boiler	\$1,238
C-2282-9-1	3020-02-H	19.95 MMBtu/hr Boiler	\$1,238
C-2282-10-1	3020-02-H	19.95 MMBtu/hr Boiler	\$1,238
C-2282-11-1	3020-10-C	250 bhp IC Engine	\$290
C-2282-12-0	3020-01-H	>1,600 Total Electric hp	\$1,238
C-2282-13-0	3020-05-E	140,634 gallon (total) storage silos	\$296
C-2282-14-0	3020-02-H	61.991 MMBtu/hr Boiler	\$1,238
C-2282-15-0	3020-02-H	61.991 MMBtu/hr Boiler	\$1,238
C-2282-16-0	3020-02-H	61.991 MMBtu/hr Boiler	\$1,238
C-2282-17-0	3020-02-H	61.991 MMBtu/hr Boiler	\$1,238

**Appendixes**

- A: Current Permits C-2282-3-0, -5-1, -7-1, -9-0, -10-0, and -11-0
- B: Draft ATCs C-2282-3-2, -5-2, -7-2, -9-1, -10-1, -11-1, -12-0, -13-0, -14-0, -15-0, -16-0, and -17-0
- C: Process Flow Diagram of the Proposed Rendering Operation
- D: Quarterly Net Emissions Change
- E: BACT Analysis for the Proposed Rendering Operation
- F: BACT Analysis for the Proposed Natural Gas-Fired Boilers
- G: Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) Memo
- H: Summary of Total Potential to Emit (PE) for Hazardous Air Pollutants (HAPs) from Facility

## **APPENDIX A**

**Current Permits C-2282-3-0, -5-1, -7-1, -9-0, -10-0, and -11-0**



# *San Joaquin Valley*

## *Air Pollution Control District*

**PERMIT UNIT:** C-2282-3-0

**EXPIRATION DATE:** 06/30/2024

**EQUIPMENT DESCRIPTION:**

1,919 BHP DETROIT DIESEL MODEL 91637316 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

### **PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
6. Engine shall be equipped with a turbocharger. [District Rule 2201]
7. Engine shall be equipped with an aftercooler or intercooler. [District Rule 2201]
8. The engine shall be operated with the injection timing retarded four degrees from the manufacturer's recommended setting. [District Rule 2201]
9. This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
10. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rule 4801 and 17 CCR 93115]
11. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
12. During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
13. An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]
14. This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

15. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
16. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
17. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
18. If this engine is located on the grounds of a K-12 school, or if this engine is located within 500 feet of the property boundary of a K-12 school, the engine shall not be operated for non-emergency purposes, including maintenance and testing, between 7:30 a.m. and 3:30 p.m. on days when school is in session. [17 CCR 93115]
19. If this engine is located on the grounds of a K-12 school, the engine shall not be operated for non-emergency purposes, including maintenance and testing, whenever there is a school sponsored activity. [17 CCR 93115]
20. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

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

# *San Joaquin Valley*

## *Air Pollution Control District*

**PERMIT UNIT:** C-2282-5-1

**EXPIRATION DATE:** 06/30/2024

**EQUIPMENT DESCRIPTION:**

19.95 MMBTU/HR HURST MODEL 54X-500-15 NATURAL GAS-FIRED BOILER WITH A POWERFLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER

### **PERMIT UNIT REQUIREMENTS**

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1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
6. Emissions rates from the natural gas-fired unit shall not exceed any of the following limits: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
7. Duration of startup and shutdown (as defined in Rule 4320) shall not exceed 2 hours each per occurrence. The operator shall maintain records of the duration of start-up, and shutdown periods. [District Rule 4305, 4306, and 4320]
8. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
9. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
10. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

11. The permittee shall maintain records of: (1) the date and time of NOX, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOX and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
12. 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, 4306, and 4320]
13. Source testing to measure NOx 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]
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]
15. 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]
16. NOx 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]
17. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
18. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320]
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
21. 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]

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

# *San Joaquin Valley* *Air Pollution Control District*

**PERMIT UNIT:** C-2282-7-1

**EXPIRATION DATE:** 06/30/2024

**EQUIPMENT DESCRIPTION:**

19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWERFLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER

## **PERMIT UNIT REQUIREMENTS**

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1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
6. Emissions rates from the natural gas-fired unit shall not exceed any of the following limits: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
7. Duration of startup and shutdown (as defined in Rule 4320) shall not exceed 2 hours each per occurrence. The operator shall maintain records of the duration of start-up, and shutdown periods. [District Rule 4305, 4306, and 4320]
8. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
9. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
10. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

11. The permittee shall maintain records of: (1) the date and time of NOX, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOX and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
12. 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, 4306, and 4320]
13. Source testing to measure NOx 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]
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]
15. 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]
16. NOx 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]
17. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
18. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320]
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
21. 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]

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

# *San Joaquin Valley*

## *Air Pollution Control District*

**PERMIT UNIT:** C-2282-9-0

**EXPIRATION DATE:** 06/30/2024

**EQUIPMENT DESCRIPTION:**

19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA LOW NOX BURNER

### **PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. The boiler shall be equipped with an economizer designed to reduce the final temperature of the boilers flue gas to a temperature no greater than 200 F and a design specification sheet for the economizer shall be made available to the District upon request. [Public Resource Code: 21000 - 21177: California Environmental Quality Act]
6. Electric motors driving combustion air fans, induced draft fans and boiler feedwater pumps shall have an efficiency meeting the standards of the National Electrical Manufacturer's Association (NEMA) for "premium efficiency" motors and shall each be operated with a variable frequency speed control or equivalent for control of flow through the fan or pump. [Public Resource Code: 21000 - 21177: California Environmental Quality Act]
7. 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 60.48c(g) and Public Resources Code 21000-21177: California Environmental Quality Act]
8. The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
9. Emissions shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> , 0.00285 lb-SO<sub>x</sub>/MMBtu 0.0076 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.0370 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu.. [District Rules 2201, 4305, 4306, and 4320]
10. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

11. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
12. 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]
13. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
14. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320]
15. 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]
16. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
17. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
18. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
19. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
20. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320]
21. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]
22. 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]
23. 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]
24. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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



25. The permittee shall maintain monthly records of the type and quantity of fuel combusted by the boiler. [40 CFR 60.48c(g) and Public Resources Code 21000-21177: California Environmental Quality Act]
26. 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]

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

# *San Joaquin Valley*

## *Air Pollution Control District*

**PERMIT UNIT:** C-2282-10-0

**EXPIRATION DATE:** 06/30/2024

**EQUIPMENT DESCRIPTION:**

19.95 MMBTU/HR SUPERIOR MODEL SX8-X-1500-PFCF-G NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA LOW NOX BURNER

### **PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
6. Emissions shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0084 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu 0.0030 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.0370 lb-CO/MMBtu, and 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
7. 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]
8. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
9. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
10. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

11. 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]
12. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
13. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320]
14. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
15. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
16. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
17. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320]
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]
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]
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]
21. 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]
22. 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]

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

# *San Joaquin Valley*

## *Air Pollution Control District*

**PERMIT UNIT:** C-2282-11-0

**EXPIRATION DATE:** 06/30/2024

**EQUIPMENT DESCRIPTION:**

250 BHP JOHN DEERE (INTERMITTENT) MODEL 6068HF485TU TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING A FIREWATER PUMP

### **PERMIT UNIT REQUIREMENTS**

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1. 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]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours. [District Rules 2201 and 4702, and 17 CCR 93115]
5. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
6. Emissions from this IC engine shall not exceed any of the following limits: 2.7 g-NOx/bhp-hr, 0.4 g-CO/bhp-hr, or 0.1 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
8. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and to preserve or protect property, human life, or public health during a fire. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
9. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, emergency firefighting, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 2201 and 4702, and 17 CCR 93115]
10. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
11. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702, and 17 CCR 93115]

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

## **APPENDIX B**

**Draft ATCs C-2282-3-2, -5-2, -7-2, -9-1, -10-1, -11-1,  
-12-0, -13-0, -14-0, -15-0, -16-0, and -17-0**

*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-3-2

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 1,919 BHP DETROIT DIESEL MODEL 91637316 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

## CONDITIONS

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1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {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]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {271} 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]
5. {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
6. Engine shall be equipped with a turbocharger. [District Rule 2201]
7. Engine shall be equipped with an aftercooler or intercooler. [District Rule 2201]
8. The engine shall be operated with the injection timing retarded four degrees from the manufacturer's recommended setting. [District Rule 2201]

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

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Brian Clements, Director of Permit Services

C-2282-3-2 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

9. This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]
10. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
11. Emissions from this IC engine shall not exceed any of the following limits: 8.85 g-NOx/bhp-hr, 4.26 g-CO/bhp-hr, or 0.35 g-VOC/bhp-hr. [District Rule 2201]
12. Emissions from this IC engine shall not exceed 0.417 g-PM10/bhp-hr based on ISO 8178 test procedure. [District Rule 2201]
13. {4261} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
14. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
15. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702 and 17 CCR 93115]
16. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]
17. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 20 hours per calendar year. [District Rules 2201 and 4702, and 17 CCR 93115]
18. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
19. The permittee shall maintain monthly records of the type of fuel purchased and the amount of fuel used in the engine each month in gallons. [District Rules 2201 and 4702, and 17 CCR 93115]
20. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
21. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
22. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
23. The total NOx and VOC emissions from this unit in each calendar month shall be calculated as follows using the NOx and VOC emission factors given in this permit: NOx (lb in month) = [fuel use in month (gal)] x [137,381 Btu/gal] x [1 bhp-hr/7,000 Btu] x 8.85 g-NOx/bhp-hr ÷ 453.59 g/lb, and VOC (lb in month) = [fuel use in month (gal)] x [137,381 Btu/gal] x [1 bhp-hr/7,000 Btu] x 0.35 g-VOC/bhp-hr ÷ 453.59 g/lb. [District Rule 2201]
24. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]

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CONDITIONS CONTINUE ON NEXT PAGE

25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

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*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

DRAFT

**PERMIT NO:** C-2282-5-2

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 19.95 MMBTU/HR HURST MODEL 54X-500-15 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

## CONDITIONS

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1. {271} 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]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {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]
5. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
6. Emissions rates from this unit shall not exceed any of the following limits: 9 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 100 ppmv CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

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

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Brian Clements, Director of Permit Services

C-2282-5-2 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

7. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
8. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
9. 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]
10. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
11. 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 2201, 4305, 4306, and 4320]
12. Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]
13. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
14. {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]
15. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
16. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
17. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

18. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
19. {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]
20. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
21. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
22. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
23. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
24. Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
25. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
26. On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
27. The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factor given in this permit or from the most recent source test, and the VOC emission factor given in this permit:  $\text{lb-pollutant in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-pollutant/MMBtu)}]$ . [District Rule 2201]
28. On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]
30. An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable Tier 2 emission limits of District Rule 4306 by May 1, 2028 and the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the applicable Tier 2 emissions limits of District Rule 4306 on and after December 31, 2029 and in full compliance with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rules 4306 and 4320]

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*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-7-2

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

## CONDITIONS

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1. {271} 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]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {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]
5. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
6. Emissions rates from this unit shall not exceed any of the following limits: 9 ppmv NOx @ 3% O2 or 0.011 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu, 0.003 lb-PM10/MMBtu, 100 ppmv CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.004 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

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

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Brian Clements, Director of Permit Services

C-2282-7-2 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

7. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
8. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
9. 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]
10. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
11. 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 2201, 4305, 4306, and 4320]
12. Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]
13. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
14. {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]
15. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
16. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
17. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

18. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
19. {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]
20. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
21. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
22. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
23. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
24. Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
25. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
26. On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
27. The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factor given in this permit or from the most recent source test, and the VOC emission factor given in this permit:  $\text{lb-pollutant in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-pollutant/MMBtu)}]$ . [District Rule 2201]
28. On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]
30. An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable Tier 2 emission limits of District Rule 4306 by May 1, 2028 and the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the applicable Tier 2 emissions limits of District Rule 4306 on and after December 31, 2029 and in full compliance with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rules 4306 and 4320]

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*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-9-1

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

## CONDITIONS

1. {271} 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]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {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]
5. {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]
6. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. Emissions rates from this unit shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.0085 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu 0.003 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

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-2282-9-1 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

8. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
9. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
10. 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]
11. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
12. 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 2201, 4305, 4306, and 4320]
13. Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
15. {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]
16. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
17. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
18. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE



19. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
20. {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]
21. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
22. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
23. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
24. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
25. Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
26. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
27. On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
28. The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factor given in this permit or from the most recent source test, and the VOC emission factor given in this permit:  $\text{lb-pollutant in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-pollutant/MMBtu)}]$ . [District Rule 2201]
29. On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
30. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]
31. An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rule 4320]

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*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

**PERMIT NO:** C-2282-10-1

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 19.95 MMBTU/HR SUPERIOR MODEL SX8-X-1500-PFCF-G NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER: LIMIT FACILITY-WIDE NOX AND VOC EMISSIONS TO 19,999 LB/YEAR

## CONDITIONS

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1. {271} 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]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {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]
5. {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]
6. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. Emissions rates from this unit shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.0084 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu 0.003 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]

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

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Brian Clements, Director of Permit Services

C-2282-10-1 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

8. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
9. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer or the District-approved in-stack emission monitor(s), 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 or in-stack emission monitor readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
10. 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 and any in-stack emission monitors shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306, and 4320]
11. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
12. 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 2201, 4305, 4306, and 4320]
13. Source testing to measure combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320]
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
15. {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]
16. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
17. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
18. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

19. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
20. {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]
21. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
22. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
23. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
24. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
25. Total facility-wide NO<sub>x</sub> emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
26. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
27. On a monthly basis, the permittee shall calculate and record the total NO<sub>x</sub> and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
28. The total NO<sub>x</sub> and VOC emissions from this unit in each calendar month shall be calculated as follows using the NO<sub>x</sub> emission factor given in this permit or from the most recent source test, and the VOC emission factor given in this permit: lb-pollutant in month = [HHV Heat Input in Month (MMBtu)] x [Emission Factor (lb-pollutant/MMBtu)]. [District Rule 2201]
29. On a monthly basis, the permittee shall calculate and record the total facility-wide NO<sub>x</sub> and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NO<sub>x</sub> and VOC emissions shall be calculated by summing the NO<sub>x</sub> and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
30. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]
31. An Emission Control Plan and any required Authority to Construct (ATC) application shall be submitted for this unit for compliance with the applicable requirements of District Rule 4320 by May 1, 2022 and the unit shall be in full compliance with the with the applicable requirements of District Rule 4320 on and after December 31, 2023. [District Rule 4320]

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*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-11-1

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 250 BHP JOHN DEERE (INTERMITTENT) MODEL 6068HF485TU TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING A FIREWATER PUMP: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR

## CONDITIONS

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1. {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]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours. [District Rules 2201 and 4702, and 17 CCR 93115]
5. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
6. Emissions from this IC engine shall not exceed any of the following limits: 2.7 g-NOx/bhp-hr, 0.4 g-CO/bhp-hr, or 0.1 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed 0.06 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

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

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Brian Clements, Director of Permit Services

C-2282-11-1: Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

8. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and to preserve or protect property, human life, or public health during a fire. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
9. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, emergency firefighting, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 2201 and 4702, and 17 CCR 93115]
10. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
11. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
12. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
13. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
14. The total NOx and VOC emissions from this unit in each calendar month shall be calculated as follows using the NOx and VOC emission factors given in this permit:  $\text{lb-pollutant in month} = [\text{Maximum Rated bhp (250 bhp)}] \times [\text{Emission Factor (g-pollutant/bhp-hr)}] \times (1 \text{ lb}/453.59 \text{ g}) \times [\text{Hours of Operation in month (hours)}]$ . [District Rule 2201]
15. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
16. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4702 and 17 CCR 93115]

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*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-12-0

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

MEAT RENDERING OPERATION WITH ONE RAW MATERIAL RECEIVING SYSTEM, CONSISTING OF RAW MATERIAL BINS, AN ENCLOSED SCREW CONVEYOR, AND TWO PRECRUSHERS, TWO DUPPS MODEL 440U SUPERCOOKOR COOKERS, ONE HEAT EXCHANGER, ONE AIR-COOLED CONDENSER SYSTEM, TWO DRAINERS, TWO DRAINER DISCHARGE CONVEYORS, TWO SWECO SCREENS, TWO CENTRIFUGES, SIX SCREW PRESSES, ONE CRAX HOPPER/BIN, TWO SCREENS, TWO CRAX GRINDER/HAMMERMILLS, AN EMISSION/ODOR CONTROL SYSTEM CONSISTING OF A TWO-STAGE VENTURI/PACKED BED SCRUBBER SYSTEM AND A 7.4 MMBTU/HR REGENERATIVE THERMAL OXIDIZER (RTO) IN SERIES (SERVING THE COOKING PROCESS, PRESSES, CENTRIFUGES, CRAX SCREENS AND CONVEYORS, DRAINERS, AND CONDENSERS), AN EMISSION/ODOR CONTROL SYSTEM CONSISTING OF A CYCLONE AND TWO-STAGE VENTURI/PACKED BED SCRUBBER SYSTEM IN SERIES (SERVING MATERIAL HANDLING AND GRINDING OPERATIONS), TWO 100,000 CFM PACKED BED SCRUBBERS (SERVING ROOM AIR), AND PERMIT EXEMPT FAT STORAGE TANKS

## CONDITIONS

1. Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 1,959 lb, 2nd quarter - 1,959 lb, 3rd quarter - 1,959 lb, and 4th quarter - 7,133 lb, and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 1,014 lb, 2nd quarter - 1,014 lb, 3rd quarter - 1,014 lb, and 4th quarter - 1,461 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
2. ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]

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-2282-12-0 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

3. {271} 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]
4. If permittee wishes to seek breakdown relief under District Rule 1100, permittee shall notify the District of any breakdown condition as defined in the rule as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. Conditions that constitute or cause a nuisance shall not be eligible for breakdown relief under District Rule 1100. [District Rule 1100]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. The exhaust stacks 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]
9. The rendering operation, associated equipment, and the facility's surrounding property shall be operated and maintained in such a manner as to prevent the generation of odors which may constitute a nuisance. [District Rule 4102]
10. The wastewater system shall be operated and maintained such that it does not cause a public nuisance. [District Rule 4102]
11. All air pollution control equipment shall be maintained in good operating condition and shall be operated in accordance with the manufacturer's instructions when the process equipment is in operation. [District Rule 4102]
12. All air pollution equipment and associated ducting shall be maintained in a leak-free manner to prevent the escape of air contaminants to the outside atmosphere prior to their treatment in the emissions/odor control system. [District Rule 4102]
13. The processing building shall be kept under negative pressure at all times when receiving or storing raw material or in the process of rendering, except during limited periods when the receiving area doors are open to allow for entry/exit of raw material delivery trucks or during an equipment breakdown as defined in Rule District 1100. [District Rules 2201 and 4102]
14. The rendering operation shall not receive, store, or render raw material unless the odor control system is fully operating, except during periods of equipment breakdown as determined by the District under District Rule 1100. During operation, all process-related potential points of odor shall be contained and/or treated to prevent escape into the atmosphere and shall only be vented to the odor control system. [District Rule 4102]
15. Raw material delivery trucks shall be unloaded within 4 hours of being scaled. Raw material delivery trucks shall not be stored or staged without first being scaled. [District Rule 4102]
16. If raw material delivery trucks cannot be unloaded within 4 hours of being scaled due to an equipment malfunction, raw material shall be temporarily staged in a covered manner not to exceed 8 hours. [District Rule 4102]
17. Incoming raw material trucks shall only be unloaded into the enclosed receiving area that is served by the rendering plant room air scrubbers. [District Rule 4102]
18. No outside storage of raw material is allowed, except as otherwise specified in this permit. Trucks waiting their turn to unload within the 4-hour unload time limitation are not considered outside storage. [District Rule 4102]
19. All material received shall be processed within 24 hours of receipt. Each delivery of material shall be monitored and records shall be maintained to ensure that processing is performed within this time limit. [District Rules 2201 and 4102]
20. If raw material cannot be processed within 24 hours of receipt, raw material shall be diverted to other facilities. No further deliveries shall be received until a 24 hour turnaround for raw material is achievable. [District Rule 4102]
21. All raw material trucks shall be maintained in condition to prevent leakage of solid or liquid material. [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE



22. Trucks delivering raw material shall be washed clean of raw material and raw material residue prior to exiting the raw material receiving area to minimize nuisance emissions. Truck tires shall be washed as necessary to limit trackout of raw material or raw material residue. [District Rule 4102]
23. The raw material receiving area shall be washed as necessary to prevent any trackout of odor-causing materials. [District Rule 4102]
24. The building doors shall remain closed except during actual entry or exit of trucks and/or personnel or in case of emergency. [District Rule 4102]
25. Vapors from the cookers shall be captured and vented to the shell-and-tube or air-cooled condenser(s), the two-stage scrubber system, and the Regenerative Thermal Oxidizer (RTO), in series. [District Rules 2201, 4102, and 4104]
26. Vapors from the drainer, drainer discharge conveyor(s), screw presses, screen(s), and centrifuge(s) shall be captured and vented to the two-stage scrubber system, and RTO, in series. [District Rules 2201, 4102 and 4104]
27. The material handling and processing system, including the screen(s), hammermill, and crax transfer conveyor, shall be vented to a cyclone to control particulate matter (PM). The cyclone serving the material handling and processing system and air from the grinding room shall be vented to a two-stage scrubber system, consisting of a venturi scrubber and a packed bed scrubber connected in series. [District Rules 2201 and 4102]
28. Only Public Utility Commission (PUC) regulated natural gas shall be used as supplemental fuel in the RTO. [District Rule 2201]
29. In the event the RTO malfunctions during raw material processing, cooker emissions shall be routed to the two-stage scrubber system and then to a packed bed scrubber serving the rendering plant room air, in series. The RTO shall be restarted as soon as practical and upon reaching operating temperature the contaminated air stream shall be immediately re-routed to the RTO. [District Rules 2201 and 4102]
30. For each of the packed bed scrubbers, the scrubbing solution shall be delivered at a minimum rate of 10 gallons per minute for every 1,000 cubic feet per minute (cfm) of exhaust flowrate. [District Rules 2201 and 4102]
31. For each of the venturi scrubbers, the scrubbing solution shall be delivered at a minimum rate of 4 gallons per minute for every 1,000 cubic feet per minute (cfm) of exhaust flowrate. [District Rules 2201 and 4102]
32. The differential pressure across each of the packed bed scrubbers and venturi scrubbers shall be maintained in the range recommended by the manufacturer. Documentation of the manufacturer's recommended differential pressure range for each scrubber shall be maintained and the acceptable differential pressure range for each scrubber shall be established at the initial inspection. [District Rules 1070, 2201, and 4102]
33. The RTO shall be operated with a combustion chamber temperature of no less than 1,400 degrees F and the retention time shall be no less than 1.0 seconds. The RTO temperature shall be monitored and recorded utilizing a continuous monitoring and recording device. The monitoring and recording device shall be maintained in proper operating condition at all times. [District Rules 2201, 4102, and 4104]
34. The RTO shall be heated to the proper operating temperature prior to introducing the contaminated air stream. [District Rules 2201, 4102, and 4104]
35. The total raw material process rate for this rendering operation shall not exceed either of the following limits: 2,333 tons in any day and 425,730 tons in any year. [District Rule 2201]
36. The total amount of meat and bone meal (MBM)/protein solids produced by the rendering operation shall not exceed either of the following limits: 663 tons in any day and 120,989 tons in any year. [District Rule 2201]
37. The emissions rates from the exhaust of the RTO that result from the raw material processed, not including SO<sub>x</sub>, PM<sub>10</sub>, and VOC emissions from the combustion of natural gas as supplemental fuel in the RTO, shall not exceed any of the following limits, in pounds per ton of raw material processed: 0.015 lb-NO<sub>x</sub>/ton, 0.0335 lb-SO<sub>x</sub>/ton, 0.0033 lb-PM<sub>10</sub>/ton, 0.0052 lb-VOC/ton, or 0.00087 lb-NH<sub>3</sub>/ton. [District Rules 2201 and 4801]
38. The SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions rates from the combustion of natural gas in the RTO as supplemental fuel, shall not exceed any of the following limits: 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201 and 4801]

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CONDITIONS CONTINUE ON NEXT PAGE

39. The controlled emissions rate from the exhaust of the packed bed scrubbers serving the rendering plant room air shall not exceed any of the following limits: PM10: 0.001 gr/dscf or 0.0088 lb/ton (compliance may be shown for either the PM10 concentration limit or process rate based PM10 limit), VOC: 3.0 ppmv as CH<sub>4</sub>, NH<sub>3</sub>: 1.0 ppmv, or H<sub>2</sub>S: 0.8 ppmv. [District Rule 2201]
40. The total PM10 emissions from the packed bed scrubbers serving the rendering plant room air shall not exceed 20.6 lb-PM10/day. To ensure compliance with the daily emission limit for PM10 from the packed bed scrubbers serving the rendering plant room, the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall not exceed 100,000 standard cubic feet per minute (scfm) until source testing has demonstrated that the packed bed scrubbers serving the rendering plant room air can comply with the daily emission limit for PM10 with a higher total combined exhaust flow rate. Records of the total combined exhaust flowrate of the packed bed scrubbers serving the rendering plant room air shall be maintained for each day that the scrubbers operate. [District Rules 1070 and 2201]
41. The total controlled PM10 emission rate from the scrubber(s) serving the material handling and processing system and air from the grinding room shall not exceed 0.0010692 lb-PM10/ton of MBM/protein solids produced. [District Rule 2201]
42. Source testing to measure the NO<sub>x</sub>, SO<sub>x</sub>, PM10, CO, VOC, and NH<sub>3</sub> emission rates from the exhaust of the RTO shall be conducted within 60 days of startup. [District Rule 2201]
43. Source testing to measure the NO<sub>x</sub>, PM10, and VOC emission rates from the exhaust of the RTO shall be conducted least once every 12 months. [District Rule 2201]
44. Source testing to measure the PM10, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the exhaust of the packed bed scrubbers serving the rendering plant room air shall be conducted within 60 days of startup. [District Rule 2201]
45. Source testing to measure the PM10, VOC, NH<sub>3</sub>, and H<sub>2</sub>S emissions from the exhaust of the packed bed scrubbers serving the rendering plant room air shall be conducted least once every 24 months. [District Rule 2201]
46. Source testing shall be performed while processing raw material at or near the maximum capacity of the rendering operation or under at another capacity that the District has previously approved in writing. [District Rules 1081 and 2201]
47. Source testing to measure NO<sub>x</sub> emissions shall be conducted using EPA Method 7E or ARB Method 100, or an alternative method approved in writing by the District. [District Rules 1081 or 2201]
48. Source testing to measure SO<sub>x</sub> emissions shall be conducted using EPA Method 6C, EPA Method 8, ARB Method 100, or SCAQMD Method 307-91, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
49. Source testing to measure CO emissions shall be conducted using EPA Method 10 or ARB Method 100, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
50. Source testing to measure PM10 emissions (filterable and condensable) shall be conducted using EPA Method 201 and 202, EPA Method 201a and 202, or ARB Method 5 in combination with Method 501, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
51. Source testing to measure the VOC emissions shall be conducted using EPA Methods 18, 25, 25A, or 25B, ARB Method 100, or SCAQMD Method 25.3, or an alternative method approved in writing by the District. For EPA Methods 25, 25A, and 25B, and ARB Method 100, EPA Method 18 may be used to remove methane and ethane in order to determine the VOC concentration. [District Rules 1081 and 2201]
52. Source testing to measure NH<sub>3</sub> emissions shall be conducted using SCAQMD Method 207.1 or BAAQMD ST-1B, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
53. Source testing to measure H<sub>2</sub>S emissions shall be conducted using ARB Method 15 or 16A, EPA Method 11, or SCAQMD Method 307-91, or an alternative method approved in writing by the District. [District Rules 1081 and 2201]
54. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100, or an alternative method approved in writing by the District. [District Rule 2201]

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CONDITIONS CONTINUE ON NEXT PAGE

55. For source testing purposes the following test methods, or alternative test methods approved by the District in writing, shall be used to determine stack gas velocity and stack gas moisture content: stack gas velocity - EPA Method 2 or ARB Method 2; stack gas moisture content - EPA Method 4 or ARB Method 4. [District Rules 1081 and 2201]
56. {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]
57. During source testing of emissions from the rendering operation, the raw material process rate shall be monitored and recorded in tons per hour, and during source testing of emissions from the RTO, the rate of the use of natural gas as fuel in the RTO shall also be monitored and recorded in standard cubic feet per hour (scf/hr) and MMBtu/hr. [District Rules 1070 and 2201]
58. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
59. For each of the packed bed scrubbers, if the scrubbing solution is delivered at a rate less than 10 gallon/minute for every 1,000 cfm of exhaust flowrate or the differential pressure across the scrubber is outside of the range recommended by the manufacturer, as measured by the permittee, the permittee shall correct the delivery rate of the scrubbing solution and/or the differential pressure across the scrubber to acceptable levels as soon as possible, but no longer than 1 hour of operation after detection. If the delivery rate of the scrubbing solution or differential pressure across the scrubber continues to be outside of acceptable ranges after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. Monitoring parameters found by District staff to be outside of established ranges constitute a violation of this permit. [District Rules 2201 and 4102]
60. For each of the venturi scrubbers, if the scrubbing solution is delivered at a rate less than 4 gallon/minute for every 1,000 cfm of exhaust flowrate or the differential pressure across the scrubber is outside of the range recommended by the manufacturer, as measured by the permittee, the permittee shall correct the delivery rate of the scrubbing solution and/or the differential pressure across the scrubber to acceptable levels as soon as possible, but no longer than 1 hour of operation after detection. If the delivery rate of the scrubbing solution or differential pressure across the scrubber continues to be outside of acceptable ranges after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. Monitoring parameters found by District staff to be outside of established ranges constitute a violation of this permit. [District Rules 2201 and 4102]
61. Continuous monitoring equipment shall be used in each packed bed scrubber and each venturi scrubber to monitor the recirculation rate of the scrubbing solution and the differential pressure across each scrubber, and to monitor the oxidation reduction potential of the scrubbing solution in each packed bed scrubber. The recirculation rates of the scrubbing solution shall be measured in gallons per minute. The recirculation rate and differential pressure across each packed bed scrubber and each venturi scrubber, and the oxidation reduction potential of the scrubbing solution in each packed bed scrubber shall be recorded at least once per day while the scrubbers are in operation. The continuous monitoring equipment shall be maintained in proper operating condition at all times. [District Rules 2201 and 4102]
62. The condenser(s) and each scrubber shall be inspected at least once per week and cleaned as needed based on inspection results. Cleaning of condenser(s) and scrubbers shall be scheduled during times when raw materials are not being received or processed. Liquids and any solids shall be disposed of in a manner to prevent release which may constitute a nuisance odor. [District Rules 2201 and 4102]
63. The permittee shall take monthly readings with a portable anemometer to verify that the main processing building is under negative pressure during periods of normal plant operation. The anemometer shall be calibrated per the manufacturer's recommendations. Additionally, the anemometer shall be made available to District inspection staff upon request. Records of anemometer measurements and calibrations shall be kept, maintained, and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4102]
64. The permittee shall keep records of the daily and annual quantity of raw material processed and the meat and bone meal (MBM)/protein solids produced, in tons. [District Rules 1070 and 2201]
65. The permittee shall keep records of the amount of natural gas fuel combusted, in scf and MMBtu, for each month that the RTO is operated. [District Rules 1070 and 2201]

CONDITIONS CONTINUE ON NEXT PAGE

66. The permittee shall keep daily records of the maximum exhaust flow rate in scfm and the hours of operation of each of the packed bed scrubbers serving the rendering plant room air and shall keep daily and monthly records of the total combined amount of air exhausted from the packed bed scrubbers serving the rendering plant room air in scf. If more accurate measurements are not available to calculate the total amount of air exhausted (scf) from each packed bed scrubber each day, then the total amount of air exhausted from each packed bed scrubber each day shall be calculated as the maximum exhaust flow rate in scfm for the particular day multiplied by 60 min/hr multiplied by the total hours of operation of the packed bed scrubber for that day. The total combined amount of air exhausted from the packed bed scrubbers in each month shall be calculated as the sum of the total amount of air exhausted from the packed bed scrubbers for each day during the particular month. [District Rules 1070 and 2201]
67. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
68. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
69. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
70. The total NOx emissions from this unit in each calendar month shall be calculated as follows using the NOx emission factor from the most recent source test of exhaust emissions from the RTO:  $\text{lb-NOx in month} = [\text{tons material processed in month (ton)}] \times [\text{NOx emission factor (lb-NOx/ton)}]$ . [District Rule 2201]
71. The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor from the most recent source test of exhaust emissions from the RTO, the VOC emission factor given in this permit for the combustion of natural gas as supplemental fuel in the RTO, and the VOC concentration from the most recent source test of exhaust emissions from the packed bed scrubbers serving the rendering plant room air:  $\text{lb-VOC in month} = [\text{tons material processed in month (ton)}] \times [\text{VOC emission factor (lb-VOC/ton)}] + [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Supplemental Fuel VOC Emission Factor (0.0055 lb-VOC/MMBtu)}] + [\text{Total amount of air exhausted from packed bed scrubbers serving room in air in month (scf)}] \times [\text{VOC concentration (ppmv)}] \times [0.000001 \times (1 \text{ lb-mol}) / (379.5 \text{ scf}) \times (16 \text{ lb-VOC}) / (1 \text{ lb-mol})]$ . [District Rule 2201]
72. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
73. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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*San Joaquin Valley*  
*Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-13-0

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

PROTEIN STORAGE AND MEAT AND BONE MEAL (MBM) LOADOUT OPERATION WITH FOUR 4,700 CUBIC FEET (173,000 LB) STORAGE SILOS, EACH SERVED BY A BIN VENT FILTER

## CONDITIONS

1. Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 4 lb, 2nd quarter - 4 lb, 3rd quarter - 4 lb, and 4th quarter - 15 lb, and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 2 lb, 2nd quarter - 2 lb, 3rd quarter - 2 lb, and 4th quarter - 3 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below.. [District Rule 2201]
2. ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]
3. {271} 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]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]

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-2282-13-0 : Apr 26 2022 5:20PM -- NORMANR : Joint Inspection NOT Required

7. Visible emissions from the bin vent filters serving the meat and bone meal (MBM) storage silos shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rules 2201 and 4101]
8. The bin vent filters shall be maintained and operated according to manufacturer's specifications. [District Rule 2201]
9. The cleaning frequency and duration of cleaning of the bin vent filters shall be adjusted to optimize the PM control efficiency. [District Rule 2201]
10. A spare set of filters shall be maintained for each bin vent filter at all times. [District Rule 2201]
11. Material removed from the filters shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
12. The amount of meat and bone meal (MBM)/protein loaded out shall not exceed either of the following limits: 663 tons in any day and 120,989 tons in any year. [District Rule 2201]
13. PM10 emissions from the MBM/protein solids loadout operation shall not exceed 0.0001616 lb/ton of protein loaded out. [District Rule 2201]
14. The permittee shall keep records of the daily and annual amount of product loaded out, in tons. [District Rules 1070 and 2201]
15. Records of all maintenance of the bin vent filters, including all change outs of filter media, shall be maintained. [District Rules 1070 and 2201]
16. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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*San Joaquin Valley*  
*Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

**PERMIT NO:** C-2282-14-0

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

## CONDITIONS

1. Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 335 lb, 2nd quarter - 335 lb, 3rd quarter - 335 lb, and 4th quarter - 1,218 lb and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 537 lb, 2nd quarter - 537 lb, 3rd quarter - 537 lb, and 4th quarter - 774 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
2. ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]
3. {271} 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]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]

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

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Brian Clements, Director of Permit Services

C-2282-14-0 : Apr 26 2022 5:20PM -- NORMANR : 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. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
9. Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
10. During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
11. The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
12. The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]
13. Ammonia (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 3% O<sub>2</sub>. [District Rules 2201 and 4102]
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
15. The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
16. If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
17. 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE



18. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
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 2201, 4305, 4306, and 4320]
20. Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
21. Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
23. {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]
24. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
25. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
26. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
27. NH<sub>3</sub> emissions for source test purposes shall be determined using BAAQMD ST-1B or SCAQMD Method 207-1. [District Rules 1081 and 2201]
28. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
29. {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]
30. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
31. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
32. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
33. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]

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CONDITIONS CONTINUE ON NEXT PAGE

34. Records shall be maintained of the amount of fuel used in this unit, in standard cubic feet (scf), during each start-up and shutdown period as determined using the fuel flow meter, and of the total amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), during start-up and shutdown for each month in which the unit is operated. [District Rules 1070 and 2201]
35. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
36. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
37. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
38. The total NOx emissions from this unit in each calendar month shall be calculated as follows using the NOx emission factors given in this permit or from the most recent source test:  $\text{lb-NOx in month} = [\text{start-up and shutdown NOx emissions in month (lb-NOx)}] + [\text{steady state NOx emissions in month (lb-NOx)}]$ , where the start-up and shutdown NOx emissions in month and steady state NOx emissions in month are calculated as follows:  $[\text{start-up and shutdown NOx emissions in month (lb-NOx)}] = [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}] \times [0.036 \text{ lb-NOx/MMBtu}]$  and  $[\text{steady state NOx emissions in month (lb-NOx)}] = [\text{steady state HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-NOx/MMBtu)}]$ , where  $[\text{steady state HHV Heat Input in Month (MMBtu)}] = [\text{total HHV Heat Input in Month (MMBtu)}] - [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}]$ . [District Rule 2201]
39. The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor given in this permit:  $\text{lb-VOC in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-VOC/MMBtu)}]$ . [District Rule 2201]
40. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
41. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

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*San Joaquin Valley*  
*Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
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**PERMIT NO:** C-2282-15-0

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

## CONDITIONS

1. Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 335 lb, 2nd quarter - 335 lb, 3rd quarter - 335 lb, and 4th quarter - 1,218 lb and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 537 lb, 2nd quarter - 537 lb, 3rd quarter - 537 lb, and 4th quarter - 774 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
2. ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]
3. {271} 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]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]

CONDITIONS CONTINUE ON NEXT PAGE

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Samir Sheikh, Executive Director / APCO

**Brian Clements, Director of Permit Services**

C-2282-15-0 : Apr 26 2022 5:20PM -- NORMANR : 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. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
9. Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
10. During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
11. The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
12. The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]
13. Ammonia (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 3% O<sub>2</sub>. [District Rules 2201 and 4102]
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
15. The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
16. If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
17. 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

18. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
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 2201, 4305, 4306, and 4320]
20. Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
21. Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
23. {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]
24. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
25. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
26. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
27. NH<sub>3</sub> emissions for source test purposes shall be determined using BAAQMD ST-1B or SCAQMD Method 207-1. [District Rules 1081 and 2201]
28. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
29. {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]
30. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
31. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
32. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
33. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]

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34. Records shall be maintained of the amount of fuel used in this unit, in standard cubic feet (scf), during each start-up and shutdown period as determined using the fuel flow meter, and of the total amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), during start-up and shutdown for each month in which the unit is operated. [District Rules 1070 and 2201]
35. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
36. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
37. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
38. The total NOx emissions from this unit in each calendar month shall be calculated as follows using the NOx emission factors given in this permit or from the most recent source test:  $\text{lb-NOx in month} = [\text{start-up and shutdown NOx emissions in month (lb-NOx)}] + [\text{steady state NOx emissions in month (lb-NOx)}]$ , where the start-up and shutdown NOx emissions in month and steady state NOx emissions in month are calculated as follows:  $[\text{start-up and shutdown NOx emissions in month (lb-NOx)}] = [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}] \times [0.036 \text{ lb-NOx/MMBtu}]$  and  $[\text{steady state NOx emissions in month (lb-NOx)}] = [\text{steady state HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-NOx/MMBtu)}]$ , where  $[\text{steady state HHV Heat Input in Month (MMBtu)}] = [\text{total HHV Heat Input in Month (MMBtu)}] - [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}]$ . [District Rule 2201]
39. The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor given in this permit:  $\text{lb-VOC in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-VOC/MMBtu)}]$ . [District Rule 2201]
40. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
41. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

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*San Joaquin Valley*  
*Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-16-0

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

## CONDITIONS

1. Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 335 lb, 2nd quarter - 335 lb, 3rd quarter - 335 lb, and 4th quarter - 1,218 lb and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 537 lb, 2nd quarter - 537 lb, 3rd quarter - 537 lb, and 4th quarter - 774 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
2. ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]
3. {271} 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]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]

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-2282-16-0 : Apr 26 2022 5:20PM -- NORMANR : 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. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
9. Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
10. During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
11. The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
12. The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]
13. Ammonia (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 3% O<sub>2</sub>. [District Rules 2201 and 4102]
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
15. The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
16. If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
17. 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE



18. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
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 2201, 4305, 4306, and 4320]
20. Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
21. Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
23. {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]
24. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
25. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
26. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
27. NH<sub>3</sub> emissions for source test purposes shall be determined using BAAQMD ST-1B or SCAQMD Method 207-1. [District Rules 1081 and 2201]
28. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
29. {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]
30. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
31. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
32. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
33. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]

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CONDITIONS CONTINUE ON NEXT PAGE

34. Records shall be maintained of the amount of fuel used in this unit, in standard cubic feet (scf), during each start-up and shutdown period as determined using the fuel flow meter, and of the total amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), during start-up and shutdown for each month in which the unit is operated. [District Rules 1070 and 2201]
35. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
36. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
37. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
38. The total NOx emissions from this unit in each calendar month shall be calculated as follows using the NOx emission factors given in this permit or from the most recent source test:  $\text{lb-NOx in month} = [\text{start-up and shutdown NOx emissions in month (lb-NOx)}] + [\text{steady state NOx emissions in month (lb-NOx)}]$ , where the start-up and shutdown NOx emissions in month and steady state NOx emissions in month are calculated as follows:  $[\text{start-up and shutdown NOx emissions in month (lb-NOx)}] = [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}] \times [0.036 \text{ lb-NOx/MMBtu}]$  and  $[\text{steady state NOx emissions in month (lb-NOx)}] = [\text{steady state HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-NOx/MMBtu)}]$ , where  $[\text{steady state HHV Heat Input in Month (MMBtu)}] = [\text{total HHV Heat Input in Month (MMBtu)}] - [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}]$ . [District Rule 2201]
39. The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor given in this permit:  $\text{lb-VOC in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-VOC/MMBtu)}]$ . [District Rule 2201]
40. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
41. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

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*San Joaquin Valley*  
*Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** C-2282-17-0

**LEGAL OWNER OR OPERATOR:** CENTRAL VALLEY MEAT CO

**MAILING ADDRESS:** 10431 8¼ AVE  
HANFORD, CA 93230

**LOCATION:** 10431 8¼ AVE  
HANFORD, CA 93230

**EQUIPMENT DESCRIPTION:**

61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

## CONDITIONS

1. Prior to operating any piece of equipment under this Authority to Construct (ATC), the permittee shall surrender PM10 emission reduction credits (ERCs) for the following quantity of emissions: 1st quarter - 335 lb, 2nd quarter - 335 lb, 3rd quarter - 335 lb, and 4th quarter - 1,218 lb and shall surrender PM2.5 ERCs for the following quantity of emissions: 1st quarter - 537 lb, 2nd quarter - 537 lb, 3rd quarter - 537 lb, and 4th quarter - 774 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERCs specified below. [District Rule 2201]
2. ERC Certificate Numbers C-1528-4 and N-1552-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this ATC. [District Rule 2201]
3. {271} 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]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]

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-2282-17-0 : Apr 26 2022 5:20PM -- NORMANR : 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. {2964} The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
9. Except during start-up and shutdown, emissions rates from this unit shall not exceed any of the following limits: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.003 lb-PM<sub>10</sub>/MMBtu, 50 ppmv CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
10. During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 30 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> (equivalent to 0.036 lb-NO<sub>x</sub>/MMBtu); 0.00285 lb-SO<sub>x</sub>/MMBtu; 0.003 lb-PM<sub>10</sub>/MMBtu; 100 ppmvd CO @ 3% O<sub>2</sub> or 0.074 lb-CO/MMBtu; or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 4320, and 4801]
11. The total time this unit is operated for start-up and shutdown (as defined in Rule 4320) shall not exceed 1.5 hours in any day. Records shall be maintained of the time of the beginning and end of each start-up and shutdown period and the total time of start-up and shutdown periods for each day that this unit operates. [District Rules 2201, 4305, 4306, and 4320]
12. The selective catalytic reduction (SCR) system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]
13. Ammonia (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 3% O<sub>2</sub>. [District Rules 2201 and 4102]
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every calendar month (in which a source test is not performed) using a portable emission monitor that satisfies District specifications or in-stack emission monitors that satisfy District specifications required for portable analyzers. 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. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 2201, 4305, 4306, and 4320]
15. The permittee shall monitor and record the stack concentration of NH<sub>3</sub> at least once every calendar month in which a source test is not performed. NH<sub>3</sub> monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]
16. If the NO<sub>x</sub>, CO, or NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, the District-approved in-stack emission monitor(s), or the District-approved ammonia monitoring equipment, 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, in-stack emission monitor, or ammonia monitoring equipment readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306, and 4320]
17. 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 and any in-stack emission monitors 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 District Rules 2201, 4305, 4306, and 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

18. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations corrected to 3% O<sub>2</sub>, (3) the make and model of portable emission analyzer(s) and in-stack emission analyzer(s), (4) emission analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2201, 4305, 4306, and 4320]
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 2201, 4305, 4306, and 4320]
20. Source testing to measure NO<sub>x</sub>, CO, and NH<sub>3</sub> 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]
21. Source testing to measure combustion NO<sub>x</sub>, CO, and NH<sub>3</sub> 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 2201, 4305, 4306, and 4320]
22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 2201, 4305, 4306, and 4320]
23. {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]
24. The results of each source test shall be submitted to the District within 60 days after completion of the source test. [District Rule 1081]
25. {4346} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
26. {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
27. NH<sub>3</sub> emissions for source test purposes shall be determined using BAAQMD ST-1B or SCAQMD Method 207-1. [District Rules 1081 and 2201]
28. {4348} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
29. {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]
30. The higher heating value (HHV) of the natural gas fuel shall be certified by a third party fuel supplier or shall be determined using ASTM D1826, ASTM 1945 in conjunction with ASTM D3588, or an alternative method approved by the District. [District Rules 2201 and 4320]
31. The permittee shall document that the natural gas combusted in the boiler is from a PUC regulated source. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement. [District Rules 2201 and 4320]
32. The boiler shall be equipped with an operational, non-resettable, totalizing mass or volumetric fuel flow meter or other District-approved alternative method to measure the amount of fuel used in the boiler. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]
33. Records of the amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), shall be maintained for each month in which the unit is operated. [District Rules 1070, 2201, and 4001, and 40 CFR Part 60, Subpart Dc]

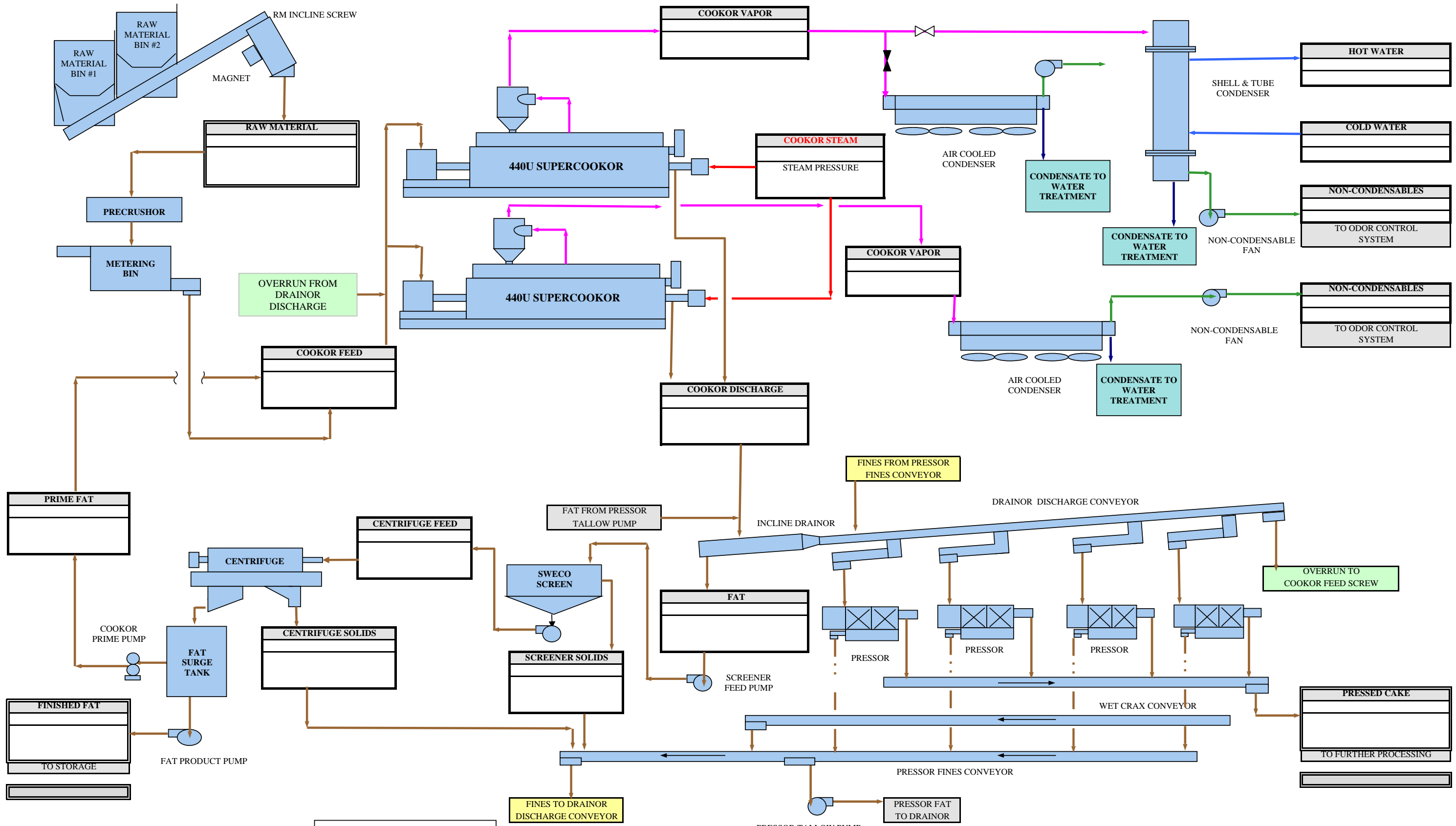
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CONDITIONS CONTINUE ON NEXT PAGE

34. Records shall be maintained of the amount of fuel used in this unit, in standard cubic feet (scf), during each start-up and shutdown period as determined using the fuel flow meter, and of the total amount of fuel used in this unit, in standard cubic feet (scf) and MMBtu based on higher heating value (hhv), during start-up and shutdown for each month in which the unit is operated. [District Rules 1070 and 2201]
35. Total facility-wide NOx emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
36. Total facility-wide VOC emissions shall not exceed 19,999 pounds in any 12 consecutive month period. [District Rule 2201]
37. On a monthly basis, the permittee shall calculate and record the total NOx and VOC emissions in pounds from this unit for the prior calendar month. [District Rules 1070 and 2201]
38. The total NOx emissions from this unit in each calendar month shall be calculated as follows using the NOx emission factors given in this permit or from the most recent source test:  $\text{lb-NOx in month} = [\text{start-up and shutdown NOx emissions in month (lb-NOx)}] + [\text{steady state NOx emissions in month (lb-NOx)}]$ , where the start-up and shutdown NOx emissions in month and steady state NOx emissions in month are calculated as follows:  $[\text{start-up and shutdown NOx emissions in month (lb-NOx)}] = [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}] \times [0.036 \text{ lb-NOx/MMBtu}]$  and  $[\text{steady state NOx emissions in month (lb-NOx)}] = [\text{steady state HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-NOx/MMBtu)}]$ , where  $[\text{steady state HHV Heat Input in Month (MMBtu)}] = [\text{total HHV Heat Input in Month (MMBtu)}] - [\text{start-up and shutdown HHV Heat Input in Month (MMBtu)}]$ . [District Rule 2201]
39. The total VOC emissions from this unit in each calendar month shall be calculated as follows using the VOC emission factor given in this permit:  $\text{lb-VOC in month} = [\text{HHV Heat Input in Month (MMBtu)}] \times [\text{Emission Factor (lb-VOC/MMBtu)}]$ . [District Rule 2201]
40. On a monthly basis, the permittee shall calculate and record the total facility-wide NOx and VOC emissions in pounds for the prior 12 calendar month period. The total facility-wide NOx and VOC emissions shall be calculated by summing the NOx and VOC emissions from the previous 12 calendar months from every permitted unit at this facility. [District Rules 1070 and 2201]
41. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4001, 4305, 4306, and 4320, and 40 CFR Part 60, Subpart Dc]

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## **APPENDIX C**

### **Process Flow Diagram of the Proposed Rendering Operation**



**NOTE:**  
All flows are in **pounds per hour**  
unless otherwise noted

LEGEND	
Material	→
Waste Vapor	→
Steam	→
Cooling Water	→
Vapor Condensate	→
Non-condensables	→

The quantities shown on this Heat and Mass Balance are presented for theoretical illustrative purposes only. They are not to be construed as and are not Performance Guarantees by The Dupps Company.

**The DUPPS Company**  
CONTINUOUS RENDERING SYSTEM  
*Designed for:*  
**Schmeckle Brothers**  
**California Beef Plant**  
November 19, 2020



## **APPENDIX D**

### **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.

Because the facility has requested to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and VOC, the total increase in the total Stationary Source Increase in Potential to Emit (SSIPE) for the project of 12,393 lb-NO<sub>x</sub>/year and of 16,621 lb-VOC/year will be proportionally allocated to the new emission units, C-2282-12-0, -13-0, -14-0, -15-0, -16-0, & -17-0, based on each unit's the annual PE2 for NO<sub>x</sub> and VOC.

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:

#### ATC C-2282-3-1: 1,919 bhp Emergency Standby Diesel IC Engine

<b>PE1 (lb/qtr) C-2282-3-0</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	749	÷	4 qtr/year	=	187.25
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	35	÷	4 qtr/year	=	8.75
CO	360	÷	4 qtr/year	=	90.00
VOC	30	÷	4 qtr/year	=	7.50

<b>PE2 (lb/qtr) C-2282-3-1</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	749	÷	4 qtr/year	=	187.25
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	35	÷	4 qtr/year	=	8.75
CO	360	÷	4 qtr/year	=	90.00
VOC	30	÷	4 qtr/year	=	7.50

<b>Quarterly NEC [QNEC] C-2282-3-1</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	187.25	-	187.25	=	0.00
SO <sub>x</sub>	0.00	-	0.00	=	0.00
PM <sub>10</sub>	8.75	-	8.75	=	0.00
CO	90.00	-	90.00	=	0.00
VOC	7.50	-	7.50	=	0.00

**ATCs C-2282-5-2 & -7-2: 19.95 MMBtu/hr Natural Gas Boilers**

<b>PE1 (lb/qtr) C-2282-5-1 &amp; -7-1</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	1,922	÷	4 qtr/year	=	480.50
SO <sub>x</sub>	498	÷	4 qtr/year	=	124.50
PM <sub>10</sub>	524	÷	4 qtr/year	=	131.00
CO	12,932	÷	4 qtr/year	=	3,233.00
VOC	699	÷	4 qtr/year	=	174.75

<b>PE2 (lb/qtr) C-2282-5-2 &amp; -7-2</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	1,922	÷	4 qtr/year	=	480.50
SO <sub>x</sub>	498	÷	4 qtr/year	=	124.50
PM <sub>10</sub>	524	÷	4 qtr/year	=	131.00
CO	12,932	÷	4 qtr/year	=	3,233.00
VOC	699	÷	4 qtr/year	=	174.75

<b>Quarterly NEC [QNEC] C-2282-5-2 &amp; -7-2</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	480.50	-	480.50	=	0.00
SO <sub>x</sub>	124.50	-	124.50	=	0.00
PM <sub>10</sub>	131.00	-	131.00	=	0.00
CO	3,233.00	-	3,233.00	=	0.00
VOC	174.75	-	174.75	=	0.00

**ATCs C-2282-9-1 & -10-1: 19.95 MMBtu/hr Natural Gas Boilers**

<b>PE1 (lb/qtr) C-2282-9-0 &amp; -10-0</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	1,485	÷	4 qtr/year	=	371.25
SO <sub>x</sub>	498	÷	4 qtr/year	=	124.50
PM <sub>10</sub>	524	÷	4 qtr/year	=	131.00
CO	6,466	÷	4 qtr/year	=	1,616.50
VOC	961	÷	4 qtr/year	=	240.25

<b>PE2 (lb/qtr) C-2282-9-1 &amp; -10-1</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	1,485	÷	4 qtr/year	=	371.25
SO <sub>x</sub>	498	÷	4 qtr/year	=	124.50
PM <sub>10</sub>	524	÷	4 qtr/year	=	131.00
CO	6,466	÷	4 qtr/year	=	1,616.50
VOC	961	÷	4 qtr/year	=	240.25

<b>Quarterly NEC [QNEC] C-2282-9-1 &amp; -10-1</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	371.25	-	371.25	=	0.00
SO <sub>x</sub>	124.50	-	124.50	=	0.00
PM <sub>10</sub>	131.00	-	131.00	=	0.00
CO	1,616.50	-	1,616.50	=	0.00
VOC	240.25	-	240.25	=	0.00

**ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump**

<b>PE1 (lb/qtr) C-2282-11-0</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	149	÷	4 qtr/year	=	37.25
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	3	÷	4 qtr/year	=	0.75
CO	22	÷	4 qtr/year	=	5.50
VOC	6	÷	4 qtr/year	=	1.50

<b>PE2 (lb/qtr) C-2282-11-1</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	149	÷	4 qtr/year	=	37.25
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	3	÷	4 qtr/year	=	0.75
CO	22	÷	4 qtr/year	=	5.50
VOC	6	÷	4 qtr/year	=	1.50

<b>Quarterly NEC [QNEC] C-2282-11-1</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	37.25	-	37.25	=	0.00
SO <sub>x</sub>	0.00	-	0.00	=	0.00
PM <sub>10</sub>	0.75	-	0.75	=	0.00
CO	5.50	-	5.50	=	0.00
VOC	1.50	-	1.50	=	0.00

ATC C-2282-12-0: Rendering Operation

As discussed above, because the facility has requested to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and VOC, the total increase in the total SSIPE for the project of 12,393 lb-NO<sub>x</sub>/year and of 16,621 lb-VOC/year will be proportionally allocated to the new emission units, C-2282-12-0, -13-0, -14-0, -15-0, -16-0, & -17-0, based on each unit's the annual PE2 for NO<sub>x</sub> and VOC.

<b>PE1 (lb/qtr) C-2282-12-0</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	0	÷	4 qtr/year	=	0.00
CO	0	÷	4 qtr/year	=	0.00
VOC	0	÷	4 qtr/year	=	0.00

<b>PE2 (lb/qtr) C-2282-12-0</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	4,539.5	÷	4 qtr/year	=	1,134.88
SO <sub>x</sub>	14,262	÷	4 qtr/year	=	3,565.50
PM <sub>10</sub>	1,405	÷	4 qtr/year	=	351.25
CO	2,214	÷	4 qtr/year	=	553.50
VOC	9,481.2	÷	4 qtr/year	=	2,370.30

<b>Quarterly NEC [QNEC] C-2282-12-0</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	1,134.88	-	0.00	=	1,134.88
SO <sub>x</sub>	3,565.50	-	0.00	=	3,565.50
PM <sub>10</sub>	351.25	-	0.00	=	351.25
CO	553.50	-	0.00	=	553.50
VOC	2,370.30	-	0.00	=	2,370.30

**ATC C-2282-13-0: Meat and Bone Meal (MBM) Loadout Operation**

<b>PE1 (lb/qtr) C-2282-13-0</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	0	÷	4 qtr/year	=	0.00
CO	0	÷	4 qtr/year	=	0.00
VOC	0	÷	4 qtr/year	=	0.00

<b>PE2 (lb/qtr) C-2282-13-0</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	20	÷	4 qtr/year	=	5.00
CO	0	÷	4 qtr/year	=	0.00
VOC	0	÷	4 qtr/year	=	0.00

<b>Quarterly NEC [QNEC] C-2282-13-0</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	0.00	-	0.00	=	0.00
SO <sub>x</sub>	0.00	-	0.00	=	0.00
PM <sub>10</sub>	5.00	-	0.00	=	5.00
CO	0.00	-	0.00	=	0.00
VOC	0.00	-	0.00	=	0.00

**ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers**

As discussed above, because the facility has requested to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and VOC, the total increase in the total SSIPE for the project of 12,393 lb-NO<sub>x</sub>/year and of 16,621 lb-VOC/year will be proportionally allocated to the new emission units, C-2282-12-0, -13-0, -14-0, -15-0, -16-0, & -17-0, based on each unit's the annual PE2 for NO<sub>x</sub> and VOC.

<b>PE1 (lb/qtr) C-2282-14-0, -15-0, -16-0, &amp; -17-0</b>					
	PE1 (lb/year)	÷	4 qtr/year	=	PE1 (lb/qtr)
NO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
SO <sub>x</sub>	0	÷	4 qtr/year	=	0.00
PM <sub>10</sub>	0	÷	4 qtr/year	=	0.00
CO	0	÷	4 qtr/year	=	0.00
VOC	0	÷	4 qtr/year	=	0.00

<b>PE2 (lb/qtr) C-2282-14-0, -15-0, -16-0, &amp; -17-0</b>					
	PE2 (lb/year)	÷	4 qtr/year	=	PE2 (lb/qtr)
NO <sub>x</sub>	1,963.4	÷	4 qtr/year	=	490.85
SO <sub>x</sub>	1,548	÷	4 qtr/year	=	387.00
PM <sub>10</sub>	1,629	÷	4 qtr/year	=	407.25
CO	21,349	÷	4 qtr/year	=	5,337.25
VOC	1,785	÷	4 qtr/year	=	446.25

<b>Quarterly NEC [QNEC] C-2282-14-0, -15-0, -16-0, &amp; -17-0</b>					
	PE2 (lb/qtr)	-	PE1 (lb/qtr)	=	QNEC (lb/qtr)
NO <sub>x</sub>	490.85	-	0.00	=	490.85
SO <sub>x</sub>	387.00	-	0.00	=	387.00
PM <sub>10</sub>	407.25	-	0.00	=	407.25
CO	5,337.25	-	0.00	=	5,337.25
VOC	446.25	-	0.00	=	446.25



## **APPENDIX E**

### **BACT Analysis for the Proposed Rendering Operation**

## **Top-Down BACT Analysis for Project C-1210060 Rendering Plant**

District BACT Guideline 8.3.2 – Animal Matter Rendering Plant, which applied to rendering operations, was originally established in 1998 is now considered to be outdated. District BACT Guideline 8.3.2 only applied to the emissions that are captured from rendering operation processing equipment and vented to primary emissions and odor control systems, but did not address rendering operation room air emissions that are not captured by the primary emissions and odor control system. Because District BACT Guideline 8.3.2 is outdated and did not address room air emissions from the rendering operations that are not captured by the primary emissions and odor control system, project-specific BACT analyses will be performed to address the emissions that will be captured from the proposed rendering operation processing equipment and the room air emissions from the proposed rendering operation based on the District's review of information that was available during the evaluation of this project.

### **I. Proposal**

Central Valley Meat Co. has requested Authority to Construct (ATC) permits for a new meat rendering facility that will be adjacent to Central Valley Meat Co.'s existing beef processing facility, located near Hanford, CA. The proposed meat rendering operation will include a raw material receiving system consisting of raw material bins, two Dupps Model 440U Supercookors and ancillary processing equipment, with emissions controlled by an emission/odor control system consisting of a two-stage venturi/packed bed scrubber system and a 7.4 MMBtu/hr regenerative thermal oxidizer (RTO) in series, a solid processing emission/odor control system consisting of a cyclone and two-stage venturi/packed bed scrubber system in series, and two 100,000 cubic feet per minute (cfm) packed bed scrubbers for control of odors and fugitive emissions from the cooker room and unloading area room air (ATC C-2282-12-0).

### **II. Top-Down BACT Analyses for the Rendering Plant Emissions Captured from Rendering Operation Equipment**

As mentioned above, a project-specific BACT analysis will be performed based on the District's review of the information that was available during the evaluation of this project to address emissions that will be captured from the proposed rendering operation processing equipment and sent to the primary control device.

#### **1. BACT Analysis for PM<sub>10</sub> Emissions:**

##### **a. Step 1 - Identify All Control Technologies**

The US Environmental Protection Agency (USEPA) RACT/BACT/LAER, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Ventura County Air Pollution Control District (VCAPCD), the Bay Area Air Quality Management District (BAAQMD), and the Sacramento Metropolitan Air Quality Management District (SMAQMD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. In addition, the Texas Commission on Environmental Quality (TCEQ) BACT

guideline for rendering operations was also reviewed to determine potential control technologies for rendering operation room air PM<sub>10</sub> emissions that are captured by the primary emissions and odor control system. The District also reviewed applicable rules for rendering operations in BAAQMD, SCAQMD, SMAQMD, and VCAPCD.

The only BACT guidelines located that addressed PM<sub>10</sub> emissions from rendering operations were the SCAQMD BACT guideline for rendering operations and outdated District BACT Guideline 8.3.2. The SCAQMD BACT guideline for rendering operations requires the emissions captured from rendering processing equipment to be vented to an afterburner or boiler firebox with a retention time of at least 0.3 seconds and a temperature of at least 1,200 °F. Outdated District BACT Guideline 8.3.2 required the use of an odor scrubber with a particulate removal system with a minimum overall control of 95% or use of a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and minimum retention time of 1.0 seconds with a particulate removal system that consists of a particulate scrubber with a minimum overall control of 95% to reduce PM<sub>10</sub> emissions from rendering operation equipment.

TCEQ has a BACT guideline for rendering operations that requires the following to reduce high-intensity odors from cookers and pressers:

- Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room. Instead of the above, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only. The temperature of vapors entering a packed bed or packed tower scrubber cannot exceed 130 Degrees Fahrenheit; accepted chemicals are chlorine dioxide, sodium hypochlorite, sodium hydroxide and ActXone

However, this TCEQ BACT guideline specifies requirements to reduce high-intensity odors from rendering operations that may create a nuisance rather than specifying requirements to reduce PM<sub>10</sub> emissions from rendering operations. The District regulates nuisance odors through District Rule 4102 – Nuisance rather than through BACT.

The applicable District, BAAQMD, SCAQMD, and SMAQMD rules that apply to rendering operations generally require gases and vapors from rendering operation equipment to be incinerated at temperatures of approximately 1,200 °F or greater for a period of not less than 0.3 seconds (or an approved equivalent), while the VCAPCD rule that applies to rendering operations requires gases and vapors from rendering operation equipment to be incinerated at temperatures of not less than 1,300 °F for a period of not less than 0.4 seconds (or an approved equivalent). A review of the rules that apply to rendering operations in other California air districts available indicate that nearly all of them also require vapors from

rendering operations to be incinerated at a temperature of approximately 1,200 °F or greater for at least 0.3 seconds (or an approved equivalent).<sup>14</sup>

The requirements of the applicable BACT guidelines and regulations that apply to emissions from rendering operation processing equipment are summarized in the table below.

BACT Guideline/ Emission Limit Source	PM <sub>10</sub> Control Technology/Requirement
Outdated SJVAPCD BACT Guideline 8.3.2 - Animal Matter Rendering Plant (2/21/1998)	<p><u>Technologically Feasible</u><sup>15</sup> Use of an odor scrubber with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%, or</p> <p>Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1,400°F and minimum retention time of 1.0 seconds with a particulate removal system that consists of a particulate scrubber, shell and tube condenser, a Venturi scrubber, a cyclone, an air cooled condenser, and a contact condenser or a combination thereof with a minimum overall control of 95%.</p>
SJVAPCD Rule 4104 – Reduction of Animal Matter (12-17-1992)	All gases, vapors, and gas-entrained effluent from any article, machine, equipment or other contrivance used for the reduction of animal matter must be incinerated at temperatures of not less than 1,200 °F for a period of not less than 0.3 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control
Bay Area AQMD Regulation 12, Rule 2 – Rendering Plants (4-24-2018)	All gases, vapors, and gas-entrained effluent from the reduction of animal matter must be incinerated at a temperature of not less than 650 °C (1,202 °F) for a period of not less than 0.3 seconds, or processed in a manner which is equally or more effective for the purpose of air pollution odor control, as determined by the APCO
Sacramento Metropolitan AQMD Rule 410 – Reduction of Animal Matter (amended 8-3-1977)	All gases, vapors, and gas-entrained effluent from any article, machine, equipment or other contrivance used for the reduction of animal matter must be incinerated at temperatures of not less than 650 °C (1,202 °F) for a period of not less than 0.3 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control
SCAQMD BACT Guidelines Part B – Rendering Processing Equipment (1988)	<p>Vent to Afterburner or Boiler Fire Box (≥ 0.3 sec. Retention Time at ≥ 1,200 °F) (1988)</p> <p>Rendering processing equipment includes crax pressing, filtering, centrifuging, evaporators, cookers, dryers, and grease and blood processing.</p>

<sup>14</sup> California air District rules are available on the California Air Resources Board (CARB) website at: <https://ww2.arb.ca.gov/current-air-district-rules>

<sup>15</sup> Although District BACT Guideline 8.3.2 identifies this option as technologically feasible, under District Project C-1172884 the District determined that this technology has been installed and operated at a rendering plant for a sufficient period of time to be considered achieved in practice.

BACT Guideline/ Emission Limit Source	PM <sub>10</sub> Control Technology/Requirement
SCAQMD Rule 472 – Reduction of Animal Matter (adopted 5-7-1976)	All gases, vapors, and gas-entrained effluent from any equipment used for the reduction of animal matter must be incinerated at temperatures of not less than 650 °C (1,202 °F) for a period of not less than 0.3 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control
Ventura County APCD Rule 58 - Reduction of Animal Matter (revised 5-23-1972)	All gases, vapors, and gas-entrained effluent from any article, machine, equipment or other contrivance used for the reduction of animal matter must be incinerated at temperatures of not less than 1,300 °F for a period of not less than 0.4 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control

In addition, the District permits for rendering operations were reviewed to determine the type of equipment that has been used to control emissions captured from rendering operation equipment. The results of this review are shown in the table below. As can be seen in the table below, in the District, emissions captured from rendering operation equipment are typically controlled through incineration with a thermal oxidizer or regenerative thermal oxidizer. The review of District permits indicate that there was at least one facility (Facility N-164) that utilized only wet scrubbers to control process emissions from rendering operation equipment; however, this facility ceased its rendering operations a few years ago.

<b>Control for Emissions Captured from Rendering Operation Processing Equipment</b>		
Facility Name (Facility ID)	Location	Rendering Operation Processing Equipment Control Device
Baker Commodities, Inc (C-72)	Fresno, CA	Thermal Oxidizer with minimum temperature of 1,200 °F and minimum retention time of 0.57 seconds
Darling International Inc (C-406)	Fresno, CA	Thermal Oxidizer with minimum temperature of 1,200 °F and minimum retention time of 0.5 seconds
Darling International Inc (N-2107)	Turlock, CA	Thermal Oxidizer with minimum temperature of 1,400 °F and minimum retention time of 1 second
Foster Foods (N-1252)	Livingston, CA	Thermal Oxidizer with minimum temperature of 1,400 °F and minimum retention time of 1 second
Yosemite Foods Inc (N-164)	Stockton, CA	Wet Scrubbers

Based on the District’s review of California air district rules, applicable BACT guidelines for rendering operations, and a survey of the equipment typically used at rendering

operations in the District used to control emissions from rendering plant room air that are not captured by the primary emissions and odor control system, the following control options were identified to control the PM<sub>10</sub> emissions captured from rendering operation processing equipment:

Option 1: Use of an odor scrubber with a particulate removal system that consists of a particulate scrubber/Venturi scrubber and condenser(s) with a minimum overall control of 95%, or

Use of a particulate removal system that consists of a particulate scrubber/venturi scrubber and condenser(s) in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds with a minimum overall control of 95% (Achieved in Practice)

Option 2: Use of a natural gas-fired thermal oxidizer with a minimum temperature of 1,200 °F and a minimum retention time of 0.3 seconds (or equivalent) (Achieved in Practice)

Option 3: Use of a natural gas-fired thermal oxidizer with a minimum temperature of 1,300 °F and a minimum retention time of 0.4 seconds (or equivalent) (Achieved in Practice)

Option 4: Use of a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,200 °F and a minimum retention time of 0.57 seconds (Achieved in Practice)

Options 2, 3, and 4 all require the use of a thermal oxidizer; however, in each of these options, the thermal oxidizer temperature and residence time are lower than the thermal oxidizer temperature and residence required by Option 1, which will result in these options having a lower control efficiency than Option 1. Because Options 2, 3, and 4 are less effective than Option 1, which is achieved in practice, they will not be considered further.

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

There are no technologically infeasible options to eliminate from step 1.

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

1: Use of an odor scrubber with a particulate removal system that consists of a particulate scrubber/venturi scrubber and condenser(s) with a minimum overall control of 95%, or

Use of a particulate removal system that consists of a particulate scrubber/venturi scrubber and condenser(s) in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds with a minimum overall control of 95% (Achieved in Practice)

#### **d. Step 4 - Cost Effectiveness Analysis**

The highest ranked option listed above has been identified as achieved in practice and has been proposed by the applicant. Therefore, the option is required and a cost analysis is not needed.

#### **e. Step 5 - Select BACT**

Pursuant to the above BACT analysis, BACT for the PM<sub>10</sub> emissions from the proposed rendering operation that will be captured from the rendering operation processing equipment is either of the following two options:

- Use of an odor scrubber with a particulate removal system that consists of a particulate scrubber/venturi scrubber and condensers with a minimum overall control of 95%, or
- Use of a particulate removal system that consists of a particulate scrubber/venturi scrubber and condenser(s) in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds with a minimum overall control of 95% (Achieved in Practice)

The applicant has proposed to use a particulate removal system that consists of a condenser, a venturi scrubber, and a packed bed scrubber, in series with a thermal oxidizer operating with a minimum chamber temperature of at least 1,400 °F and minimum residence time of 1.0 second to control the PM<sub>10</sub> emissions that are captured from the rendering operation processing equipment. Therefore, the BACT requirements for PM<sub>10</sub> from the operation will be satisfied.

## **2. BACT Analysis for VOC Emissions:**

### **a. Step 1 - Identify All Control Technologies**

The US Environmental Protection Agency (USEPA) RACT/BACT/LAER, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Ventura County Air Pollution Control District (VCAPCD), the Bay Area Air Quality Management District (BAAQMD), and the Sacramento Metropolitan Air Quality Management District (SMAQMD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. In addition, the Texas Commission on Environmental Quality (TCEQ) BACT guideline for rendering operations was also reviewed to determine potential control technologies for rendering operation room air VOC emissions that are captured by the primary emissions and odor control system. The District also reviewed applicable rules for rendering operations in BAAQMD, SCAQMD, SMAQMD, and VCAPCD.

The only BACT guidelines located that addressed VOC emissions from rendering operations were the SCAQMD BACT guideline for fish reduction, rendering – presses, centrifuges, separators, tanks, etc. and outdated District BACT Guideline 8.3.2. The SCAQMD BACT guideline for fish reduction rendering operations requires the emissions

captured from rendering processing equipment to be sent through a water condenser and vented to a dryer firebox. Outdated District BACT Guideline 8.3.2 required the use of an odor scrubbing system utilizing a scrubbing medium of chlorine dioxide in water with a minimum overall control of 95% or use of a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and minimum retention time of 1.0 seconds with a minimum overall control of 95% to reduce VOC emissions from rendering operation equipment.

TCEQ has a BACT guideline for rendering operations that requires the following to reduce high-intensity odors from cookers and pressers:

- Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room. Instead of the above, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only. The temperature of vapors entering a packed bed or packed tower scrubber cannot exceed 130 Degrees Fahrenheit; accepted chemicals are chlorine dioxide, sodium hypochlorite, sodium hydroxide and ActXone

However, this TCEQ BACT guideline specifies requirements to reduce high-intensity odors from rendering operations that may create a nuisance rather than specifying requirements to reduce VOC emissions from rendering operations. The District regulates nuisance odors through District Rule 4102 – Nuisance rather than through BACT. Although the TCEQ BACT guideline applies to high-intensity odors rather than VOC emissions, because odors from rendering operations may include some VOCs, the requirements of the TCEQ BACT guideline for high-intensity odors from rendering operations will be considered for purposes of this analysis.

The applicable District, BAAQMD, SCAQMD, and SMAQMD rules that apply to rendering operations generally require gases and vapors from rendering operation equipment to be incinerated at temperatures of approximately 1,200 °F or greater for a period of not less than 0.3 seconds (or an approved equivalent), while the VCAPCD rule that applies to rendering operations requires gases and vapors from rendering operation equipment to be incinerated at temperatures of not less than 1,300 °F for a period of not less than 0.4 seconds (or an approved equivalent). A review of the rules that apply to rendering operations in other California air districts available indicate that nearly all of them also require vapors from rendering operations to be incinerated at a temperature of approximately 1,200 °F or greater for at least 0.3 seconds (or an approved equivalent).

The requirements of the applicable BACT guidelines and regulations that apply to emissions from rendering operation processing equipment are summarized in the table below.



BACT Guideline/ Emission Limit Source	VOC Control Technology/Requirement
Outdated SJVAPCD BACT Guideline 8.3.2 - Animal Matter Rendering Plant (2/21/1998)	<p><u>Technologically Feasible</u><sup>16</sup> Use of an odor scrubbing system utilizing a scrubbing medium of chlorine dioxide in water with a minimum overall control of 95% or better, or<sup>17</sup></p> <p>Thermal oxidizer utilizing natural gas with a minimum chamber temperature of 1,400 °F and minimum retention time of 1.0 second with a minimum overall control of 95%</p>
SJVAPCD Rule 4104 – Reduction of Animal Matter (12-17-1992)	All gases, vapors, and gas-entrained effluent from any article, machine, equipment or other contrivance used for the reduction of animal matter must be incinerated at temperatures of not less than 1,200 °F for a period of not less than 0.3 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control
Bay Area AQMD Regulation 12, Rule 2 – Rendering Plants (4-24-2018)	All gases, vapors, and gas-entrained effluent from the reduction of animal matter must be incinerated at a temperature of not less than 650 °C (1,202 °F) for a period of not less than 0.3 seconds, or processed in a manner which is equally or more effective for the purpose of air pollution odor control, as determined by the APCO
Sacramento Metropolitan AQMD Rule 410 – Reduction of Animal Matter (amended 8-3-1977)	All gases, vapors, and gas-entrained effluent from any article, machine, equipment or other contrivance used for the reduction of animal matter must be incinerated at temperatures of not less than 650 °C (1,202 °F) for a period of not less than 0.3 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control
SCAQMD BACT Guidelines Part B – Fish Reduction: rendering – presses, centrifuges, separators, tanks, etc. (1988)	Water Condenser and Vent to Dryer Firebox
SCAQMD Rule 472 – Reduction of Animal Matter (adopted 5-7-1976)	All gases, vapors, and gas-entrained effluent from any equipment used for the reduction of animal matter must be incinerated at temperatures of not less than 650 °C (1,202 °F) for a period of not less than 0.3 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control
Ventura County APCD Rule 58 - Reduction of Animal Matter (revised 5-23-1972)	All gases, vapors, and gas-entrained effluent from any article, machine, equipment or other contrivance used for the reduction of animal matter must be incinerated at temperatures of not less than 1,300 °F for a period of not less than 0.4 seconds, or processed in such a manner determined by the APCO to be equally or more effective for the purpose of air pollution control

<sup>16</sup> Although District BACT Guideline 8.3.2 identifies this option as technologically feasible, under District Project C-1172884 the District determined that this technology has been installed and operated at a rendering plant for a sufficient period of time to be considered achieved in practice.

<sup>17</sup> District Project N-970462, under which District BACT Guideline 8.3.2 was established, clarifies that use of an odor system using chlorine dioxide with a minimum VOC control efficiency of 95% and use of a thermal oxidizer with a minimum VOC control of efficiency of 95% are equivalent options under the BACT Guideline

BACT Guideline/ Emission Limit Source	VOC Control Technology/Requirement
<p>TCEQ Mechanical Sources, Historical Best Available Control Technology (BACT) Requirements - Rendering: High- Intensity Odors from Cookers and Presses (2009)</p>	<p style="text-align: center;"><u>Pollutant: Odor</u></p> <p>Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room.</p> <p>Instead of the previous, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only</p> <p>Control Efficiency or Details: Prevent nuisance condition defined under Texas Health and Safety Code, § 341.011</p>

In addition, the District permits for rendering operations were reviewed to determine the type of equipment that has been used to control emissions captured from rendering operation equipment. The results of this review are shown in the table below. As can be seen in the table below, in the District, emissions captured from rendering operation equipment are typically controlled through incineration with a thermal oxidizer or regenerative thermal oxidizer. The review of District permits indicate that there was at least one facility (Facility N-164) that utilized only wet scrubbers to control process emissions from rendering operation equipment; however, this facility ceased its rendering operations a few years ago.

<b>Control for Emissions Captured from Rendering Operation Processing Equipment</b>		
<b>Facility Name (Facility ID)</b>	<b>Location</b>	<b>Rendering Operation Processing Equipment Control Device</b>
Baker Commodities, Inc (C-72)	Fresno, CA	Thermal Oxidizer with minimum temperature of 1,200 °F and minimum retention time of 0.57 seconds
Darling International Inc (C-406)	Fresno, CA	Thermal Oxidizer with minimum temperature of 1,200 °F and minimum retention time of 0.5 seconds
Darling International Inc (N-2107)	Turlock, CA	Thermal Oxidizer with minimum temperature of 1,400 °F and minimum retention time of 1 second
Foster Foods (N-1252)	Livingston, CA	Thermal Oxidizer with minimum temperature of 1,400 °F and minimum retention time of 1 second
Yosemite Foods Inc (N-164)	Stockton, CA	Wet Scrubbers

Based on the District's review of California air district rules, applicable BACT guidelines for rendering operations, and a survey of the equipment typically used at rendering operations in the District used to control emissions from rendering plant room air that are not captured by the primary emissions and odor control system, the following control options were identified to control the VOC emissions captured from rendering operation processing equipment:

Option 1: Use of an odor scrubbing system utilizing a scrubbing solution of chlorine dioxide, sodium hypochlorite, or sodium hydroxide with a minimum overall control of 95% or better, or

Use of a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds with a minimum overall control of 95% (Achieved in Practice)

Option 2: Use of an odor scrubbing system in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds (Technologically Feasible)

Option 3: Use of a natural gas-fired thermal oxidizer with a minimum temperature of 1,200 °F and a minimum retention time of 0.3 seconds (or equivalent) (Achieved in Practice)

Option 4: Use of a natural gas-fired thermal oxidizer with a minimum temperature of 1,300 °F and a minimum retention time of 0.4 seconds (or equivalent) (Achieved in Practice)

Option 5: Use of a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,200 °F and a minimum retention time of 0.57 seconds (Achieved in Practice)

Options 3, 4, and 5 all require the use of a thermal oxidizer; however, in each of these options, the thermal oxidizer temperature and residence time are lower than the thermal oxidizer temperature and residence required by Option 1, which will result in these options having a lower control efficiency than Option 1. Because Options 3, 4, and 5 are less effective than Option 1, which is achieved in practice, they will not be considered further.

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

There are no technologically infeasible options to eliminate from step 1.

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

- 1: Use of a scrubbing system in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds (> 95% control<sup>18</sup>) (Technologically Feasible)
- 2: Use of an odor scrubbing system utilizing a scrubbing solution of chlorine dioxide, sodium hypochlorite, or sodium hydroxide with a minimum overall control of 95% or better, or

Use of a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds with a minimum overall control of 95% (Achieved in Practice)

### **d. Step 4 - Cost Effectiveness Analysis**

The highest ranked option listed above has been proposed by the applicant. Therefore, a cost analysis is not required.

### **e. Step 5 - Select BACT**

Pursuant to the above BACT analysis, BACT for the VOC emissions from the proposed rendering operation that will be captured from the rendering operation processing equipment is the following:

- Use of a scrubbing system in series with a natural gas-fired thermal oxidizer with a minimum chamber temperature of 1,400 °F and a minimum retention time of 1.0 seconds (> 95% control)

The applicant use a two-stage scrubbing system in series with a thermal oxidizer operating with a minimum chamber temperature of at least 1,400 °F and minimum residence time of 1.0 seconds to control the VOC emissions that are captured from the rendering operation processing equipment. Therefore, the BACT requirements for VOC from the operation will be satisfied.

## **III. Top-Down BACT Analyses for the Rendering Plant Room Air Emissions**

As mentioned above, a project-specific BACT analysis a project-specific BACT analysis will be performed for control of emissions from the proposed rendering operation's room air that are not captured and sent to the primary emission and odor control system based on the District's review of information that was available during the evaluation of this project.

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<sup>18</sup> Because a thermal oxidizer with a chamber temperature of at least 1,400 °F and a retention time of least 1.0 seconds is expected to have a minimum control efficiency of 95%, the utilization a scrubbing system in series with a thermal oxidizer meeting these requirements will have > 95% control efficiency.

## 1. BACT Analysis for PM<sub>10</sub> Emissions:

### a. Step 1 - Identify All Control Technologies

The US Environmental Protection Agency (USEPA) RACT/BACT/LAER, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Ventura County Air Pollution Control District (VCAPCD), the Bay Area Air Quality Management District (BAAQMD), and the Sacramento Metropolitan Air Quality Management District (SMAQMD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. In addition, the Texas Commission on Environmental Quality (TCEQ) BACT guideline for rendering operations was also reviewed to determine potential control technologies for rendering operation room air PM<sub>10</sub> emissions that are not captured by the primary emissions and odor control system. The District also reviewed applicable rules for rendering operations in BAAQMD, SCAQMD, SMAQMD, and VCAPCD.

The only BACT guideline located that addressed PM<sub>10</sub> emissions from rendering operations was the SCAQMD BACT guideline for rendering operations. However, this SCAQMD BACT guideline does not address the emissions from the rendering operation that are not captured by the primary emissions and odor control system, but rather requires the emissions captured by the primary emissions and odor control system to be vented to an afterburner or boiler firebox with a retention time of at least 0.3 seconds and a temperature of at least 1,200 °F. The BACT requirements for the emissions from the rendering operation that are captured by the primary emissions and odor control system were addressed above.

TCEQ has a BACT guideline for rendering operations that requires the following to reduce high-intensity odors from cookers and pressers:

- Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room. Instead of the above, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only. The temperature of vapors entering a packed bed or packed tower scrubber cannot exceed 130 Degrees Fahrenheit; accepted chemicals are chlorine dioxide, sodium hypochlorite, sodium hydroxide and ActXone

This TCEQ BACT guideline specifies requirements to reduce high-intensity odors from rendering operations that may create a nuisance rather than specifying requirements to reduce PM<sub>10</sub> emissions from rendering operations, and the TCEQ BACT guideline specifies requirements for the primary control system for high-intensity odors from cookers and presses rather than specifying requirements for fugitive rendering plant room air emissions that are not captured by the primary odor control system. Although the TCEQ BACT guideline applies to high-intensity odors from rather cookers and pressers

than PM<sub>10</sub> emissions from rendering operation room air, the requirements of the TCEQ BACT guideline for high-intensity odors from rendering operations that could potentially control rendering operation room air emissions will be considered for purposes of this analysis.

There were no applicable rules located that specifically address PM<sub>10</sub> emissions from rendering operation room air that are not captured by the primary emissions and odor control system. SCAQMD Rule 415 – Odors from Rendering Facilities specifies requirements to reduce odors from rendering facilities, but does not specifically address PM<sub>10</sub> emissions from rendering operation room air. However, the requirements of this rule that could potentially reduce PM<sub>10</sub> emissions from rendering operation room air will be considered for purposes of this analysis. To control odors from rendering operations, SCAQMD Rule 415 requires the use of a closed system or a permanent total enclosure. SCAQMD Rule 415 defines a closed system as *“a system handling any combination of solids, liquids, vapors, and air at a rendering facility, in which odors are contained within the system”* and requires each component of a closed system to be maintained in a manner to minimize leaks, requires material conveyers, troughs, bins, and hoppers to be completely enclosed except for doors and panels required for maintenance and personnel access, and requires mating surfaces on doors, access panels, and ductwork and air gaps in the system to be sealed with gasket material or caulk. Any alternative to a closed system must be approved by the SCAQMD executive officer. SCAQMD Rule 415 defines a permanent total enclosure as *“an enclosure having a permanently installed roof and exterior walls which are constructed of solid material, and completely surround one or more odor-generating sources such that all odors from processes conducted within the enclosure are contained therein.”* SCAQMD Rule 415 requires use of use of an odor control system in conjunction with a permanent total enclosure. The odor control system must be designed and operated to control fugitive odors from a permanent total enclosure and raw material receiving.

In addition, the District permits for rendering operations were reviewed to determine the type of controls that have been used at rendering operations for room air emissions that are not captured by the primary emissions and odor control system. The results of this review are shown in the table below. As can be seen in the table below, rendering plant room air emissions that are not captured by the primary emissions and odor control system are typically controlled by a wet scrubber or combination of wet scrubbers.

<b>Emission Control for Rendering Plant Room Air Emissions that are not Captured by the Primary Emissions and Odor Control System</b>		
<b>Facility Name (Facility ID)</b>	<b>Location</b>	<b>Room Air Control Device</b>
Baker Commodities, Inc (C-72)	Fresno, CA	None
Darling International Inc (C-406)	Fresno, CA	Wet Scrubbers
Darling International Inc (N-2107)	Turlock, CA	Wet Scrubbers
Foster Foods (N-1252)	Livingston, CA	Wet Scrubbers

Emission Control for Rendering Plant Room Air Emissions that are not Captured by the Primary Emissions and Odor Control System		
Facility Name (Facility ID)	Location	Room Air Control Device
Yosemite Foods Inc (N-164)	Stockton, CA	Wet Scrubbers

Based on the District’s review of air district rules and applicable BACT guidelines for rendering operations, and a survey of the equipment typically used at rendering operations in the District used to control emissions from rendering plant room air that are not captured by the primary emissions and odor control system, the following PM<sub>10</sub> control option was identified for rendering plant room air emissions:

PM<sub>10</sub> Control Option 1: a) Use of a Closed System as Defined in SCAQMD Rule 415 or b) Rendering Operations in a Building Kept Under Negative Pressure and Vented to a Wet Scrubber

- a. Use of a closed system as defined in SCAQMD Rule 415: Each component of the closed system must maintained in a manner to minimize leaks; material conveyers, troughs, bins, and hoppers must to be completely enclosed except for doors and panels required for maintenance and personnel access, and mating surfaces on doors, access panels, and ductwork and air gaps in the system must be sealed with gasket material or caulk; or
- b. Rendering operations in a building kept under negative pressure and vented to a wet scrubber

This option is required by current regulations for rendering plants and/or has been used at multiple rendering plants to control room air emissions, and is therefore achieved in practice.

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

There are no technologically infeasible options to eliminate from step 1.

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

Option 1: a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber

**d. Step 4 - Cost Effectiveness Analysis**

The only option listed above has been identified as achieved in practice and has been proposed by the applicant. Therefore, the option is required and a cost analysis is not needed.

### **e. Step 5 - Select BACT**

Pursuant to the above BACT analysis, BACT for PM<sub>10</sub> emissions in the room air from the proposed rendering operation that are not captured by the primary emissions control system is the following:

- a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber

The applicant has proposed to use a building kept under negative pressure vented to packed bed scrubbers to control the room air emissions from the rendering operation. Therefore, the BACT requirements for PM<sub>10</sub> emissions from the operation will be satisfied.

## **2. BACT Analysis for VOC Emissions:**

### **a. Step 1 - Identify All Control Technologies**

The USEPA RACT/BACT/LAER, the CARB BACT Clearinghouse, the SCAQMD, VCAPCD, BAAQMD, and SMAQMD BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. In addition, the Texas Commission on Environmental Quality (TCEQ) BACT guideline for rendering operations was also reviewed to determine potential control technologies for rendering operation room air VOC emissions that are not captured by the primary emissions and odor control system. The District also reviewed applicable rules for rendering operations in BAAQMD, SCAQMD, SMAQMD, and VCAPCD.

No BACT guidelines were located that addressed VOC emissions from the rendering operation room air that are not captured by the primary emissions and odor control system. There were no applicable rules located that specifically address VOC emissions from rendering operations room air that are not captured by the primary emissions and odor control system.

TCEQ has a BACT guideline for rendering operations that requires the following to reduce high-intensity odors from cookers and pressers:

- Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room. Instead of the above, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only. The temperature of vapors entering a packed bed or packed tower scrubber cannot exceed 130 Degrees Fahrenheit; accepted chemicals are chlorine dioxide, sodium hypochlorite, sodium hydroxide and ActXone



However, this TCEQ BACT guideline specifies requirements to reduce high-intensity odors from rendering operations that may create a nuisance rather than specifying requirements to reduce VOC emissions from rendering operations, and the TCEQ BACT guideline specifies requirements for the primary control system for high-intensity odors from cookers and presses rather than specifying requirements for fugitive rendering plant room air emissions that are not captured by the primary odor control system. Although the TCEQ BACT guideline applies to high-intensity odors from rather cookers and pressers than VOC emissions from rendering operation room air, the requirements of the TCEQ BACT guideline for high-intensity odors from rendering operations that could potentially control rendering operation room air emissions will be considered for purposes of this analysis.

SCAQMD Rule 415 – Odors from Rendering Facilities specifies requirements to reduce odors from rendering facilities, including odors from nitrogen and sulfur compounds emitted from rendering facilities, but does not specifically address VOC emissions from rendering operation room air. However, the requirements of this rule that could potentially reduce VOC emissions from rendering operation room air will be considered for purposes of this analysis. To control odors from rendering operations, SCAQMD Rule 415 requires the use of a closed system or a permanent total enclosure. SCAQMD Rule 415 defines a closed system as *“a system handling any combination of solids, liquids, vapors, and air at a rendering facility, in which odors are contained within the system”* and requires each component of a closed system to be maintained in a manner to minimize leaks, requires material conveyers, troughs, bins, and hoppers to be completely enclosed except for doors and panels required for maintenance and personnel access, and requires mating surfaces on doors, access panels, and ductwork and air gaps in the system to be sealed with gasket material or caulk. Any alternative to a closed system must be approved by the SCAQMD executive officer. SCAQMD Rule 415 defines a permanent total enclosure as *“an enclosure having a permanently installed roof and exterior walls which are constructed of solid material, and completely surround one or more odor-generating sources such that all odors from processes conducted within the enclosure are contained therein.”* SCAQMD Rule 415 requires use of use of an odor control system in conjunction with a permanent total enclosure. The odor control system must be designed and operated to control fugitive odors from a permanent total enclosure and raw material receiving and must have minimum control efficiency of 70% for nitrogen compounds and 70% for sulfur compounds, but no control efficiency is required for VOC emissions.

As discussed above, the District permits for rendering operations were also reviewed to determine the type of controls that have been used at rendering operations for room air emissions that are not captured by the primary emissions and odor control system. The results of this review are shown in the table below. As can be seen in the table below, rendering plant room air emissions that are not captured by the primary emissions and odor control system are typically controlled by a wet scrubber or combination of wet scrubbers.

<b>Emission Control for Rendering Plant Room Air Emissions that are not Captured by the Primary Emissions and Odor Control System</b>		
<b>Facility Name (Facility ID)</b>	<b>Location</b>	<b>Room Air Control Device</b>
Baker Commodities, Inc (C-72)	Fresno, CA	None
Darling International Inc (C-406)	Fresno, CA	Wet Scrubbers
Darling International Inc (N-2107)	Turlock, CA	Wet Scrubbers
Foster Foods (N-1252)	Livingston, CA	Wet Scrubbers
Yosemite Foods Inc (N-164)	Stockton, CA	Wet Scrubbers

Based on the District’s review of air district rules and applicable BACT guidelines for rendering operations, and a survey of the equipment typically used at rendering operations in the District used to control emissions from rendering plant room air that are not captured by the primary emissions and odor control system, the following VOC control option was identified for rendering plant room air emissions:

VOC Control Option 1: a) Use of a Closed System as Defined in SCAQMD Rule 415 or b) Rendering Operations in a Building Kept Under Negative Pressure and Vented to a Wet Scrubber

- a. Use of a closed system as defined in SCAQMD Rule 415: Each component of the closed system must maintained in a manner to minimize leaks; material conveyers, troughs, bins, and hoppers must to be completely enclosed except for doors and panels required for maintenance and personnel access, and mating surfaces on doors, access panels, and ductwork and air gaps in the system must be sealed with gasket material or caulk; or
- b. Rendering operations in a building kept under negative pressure and vented to a wet scrubber

This option is required by current regulations for rendering plants and/or has been used at multiple rendering plants to control room air emissions, and is therefore achieved in practice.

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

There are no technologically infeasible options to eliminate from step 1.

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

Option 1: a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber

### **d. Step 4 - Cost Effectiveness Analysis**

The only option listed above has been identified as achieved in practice and has been proposed by the applicant. Therefore, the option is required and a cost analysis is not needed.

### **e. Step 5 - Select BACT**

Pursuant to the above BACT analysis, BACT for VOC emissions in the room air from the proposed rendering operation that are not captured by the primary emissions control system is the following:

- a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber

The applicant has proposed to use a building kept under negative pressure vented to packed bed scrubbers to control the room air emissions from the rendering operation. Therefore, the BACT requirements for VOC emissions from the operation will be satisfied.

## **3. BACT Analysis for NH<sub>3</sub> Emissions:**

### **a. Step 1 - Identify All Control Technologies**

The USEPA RACT/BACT/LAER, the CARB BACT Clearinghouse, the SCAQMD, VCAPCD, BAAQMD, and SMAQMD BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. In addition, the Texas Commission on Environmental Quality (TCEQ) BACT guideline for rendering operations was also reviewed to determine potential control technologies for rendering operation room air NH<sub>3</sub> emissions that are not captured by the primary emissions and odor control system. The District also reviewed applicable rules for rendering operations in BAAQMD, SCAQMD, SMAQMD, and VCAPCD.

No BACT guidelines were located that addressed NH<sub>3</sub> emissions from the rendering operation room air that are not captured by the primary emissions and odor control system.

TCEQ has a BACT guideline for rendering operations that requires the following to reduce high-intensity odors from cookers and pressers:

- Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The

scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room. Instead of the above, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only. The temperature of vapors entering a packed bed or packed tower scrubber cannot exceed 130 Degrees Fahrenheit; accepted chemicals are chlorine dioxide, sodium hypochlorite, sodium hydroxide and ActXone

This BACT guideline is specifically applicable to high-intensity odors from rendering operations that may create a nuisance rather than NH<sub>3</sub> emissions, and the TCEQ BACT guideline specifies requirements for the primary control system for high-intensity odors from cookers and presses rather than specifying requirements for fugitive rendering plant room air emissions that are not captured by the primary odor control system. Although the TCEQ BACT guideline applies to high-intensity odors from rather cookers and pressers than NH<sub>3</sub> emissions from rendering operation room air, the requirements of the TCEQ BACT guideline for high-intensity odors from rendering operations that could potentially control rendering operation room air emissions will be considered for purposes of this analysis.

SCAQMD Rule 415 – Odors from Rendering Facilities specifies requirements to reduce odors from rendering facilities, including odors from nitrogen and sulfur compounds emitted from rendering facilities. To control odors from rendering operations, SCAQMD Rule 415 requires the use of a closed system or a permanent total enclosure. SCAQMD Rule 415 defines a closed system as *“a system handling any combination of solids, liquids, vapors, and air at a rendering facility, in which odors are contained within the system”* and requires each component of a closed system to be maintained in a manner to minimize leaks, requires material conveyers, troughs, bins, and hoppers to be completely enclosed except for doors and panels required for maintenance and personnel access, and requires mating surfaces on doors, access panels, and ductwork and air gaps in the system to be sealed with gasket material or caulk. Any alternative to a closed system must be approved by the SCAQMD executive officer. SCAQMD Rule 415 defines a permanent total enclosure as *“an enclosure having a permanently installed roof and exterior walls which are constructed of solid material, and completely surround one or more odor-generating sources such that all odors from processes conducted within the enclosure are contained therein.”* SCAQMD Rule 415 requires use of use of an odor control system in conjunction with a permanent total enclosure. The odor control system must be designed and operated to control fugitive odors from a permanent total enclosure and raw material receiving and must have minimum control efficiency of 70% for nitrogen compounds and 70% for sulfur compounds.

As discussed above, the District permits for rendering operations were also reviewed to determine the type of controls that have been used at rendering operations for room air emissions that are not captured by the primary emissions and odor control system. The results of this review are shown in the table below. As can be seen in the table below, rendering plant room air emissions that are not captured by the primary emissions and

odor control system are typically controlled by a wet scrubber or combination of wet scrubbers.

<b>Emission Control for Rendering Plant Room Air Emissions that are not Captured by the Primary Emissions and Odor Control System</b>		
<b>Facility Name (Facility ID)</b>	<b>Location</b>	<b>Room Air Control Device</b>
Baker Commodities, Inc (C-72)	Fresno, CA	None
Darling International Inc (C-406)	Fresno, CA	Wet Scrubbers
Darling International Inc (N-2107)	Turlock, CA	Wet Scrubbers
Foster Foods (N-1252)	Livingston, CA	Wet Scrubbers
Yosemite Foods Inc (N-164)	Stockton, CA	Wet Scrubbers

The EPA Clean Air Technology Center (CATC) Air Pollution Technology Fact Sheet – Packed-Bed/Packed-Tower Wet Scrubber (2003) states that control device vendors estimate that removal efficiencies range from 95% to 99% for inorganic gases<sup>19</sup> and the EPA CATC Air Pollution Technology Fact Sheet – Spray-Chamber/Spray-Tower Wet Scrubber (2003) states that control device vendors estimate that removal efficiencies range from 95% to 99% for inorganic gases and that SO<sub>2</sub> removal efficiencies vary from 80% to greater than 99%, depending upon the type of reagent used and the spray tower design, and that most current applications have a removal efficiency greater than 90%.<sup>20</sup> Although vendors of different wet scrubbers have estimated removal efficiencies of 95% or greater for inorganic gases, it is not clear that these control efficiencies have been demonstrated for the dilute concentrations of inorganic compounds in rendering plant room air that are not captured by the primary emissions and odor control system. Therefore, for purposes of this analysis, the minimum control efficiency of 70% for nitrogen compounds from SCAQMD Rule 415 will be considered the minimum achieved in practice standard for the control of NH<sub>3</sub> emissions from rendering operation room air.

Based on the District’s review of air district rules and applicable BACT guidelines for rendering operations, and a survey of the equipment typically used at rendering operations in the District used to control emissions from rendering plant room air that are not captured by the primary emissions and odor control system, the following NH<sub>3</sub> control option was identified for rendering plant room air emissions:

<sup>19</sup> US EPA (2003) EPA Clean Air Technology Center (CATC) Air Pollution Technology Fact Sheet (FS) - Packed-Bed/Packed-Tower Wet Scrubber (EPA-452/F-03-015) <https://www3.epa.gov/ttnchie1/mkb/documents/fpack.pdf>

<sup>20</sup> US EPA (2003) EPA Clean Air Technology Center (CATC) Air Pollution Technology Fact Sheet (FS) - Spray-Chamber/Spray-Tower Wet Scrubber (EPA-452/F-03-016) <https://www3.epa.gov/ttnchie1/mkb/documents/fsprytwr.pdf>

NH<sub>3</sub> Control Option 1: a) Use of a Closed System as Defined in SCAQMD Rule 415 or b) Rendering Operations in a Building Kept Under Negative Pressure and Vented to a Wet Scrubber or Alternative Control Technology that Reduces NH<sub>3</sub> Emissions by at Least 70%

- a. Use of a closed system as defined in SCAQMD Rule 415: Each component of the closed system must be maintained in a manner to minimize leaks; material conveyers, troughs, bins, and hoppers must be completely enclosed except for doors and panels required for maintenance and personnel access, and mating surfaces on doors, access panels, and ductwork and air gaps in the system must be sealed with gasket material or caulk; or
- b. Rendering operations in a building kept under negative pressure and vented to a wet scrubber or alternative technology that reduces NH<sub>3</sub> emissions by at least 70%

This option is required by current regulations for rendering plants and/or has been used at multiple rendering plants to control room air emissions, and is therefore achieved in practice.

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

There are no technologically infeasible options to eliminate from step 1.

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

Option 1: a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber or alternative technology that reduces NH<sub>3</sub> emissions by at least 70%

**d. Step 4 - Cost Effectiveness Analysis**

The only option listed above has been identified as achieved in practice and has been proposed by the applicant. Therefore, the option is required and a cost analysis is not needed.

**e. Step 5 - Select BACT**

Pursuant to the above BACT analysis, BACT for NH<sub>3</sub> emissions in the room air from the proposed rendering operation that are not captured by the primary emissions control system is the following:

- a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber or alternative technology that reduces NH<sub>3</sub> emissions by at least 70%

The applicant has proposed to use a building kept under negative pressure vented to packed bed scrubbers to control the room air emissions from the rendering operation. Therefore, the BACT requirements for NH<sub>3</sub> emissions from the operation will be satisfied.

#### **4. BACT Analysis for H<sub>2</sub>S Emissions:**

##### **a. Step 1 - Identify All Control Technologies**

The USEPA RACT/BACT/LAER, the CARB BACT Clearinghouse, the SCAQMD, VCAPCD, BAAQMD, and SMAQMD BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. In addition, the Texas Commission on Environmental Quality (TCEQ) BACT guideline for rendering operations was also reviewed to determine potential control technologies for rendering operation room air H<sub>2</sub>S emissions that are not captured by the primary emissions and odor control system. The District also reviewed applicable rules for rendering plants in BAAQMD, SCAQMD, SMAQMD, and VCAPCD.

No BACT guidelines were located that addressed H<sub>2</sub>S emissions from the rendering operation room air that are not captured by the primary emissions and odor control system.

TCEQ has a BACT guideline for rendering operations that requires the following to reduce high-intensity odors from cookers and pressers:

- Building under negative pressure and air streams routed to a condenser or venturi scrubber followed by two packed bed or two packed tower scrubbers. The scrubbers may use sodium hydroxide, chlorine dioxide, or sodium hypochlorite, maintain a pH of 11 and 10 ppm residual chlorine concentration, and maintain 30 room air changes per hour on the cooking room. Instead of the above, the air stream may be routed to a condenser/venturi scrubber followed by the boiler firebox for incineration when the boiler is on high fire only. The temperature of vapors entering a packed bed or packed tower scrubber cannot exceed 130 Degrees Fahrenheit; accepted chemicals are chlorine dioxide, sodium hypochlorite, sodium hydroxide and ActXone

This BACT guideline is specifically applicable to high-intensity odors from rendering operations that may create a nuisance rather than H<sub>2</sub>S emissions, and the TCEQ BACT guideline specifies requirements for the primary control system for high-intensity odors from cookers and presses rather than specifying requirements for fugitive rendering plant room air emissions that are not captured by the primary odor control system. Although the TCEQ BACT guideline applies to high-intensity odors from rather cookers and pressers than H<sub>2</sub>S emissions from rendering operation room air, the requirements of the TCEQ BACT guideline for high-intensity odors from rendering operations that could potentially control rendering operation room air emissions will be considered for purposes of this analysis.

SCAQMD Rule 415 – Odors from Rendering Facilities specifies requirements to reduce odors from rendering facilities, including odors from nitrogen and sulfur compounds emitting from rendering facilities. To control odors from rendering operations, SCAQMD Rule 415 requires the use of a closed system or a permanent total enclosure. SCAQMD Rule 415 defines a closed system as “*a system handling any combination of solids, liquids, vapors, and air at a rendering facility, in which odors are contained within the system*” and requires each component of a closed system to be maintained in a manner to minimize leaks, requires material conveyers, troughs, bins, and hoppers to be completely enclosed except for doors and panels required for maintenance and personnel access, and requires mating surfaces on doors, access panels, and ductwork and air gaps in the system to be sealed with gasket material or caulk. Any alternative to a closed system must be approved by the SCAQMD executive officer. SCAQMD Rule 415 defines a permanent total enclosure as “*an enclosure having a permanently installed roof and exterior walls which are constructed of solid material, and completely surround one or more odor-generating sources such that all odors from processes conducted within the enclosure are contained therein.*” SCAQMD Rule 415 requires use of use of an odor control system in conjunction with a permanent total enclosure. The odor control system must be designed and operated to control fugitive odors from a permanent total enclosure and raw material receiving and must have minimum control efficiency of 70% for nitrogen compounds and 70% for sulfur compounds.

As discussed above, the District permits for rendering operations were also reviewed to determine the type of controls that have been used at rendering operations for room air emissions that are not captured by the primary emissions and odor control system. The results of this review are shown in the table below. As can be seen in the table below, rendering plant room air emissions that are not captured by the primary emissions and odor control system are typically controlled by a wet scrubber or combination of wet scrubbers.

<b>Emission Control for Rendering Plant Room Air Emissions that are not Captured by the Primary Emissions and Odor Control System</b>		
<b>Facility Name (Facility ID)</b>	<b>Location</b>	<b>Room Air Control Device</b>
Baker Commodities, Inc (C-72)	Fresno, CA	None
Darling International Inc (C-406)	Fresno, CA	Wet Scrubbers
Darling International Inc (N-2107)	Turlock, CA	Wet Scrubbers
Foster Foods (N-1252)	Livingston, CA	Wet Scrubbers
Yosemite Foods Inc (N-164)	Stockton, CA	Wet Scrubbers

The EPA Clean Air Technology Center (CATC) Air Pollution Technology Fact Sheet – Packed-Bed/Packed-Tower Wet Scrubber (2003) states that control device vendors



estimate that removal efficiencies range from 95% to 99% for inorganic gases<sup>21</sup> and the EPA CATC Air Pollution Technology Fact Sheet – Spray-Chamber/Spray-Tower Wet Scrubber (2003) states that control device vendors estimate that removal efficiencies range from 95% to 99% for inorganic gases and that SO<sub>2</sub> removal efficiencies vary from 80% to greater than 99%, depending upon the type of reagent used and the spray tower design, and that most current applications have a removal efficiency greater than 90%.<sup>22</sup> Although vendors of different wet scrubbers have estimated removal efficiencies of 95% or greater for inorganic gases, it is not clear that these control efficiencies have been demonstrated for the dilute concentrations of inorganic compounds in rendering plant room air that are not captured by the primary emissions and odor control system. Therefore, for purposes of this analysis, the minimum control efficiency of 70% for sulfur compounds from SCAQMD Rule 415 will be considered the minimum achieved in practice standard for the control of H<sub>2</sub>S emissions from rendering operation room air.

Based on the District's review of air district rules and applicable BACT guidelines for rendering operations, and a survey of the equipment typically used at rendering operations in the District used to control emissions from rendering plant room air that are not captured by the primary emissions and odor control system, the following H<sub>2</sub>S control option was identified for rendering plant room air emissions:

H<sub>2</sub>S Control Option 1: a) Use of a Closed System as Defined in SCAQMD Rule 415 or b) Rendering Operations in a Building Kept Under Negative Pressure and Vented to a Wet Scrubber or Alternative Control Technology that Reduces NH<sub>3</sub> Emissions by at Least 70%

- a. Use of a closed system as defined in SCAQMD Rule 415: Each component of the closed system must maintained in a manner to minimize leaks; material conveyers, troughs, bins, and hoppers must to be completely enclosed except for doors and panels required for maintenance and personnel access, and mating surfaces on doors, access panels, and ductwork and air gaps in the system must be sealed with gasket material or caulk; or
- b. Rendering operations in a building kept under negative pressure and vented to a wet scrubber or alternative technology that reduces NH<sub>3</sub> emissions by at least 70%

This option is required by current regulations for rendering plants and/or has been used at multiple rendering plants to control room air emissions, and is therefore achieved in practice.

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

There are no technologically infeasible options to eliminate from step 1.

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<sup>21</sup> US EPA (2003) EPA Clean Air Technology Center (CATC) Air Pollution Technology Fact Sheet (FS) - Packed-Bed/Packed-Tower Wet Scrubber (EPA-452/F-03-015) <https://www3.epa.gov/ttnchie1/mkb/documents/fpack.pdf>

<sup>22</sup> US EPA (2003) EPA Clean Air Technology Center (CATC) Air Pollution Technology Fact Sheet (FS) - Spray-Chamber/Spray-Tower Wet Scrubber (EPA-452/F-03-016) <https://www3.epa.gov/ttnchie1/mkb/documents/fsprytwr.pdf>

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

Option 1: a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber or alternative technology that reduces H<sub>2</sub>S emissions by at least 70%

**d. Step 4 - Cost Effectiveness Analysis**

The only option listed above has been identified as achieved in practice and has been proposed by the applicant. Therefore, the option is required and a cost analysis is not needed.

**e. Step 5 - Select BACT**

Pursuant to the above BACT analysis, BACT for H<sub>2</sub>S emissions in the room air from the proposed rendering operation that are not captured by the primary emissions control system is the following:

- a) Use of a closed system as defined in SCAQMD Rule 415 or b) rendering operations in a building kept under negative pressure and vented to a wet scrubber or alternative technology that reduces H<sub>2</sub>S emissions by at least 70%

The applicant has proposed to use a building kept under negative pressure vented to packed bed scrubbers to control the room air emissions from the rendering operation. Therefore, the BACT requirements for H<sub>2</sub>S emissions from the operation will be satisfied.

## **APPENDIX F**

### **BACT Analysis for the Proposed Natural Gas-Fired Boilers**

## **Top-Down BACT Analysis for Project C-12010060 61.991 MMBtu/hr Natural Gas-Fired Boilers**

Previous District BACT Guideline 1.1.2 – Boiler: > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings, which was rescinded on October 26, 2009, listed the BACT requirements for natural gas-fired boilers rated greater than 20.0 MMBtu/hr that do not have highly variable load swings during operation. Because there is no existing District BACT Guideline that applies to the proposed 61.991 MMBtu/hr natural gas-fired boilers, a project-specific BACT analysis will be performed in accordance the District BACT policy to determine the BACT requirements for the proposed natural gas-fired boilers.

### **I. Proposal**

Central Valley Meat Co. has requested Authority to Construct (ATC) permits for the installation of four new identical 61.991 MMBtu/hr natural gas-fired boilers, each with flue gas recirculation (FGR) and a selective catalytic reduction (SCR) system to control NO<sub>x</sub> emissions (ATCs C-2282-14-0, -15-0, -16-0, & -17-0) that will be used to provide heat and steam for their proposed new meat rendering operation. Central Valley Meat Co. has not proposed to limit the hours of operation of any of the boilers; however, they have proposed to limit the total potential to emit from the facility to no more than 19,999 lb/year of NO<sub>x</sub> and 19,999 lb/year of VOC.

### **II. Top-Down BACT Analyses for the Proposed 61.991 Natural Gas-Fired Boilers**

As stated above, a project-specific BACT analysis will be performed for the proposed 61.991 MMBtu/hr natural gas-fired boilers evaluated under this project.

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

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

The USA Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management District (BAAQMD), the Sacramento Metropolitan Air Quality Management District (SMAQMD), the Monterey Bay Air Resources District, the Santa Barbara Air Pollution Control District (SBAPCD), and San Diego Air Pollution Control District (SDAPCD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. Note that the previous SJVAPCD BACT guidelines for boilers were not considered because the BACT requirements in boilers are currently outdated and need to be revised. When a boiler triggers BACT requirements in the District, a case-by-case project-specific determination is conducted and the results of that determination are considered BACT for that particular operation.

The District also reviewed the applicable boiler rules from SJVAPCD, BAAQMD, SCAQMD, SMAQMD, and the Ventura County Air Pollution Control District (VCAPCD). The following table summarizes the results of the review of these BACT guidelines and air district rules:

BACT Guideline/ Emission Limit Source	Equipment Rating	NO <sub>x</sub> Control Technology/Requirement
SJVAPCD Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12-17-2020)	> 20 MMBtu/hr	<p>Tier 1 Standard Schedule NO<sub>x</sub> Limit: 7 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu</p> <p>Tier 1 Enhanced Schedule NO<sub>x</sub> Limit: 6 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.007 lb-NO<sub>x</sub>/MMBtu</p> <p>Tier 2 NO<sub>x</sub> Limit: 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu</p>
SCAQMD BACT Guidelines Part B - Boiler, 39.9 MMBtu/hr with SCR (3-22-2016)	39.9 MMBtu/hr	<p><u>Achieved in Practice</u> Description: 39.9 MMBtu watertube boiler with low NO<sub>x</sub> burner and SCR</p> <p>5 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub></p> <p>Other BACT Requirements: When firing on standby fuel: 40 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub>, 15 min average; 400 ppmvd CO @ 3% O<sub>2</sub></p> <p>Start-ups not to exceed 120 min for cold start and 30 min for warm start.</p>
SCAQMD BACT Guidelines Part D – Boiler, Natural Gas or Propane Fired, ≥ 20 and < 75 MMBtu/hr (2-1-2019 Rev. 3)	≥ 20 MMBtu/hr and < 75 MMBtu/hr	<p><u>Achieved in Practice</u> Compliance with SCAQMD Rule 1146 (2-1-2019)</p>
SCAQMD Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (amended 12-4-2020)	New Boilers ≥ 20 MMBtu/hr and < 75 MMBtu/hr	5 ppmvd NO <sub>x</sub> @ 3% O <sub>2</sub> or 0.0062 lb-NO <sub>x</sub> /MMBtu
Sacramento Metropolitan AQMD BACT Determination 283	5 MMBtu/hr to 20 MMBtu/hr	<p><u>Achieved in Practice</u> For firetube boilers: 7 ppm NO<sub>x</sub> at 3% O<sub>2</sub> or 0.0085 lb/MMBtu, Non-atmospheric units: 9 ppmvd NO<sub>x</sub> at 3% O<sub>2</sub> or 0.011 lb/MMBtu,<sup>23</sup> Atmospheric units and thermal fluid heaters: 12 ppmvd NO<sub>x</sub> at 3% O<sub>2</sub> or 0.015 lb/MMBtu</p>
Sacramento Metropolitan AQMD Rule 411 - NO <sub>x</sub> from Boilers, Process Heaters and Steam Generators (Amended 8-23-2007)	≥ 20 MMBtu/hr	9 ppmvd NO <sub>x</sub> at 3% O <sub>2</sub>

<sup>23</sup> Sacramento Metropolitan AQMD BACT Determination 283 lists 9 ppmvd NO<sub>x</sub> at 3% O<sub>2</sub> or 0.0085 lb/MMBtu; however, this appears to be a mistake. Based on the SJVAPCD and SCAQMD requirements referenced in the SMAQMD BACT determination, the correct value appears to be 9 ppmvd NO<sub>x</sub> at 3% O<sub>2</sub> or 0.011 lb/MMBtu. Sacramento Metropolitan AQMD BACT Determination 283 is available at the following web link: <http://www.airquality.org/StationarySources/Documents/Boilers%20to%2020%20MMBtu%20per%20hr%20BACT%20283.pdf>

BACT Guideline/ Emission Limit Source	Equipment Rating	NO <sub>x</sub> Control Technology/Requirement
Bay Area AQMD BACT Workbook – Boiler, ≥ 50 MMBtu/hr heat input	≥ 50 MMBtu/hr	<u>Typical Technology</u> 1. Selective Catalytic Reduction (SCR) + Low NO <sub>x</sub> Burners (LNB) + Flue Gas Recirculation (FGR) 2. Ultra Low NO <sub>x</sub> Burners (ULNB) + FGR
Bay Area AQMD Regulation 9, Rule 7 - Nitrogen Oxides And Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters (4-24-2018)	20 MMBtu/hr to < 75 MMBtu/hr	9 ppmvd NO <sub>x</sub> at 3% O <sub>2</sub>
Monterey Bay Air Resources District Permit Requirements for Gaseous Fired Boilers (5-8-2019)	Natural Gas > 2 MMBtu/hr and < 75 MMBtu/hr	<u>BACT</u> 9 ppmvd NO <sub>x</sub> at 3% O <sub>2</sub>
Santa Barbara APCD Default Boiler/Process Heater/Large Water Heater and Steam Generator emission Standards (3-14-2017)	All Gaseous Fuels 26+ MMBtu/hr	<u>BACT</u> 5 ppmvd NO <sub>x</sub> at 3% O <sub>2</sub>
San Diego APCD New Source Review Requirements For Best Available Control Technology (BACT) Guidance Document (June 2011) Boilers (50 to <250 MM BTU/HR) -- Fee Schedule 13B	50 MMBtu/hr to < 250 MMBtu/hr	<u>Technologically Feasible</u> BACT Emission Rate Limit: 5 ppmv @ 3% O <sub>2</sub> / Natural Gas (NG) or LPG SCR on NG or LPG fuel  <u>Achieved in Practice</u> BACT Emission Rate Limit: 9 ppmv @ 3% O <sub>2</sub> / Natural Gas (NG) or LPG Low NO <sub>x</sub> burner, FGR, and oxygen controller. NG or LPG
Ventura County APCD Rule 74.15 - Boilers, Steam Generators and Process Heaters (11-10-2020)	≥ 5.0 MMBtu/hr	9 ppmvd @ 3% O <sub>2</sub>
EPA New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial- Commercial-Institutional Steam Generating Units	> 10 MMBtu/hr and ≤ 100 MMBtu/hr	No NO <sub>x</sub> Standard

The District searches in the USEPA RACT/BACT/LAER Clearinghouse resulted in BACT limits for NO<sub>x</sub> from boilers ranging from 8 ppmv @ 3% O<sub>2</sub> (for RBLC ID MD-0042) to 74 ppmv @ 3% O<sub>2</sub> (for RBLC ID TX-0501) with over 75% of the BACT/LAER determinations located listing NO<sub>x</sub> emission limits greater than 9 ppmv @ 3% O<sub>2</sub> (See District Project C-1203678).

As shown in the table above, the lowest NO<sub>x</sub> emission limit identified for boilers was the 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu Tier 2 NO<sub>x</sub> limit of District Rule 4320. Based on available source test data, the District previously determined that this limit was achieved in practice during steady state operation for boilers rated greater than 20.0 MMBtu/hr in other projects for installation of new boilers (e.g. District projects N-1172636, C-1172884, C-1183435, C-1192443, and N-1213321). The use of SCR is generally

required to consistently achieve this NO<sub>x</sub> emission limit and SCR systems require some time after startup of a boiler before they become fully functional. In addition, the District does not have any source test data during start-up or shutdown because District source testing is not performed during start-up or shutdown. Therefore, 2.5 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu is only achieved in practice BACT for boilers during steady-state operation. Achieved in practice BACT for NO<sub>x</sub> the proposed boilers during start-up or shutdown has been determined to be the manufacturer's guaranteed emission rate of 30 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> and the start-up and shutdown requirements of District Rule 4320.

Based on the District's review of California air district rules and applicable BACT guidelines for boilers rated greater than 20.0 MMBtu/hr, and a review of previous District project-specific BACT determinations and District permit requirements for boilers rated greater than 20.0 MMBtu/hr, the following NO<sub>x</sub> control option was identified for boilers rated greater than 20.0 MMBtu/hr:

NO<sub>x</sub> Control Option #1: 2.5 ppmvd @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu During Steady-State Operation, and 30 ppmvd @ 3% O<sub>2</sub> or 0.036 lb-NO<sub>x</sub>/MMBtu and Compliance with District Rule 4320 Requirements for Start-up and Shutdown

Steady-State Operation: 2.5 ppmvd @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu, and  
Start-up and Shutdown: 30 ppmvd @ 3% O<sub>2</sub> or 0.036 lb-NO<sub>x</sub>/MMBtu and compliance with District Rule 4320 requirements for start-up and shutdown

District source testing indicates that there are boilers rated greater than 20.0 MMBtu/hr that comply with a 2.5 ppmvd @ 3% O<sub>2</sub> NO<sub>x</sub> limit during steady-state operation and the District has also required a NO<sub>x</sub> limit of 2.5 ppmvd @ 3% O<sub>2</sub> as BACT for other boilers rated greater than 20.0 MMBtu/hr during steady-state operation. In addition, all boilers that are subject to Rule 4320 and require start-up and shutdown provisions are required to comply with the start-up and shutdown provisions of District Rule 4320; therefore, this option is achieved in practice.

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

There are no technologically infeasible options to eliminate from step 1.

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

Option 1: 2.5 ppmvd @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu during steady-state operation, and 30 ppmvd @ 3% O<sub>2</sub> or 0.036 lb-NO<sub>x</sub>/MMBtu and compliance with District Rule 4320 requirements for start-up and shutdown

#### **d. Step 4 - Cost Effectiveness Analysis**

The applicant has proposed the highest ranked control option identified above and this option has been determined to be achieved in practice. Therefore, a cost effectiveness analysis is not required.

**e. Step 5 - Select BACT**

Pursuant to the above BACT Analysis, BACT for NO<sub>x</sub> emissions from the proposed boilers is 2.5 ppmvd @ 3% O<sub>2</sub> or 0.003 lb-NO<sub>x</sub>/MMBtu during steady-state operation, and 30 ppmvd @ 3% O<sub>2</sub> or 0.036 lb-NO<sub>x</sub>/MMBtu and compliance with District Rule 4320 requirements for start-up and shutdown. The applicant has proposed to comply with these requirements. Therefore, the BACT requirements for NO<sub>x</sub> will be satisfied.

**2. BACT Analysis for SO<sub>x</sub> Emissions:**

**a. Step 1 - Identify control technologies**

The USA Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management District (BAAQMD), the Sacramento Metropolitan Air Quality Management District (SMAQMD), the Monterey Bay Air Resources District, the Santa Barbara Air Pollution Control District (SBAPCD), and San Diego Air Pollution Control District (SDAPCD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. Note that the previous SJVAPCD BACT guidelines for boilers were not considered because the BACT requirements in boilers are currently outdated and need to be revised. When a boiler triggers BACT requirements in the District, a case-by-case project-specific determination is conducted and the results of that determination are considered BACT for that particular operation.

The District also reviewed the applicable boiler rules from SJVAPCD, BAAQMD, SCAQMD, SMAQMD, and the Ventura County Air Pollution Control District (VCAPCD). The following table summarizes the results of the review of these BACT guidelines and air district rules:

BACT Guideline/ Emission Limit Source	Equipment Rating	SO <sub>x</sub> Control Technology/Requirement
SJVAPCD Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12-17-2020)	> 5.0 MMBtu/hr	Fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases; or  Limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or  Install and properly operate an emission control system that reduces SO <sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO <sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O <sub>2</sub>
SCAQMD BACT Guidelines Part B - Boiler, 39.9 MMBtu/hr with SCR (3-22-2016)	39.9 MMBtu/hr	No SO <sub>x</sub> requirement



BACT Guideline/ Emission Limit Source	Equipment Rating	SO <sub>x</sub> Control Technology/Requirement
SCAQMD BACT Guidelines Part D – Boiler, Natural Gas or Propane Fired, ≥ 20 and < 75 MMBtu/hr (2-1-2019 Rev. 3)	≥ 20 MMBtu/hr and < 75 MMBtu/hr	<u>Achieved in Practice</u> Natural Gas
SCAQMD Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (amended 12-4-2020)	All	No SO <sub>x</sub> requirement
Sacramento Metropolitan AQMD BACT Determination 283	5 MMBtu/hr to 20 MMBtu/hr	<u>Achieved in Practice</u> Good combustion practice and natural gas or LPG fuel
Sacramento Metropolitan AQMD Rule 411 - NO <sub>x</sub> from Boilers, Process Heaters and Steam Generators (Amended 8-23-2007)	All	No SO <sub>x</sub> requirement
Bay Area AQMD BACT Workbook – Boiler, ≥ 50 MMBtu/hr heat input	≥ 50 MMBtu/hr	<u>Technologically Feasible</u> Natural Gas or Treated Refinery Gas Fuel with < 0.50 ppmv Hydrogen Sulfide and <100 ppmv Total Reduced Sulfur  <u>Achieved in Practice</u> Natural Gas or Treated Refinery Gas Fuel with < 100 ppmv Total Reduced Sulfur
Bay Area AQMD Regulation 9, Rule 7 - Nitrogen Oxides And Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters (4-24-2018)	All	No SO <sub>x</sub> requirement
Monterey Bay Air Resources District Permit Requirements for Gaseous Fired Boilers (5-8-2019)	All	<u>BACT</u> Exclusive use of PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases
Santa Barbara APCD Default Boiler/Process Heater/Large Water Heater and Steam Generator Emission Standards (3-14-2017)	All Gaseous Fuels	No SO <sub>x</sub> requirement
San Diego APCD New Source Review Requirements For Best Available Control Technology (BACT) Guidance Document (June 2011) Boilers (50 to <250 MM BTU/HR) -- Fee Schedule 13B	50 MMBtu/hr to < 250 MMBtu/hr	<u>Achieved in Practice</u> Natural Gas (NG) or LPG fuel
Ventura County APCD Rule 74.15 - Boilers, Steam Generators and Process Heaters (11-10-2020)	≥ 5.0 MMBtu/hr	No SO <sub>x</sub> requirement

BACT Guideline/ Emission Limit Source	Equipment Rating	SO <sub>x</sub> Control Technology/Requirement
EPA New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	> 10 MMBtu/hr and ≤ 100 MMBtu/hr	No SO <sub>x</sub> requirement for natural gas-fired boilers

District searches in the USEPA RACT/BACT/LAER Clearinghouse indicated that boilers fueled exclusively on pipeline natural gas were not equipped with any additional controls for SO<sub>x</sub> or PM<sub>10</sub>.

Based on the District's review of California air district rules and applicable BACT guidelines for boilers and a review of previous District project-specific BACT determinations and District permit requirements for boilers, the following SO<sub>x</sub> control options were identified for boilers rated greater than 20.0 MMBtu/hr fired on gaseous fuel:

SO<sub>x</sub> Control Option #1: Fire Units with Only California Public Utilities Commission (PUC) Quality Natural Gas with a Maximum Sulfur Content of 5 grains per 100 standard cubic feet (scf)

Pursuant to the definitions in District Rules 4306 and 4320, Public Utilities Commission (PUC) quality natural gas has a maximum sulfur content of five grains per 100 scf. There are numerous boilers in the District that are only permitted to be fired on PUC quality natural gas and the exclusive use of PUC quality natural gas and limiting the fuel sulfur content to no more than five grains of total sulfur per 100 scf are options by which boilers can comply with the particulate matter control requirements of District Rule 4320; therefore, this option is achieved in practice.

A natural gas sulfur content of five grains per 100 scf is equivalent to approximately 85 ppmv as sulfur and results in an emission factor of approximately 0.0143 lb-SO<sub>x</sub>/MMBtu (as SO<sub>2</sub>) when combusted, as shown below.

SO<sub>x</sub> Emission Factor for Natural Gas with a Sulfur Content of 5 grain/100 scf

$$\frac{5 \text{ grain} - \text{S}}{100 \text{ ft}^3} \times \frac{1 \text{ lb} - \text{S}}{7,000 \text{ grain} - \text{S}} \times \frac{1 \text{ ft}^3}{1,000 \text{ Btu}} \times \frac{10^6 \text{ Btu}}{\text{MMBtu}} \times \frac{64 \text{ lb} - \text{SO}_2}{32 \text{ lb} - \text{S}} = 0.0143 \frac{\text{lb} - \text{SO}_x}{\text{MMBtu}}$$

SO<sub>x</sub> Control Option #2: Fire Units with Only California PUC Regulated (Pipeline) Natural Gas or Natural Gas with a Maximum Sulfur Content of 1 grain per 100 scf

There are numerous boilers in the District that are only permitted to be-fired on PUC regulated natural gas; therefore, this option is achieved in practice. Pursuant to District Policy APR 1720 (12/20/2001), the District has determined PUC regulated natural gas has a maximum sulfur content of one grain per 100 scf and a SO<sub>x</sub> emission factor of 0.00285 lb-SO<sub>x</sub>/MMBtu when combusted.

SO<sub>x</sub> Control Option #3: Fire Units Exclusively on California PUC Quality Natural Gas, Commercial Propane, Butane, or Liquefied Petroleum Gas (LPG), or a Combination of Such Gases

This is an option by which boilers can comply with the particulate matter control requirements of District Rule 4320 and, as shown above, has also been determined to be achieved in practice BACT for SO<sub>x</sub> emissions from boilers in the Sacramento Metropolitan AQMD, the Monterey Bay Air Resource District, and the San Diego APCD; therefore, this option is achieved in practice.

Information from the US Energy Information Administration indicates that the typical higher heating value (HHV) of commercial propane is 91,452 Btu/gallon.<sup>24</sup> Based on the Gas Processor Association (GPA) Liquefied Petroleum Gas Specifications and Test Methods,<sup>25</sup> the maximum sulfur content of commercial propane is 185 ppmw, equivalent to 15 grain/100 scf. AP-42, Chapter 1.5 - Liquefied Petroleum Gas Combustion (July 2008), Table 1.5-1 indicates that the SO<sub>x</sub> emission factor for combustion of propane in lb-SO<sub>x</sub> per 1,000 gallons of propane combusted can be calculated as 0.1 times the sulfur content in grains per 100 scf. Therefore, the SO<sub>x</sub> emission factor for this option is approximately 0.0164 lb-SO<sub>x</sub>/MMBtu, as calculated below.

SO<sub>x</sub> Emission Factor for Commercial Propane or LPG

$$\frac{15 \text{ grain} - S}{100 \text{ ft}^3} \times \frac{(0.1 \text{ lb} - \text{SO}_2/1,000 \text{ gal})}{(1 \text{ grain} - S/100 \text{ ft}^3)} \times \frac{1 \text{ gal}}{91,452 \text{ Btu}} \times \frac{10^6 \text{ Btu}}{\text{MMBtu}} = 0.0164 \frac{\text{lb} - \text{SO}_x}{\text{MMBtu}}$$

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

There are no technologically infeasible options to eliminate from step 1.

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

- 1) Firing boilers on only California PUC regulated (pipeline) natural gas or natural gas with a maximum sulfur content of 1 grain per 100 scf - 0.00285 lb-SO<sub>x</sub>/MMBtu (Achieved in Practice)
- 2) Firing boilers on only California PUC quality natural gas with a maximum sulfur content of 5 grains per 100 scf - 0.0143 lb-SO<sub>x</sub>/MMBtu (Achieved in Practice)
- 3) Fire units exclusively on California PUC quality natural gas, commercial propane, butane, or liquefied petroleum gas (LPG), or a combination of such gases - 0.0164 lb-SO<sub>x</sub>/MMBtu (Achieved in Practice)

<sup>24</sup> US Energy Information Administration. Units and Calculators Explained webpage (Last updated: May 12, 2021; Source: Monthly Energy Review, April 2021). <https://www.eia.gov/energyexplained/units-and-calculators/>

<sup>25</sup> <https://www.techstreet.com/mss/products/preview/2372>

#### **d. Step 4 - Cost Effectiveness Analysis**

The applicant has proposed the highest ranked control option identified above and this option has been determined to be achieved in practice. Therefore, a cost effectiveness analysis is not required.

#### **e. Step 5 - Select BACT**

Pursuant to the above BACT Analysis, BACT for SO<sub>x</sub> emissions from the proposed boilers is firing the boilers only with California PUC regulated natural gas or natural gas with a maximum sulfur content of one grain per 100 scf. The applicant has proposed to comply to fire the boilers only using PUC regulated natural gas. Therefore, the BACT requirements for SO<sub>x</sub> will be satisfied.

### **3. BACT Analysis for PM<sub>10</sub> Emissions:**

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

The USA Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management District (BAAQMD), the Sacramento Metropolitan Air Quality Management District (SMAQMD), the Monterey Bay Air Resources District, the Santa Barbara Air Pollution Control District (SBAPCD), and San Diego Air Pollution Control District (SDAPCD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. Note that the previous SJVAPCD BACT guidelines for boilers were not considered because the BACT requirements in boilers are currently outdated and need to be revised. When a boiler triggers BACT requirements in the District, a case-by-case project-specific determination is conducted and the results of that determination are considered BACT for that particular operation.

The District also reviewed the applicable boiler rules from SJVAPCD, BAAQMD, SCAQMD, SMAQMD, and the Ventura County Air Pollution Control District (VCAPCD). The following table summarizes the results of the review of these BACT guidelines and air district rules:

BACT Guideline/ Emission Limit Source	Equipment Rating	PM <sub>10</sub> Control Technology/Requirement
SJVAPCD Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12-17-2020)	> 5.0 MMBtu/hr	Fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases; or  Limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or  Install and properly operate an emission control system that reduces SO <sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO <sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O <sub>2</sub>
SCAQMD BACT Guidelines Part B - Boiler, 39.9 MMBtu/hr with SCR (3-22-2016)	39.9 MMBtu/hr	No PM <sub>10</sub> requirement
SCAQMD BACT Guidelines Part D – Boiler, Natural Gas or Propane Fired, ≥ 20 and < 75 MMBtu/hr (2-1-2019 Rev. 3)	≥ 20 MMBtu/hr and < 75 MMBtu/hr	<u>Achieved in Practice</u> Natural Gas
SCAQMD Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (amended 12-4-2020)	All	No PM <sub>10</sub> requirement
Sacramento Metropolitan AQMD BACT Determination 283	5 MMBtu/hr to 20 MMBtu/hr	<u>Achieved in Practice</u> Good combustion practice and natural gas or LPG fuel
Sacramento Metropolitan AQMD Rule 411 - NO <sub>x</sub> from Boilers, Process Heaters and Steam Generators (Amended 8-23-2007)	All	No PM <sub>10</sub> requirement
Bay Area AQMD BACT Workbook – Boiler, ≥ 50 MMBtu/hr heat input	≥ 50 MMBtu/hr	<u>Achieved in Practice</u> Natural Gas or Treated Refinery Gas Fuel
Bay Area AQMD Regulation 9, Rule 7 - Nitrogen Oxides And Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters (4-24-2018)	All	No PM <sub>10</sub> requirement
Monterey Bay Air Resources District Permit Requirements for Gaseous Fired Boilers (5-8-2019)	All	<u>BACT</u> Exclusive use of PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases
Santa Barbara APCD Default Boiler/Process Heater/Large Water Heater and Steam Generator Emission Standards (3-14-2017)	All Gaseous Fuels	No PM <sub>10</sub> requirement

BACT Guideline/ Emission Limit Source	Equipment Rating	PM <sub>10</sub> Control Technology/Requirement
San Diego APCD New Source Review Requirements For Best Available Control Technology (BACT) Guidance Document (June 2011) Boilers (50 to <250 MM BTU/HR) -- Fee Schedule 13B	50 MMBtu/hr to < 250 MMBtu/hr	<p style="text-align: center;"><u>Achieved in Practice</u> Natural Gas (NG) or LPG fuel BACT Emission Rate Limit - 0.10 grain/dscf*</p> <p>*San Diego APCD has determined that the use of Natural Gas ensures compliance with the PM BACT emission rate limit of 0.1 gr/dscf. No further analysis is required for this pollutant.</p>
Ventura County APCD Rule 74.15 - Boilers, Steam Generators and Process Heaters (11-10-2020)	≥ 5.0 MMBtu/hr	No PM <sub>10</sub> requirement
EPA New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	> 10 MMBtu/hr and ≤ 100 MMBtu/hr	No PM <sub>10</sub> requirement for natural gas-fired boilers

District searches in the USEPA RACT/BACT/LAER Clearinghouse indicated that boilers fueled exclusively on pipeline natural gas were not equipped with any additional controls for SO<sub>x</sub> or PM<sub>10</sub>. Additionally, source testing of PM emissions is rarely required for boilers that are only fired on gaseous fuels. As a result, source test results for PM emissions from boilers that are only fired on gaseous fuels are very limited. PM emissions from combustion of gaseous fuels primarily result from the incineration of fuel-borne sulfur compounds resulting in the formation of sulfur-containing particulate; therefore, PM emissions from gaseous fuel-fired boilers are related to the sulfur content of the fuel.

Based on the District’s review of California air district rules and applicable BACT guidelines for boilers and a review of previous District project-specific BACT determinations and District permit requirements for boilers, the following PM<sub>10</sub> control options were identified for boilers rated greater than 20.0 MMBtu/hr fired on gaseous fuel:

PM<sub>10</sub> Control Option #1: Fire Units with Only California Public Utilities Commission (PUC) Quality Natural Gas with a Maximum Sulfur Content of 5 grains per 100 standard cubic feet (scf)

Pursuant to the definitions in District Rules 4306 and 4320, Public Utilities Commission (PUC) quality natural gas has a maximum sulfur content of five grains per 100 scf. There are numerous boilers in the District that are only permitted to be fired on PUC quality natural gas and the exclusive use of PUC quality natural gas and limiting the fuel sulfur content to no more than five grains of total sulfur per 100 scf are options by which boilers can comply with the particulate matter control requirements of District Rule 4320; therefore, this option is achieved in practice.

As discussed in this evaluation, based on the limited source testing data available for natural gas-fired boilers and process heaters, the District has determined that boilers that are fueled with PUC quality natural gas with a maximum sulfur content of five grains per 100 scf will have a PM<sub>10</sub> emission factor no more than 0.003 lb-PM<sub>10</sub>/MMBtu.

PM<sub>10</sub> Control Option #2: Fire Units Exclusively on California PUC Quality Natural Gas, Commercial Propane, Butane, or Liquefied Petroleum Gas (LPG), or a Combination of Such Gases

This is an option by which boilers can comply with the particulate matter control requirements of District Rule 4320 and, as shown above, has also been determined to be achieved in practice BACT for PM<sub>10</sub> emissions from boilers in the Sacramento Metropolitan AQMD, the Monterey Bay Air Resource District, and the San Diego APCD; therefore, this option is achieved in practice.

Based on AP-42, Chapter 1.5 - Liquefied Petroleum Gas Combustion (July 2008), Table 1.5-1, the PM<sub>10</sub> emission factor for boilers combusting LPG is 0.0078 lb-PM<sub>10</sub>/MMBtu.

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

There are no technologically infeasible options to eliminate from step 1.

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

- 1) Firing boilers on only California PUC quality natural gas or natural gas with a maximum sulfur content of 5 grains per 100 scf (0.003 lb-PM<sub>10</sub>/MMBtu) (Achieved in Practice)
- 2) Fire units exclusively on California PUC quality natural gas, commercial propane, butane, or liquefied petroleum gas (LPG), or a combination of such gases (0.0078 lb-PM<sub>10</sub>/MMBtu) (Achieved in Practice)

**d. Step 4 - Cost Effectiveness Analysis**

The applicant has proposed the highest ranked control option identified above and this option has been determined to be achieved in practice. Therefore, a cost effectiveness analysis is not required.

**e. Step 5 - Select BACT**

Pursuant to the above BACT Analysis, BACT for PM<sub>10</sub> emissions from the proposed boilers is firing the boilers only with California PUC quality natural gas or natural gas with a maximum sulfur content of 5 grains per 100 scf. The applicant has proposed to comply to fire the boilers only using PUC regulated natural gas. Therefore, the BACT requirements for PM<sub>10</sub> will be satisfied.

**4. BACT Analysis for VOC Emissions:**

**a. Step 1 - Identify control technologies**

The USA Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse, the California Air Resources Board (CARB) BACT Clearinghouse, and the South Coast Air Quality Management District (SCAQMD), the Bay Area Air Quality Management

District (BAAQMD), the Sacramento Metropolitan Air Quality Management District (SMAQMD), the Monterey Bay Air Resources District, the Santa Barbara Air Pollution Control District (SBAPCD), and San Diego Air Pollution Control District (SDAPCD) BACT Guidelines were reviewed to determine potential control technologies for this class and category of operation. Note that the previous SJVAPCD BACT guidelines for boilers were not considered because the BACT requirements in boilers are currently outdated and need to be revised. When a boiler triggers BACT requirements in the District, a case-by-case project-specific determination is conducted and the results of that determination are considered BACT for that particular operation.

The District also reviewed the applicable boiler rules from SJVAPCD, BAAQMD SCAQMD, SMAQMD, and the Ventura County Air Pollution Control District (VCAPCD). The following table summarizes the results of the review of these BACT guidelines and air district rules:

BACT Guideline/ Emission Limit Source	Equipment Rating	VOC Control Technology/Requirement
SJVAPCD Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12-17-2020)	> 5.0 MMBtu/hr	No VOC requirement
SCAQMD BACT Guidelines Part B - Boiler, 39.9 MMBtu/hr with SCR (3-22-2016)	39.9 MMBtu/hr	No VOC requirement
SCAQMD BACT Guidelines Part D – Boiler, Natural Gas or Propane Fired, $\geq 20$ and $< 75$ MMBtu/hr (2-1-2019 Rev. 3)	$\geq 20$ MMBtu/hr and $< 75$ MMBtu/hr	No VOC requirement
SCAQMD Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (amended 12-4-2020)	All	No VOC requirement
Sacramento Metropolitan AQMD BACT Determination 283	5 MMBtu/hr to 20 MMBtu/hr	<u>Achieved in Practice</u> Good combustion practice and natural gas or LPG fuel
Sacramento Metropolitan AQMD Rule 411 - NO <sub>x</sub> from Boilers, Process Heaters and Steam Generators (Amended 8-23-2007)	All	No VOC requirement
Bay Area AQMD BACT Workbook – Boiler, $\geq 50$ MMBtu/hr heat input	$\geq 50$ MMBtu/hr	<u>Typical Technology</u> Good Combustion Practice
Bay Area AQMD Regulation 9, Rule 7 - Nitrogen Oxides And Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters (4-24-2018)	All	No VOC requirement
Monterey Bay Air Resources District Permit Requirements for Gaseous Fired Boilers (5-8-2019)	All	No VOC requirement



BACT Guideline/ Emission Limit Source	Equipment Rating	VOC Control Technology/Requirement
Santa Barbara APCD Default Boiler/Process Heater/Large Water Heater and Steam Generator Emission Standards (3-14-2017)	All Gaseous Fuels	No VOC requirement
San Diego APCD New Source Review Requirements For Best Available Control Technology (BACT) Guidance Document (June 2011) Boilers (50 to <250 MM BTU/HR) -- Fee Schedule 13B	50 MMBtu/hr to < 250 MMBtu/hr	<u>Achieved in Practice</u> Natural Gas (NG) or LPG fuel
Ventura County APCD Rule 74.15 - Boilers, Steam Generators and Process Heaters (11-10-2020)	≥ 5.0 MMBtu/hr	No VOC requirement
EPA New Source Performance Standards (NSPS) - 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial- Commercial-Institutional Steam Generating Units	> 10 MMBtu/hr and ≤ 100 MMBtu/hr	No VOC requirement for natural gas-fired boilers

District searches in the USEPA RACT/BACT/LAER Clearinghouse indicated that boilers fueled exclusively on pipeline natural gas were not equipped with any additional controls for VOC emissions. Additionally, source testing of VOC emissions is rarely required for boilers that are only fired on gaseous fuels. As a result, source test results for VOC emissions from boilers that are only fired on gaseous fuels are very limited.

Based on the District’s review of California air district rules and applicable BACT guidelines for boilers and a review of previous District project-specific BACT determinations and District permit requirements for boilers, the following VOC control options were identified for boilers rated greater than 20.0 MMBtu/hr fired on gaseous fuel:

VOC Control Option #1: Fire Units with Only California Public Utilities Commission (PUC) Quality Natural Gas

There are numerous boilers in the District that are only permitted to be-fired on PUC quality natural gas; therefore, this option is achieved in practice.

Based on AP-42, Chapter 1.4 – Natural Gas Combustion (July 1998), Table 1.4-2, the VOC emission factor for boilers combusting natural gas is 0.0055 lb-VOC/MMBtu.

VOC Control Option #2: Fire Units Exclusively on California PUC Quality Natural Gas, Commercial Propane, Butane, or Liquefied Petroleum Gas (LPG), or a Combination of Such Gases

This is an option by which boilers can comply with the particulate matter control Requirements of District Rule 4320 and has also been determined to be achieved in practice BACT for VOC emissions from boilers in the Sacramento Metropolitan AQMD and the San Diego APCD; therefore, this option is achieved in practice.

Based on AP-42, Chapter 1.5 - Liquefied Petroleum Gas Combustion (July 2008), Table 1.5-1, the VOC emission factor for boilers combusting LPG is 0.0088 lb-VOC/MMBtu.

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

There are no technologically infeasible options to eliminate from step 1.

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

- 1) Firing boilers on only California PUC quality natural gas – 0.0055 lb-VOC/MMBtu (Achieved in Practice)
- 2) Fire units exclusively on California PUC quality natural gas, commercial propane, butane, or liquefied petroleum gas (LPG), or a combination of such gases - 0.0088 lb-VOC/MMBtu (Achieved in Practice)

**d. Step 4 - Cost Effectiveness Analysis**

The applicant has proposed the highest ranked control option identified above and this option has been determined to be achieved in practice. Therefore, a cost effectiveness analysis is not required.

**e. Step 5 - Select BACT**

Pursuant to the above BACT Analysis, BACT for VOC emissions from the proposed boilers is firing the boilers only with California PUC quality natural gas. The applicant has proposed to comply to fire the boilers only using PUC regulated natural gas. Therefore, the BACT requirements for VOC will be satisfied.

## **APPENDIX G**

### **Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) Memo**

# San Joaquin Valley Air Pollution Control District

## Risk Management Review and Ambient Air Quality Analysis

To: Ramon Norman – Permit Services  
 From: Will Worthley – Technical Services  
 Date: February 04, 2022  
 Facility Name: CENTRAL VALLEY MEAT CO  
 Location: 10431 8 ¾ AVE, HANFORD  
 Application #(s): C-2282-3-2, -5-2, -7-2, -9-1, -10-1, -11-1, -12-0, -13-0, -14-0, -15-0, -16-0, -17-0  
 Project #: C-1210060

### 1. Summary

#### 1.1 RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
12-0	31.10	0.84	0.04	7.24E-09	No	Yes
14-0	0.27	0.00	0.00	5.22E-08	No	Yes
15-0	0.27	0.00	0.00	5.22E-08	No	Yes
16-0	0.27	0.00	0.00	5.22E-08	No	Yes
17-0	0.27	0.00	0.00	5.23E-08	No	Yes
<b>Project Totals</b>	>1	0.84	0.04	2.16E-07		
<b>Facility Totals</b>	>1	0.90	0.04	2.67E-06		

#### 1.2 AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass		Pass		
NO <sub>x</sub>	Pass				Pass
SO <sub>x</sub>	Pass	Pass		Pass	Pass
PM10				N/A <sup>1</sup>	N/A <sup>1</sup>
PM2.5				N/A <sup>1</sup>	N/A <sup>1</sup>

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 and PM2.5 emission reduction credits to fully offset the PM emissions from this project.

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

Unit # 12-0, 14-0, 15-0, 16-0, & 17-0

1. 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 December 2, 2021 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -3-2: MODIFICATION OF 1,919 BHP DETROIT DIESEL MODEL 91637316 DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR
- Unit -5-2: MODIFICATION OF 19.95 MMBTU/HR HURST MODEL 54X-500-15 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR
- Unit -7-2: MODIFICATION OF 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC-10-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR
- Unit -9-1: MODIFICATION OF 19.95 MMBTU/HR HURST MODEL S5-X-500-150 NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR
- Unit -10-1: MODIFICATION OF 19.95 MMBTU/HR SUPERIOR MODEL SX8-X-1500-PFCF-G NATURAL GAS-FIRED BOILER WITH A POWER FLAME MODEL NVC11-G-30 ULTRA-LOW NOX BURNER: LIMIT FACILITY-WIDE NOX AND VOC EMISSIONS TO 19,999 LB/YEAR
- Unit -11-1: MODIFICATION OF 250 BHP JOHN DEERE (INTERMITTENT) MODEL 6068HF485TU TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING A FIREWATER PUMP: LIMIT TOTAL FACILITY-WIDE NOX AND VOC EMISSIONS EACH TO 19,999 LB/YEAR
- Unit -12-0: MEAT RENDERING OPERATION WITH ONE RAW MATERIAL RECEIVING SYSTEM, CONSISTING OF RAW MATERIAL BINS, AN ENCLOSED SCREW CONVEYOR, AND TWO PRECRUSHERS, TWO DUPPS MODEL 440U SUPERCOOKOR COOKERS, ONE SHELL AND TUBE HEAT EXCHANGER, ONE AIR-COOLED CONDENSER SYSTEM, ONE DRAINER, ONE DRAINER DISCHARGE CONVEYOR, ONE SWECO SCREEN, ONE CENTRIFUGE, SIX SCREW PRESSES, ONE CRAX HOPPER/BIN, ONE SCREEN, TWO CRAX GRINDER/HAMMERMILLS, AN EMISSION/ODOR CONTROL SYSTEM CONSISTING OF A TWO-STAGE VENTURI/PACKED BED SCRUBBER SYSTEM AND A 5 MMBTU/HR REGENERATIVE THERMAL OXIDIZER (RTO) IN SERIES, AN EMISSION/ODOR CONTROL SYSTEM CONSISTING OF A CYCLONE AND TWO-STAGE VENTURI/PACKED BED SCRUBBER SYSTEM IN SERIES, TWO 100,000 CFM PACKED BED SCRUBBER (SERVING ROOM AIR), AND PERMIT EXEMPT FAT STORAGE TANKS
- Unit -13-0: PROTEIN STORAGE AND MEAT AND BONE MEAL (MBM) LOADOUT OPERATION WITH THREE 4,700 CUBIC FEET (173,000 LB) STORAGE SILOS, EACH SERVED BY A BIN VENT FILTER
- Unit -14-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX

BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

- Unit -15-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM
- Unit -16-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM
- Unit -17-0: 61.991 MMBTU/HR CLEAVER BROOKS, MODEL CBEX-2W-700-1500-150ST, NATURAL GAS FIRED-BOILER WITH A CLEAVER BROOKS LOW NOX BURNER, INDUCED FLUE GAS RECIRCULATION (FGR), AND A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

### **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 unit's or 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 one 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 unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

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

- Toxic emissions are derived from a 2017 source test of Sacramento Rendering Company by Best Environmental. Worst case of scrubber runs used.
- Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion.

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 2013-2017 from Hanford (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:

<b>Source Process Rates</b>					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
12	1	Scubber 1 VOC	LBS	0.759	6648
12	2	Scubber 2 VOC	LBS	0.759	6648
12	3	RTO VOC	LBS	0.533	2455
14	1	NG Usage	MMscf	0.0074	64.8
15	1	NG Usage	MMscf	0.0074	64.8
16	1	NG Usage	MMscf	0.0074	64.8
17	1	NG Usage	MMscf	0.0074	64.8

<b>Point Source Parameters</b>						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
12	Animal Rendering Plant - RTO	15.24	364	20.30	0.91	Vertical
12	Animal Rendering Plant - Scrubber 2	15.24	0	21.40	1.68	Vertical
12	Animal Rendering Plant - Scrubber 1	15.24	0	21.40	1.68	Vertical
14	NG Boiler	13.86	496	14.71	0.91	Vertical
15	NG Boiler	13.86	496	14.71	0.91	Vertical
16	NG Boiler	13.86	496	14.71	0.91	Vertical
17	NG Boiler	13.86	496	14.71	0.91	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 NO<sub>2</sub> 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:

<b>Monitoring Stations</b>				
<b>Pollutant</b>	<b>Station Name</b>	<b>County</b>	<b>City</b>	<b>Measurement Year</b>
CO	Tranquillity	Fresno		2018
NOx	Hanford	Kings	Hanford	2018
PM10	Hanford	Kings	Hanford	2018
PM2.5	Hanford	Kings	Hanford	2018
SOx	Fresno - Garland	Fresno	Fresno	2018

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

<b>Emission Rates (lbs/hour)</b>						
<b>Unit ID</b>	<b>Process</b>	<b>NOx</b>	<b>SOx</b>	<b>CO</b>	<b>PM10</b>	<b>PM2.5</b>
12	1	0.00	0.00	0.00	NA <sup>1</sup>	NA <sup>1</sup>
12	2	0.00	0.00	0.00	NA <sup>1</sup>	NA <sup>1</sup>
12	3	1.46	3.27	0.42	NA <sup>1</sup>	NA <sup>1</sup>
12	4	0.00	0.00	0.00	NA <sup>1</sup>	NA <sup>1</sup>
13	1	0.00	0.00	0.00	NA <sup>1</sup>	NA <sup>1</sup>
14	1	2.26	0.18	4.58	NA <sup>1</sup>	NA <sup>1</sup>
15	1	2.26	0.18	4.58	NA <sup>1</sup>	NA <sup>1</sup>
16	1	2.26	0.18	4.58	NA <sup>1</sup>	NA <sup>1</sup>
17	1	2.26	0.18	4.58	NA <sup>1</sup>	NA <sup>1</sup>

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 and PM2.5 emission reduction credits to fully offset the PM emissions from this project.

<b>Emission Rates (lbs/year)</b>						
<b>Unit ID</b>	<b>Process</b>	<b>NOx</b>	<b>SOx</b>	<b>CO</b>	<b>PM10</b>	<b>PM2.5</b>
12	1	000	000	000	NA <sup>1</sup>	NA <sup>1</sup>
12	2	000	000	000	NA <sup>1</sup>	NA <sup>1</sup>
12	3	6,386	14,387	3,679	NA <sup>1</sup>	NA <sup>1</sup>
12	4	000	000	000	NA <sup>1</sup>	NA <sup>1</sup>
13	1	000	000	000	NA <sup>1</sup>	NA <sup>1</sup>
14	1	2,762	1,548	21349	NA <sup>1</sup>	NA <sup>1</sup>
15	1	2,762	1,548	21349	NA <sup>1</sup>	NA <sup>1</sup>
16	1	2,762	1,548	21349	NA <sup>1</sup>	NA <sup>1</sup>
17	1	2,762	1,548	21349	NA <sup>1</sup>	NA <sup>1</sup>

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 and PM2.5 emission reduction credits to fully offset the PM emissions from this project.



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 2013-2017 from Hanford (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
12	Animal Rendering Plant - RTO	15.24	0	21.60	0.91	Vertical
12	Animal Rendering Plant - Scrubber 2	15.24	0	21.40	1.68	Vertical
12	Animal Rendering Plant - Scrubber 1	15.24	0	21.40	1.68	Vertical
12	Animal Rendering Plant – Solids Processing	15.24	364	20.30	0.91	Vertical
14	NG Boiler	13.86	496	14.71	0.91	Vertical
15	NG Boiler	13.86	496	14.71	0.91	Vertical
16	NG Boiler	13.86	496	14.71	0.91	Vertical
17	NG Boiler	13.86	496	14.71	0.91	Vertical

Volume Source Parameters					
Unit ID	Unit Description	Release Height (m)	Side Length (m)	Initial Lateral Dimension (m)	Initial Vertical Dimension (m)
13	Storage	6.10	4.88	1.13	5.31
13	Loadout	6.10	4.88	1.13	5.31

## 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 H**

### **Summary of Total Potential to Emit (PE) for Hazardous Air Pollutants (HAPs) from Facility**

The total potential to emit for Hazardous Air Pollutants (HAPs) for the facility is shown in the tables below based on the District's Risk Management Review Spreadsheets for various types of equipment.

<b>Total Facility-Wide PE for HAPs (lb/year)</b>		
<b>Permit Unit</b>	<b>Total HAPs (lb/yr)</b>	<b>Total HAPs (ton/yr)</b>
ATC C-2282-3-1 (1,919 bhp Diesel Emergency Engine)	8	0.00
ATC C-2282-5-2 (19.95 MMBtu/hr Natural Gas Boiler)	14	0.01
ATC C-2282-7-2 (19.95 MMBtu/hr Natural Gas Boiler)	14	0.01
ATC C-2282-9-1 (19.95 MMBtu/hr Natural Gas Boiler)	14	0.01
ATC C-2282-10-1 (19.95 MMBtu/hr Natural Gas Boiler)	14	0.01
ATC C-2282-11-1 (250 bhp Diesel Emergency Engine)	5	0.00
ATC C-2282-12-0 (Meat Rendering Operation with RTO)	5,538	2.77
ATC C-2282-13-0 (Meat and Bone Meal Storage and Loadout)	0	0
ATC C-2282-14-0 (61.991 MMBtu/hr NG Boiler with SCR)	45	0.02
ATC C-2282-15-0 (61.991 MMBtu/hr NG Boiler with SCR)	45	0.02
ATC C-2282-16-0 (61.991 MMBtu/hr NG Boiler with SCR)	45	0.02
ATC C-2282-17-0 (61.991 MMBtu/hr NG Boiler with SCR)	45	0.02
<b>Total Facility-Wide PE for HAPs</b>	<b>5,787</b>	<b>2.89</b>

PE for HAPs for ATC C-2282-3-1: 1,919 bhp Emergency Standby Diesel IC Engine

<b>PE for HAPs for ATC C-2282-3-1</b>			
<b>HAP</b>	<b>CAS#</b>	<b>Diesel EF (lb/1,000 gallon)</b>	<b>Annual PE for HAPs (lb/year)</b>
1,3 Butadiene	106990	2.17E-01	0.4
Acetaldehyde	75070	7.83E-01	1.6
Acrolein	107028	3.39E-02	0.1
Arsenic	7440382	1.60E-03	0.0
Benzene	71432	1.86E-01	0.4
Cadmium	7440439	1.50E-03	0.0
Chlorobenzene	108907	2.00E-04	0.0
Chromium	7440473	6.00E-04	0.0
Ethyl Benzene	100414	1.09E-02	0.0
Formaldehyde	50000	1.73E+00	3.5
Hexane	110543	2.69E-02	0.1
Hexavalent Chromium	18540299	1.00E-04	0.0
Hydrogen Chloride	7647010	1.86E-01	0.4
Lead	7439921	8.30E-03	0.0
Manganese	7439965	3.10E-03	0.0
Mercury	7439976	2.00E-03	0.0
Naphthalene	91203	1.97E-02	0.0
Nickel	7440020	3.90E-03	0.0

<b>PE for HAPs for ATC C-2282-3-1</b>			
<b>HAP</b>	<b>CAS#</b>	<b>Diesel EF (lb/1,000 gallon)</b>	<b>Annual PE for HAPs (lb/year)</b>
Polycyclic Organic Matter (PAHs)	1150	5.59E-02	0.1
Selenium	7782492	2.20E-03	0.0
Toluene	108883	1.05E-01	0.2
Xylenes	1330207	4.24E-02	0.1
<b>Total PE for HAPs (lb/year)</b>			<b>8</b>

PE for HAPs for ATCs C-2282-5-2, -7-2, -9-1, & -10-1: 19.95 MMBtu/hr Natural Gas Boilers

<b>PE for HAPs for ATCs C-2282-5-2, -7-2, -9-1, &amp; -10-1</b>			
<b>HAP</b>	<b>CAS#</b>	<b>10-100 MMBtu/hr EF (lb/MMscf)</b>	<b>Annual PE for HAPs (lb/year)</b>
Acetaldehyde	75070	3.10E-03	0.5
Acrolein	107028	2.70E-03	0.5
Benzene	71432	5.80E-03	1.0
Ethyl Benzene	100414	6.90E-03	1.2
Formaldehyde	50000	1.23E-02	2.1
Hexane	110543	4.60E-03	0.8
Naphthalene	91203	3.00E-04	0.1
Polycyclic Organic Matter (PAHs)	1151	1.00E-04	0.0
Toluene	108883	2.65E-02	4.6
Xylenes	1330207	1.97E-02	3.4
<b>Total PE for HAPs (lb/year)</b>			<b>14</b>

PE for HAPs for ATC C-2282-11-1: 250 bhp Emergency IC Engine Powering a Firewater Pump

<b>PE for HAPs for ATC C-2282-11-1</b>			
<b>HAP</b>	<b>CAS#</b>	<b>Diesel EF (lb/1,000 gallon)</b>	<b>Annual PE for HAPs (lb/year)</b>
1,3 Butadiene	106990	2.17E-01	0.3
Acetaldehyde	75070	7.83E-01	1.0
Acrolein	107028	3.39E-02	0.0
Arsenic	7440382	1.60E-03	0.0
Benzene	71432	1.86E-01	0.2
Cadmium	7440439	1.50E-03	0.0
Chlorobenzene	108907	2.00E-04	0.0
Chromium	7440473	6.00E-04	0.0
Ethyl Benzene	100414	1.09E-02	0.0
Formaldehyde	50000	1.73E+00	2.1
Hexane	110543	2.69E-02	0.0
Hexavalent Chromium	18540299	1.00E-04	0.0
Hydrogen Chloride	7647010	1.86E-01	0.2

<b>PE for HAPs for ATC C-2282-11-1</b>			
<b>HAP</b>	<b>CAS#</b>	<b>Diesel EF (lb/1,000 gallon)</b>	<b>Annual PE for HAPs (lb/year)</b>
Lead	7439921	8.30E-03	0.0
Manganese	7439965	3.10E-03	0.0
Mercury	7439976	2.00E-03	0.0
Naphthalene	91203	1.97E-02	0.0
Nickel	7440020	3.90E-03	0.0
Polycyclic Organic Matter (PAHs)	1150	5.59E-02	0.1
Selenium	7782492	2.20E-03	0.0
Toluene	108883	1.05E-01	0.1
Xylenes	1330207	4.24E-02	0.1
<b>Total PE for HAPs (lb/year)</b>			<b>5</b>

PE for HAPs for ATC C-2282-12-0: Rendering Operation

<b>PE for HAPs for ATC C-2282-12-0</b>			
<b>HAP</b>	<b>CAS#</b>	<b>Rendering EF (lb/lb-VOC)</b>	<b>Annual PE for HAPs (lb/year)</b>
Carbon disulfide	75150	4.13E-03	122.1
Hexane	110543	1.35E-02	398.7
Methanol	67561	1.29E-01	3,820.9
Methyl Chloride	74873	2.70E-02	797.5
Toluene	108883	1.35E-02	398.7
<b>Total PE for HAPs (lb/year)</b>			<b>5,538</b>

PE for HAPs for ATCs C-2282-14-0, -15-0, -16-0, & -17-0: 61.991 MMBtu/hr Natural Gas Boilers

<b>PE for HAPs for ATCs C-2282-14-0, -15-0, -16-0, &amp; -17-0</b>			
<b>HAP</b>	<b>CAS#</b>	<b>10-100 MMBtu/hr EF (lb/MMscf)</b>	<b>Annual PE for HAPs (lb/year)</b>
Acetaldehyde	75070	3.10E-03	1.7
Acrolein	107028	2.70E-03	1.5
Benzene	71432	5.80E-03	3.1
Ethyl Benzene	100414	6.90E-03	3.7
Formaldehyde	50000	1.23E-02	6.7
Hexane	110543	4.60E-03	2.5
Naphthalene	91203	3.00E-04	0.2
Polycyclic Organic Matter (PAHs)	1151	1.00E-04	0.1
Toluene	108883	2.65E-02	14.4
Xylenes	1330207	1.97E-02	10.7
<b>Total PE for HAPs (lb/year)</b>			<b>45</b>